The rock art explosion when it comes to the increase in motifs, the large number of sites and the large rock art areas with concentrations of rock art, occurs virtually simultaneously in all of northern Fennoscandia, between 5500BC and 5000BC. This is also the time when the sites become large (by number of figures), human are involved in various activities (hunting, dancing, journeying etc.), clear scenes and compositions and the first sites that evidence a long continuous tradition where rock art is being made in the same area for several thousand years, like in Alta, Nämforsen and Vyg. The difference between the "Early Stone Age" sites and the "Late Stone Age" sites are presented in Figure 284. Concluding from the dates, the large rock art areas is initiated virtually simultaneously and people returned to these places to make rock art for thousands of years.

Vegetation and research intensity are problematic when it comes to representativeness of the material record. The large figures at the polished sites in the Ofoten area are visible due to good preservation conditions. This must be bore in mind when looking at the Stone Age sites in general. The research activity in some areas has revealed large rock art concentrations by deturfing large areas of rocks. Without the deturfing of the rocks in Alta, the Alta area would have included "only" a few hundred figures. The excavations at Vyg revealed most of the rock art in the Vyg area, and we know that most of the large sites have been deturfed to find more rock art. One must be aware of the fact that areas with many small sites may prove to be large concentrations if one was to deturf rocks in the area. Examples of such areas from the Case studies is e.g. the Sletjord area in the Ofoten Case study where Hallström was told there were several more sites, but at his visit in 1908 they were overgrown. Other such examples could be the Tennes area in Troms, northern Norway where there are four sites with rock art but rock outcrops between the sites have not been investigated. In middle Norway, the Hammer site includes 16 sites that date from the latter part of the Early Stone Age to the Bronze Age. With this in notion in mind, one sense that more large rock art concentrations can be found in Fennoscandia. A good example of this is the Kanozero case study where the first rock art was discovered in 1997 and now the site includes more than 1000 figures.

Macrolandscapes – the wider picture

Location of rock art

Dating sites is important when it comes to the macrolandscape. Fennoscandia has undergone large changes in the landscape due to natural processes. The main change has been the land uplift, leaving rock art sites up to 100masl and like at Nämforsen more than 140km inland. Important for this thesis has been reconstructing lost relations. Reconstructing the landscape by raising the sea level has shown that the landscape has changed since the time of the making of the rock art. At some places it is problematic to see how the landscape would have been due to the changed landscape context both when it comes to natural and human intervention. The land uplift combined with the building of large hydro-power systems at Nämforsen and Vyg has left the landscape contexts somewhat unrecognisable to the ones in the past (Figure 208). It is therefore crucial to include lost relations when interpreting past landscapes.

When it comes to location for the rock art in the Case studies, there is one common factor for all the large rock art areas; the shore connection as presented by Helskog (1999). The only sites that do not have such a location in the shore zone, are a few of the paintings in northern Sweden. The polished rock art and the carvings are almost exclusively bound to the contemporary shoreline and, like at Nes and Valle in the Ofoten Case study, they are located at the same elevation even where there is no visibility between the sites. One would otherwise assume that carvings were made at different elevations if they were not shore connected. The Slettnes site and much of the rock art at Vyg were covered by transgressions, which backs the shore connection. There are several sites along the coast of Norway that were covered by marine deposits; amongst them are Kvalsund (Gjessing 1938) and Kirkely (Simonsen 1958) at Tennes in northern Norway and Hammer VI and VII (Bakka 1975b), Strand (Gjessing 1936a) in middle Norway. Several sites have also been suggested to be worn by the waves like at Slettnes in northern Norway (see Figure 148), Kirkely²¹³ at Tennes in northern Norway (Simonsen 1958) and Strand (Gjessing 1936a) in middle Norway. The similarity in selected motifs and scenes at the same elevation (phase) in Alta like the reindeer corrals and the bearhunting scenes that occur at the same elevation, links the dating to the previous shoreline. At the Nämforsen site, even after the land uplift had removed the seashore from Nämforsen, the shore connection was upheld by the large waterfall. At Kanozero the carvings are also made

_

²¹³ At the Kirkely site the "wave erosion" is evident by the higher elevated figures not being eroded while the lower elevated figures are "wave eroded" like at Slettnes.

with strictly connected to the shore. The vegetation free zone was ideal since they were always available. The tidal effect is different in the Ofoten area, the Alta area, Nämforsen and at Vyg by its coastal location. It is interesting that virtually all the rock art compositions and scenes were most likely made within the sea-spray zone as argued in chapter 4 (see Figure 80). All the large compositions at the coastal locations in the case studies at Alta, Nämforsen, Ofoten and Vyg fall within 2m elevation, even if the largest scenes and compositions could be as long as 8m at the bear hunting scenes or the reindeer corrals in Alta. Even at the large composition at Leiknes 1 the figures seem to follow the same 2m interval (see Figure 96). At the inland case study at Kanozero, the scenes and compositions never break with this seaspray zone. This is also the case when compared to the rest of the rock art in northern Fennoscandia. At Onega the annual fluctuations of water level in the lake varied as much as 80cm. This meant that some of the figures were submerged during one of my visits. The same was observed by Hallström as many of the figures were submerged during his initial visit to Nämforsen at midsummer 1907 when the forceful rapids prevented his approach to Bradön Island. At the spring time, parts of the figures or the entire panel at the inland sites, like at Duved²¹⁴ and Landverk in northern Sweden, are submerged due to high water-levels and the shore connection of the sites. The examples of shore connections between Stone Age rock art in northern Fennoscandia is numerous; hence I have argued that the majority of rock art in my case studies were shorebound when made.

It has been argued by Sognnes, using examples from middle Norway, that rock art sites from the Stone Age are located by conspicuous topographical features (Sognnes 1998:154ff; Sognnes 2002:202ff, fig 10.4). Some of these topographical features would stand out in the landscape, like the Hell site that is located at an island on a vertical rock cliff that could be seen from the sea. According to Sognnes, the topographical features chosen for making the Stone Age rock art may not be large, but frequently would be easily spotted by people paddling along the sound and fjords (Sognnes 2002:202). Other such conspicuous topographical features that has been connected to rock art is the rapids / waterfall (Goldhahn 2002b; Hallström 1960; Ramqvist et al. 1985b), such as those at Nämforsen and Vyg (see Figure 207 and Figure 264). The Stornorrfors site was found in 1985 by Swedish scholars searching for rock art in locations similar to Nämforsen where one have islands in waterfalls / rapids (Ramqvist et al. 1985b). By no doubt, many Stone Age rock art sites are located on islands in large rivers or at waterfalls (e.g. Glösa, Gärde, Nämforsen, Stornorrfors in middle

²¹⁴ At the Duved site, the whole site was submerged during my fieldwork in May 2004.

Sweden, Vyg in northwestern Russia). However, in the Ofoten area, the Kanozero area and the Alta area, they are not. Many of the rock art sites are located on small islands, such as the Goreliy, Jeloviy and Kamenniy sites at Kanozero, the Bradön and Notön island at Nämforsen, the Besovy Sledki, Jerpin Pudas and Nameless islands with rock art at Vyg. This is also found in middle Norway when reconstructing the land uplift, like at e.g. Hell, and in northwestern Russia at the small islands Guri and Mudosh at Onega. Sites are located at vertical rock cliffs (Jo Sarsaklubben at Nes, Valle 1 and 2 and Vik in Ofoten). This is also found in middle Norway at e.g. Hell and Stykket (see Figure 285). The majority of the sites are located at coastal rock slopes. This is also evident for large parts of the Stone Age rock carvings in the rest of Fennoscandia. There are also boulders with rock art located in the shorezone in the Alta-area (e.g. Slettnes 1-4, Langnesholmen 1-4). This is also found at e.g. Chalmn Varre on Kola Peninsula, Reppa in middle Norway (Sognnes 1981) and e.g. at Botilstenen and Åbosjön in northern Sweden.

There is no one common location factor of rock art sites except the suggested shore connection and the obvious fact that to make rock art, one need available rocks. In northern Norway there are also a few sites with cave paintings (most likely dated to the Bronze Age) (Hesjedal 1990:129). Rock art in northern Fennoscandia are located on vertical cliffs, horizontal coastal rock slopes, islands and on boulders. The one factor that is necessary when making rock art, the rock itself, has rarely been considered and should be explored in future rock art research. In ethnography, there are examples of people communicating with the spirits and communicating with stones (see chapter 4). However, returning to the conspicuous topographical features, many of the sites are located at locations that is in some way separates from the rest of the surrounding landscape. The caves, the waterfall / rapids, the vertical cliffs, the coastal rock slopes, the islands, the boulders all have one common denominator; they stand out from the rest of the landscape. They are located at places where the landscape character changes; like the waterfall / rapids or the island or boulders that appear from the sea. They are located at liminal places in the landscape. From the ethnographic record, we know that such places are laden with meaning. Some of these rock art sites stand out from a distance when moving in a landscape, while others only appear at close range. However, not only conspicuous topographical features make rock art stand out in the landscape. The large rock art images like at e.g. Sagelva or Jo Sarsaklubben, Nes in the Ofoten Case could be seen at a distance of up to 300m when paddling along the sound and fjords.

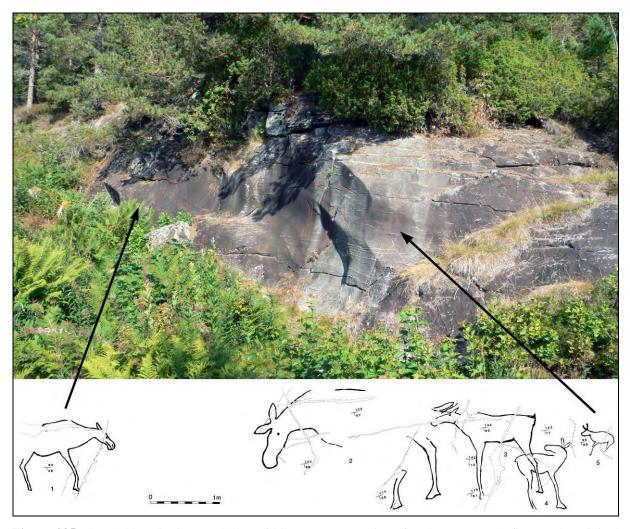


Figure 285 The Stykket site in Trøndelag, middle Norway. Tracing after Sognnes (1981:fig 7). The original tracing did not show the relation between the elk in the rest of the figures. The distance is about 2m. The figures can be seen at about 50m distance. In this illustration, the relation between the figures are fixed and the two initial tracings joined together. Photo and illustration: Jan Magne Gjerde.

The main problem with a locational interpretation as presented above, is that we need to know the natural background in relation to the cultural background. What are the conspicuous features of a landscape? This is different in the different areas of northern Fennoscandia. What is conspicuous in one landscape may not be conspicuous in another or may not even exist in another. The two opposites in my case studies are the steep fjordal mountain landscape of Ofoten contrasting the flat landscape in the Vyg region. The change in the landscape also makes it important to view the sites in relation to the lost relations (e.g. the Vyg rock art that today is located 8km inland where the whole landscape character is changed due to the land uplift and the Hydro Power construction contrasted to when they were made in the rapids of Vyg and in the river estuary of the Vyg River).

A critique of the western gaze of nature has been put forward by Smith and Blundell for the interpretation of the macrotopographical features in relation to rock art (Smith &

Blundell 2004). However, as I have also argued elsewhere (Gjerde 2006; Gjerde 2009), one needs to account for both the large topographical features and the less conspicuous ones. The main problem is that we, in our "out of the office" experience in a landscape, often regard all features as conspicuous, special and meaningful. We do not know the cultural code of the natural features that could have been laden with meaning in the past. An example of this is the two different landscapes of northern Norway as viewed through the eyes of a reindeer herder and an angler, where the same topographical features were connoted with different meaning (Meløe 1990). Sognnes' notion that the rock art sites are located at conspicuous topographical features (Sognnes 1998:154ff; Sognnes 2002:202ff, fig 10.4), seems to be the case for many of the sites, but as for the rock art in general there is not one locational factor that could explain the location of all the sites other than the shore connection.

Symbols and signposts – socializing landscapes

During fieldwork, I became aware that some of the sites were most visible from the lake or the sea. This became evident at the sites where the situation was more similar to the one in prehistory like at the inland lakes (see Figure 82). At the Landverk site (Figure 15), the two large elks were visible from a boat, but not from land. At Jo Sarsaklubben and Valle, I became aware that these figures could be observed at a large distance contrasting the rock. This can also be seen at the large paintings, e.g. like the large salmon figures at Honnhammer in the northern part of western Norway (see Figure 286). The large natural sized figures situated on vertical cliffs seemed to be best observed from a distance and often from a observation point from boat at sea. With a raised shoreline, this constituted a methodological problem. A revisit to the Ofoten area by helicopter showed that figures could be seen at as much as 300m distance at a vantage point similar to the elevation of the polished carvings (see Figure 104 and Figure 105). When freshly made, the polished carvings, the carvings and the paintings would contrast the surrounding rock making them visible at a large distance. The best example in the Case studies comes from the Jo Sarsaklubben site. Looking at recent carvings in the shore zone, like at Onega, one can see how clear the carvings would appear in contrast to the rock surface even years after they were made (see Figure 287).

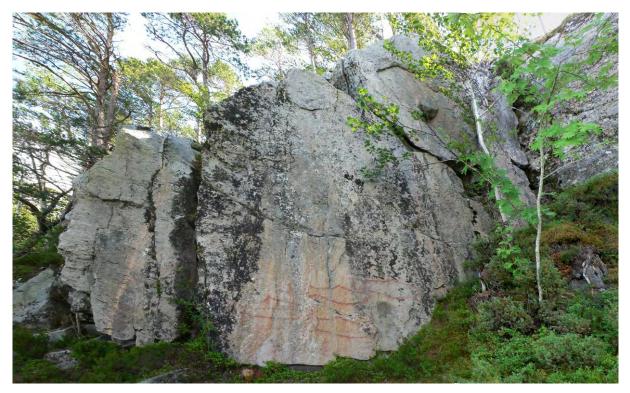


Figure 286 The large salmons at Honnhammer III (Honnhammerneset), northern part of western Norway. The salmon figures measures between 1m and 1.20m. The vertical cliff stands about 5m up from the small ledge beneath the paintings. Illustration is compiled from 5 photos. The lowest salmon seems to appear from the crack where the red line in the rock twirls like flowing water. The salmon above this also seem to appear from this same natural feature possibly referring to the flowing river? Photos and illustration: Jan Magne Gjerde.

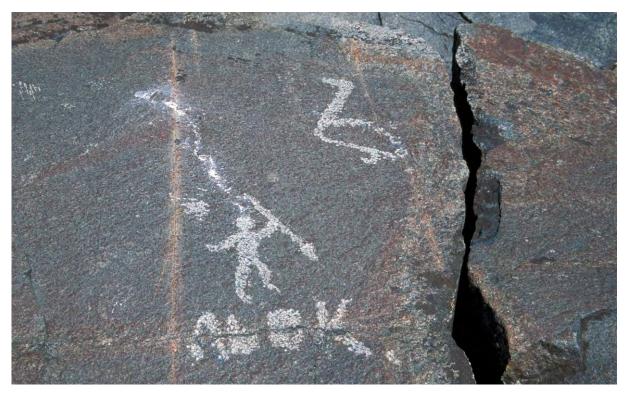


Figure 287 Modern carving from Lake Onega in northwestern Russia. This carving was made more than 20 years ago according to a local informant. The person holding the spear is about 20cm tall. Photo: Jan Magne Gjerde.

By reconstructing lost relations, like the land uplift, one has a better opportunity to see how the landscape was in the past when the rock art was made, not only the present landscape. This is important since otherwise one would not see how the rock art sites were located in the past and place the interpretation of rock art in the context of the present landscape, making flawed relations between the rock art and its landscape.

The first rock art sites are located so that they can be seen from a vast distance. They are also located at the point or near a favourable bay for settlement (see Leiknes, Forselv, Jo Sarsaklubben, Nes Fort Øst, Nes Fort Vest, Vik, Fjellvika sites in the Ofoten case study). The Early Stone Age sites and many of the sites dated to the transition between the Early and Late Stone Age seems to be located at a point where the distance crossing the fjord or river is shortest (e.g. Brennholtet and Sagelva from the Ofoten Case study). This is also the case for other sites in northern Fennoscandia, as suggested by Farbregd (1980), where rock art is located at both sides of such a crossing place for elk. The earliest carvings in Alta were made on both sides of the Kåfjord fjord where the Ausekarnes point (then a small island) is the shortest crossing place (see Figure 168). This location resembles the cherished crossing places found in the ethnographic sources; fjords, lakes and rivers have certain places favoured by large game animal when it comes to crossing waters. This is found in several ethnographic sources describing the favoured crossing places for cervidae (elk, deer, reindeer) over large parts of the circumpolar area (Grønnow et al. 1983; Popov 1948; Stewart et al. 2004). It seems like the earliest rock art is located at favourable places for animals. These were places where animals would "appear from the rock" or in the adjacent area or zone. The early rock art sites depicting large game animals on vertical cliffs that can be seen from a distance acted like signposts when moving in this coastal landscape. Based on the case studies and the Inuit perception of territory (Collignon 2006b), which have counterparts in other circumpolar hunter-gatherers perception of landscape, the early rock art is about marking favourable areas or zones, e.g. at Jo Sarsaklubben the reindeer can be seen standing at the vertical cliff as a symbol a reindeer area. Similar, the large reindeer at Sagelva could refer to the crossing places inland from the Sagelva site (Figure 118). These places would be places where knowledge of the land were inscribed into the rocks acting as memoryscapes.

Before I enter the interpretation of central places or meeting places, I will direct the reader to the relative and cultural preconception when it comes to distance. Distance and the perception of distance are culturally conditioned. It relates to how one moves in the landscape and the concept of spatial relations. Today modern communication lines and political and

administrative boundaries often hinder the knowledge of lost relations when it comes to moving in the landscape.

Meeting places

I am inclined to suggest; that even if large rock art areas like Nämforsen must have had its peak certain times of year when it was visited by many people, this was a place where people met at all times of the year exchanging information. The unique geographical location in relation communication and the large settlement record argues that there were always people at the large rock art areas like at Alta, Nämforsen, Kanozero and Vyg; hence, here one would always meet people.

The rock art sites in Nordland, northern Norway, with relatively many figures (Fykan, Klubba, Leiknes) were early on interpreted as places where people gathered and made the polished carvings and, at occasions, painted them with red colour. According to Gjessing, this most likely occurred at certain times of year when people repetitively visited the places followed by ritual cult (Gjessing 1945:313). The large number of carvings and the focus on boats has validated the interpretation that Nämforsen was a node in the Stone Age landscape that was also central into the Bronze Age. It has been suggested by several researchers that Nämforsen was a meeting place for several groups during the Stone Age (Baudou 1993; Forsberg 1993:242; Hagen 1976:127-130; Hallström 1960; Ramqvist 2002b:154-156; Tilley 1991:108-113).

As mentioned earlier, the large concentration of rock art has been interpreted as nodes in the landscape. Hallström interpreted Vyg, by comparison to Nämforsen, as a node because of its unique geographical location (ideal aggregation places by its location) (Hallström 1960:XI). While Hallström explained the rock art nodes in relation to the places' unique character, Hagen interpreted these large concentrations of rock art, e.g. at Vyg, to be a result of the fact that they were ecological favourable places related to hunting magic (Hagen 1969:143). Vyg has also been seen as a meeting place for a large group of people or many groups that would gather for different types of social interaction at certain times of year (Stolyar 2000; Stolyar 2001:124). The favourable location of the large rock art sites, where coast and inland meet, would have been ideal meeting-places for dispersed groups with common traditions. This would be places where they could get together to hunt, fiest and perform tribe traditional activities (Hagen 1976:127-130). The Alta site has also been

interpreted as a meeting place for social interaction between coastal and inland groups during the Late Stone Age (Hood 1988).

When it comes to the early sites, most of them include few figures and solely large game. Even if this cannot be established, the early sites also seem to have been made (and possibly) in use during a rather short time (see the Ofoten Case, e.g. for the Jo Sarsaklubben site). Based on the current suggested dates, the large rock art areas of Alta, Kanozero, Nämforsen and Vyg were large rock art areas where it in this thesis has been shown that rock art was made for several thousand years. These sites were nodes in the landscape that people returned to make rock art for generations.

Stone Age journeys

Returning to the "unique geographical location" of the large rock art areas, one sees that they are all centrally placed when it comes to travelling. The Alta sites are located at the head of the large Alta-fjord that acted as a funnel both between the coast and the inland where the natural lines of communication met in Alta (see Alta Case study). The Nämforsen site is located at the head of the long Ångermanälven-fjord which would have been a "Stone Age highway" for people moving inland from the Gulf of Bothnia (see Case Study Nämforsen). When it comes to the Russian sites of Kanozero and Vyg, the similarity in the material record connects these sites to the large Onega site. They are all central areas in the major waterway systems in northwestern-Russia where the distance between the large rock art centres is about 300km. While the Onega carvings are located where the rivers enter the Onega sea from the East, the Vyg site would have been located at the Vyg estuary where it entered the White Sea. Further north, and connected to the large waterway crossing the Kola Peninsula, is the Kanozero site that is located at the Kanozero Lake as part of the Umba-Varzuga waterway between the White Sea and the Barents (see Figure 288 and Figure 235).

An important aspect of such a meeting place, is that people or groups of people journeyed to and from such nodes in the Stone Age hunter-gatherer landscape. The boats at Vyg are often associated with the whale hunt. However, the large boats could also communicate their communication abilities. Some of the larger boats room more than 10 people and must have been similar to the Umiak of the Eskimoes. The large boats and the actual journeys have been connected to the large journeys and stories of the travels and its rituals when starting or completing a long journey should not be underestimated. The journey in itself has been associated with rituals as suggested by Helms (1988; 1992).

The large variety of figures that has its counterparts in large areas of northern Fennoscandia supports the idea that Kanozero was a meeting place. The strategic geographical location also advocates the meeting place idea. Kanozero is in wide terms a place for cynegetic activities. I am convinced that Kanozero was a place where people knew others would meet, a meeting place where people could exchange information and ideas both functional and ideological.



Figure 288 The relations between the sites "related" to Vyg. The landscape is tilted in Google Earth. Thereby distance relations are distorted. Vyg according to leading communication lines from the Onega to the White Sea. Note that the Finnish rock paintings are not presented in this illustration. The distance as the crow flies from the Onega carvings to the Vyg carvings are c. 300km as the crow flies and the distance to the Kanozero carvings from Vyg are about 280km. Illustration: Jan Magne Gjerde.

In northern Norway, Bjerck (2007; 2008; 2009a; 2009b) claims that there seems to be a delayed colonization of the inner fjordal areas based on studies on settlement location along the coast of Norway. The settlements clearly have an outer coastal location. The explosion in rock art sites and the focus on journeys in rock art could be describing the intensity of journeys and the manifestation of familiarizing the landscapes. By about 5500-5000BC people in the north had an extreme knowledge of the land and by cynegetic activities their knowledge were manifested at places through the rock art in a manner similar to what Taçon (1994) defines as socialising landscapes in Australia where it became increasingly important to mark the land and this was performed by making rock art.

In his description of Finland, the land and the people, Nordenskiöld describes the communication by land and water in Finland as similar to the Kanozero area of Kola Peninsula: "Characteristics of Finland are the so-called winter-roads, which are used when the lakes are frozen over. By travelling partly by land and partly on frozen lakes long detours can be avoided". The numerous watercourses in Finland have been of extreme importance as highways of communication ever since the Stone Age (Nordenskiold 1919:374).

It is no problem finding boats involved in some form of hunting or fishing, like the halibut fishing at Forselv, the driving of reindeer in Alta or the whale hunting Vyg. However, the majority of the boats depicted are not part of such hunts. They simply depict boats (see e.g. Figure 289 and Figure 290). At Nämforsen, Hallström related the small boats to the fishing and hunting, while the large boats with a number of crew (see Figure 289) could illustrate the long journeys to and from the waterfall (Hallström 1945:33).



Figure 289 Boat image from Lillforshällen, Laxön in Nämforsen. These large boats made Hallström suggest they were illustrating long journeys. This boat has about 15 crew members. The boat measures about 1.8m in length. Photo: Jan Magne Gjerde.

I find my initial critique of current rock art research validated due to its interpretation that everything must always mean something *much* more than what is actually depicted in the rocks. A good example is when Tilley in his discussion on the Nämforsen material draws

attention to the ambiguity of the boat (elk-head boat and antlers as boats) (Tilley 1991:68). Tilley then continues in his cosmological quest of rock art: "Just as the vast herds of elks depicted did not exist, neither did these accumulations of small vessels nor the massive ships. What we are dealing with is not reality but a cosmological depiction of it" (Tilley 1991:77). I do not question that cosmology is included in Stone Age rock art, however, the large herds of elks exists in the forested area near Nämforsen, the reindeer flocks at Alta are real, the bear hunts were not part of peoples imagined world and the whale hunts at Kanozero or Vyg are not solely a cosmological incident. In his works on Nämforsen, Tilley strands in his boat moving along the cosmological river never considering the fact that a boat could actually be a boat.

The Case studies show that the large rock art areas are located at places that favours boats as communication. They are located at central places in relation to large waterways (rivers or fjords) or at coastal locations. These large waterways must have acted like Stone Age highways. This can best be seen at Nämforsen where the large Ångermanälven River when accounting for the land uplift, becomes the Ångermanälven-fjord that cuts about 140km inland to Nämforsen. No other fjord prove to be such a Stone Age highway connected to the Gulf of Bothnia during the Stone Age. This would have been an ideal line of communication between people living along the fjord and on the outer coast. The large waterfall at Nämforsen would be a natural stop before one could go further inland. The low inclination would make it possible to carry the boats past the waterfall and journey further inland making the Ångermanälven-fjord and the Ångermanälven River stable and one could travel by boat to Nämforsen during the Late Stone Age. The boat would have been central to the people settling the Ångermanälven region in the Stone Age. This could be one of the reasons why the boat is frequently depicted. In addition, it is the large boats with many people that are depicted where they could represent what Helms ethnographically refers to as the long journeys often connected to rituals (Helms 1988). Recently Lindgren has stressed the importance of being a traveller during the Stone Age when it comes to acquiring and exchanging raw materials and knowledge (Lindgren 2007). The importance of travelling, communicating, storing information, and then retelling the stories at certain places or at certain times is connected to certain people in society as suggested by Barth in Southeast Asia and Melanesia (Barth 1990).

The long journeys I suggest for the Stone Age has previously been suggested when it comes to acquiring raw materials like flint or "elite objects" such as amber. Long distance travelling have been suggested for the Bronze Age (Kristiansen 2002; Kristiansen 2004;

Kristiansen & Larsson 2005). However, rarely have long range travels during the Stone Age been discussed, although large boats rooming many people are depicted in the rock art. Long journeys can be connected to rituals and the importance of being a traveller when it comes to acquiring knowledge. Communication, and especially long-range communication should be stressed more for the Stone Age. Knowledge of the landscape would have been extremely important for people during the Stone Age. Examples from the Inuit world, suggest that it is the male hunters that through cynegetic activities are holders of the "wisdom of land" (Collignon 2006b). Through journeys, individual and communal hunting they had a geographical knowledge that must have been vital to them as hunter-fisher-gatherers.

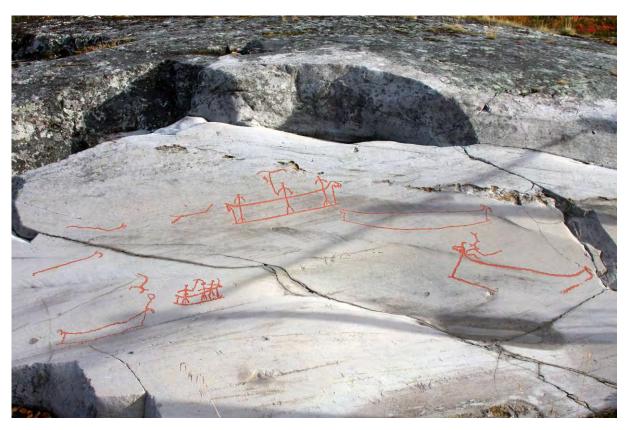


Figure 290 Boat images at Bergbukten 3 in Hjemmeluft, Alta. The size of the large boat, above the middle of the photo, with three crewmembers, is about 67cm long. These boats belong to phase 2 and is dated to about 4200BC-3000BC (see **Figure 152**). Photo: Jan Magne Gjerde.

The head of the Alta-fjord would have been an ideal stop for people journeying between coastal and inland areas. The wider Alta area shows a unique geographical character were the inland valleys and the fjordal tributaries to the Alta fjord acts as funnels routing people through the head of the Alta-fjord through its natural lines of communication. The head of the Alta fjord by its location and the rock art has been interpreted as a meeting place

and according to Hood, Alta would have been an ideal place for communication between different inland and coastal groups (Hood 1988).

Moving back to the rock art in relation to journeys, by no doubt some of the stories of the rocks most likely represents stories that occurred in the vicinity or at the actual place where the rock art is depicted. I have suggested this for the whale hunting scenes at Vyg (Gjerde 2005; Gjerde 2006; Gjerde in press-a), a theory that is supported by whale bones found at adjacent settlements. Thereby the whale hunting tells stories from the actual rock art place. But, as the case studies shows, the stories do not merely depict the actual place and the activity where it occurred, as presented in the hunting place theory of rock art. Even if there are places where I am convinced the hunting place would have been where the rock art site is located (e.g. Høgberget 1, Jerpin Pudas 3 (Vyg), Jo Sarsaklubben) they also depict activities that would have occurred in the area, thus referring both to the rock art place and their understanding of the macrolandscape. An example of this is from Bergbukten 4 where inland reindeer corrals are depicted, while the area where the rock art is located and the coast is represented by halibut fishing scenes (see Figure 183). Another example is from Nämforsen, where the landscape is depicted as seen from the Nämforsen site with the "inland" elk hunting and the elk and man walking on the shore and the boats depicted on the fjord. The figures are depicted as a cross-section of the landscape (see Figure 262 in relation to Figure 270).

When it comes to the travels of stories and the telling of stories about cynegetic activities, I will direct the reader to the Besov Nos panel at Onega where whale hunting is depicted. We know that the Beluga whale was not present in the Onega Lake. Most likely this is a story of and by people taking part in the Beluga hunting at the White Sea, perhaps at Vyg, linking the two sites stronger together. There are three whales at Besov Nos in Onega. Two of them were discovered by Ravdonikas (1936b:plate 25, 30). When revisiting the Besov Nos site, a part of a whale can be seen and what was interpreted as a human figure most likely is a boat with a hunting line (see Ravdonikas 1936b:plate 28 figure 56). The best visible whale hunting scene can be seen at Besov Nos (Ravdonikas 1936b:plate 30 figure 60 and 61). Another whale is depicted to the right of the whale figure, however, one can only see the whale and the hunting line since the rest of the figure is eroded. The area with other figures (Ravdonikas 1936b:plate 25), then most likely depicts three whale hunting scenes, where the best preserved is the middle one (see Figure 291). While the hunting scenes at Vyg is telling stories of cynegetic activities connected to the site, the whale hunting scenes at Onega tells stories of travels and hunting the white whale by the White Sea, some 300km away. As seen

in the case studies, there seems to be a geographical reference in the rock art that sometimes relate to areas, zones or the places where the activity occurred.



Figure 291 The whale hunting scenes at Onega. Only the whale hunting scenes are chalked to make them more clear on the photo. This is the left and the middle whale hunting scene at Besov Nos. Scale in the middle of the photo is 10cm. Tracing of the figures at Besov Nos can be found in Ravdonicas publication on the Onega carvings (Ravdonikas 1936b:plate 25). Photo: Jan Magne Gjerde.

Hallström early on accounted for Russian flint in northern Sweden by suggesting travels over the Bothnian Sea (Hallström 1925:89). By adding the motif similarity and stylistic comparison of the rock art and the elk-head sticks found at the Olenii Ostrov burial site in Onega, Hallström suggested that a connection could hardly be doubted (Hallström 1960:317). Large boats and the actual (long) journeys may have been associated with rituals, as suggested by Helms (1988; 1992). In Hallströms work, when he suggests a similarity between the carvings from Nämforsen and Onega and the brief account of the long journeys to and from such meeting places, I am of the mind that what Hallström meant, is that people through their journeys could have visited several of these "meeting-places". Hallström travelled to and from the sites, revisited them, and hence, witnessed the similarities, not from the tracings in a book, but by first hand knowledge. Through my fieldwork, it has been of crucial importance to see the rock art *in situ*, to travel to and from the sites spending time in the landscape.

Microlandscape – miniature worlds

As shown in the numerous examples from the case studies there is no doubt that rock art interacted with natural features in the rock surface, from the tiniest crack up to the microtopography in the rocks acting as miniature landscapes or miniature worlds.

Some places, it seems like the animals appear from cracks interacting with the layering in the rock surface, like at Flatruet (Figure 292 and Figure 293) and Högberget 1 (see Figure 261) in northern Sweden or at Gjølgjavatnet (see Figure 294) and Hunnhammer 3 (see Figure 286) in middle Norway. In the light of ethnography, the rock surface acts like a membrane between this and the other world (Lewis Williams & Dowson 1990). Steps, cracks and the like were construed as pathways which connected the world and could only be followed by shamans and inhabitants of the spiritual world (Ouzman 1998:36) This has been well documented several places in the world, e.g. in South Africa (Lewis-Williams 2002a) and North America (Arsenault 2004a:299f).



Figure 292 The Flatruet site in northern Sweden where one can see how the figures are placed in relation to cracks and ledges as if the animals appear from cracks in the rocks. At a closer look it seems like the human representations and the elk figures are appearing from the cracks connected to the ledges from inside the rock surface, the "other world" Photo: Jan Magne Gjerde.



Figure 293 One of the elks at the Flatruet site in northern Sweden where the elk is appearing form the crack interacting with the elemnts in the rock. Photo: Jan Magne Gjerde.



Figure 294 Painted figures at Gjølgjavatnet middle Norway. Notice how the large elk figure appears as if it is coming out of the rock. Photo: Jan Magne Gjerde.

As seen in the Ofoten Case study, the tiniest crack or line in the rock could be included in the rock art like the mouth of the reindeer at Jo Sarsaklubben (see Figure 134) or the quartzline indicating the waterline where the swan is swimming at Leiknes (see Figure 135). At Bergbukten 1 in Hjemmeluft, Alta, bear tracks appear from a natural formation in the rock (see Figure 150), while at Vyg, the water runs over the rock surface indicating the river (see Figure 216). At Kanozero the inclination of the rock relates to the actual skier and relates to the topography (see Figure 240) and at Nämforsen (HIIQ1), a quartzline represents the shoreline where a human and an elk is standing at the shore (see Figure 268). These examples show that rock art interacts with natural features. However, this does not mean that I regard all the rock art to be solely dependant on the natural features. The natural elements are included in rock art at many, but not all places. This argues for a study of human interaction with the rock itself. We have to consider that we do not know what features were part of the rock art story at any given time. We do not know the cultural code at any given time of the rock art and of the natural features.

What I find most interesting concerning the interaction of the elements, natural features and rock art, is the interplay with the macrolandscape. In all my case studies, I find places where rock art and the natural elements interact as rock art and natural elements seems to describe the figures in relation to a wider landscape, the macrolandscape. The rock art and the elements interact creating miniature landscapes or miniature worlds of the world in which the hunter-gatherer lives. At Bergbukten 1 in Alta the miniature lakes, valleys and rivers interact with the figures representing miniature worlds. At Nämforsen the HIIQ1 site appear as a representation of the landscape seen from the rock art site (see Figure 262 in relation to Figure 270). Numerous examples relate the rock art to the natural topography in the area. At Bergbukten 1, one can also see how the rock art refers to topographical features through its positioning. In my opinion, when studying Stone Age rock art, both the motifs, scenes and the interaction with the microlandscape are references to places, areas and macrolandscapes. Like the bear dens in Alta, the reindeer corrals in Alta, the boats in the miniature river at Nämforsen, the whale hunting and the hunting of elk at Vyg and the hunting of bear at Kanozero. They are all reference points to the macrolandscape and places in their real world. This brings me to the geographical knowledge and the memoryscapes stored in the rocks.

The miniature landscapes of the rocks were applied as a backdrop to tell the stories; such as the inland hunting for elks at Nämforsen (Hallström IIQ1) (Figure 270), or the inland reindeer corrals at Alta (see Figure 171), the open sea halibut fishing scenes from Forselv (see Figure 75), and the Beluga whale hunting in the river and river estuary at Vyg (Figure 216).

The placement of activities and figures in relation to miniature water systems shows that the figures were placed in relation to the micro-landscape in order to tell stories related to the macrolandscape, to actual and imaginary places. Examples of this at can be found other places as shown through the examples from Nämforsen at Laxön ("Nedre Hällkaret") (see Figure 271), Bradön (see Figure 265, Figure 266, Figure 267). Many of the stories at Nämforsen depicts cynegetic activities and knowledge with the microlandscapes as a backdrop, telling stories of their interaction with environment. The stories acted as memoryscapes related to geographical knowledge of the environment.

Reconstructing Stone Age hunter-gatherer landscapes

Ethnographic landscapes

Rarely do we have the opportunity to look at the landscapes of the past. One need to account for the changes in a landscape and relate to the activities in a landscape. Rock art contains an important door into the lived landscapes of the past. Accepting that at least some of the rock art depicts reality, one way of getting closer to the past as experienced in the past is through ethnography. I will exemplify this with whale hunting that is relevant for large parts of the scenes at Kanozero and Vyg. When trying to get a better understanding of Stone Age hunter-gatherer landscapes we need to find similar landscapes that include similar activities or manners in which to approach the world.

It is important to look for societies that live in the same "animal worlds" when seeking relevant analogy and ethnography (Helskog 2001b:4). Similarity in environment cannot be stressed enough. This has been somewhat neglected when it comes to rock art. It has been easier to compare and draw analogies in a south-north direction. Hence, it has been easier to apply ethnographic analogies from South-Africa and Australia rather than from the circumpolar area. An exception to this are some of Helskog's work on northern rock art (e.g. Helskog 1999; Helskog 2004a).

Accepting a slight repetition of some of the results from the Vyg case study that may also have implications for the Kanozero case study, I will dive into the "Beluga landscapes" in the ethnography in relation to the rock art. When looking at the Beluga whale, the ethnographic descriptions of the traditional hunt are important. The ethnographic record of these large hunting places, or "Beluga landscapes", where a well-coordinated hunting team, could yield a great supply of whale meat and oil with little outlay of effort (McGhee 1974:19). Whale meat and fish are cached (dug down) to last through the winter, thereby securing a year

round supply of food (McGhee 1974:22; Stefansson 1914). These landscapes are places that are defined as perfect places for whale hunting.

Returning to Vyg, the topographic situation in the Besovy Sledki / Jerpin Pudas area shows a striking recemblence with the topographic situation of the Canadian Beluga landscapes as shown in the Vyg Case study (see Figure 209 and Figure 212). Several places could have worked as *cul de sac* places for the Beluga hunt in the Vyg area. The "natural" whale trap being between the rock art sites, Besovy Sledki North and Jerpin Pudas 3, in the bay of shallow water where the waterfalls would be a major obstacle and would have hindered the Beluga whales in going further upstream. The evidence for a direct connection between the topographic situation and the actual presence of Beluga and Beluga hunting is also strengthened by the distribution of the motifs. There seems to be a visualization of the whale hunt where it actually happened. This means that there is a "direct" link between the place of action (the whale hunt) and the action in the rock art.

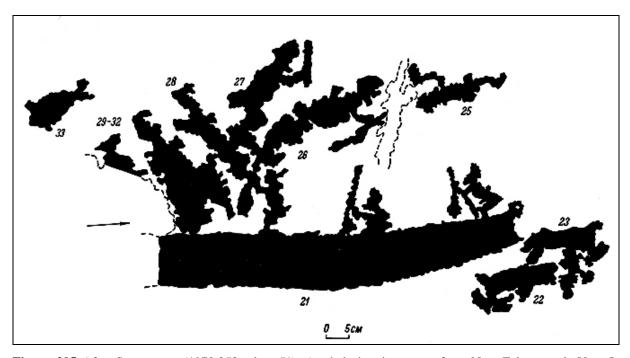


Figure 295 After Savvateyev (1970:253, plate 51). A whale hunting scene from New Zalavruga 9, Vyg. It appears as if the people have been thrown out of the boat during the hunt. The front of the boat is eroded.

In the ethnographic record, the dangers connected to the whale hunt are described vividly; "... accidents were common but drownings rare" (Lucier & VanStone 1995:82). A hunting scene representing this can be observed on New Zalavruga 9, Vyg (see Figure 295), where people are "thrown" out of the boat in connection with the whale hunt. The ethnographic record descriptions of the rituals connected to the whale hunt are elaborate

(Lantis 1938; Lantis 1940; Lucier & VanStone 1995:56-58). I would suggest that the dangers inherent in the whale hunt could be one of the reasons why the rituals connected to the whale hunt are so elaborate.

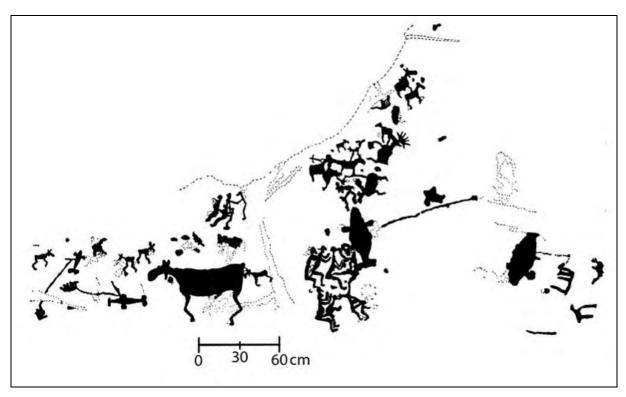


Figure 296 Section of Jerpin Pudas 3. After Savvateyev (1977:72). The copulation scenes connected to the Beluga Whale can be seen in the middle of the tracing.



Figure 297 Rubbing of the large whale hunting scene at New Zalavruga 4. This has been interpreted as a training or initiation scene of the whale hunt. Note the clear erection on some of the male hunters. Rubbing: Jan Magne Gjerde.

The mentioned rituals in the ethnographic record are also connected to numerous taboos related to the whale hunt. One of the interesting observations is the distancing between the male hunter and his wife before and during the hunt (Lucier & VanStone 1995:59). After the successful hunt, the feasting also includes the "meeting" of man and woman. This could be what we see at the Jerpin Pudas 3 site where four copulation scenes are depicted next to a

Beluga and one of the couples is virtually on its way into the whale (see Figure 296). The connection between fertility, rituals and rock art have previously been suggested. The copulation scenes at Jerpin Pudas 3 at Vyg is one of the most direct links in the rock art of Vyg. Looking at the hunting scenes from Vyg, many of the hunters are depicted with an erection (e.g. Figure 297), perhaps emphasizing fertility and power. We know that hunting in hunter-fisher-gatherer societies have been associated with elaborate rituals. The ethnographic record sometimes vividly describes rituals connected to the hunt. They also describe elaborate rituals in relation to the hunting practices and the importance of communication between man and animals. We see that the boats and the elk-head sticks are associated with the elk. This can be explained through the elk morphology, that it is a good swimmer and moves fast both on land and at sea (Brandstrup 1985; Farbregd 1980).

The abundance of Beluga hunting scenes (more than 60 scenes of Beluga hunting from boat in the Vyg area (see e.g. Figure 297), shows that people have hunted Beluga from boats, sometimes also combined with hunting from the shore. From the ethnographic record we know that the gathering for the Beluga hunt reinforced hunting partnerships, cemented relations between participating societies and minimized inter-societal conflict (Lucier & VanStone 1995:86). Some groups of people would live in the areas all the time while others would migrate to the Beluga hunting landscapes during the hunting season (Lucier & VanStone 1995:3, 11; McGhee 1974). In traditional hunting societies the hunting leader or shaman (often the same person) could come from any of the societies that cooperated in the Beluga hunt (Lucier & VanStone 1995:51, 86). Such cooperation would strengthen the relations between the inland and coastal groups, as suggested for the Alta rock art area by Hood (1988). An increasing amount of people living at these favourable nodes in the landscape of hunter / gatherers could have triggered changes of many aspects in society and may even have advocated a change within the social organization. From the ethnographic record we know that large amounts of people gathered at adjacent favourable ecological places during the hunt. The Vyg area could be one of these places already as early as 5500BC. Most likely few people lived there year round, hence, people gathered at Vyg during the hunt as described in the ethnographic sources from northern Canada (Lucier & VanStone 1995; Nelson 1983[1899]). Vyg would then be such an important node in the hunter-gatherer landscape ideal for inter-societal relations where social interaction was important. The communication line along the Vyg River makes me suggest that this was a central place in the hunter-gatherer landscape where people met due to the fact that there would always be people on the move to and from the Vyg area. This would be a place where information was exchanged and communication in a wide sense was practiced.

The Beluga hunting scenes in the Besovy Sledki / Jerpin Pudas area are represented by single boats containing one person. This is also the situation at Zalavruga, but in addition, at Zalavruga you also find representations of collective hunting where several boats takes part in the hunt for one whale. One of the hunting scenes at New Zalavruga 4 has also been interpreted as depiction of training or initiation of the whale hunters²¹⁵ (see Figure 297).

According to Ingold: "A place owes its character to the experiences it affords to those who spend time there – to the sights, sounds and indeed smells that constitute its specific ambience" (Ingold 2000:192). But how are we to witness or describe the experiences or the atmosphere of the past? The collective hunting, the communication and cooperation between the people, the smells, the colours, the perceptions of the whale hunting so visually expressed in the rock art, or the rituals associated with the whale hunt. The bay filled with red blood set against the white colour of the whale. The blood washed up on the "red beaches" that would stay red for a while. The sounds of the animals, the loud whirling from the beluga herd. The "rolling raven call" when the shaman or watch-leader saw the Belugas and the silent visual "language" and low-level voice communication where the hunters formed quickly for attack and altered the hunt as belugas veered or turned about. The complete silence until the sign was given and it was appropriate to frighten the prey. Then, the "exiting events", with animals dashing about in shallow water, sometimes causing the kayaks to overturn and people to be injured. According to the ethnographic sources, feasting and social events followed a successful hunt (Lantis 1938:446; Lucier & VanStone 1995:69, 82-83). The majority of these experiences will remain foreign to us. However, we must try to interpret the rock art in the light of ethnographical sources.

Hunting the largest animals

Based on the main theme in Stone Age rock art, large animals and hunting scenes, it is evident that they tell stories of hunting. Furthermore, it is not just any hunt that is depicted, it is stories of hunting the largest animals. Depictions include the "hunting" or fishing of halibut at Forselv (see Figure 75) and at Alta (Figure 146). There are bear hunting scenes from Alta, Kanozero and Vyg. Elk hunting is best illustrated at Nämforsen, but is also depicted in Alta,

-

²¹⁵ Abram Stolyar, personal communication, 2005.

Kanozero and Vyg. At Kanozero one finds reindeer hunting, and at Alta also, reindeer hunting by boat and in reindeer corrals.

The hunting theme is apparent in all the Case Studies. What strikes me is that the hunting interpretation that was manifested in the 1930s became less valid for rock art research after the hunting scenes appeared in the material record ²¹⁶. Could this be related to the research aims, of the majority of researchers, where the knowledge of the material record gradually was granted less importance in the interpretation of rock art? It seems like researchers "washed out" hunting and fishing when they distanced and discarded the hunting magic / sympathetic magic theory. Bear in mind that what we are studying is rock art by Stone Age hunter-fisher-gatherers. In northern Fennoscandia their economy was mainly based on hunting and fishing. By returning to the rock art and its lost relations one can discern other aspects of the past. In this thesis one has tried to gain a better understanding of prehistoric landscape conception and its conceivable role in northern Fennoscandian Stone Age hunter-fisher-gatherer cosmology.

Reconstructing the landscape of the largest animals involves the morphology of the animals. Common for all the large animals that appear in the rock art, is that they are migratory animals that come and go by the season. They often migrate along the same lines in the landscape, along natural lines of communication, like the reindeer do between the coast and inland areas in northern Norway, or at Vyg where the Beluga whale gather at late summer / early autumn. These lines of communication would be guided by the macrolandscape as to where it is possible to and where it is favourable to move during these migrations.

In the Arctic, there are between 6 and 8 months of winter. The returning animals have always been appreciated by the people inhabiting these areas. Knowledge of the animals morphology, when and how they migrate, would have been of great importance for the first people that entered northern Fennoscandia after the last Ice Age, and it is still vital for anglers or reindeer herders today. The areas where certain animals would be at a given time have always been crucial for hunter-fisher-gatherers. In northern Fennoscandia today there are virtually only domesticated reindeer present. The Beluga whale populations were slaughtered to a minimum during the 1960s. It is therefore hard to imagine what an impact these animals would have had on people living in these landscapes. There are other areas where animals are abundant. These areas and animal worlds can be used to get a glimpse of how it must have been during the migrations. We can apply ethnographic sources to get a better understanding

²¹⁶ Most prevailing is the bear hunting and reindeer hunting in Alta, northern Norway and the Beluga whale hunting at Vyg in northwestern Russia.

of the animal worlds depicted in the rock art, like the large flocks of Beluga whale or the large herds of reindeer that appeared in the landscape at given times every year. They are lost relations of the hunter-fisher-gatherer landscape depicted in the rock art. Herds of elk can still be observed in northern Sweden, however herds of Beluga whale like in Figure 311 or herds of wild reindeer like in Figure 312 is long gone from these landscapes.

Before 5500-5000BC we only see large game animals depicted but after about 5000BC collective hunting appear in the rock art. We see the reindeer corrals in Alta, Beluga hunting at Kanozero and Vyg and elk hunting at Nämforsen. These are depictions of a hunting strategy that involved a vast number of people. The investment in the large hunting pit systems for elk connected to the rock painting sites in northern Sweden, the communal hunts depicted at Vyg with about 50 people participating in the hunt and the building and maintenance of the large reindeer corrals in Alta suggest that people were cooperating during the hunting. We know that these hunting periods for the migrating reindeer or Beluga whale were confined to a rather short hunting season. Ethnographic examples show that many people gathered at favourable ecological places during hunting seasons, such as among the Nganasan in Siberia where groups of people cooperated in the reindeer hunting (Popov 1948; Popov 1966), or amongst the Inuit where large groups gathered during the Beluga whale hunting season (Nelson 1983[1899]; Savelle 1995) and in Siberia where people gathered during the Geese molting (Popov 1948; Popov 1966; Storå 1968).

Within a hunter-gatherer landscape there are favourable zones or areas in relation to animals. This is either where large groups of animals congregate at certain times of the year, like the Beluga in river estuaries (McGhee 1974), or places where reindeer gather like the calving places ²¹⁷ or the *jassat*, where reindeer cool down on snowy patches during hot summer days to avoid the heat and insects (Anderson & Nilssen 1998; Kalstad 1994; Kalstad & Brantenberg 1987:17; Meløe 1990), as seen in Figure 298, or the feeding / resting grounds for migrating geese (Bollingmo 1991; Storå 1968). Returning to the earliest rock art (e.g. Valle in Ofoten and the clearest example from Fykanvatn in northern Norway, these sites would have been situated adjacent to the glacier and even now the steep mountains makes these areas hold *jassat* ideal for the reindeer to cool down and "get away" from the incects (see Figure 298). Places connected to the seasonal migration of reindeer are connected to landscapes where reindeer migrate; certain valleys, bogs, crossing places (over fjords, lakes and rivers). These places are among the Saami named *suopháš* and relate to such favourable

_

²¹⁷ Johan Albert Karlstad, personal communication 2007.

places (Manker 1960; Sommerseth 2009:248; Vorren 1998:135). Such favourable places connected to the annual migration of large terrestrial game can be found in vast parts of the circumpolar area (Benedict 2005; Blehr 1982; Collignon 2006b; Grønnow et al. 1983; Popov 1948; Popov 1966; Stewart et al. 2004).



Figure 298 View of a typical aggregation of a large group of reindeer occupying an entire *jassat* (snow patch) during a hot summer day from Kvænangsfjellet in Troms, northern Norway, 1985. Notice how the reindeer congregate and virtually "fill" the jassat but are not standing outside the *jassat*. Photo © Arne C. Nilssen, Tromsø University Museum.

The large rock art centres depicts congregations of animals. These are also depicted in areas where such animals are abundant or most likely would have been in prehistory. When viewing Stone Age rock art from all of Fennoscandia the selection of motifs show a regional variation where some animals appear in abundance in the different regions. One common animal is the elks are "everywhere", even though they are more prevailing in Finland, northern Sweden, eastern and middle Norway. Even if it is highly subjective, a simplistic model of such congregations of favoured animals represented in the different areas rock art is presented in Figure 301. Here one finds the reindeer in Alta, northern Norway, the Beluga whale at Vyg, northwestern Russia, the elk at Nämforsen in northern Sweden. Looking at the

rest of Fennoscandia, the red deer at Vingen in western Norway²¹⁸ (see Figure 302), the geese at Hammer in middle Norway (see Figure 281), the halibuts at Kvennavika, middle Norway (see Figure 300), the elks in Eastern Norway (see Figure 307 and Figure 308) or the swans at Onega²¹⁹ (see Figure 299) all reflect the congregations of large game or important animals and most likely refers to favourable places both adjacent to the rock art but also in the wider landscape or area / zone.

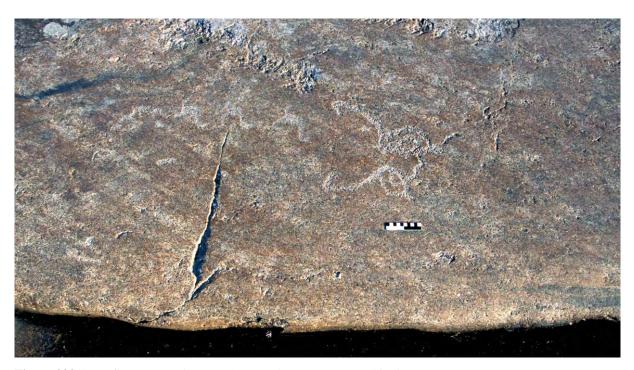


Figure 299 Swan figures at Peri Nos 3, Onega. Photo: Jan Magne Gjerde.

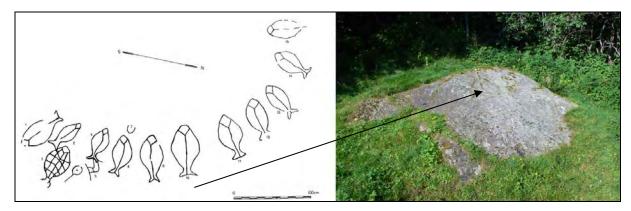


Figure 300 The "collection" of halibuts at Kvennavika, middle Norway. The halibut figures are depicted on the upper half of the rock outcrop. The position of figure nr. 10 is indicated by the black arrow. When made, the seaspray would most likely wash over the rock outcrop at high tide. Tracing after Gjessing (1936a:pl. LXX). Photo and illustration: Jan Magne Gjerde.

²¹⁸ A local informant in Vingen, Helga Vingelven, informed me that it was normal to see groups of red deer coming down in the Vingen area. The largest group she had counted consisted of a group of 87 animals.
²¹⁹ The sheer number and domination of motifs led researchers to name an area with rock carvings at Onega the Swan Cae.

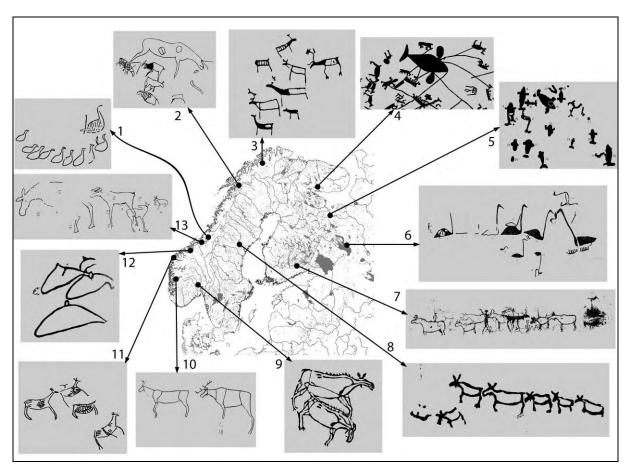


Figure 301 A selection of the regional variation of animals in Late Stone Age rock art in Fennoscandia. Animals in rock art in Fennoscandia: 1: Hammer 5A after Bakka (1988:iv), 2: Forselv, authors tracing 3: Bergbukten 4, Hjemmeluft, Alta after Helskog (1988:44), 4: Kamenniy 7, Kanozero, authors tracing 5: Besovy Sledki South, Vyg after (1938:plate 32), 6: Besov Nos, Onega after (Ravdonikas 1936b:plate 27), 7: Verla after Miettinen (Pentikäinen & Miettinen 2003:41), 8: Notön, Nämforsen after Hallström (1960:plate XXVI O:2), 9: Katsundholmen (Kløftefoss) after Engelstad (1934:Planche LIV), Vangdal 2 after Mandt (1972:pl. 38a), 11: Elva, Vingen after Hallström (1938:plate XXXVI), 12: Bogge 2 after Hallström (1938:plate 33), 13: Stykket after Sognnes (1981:fig 7). Illustration: Jan Magne Gjerde.

One of the large rock art concentrations where one animal is clearly favoured is the Vingen rock art area (see Figure 303), where the red deer is frequently depicted (Figure 302). Of the identified motifs in Vingen, the red deer dominate and an overview of the Vingen material by Viste (Viste 2003:43, tabell 4.1) shows that more than 50% of the identified figures are red deer²²⁰. Vingen was by Brøgger in line with the hunting magic / hunting place theory interpreted as a hunters heaven (Brøgger 1925:78). The region where Vingen is situated is one of the areas with the highest numbers of red deer in Norway (Meisingset 2008). Not necessarily Vingen as such, but the Vingen area might be a favourable place that was central in the Stone Age hunter-gatherer landscape (Gjerde in prep-a).

_

²²⁰ According to Viste there are 2159 figures in Vingen. Of these 564 are unidentified figures (lines and fragments of figures). Removing these, there are 1595 identified figure as Vingen. Of these are 941 animal figures where 859 are cervids and 756 represents red deer. Of the animals depicted in Vingen, the red deer make out more than 80%.

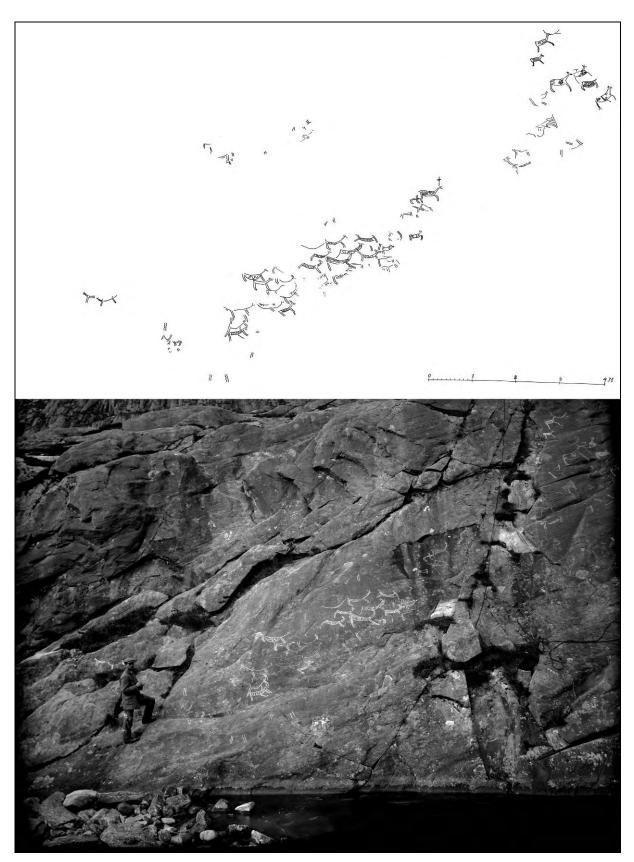


Figure 302 The Elva site in Vingen after Hallströms documentation. Notice how the red deer is following the ledge running up the "valley" interacting with the landscape. The whole Vingen area is dominated by such ledges (see **Figure 303**). Tracing after Hallström (1938:plate XXXVI). Photo from Gustaf Hallströms Archive at the Research Archive, University of Umeå, Sweden. Illustration: Jan Magne Gjerde.



Figure 303 Vingen in western Norway. Main parts of the carvings are located on rock slopes and cliffs. The Elva site is marked and the figures in **Figure 302** are situated on the left side of the Vingen River. The white arrow marks the outflow of the Vingen River. Notice the ledges that are restricting movement for man and animal walking between the coast and the mountain area. Photo and illustration: Jan Magne Gjerde.

Further applying the term *suopháš* or favourable places, they are connected to the animals. They are found in close relation to the large hunting pit systems for reindeer and elk. In northern Sweden, the Glösa site was first interpreted as a hunting place connected to driving elks over cliffs (Wetterberg 1845). The Glösa rock carvings are located on rock slopes in a small river a few meters from where the river ends in a vertical cliff that would have been an ideal hunting place using the hunting drive technique. Such hunting drives for elk is described in Sweden from historic times where they chased elks over cliffs (Granlund 1940). Through the case study of the Nämforsen area it is justified to assume that hunting of elk at least occurred adjacent to the rock art cliffs depicting elk (see e.g. Figure 258 and Figure 259). The Sagelva site depicting reindeer is one of the places in the Case studies that connects such favourable places to the rock art. Many of the rock art sites in the case studies are connected to such favourable places. Moving back to the rock carving site at Glösa in northern Sweden (Raä Alsen 13:1), situated about 145km west of Nämforsen, the site includes about 30 elk figures and a few geometrical motifs. The rock art site at Glösa has been dated to the Late Stone Age by stylistic means (Baudou 1995:fig 13; Forsberg 1993:228f; Forsberg 2000). About 500m southeast of the rock carvings at Glösa, a large hunting pit system for elks with more than 100 hunting pits starts. The system stretches for more than 6km between the two lakes Näldsjön and Alsensjön (see Figure 304). The problematic dating of the hunting pits suggests that the hunting pits could be younger than the rock art. The large amount of hunting pits and long use of the pits suggest that these grounds were good hunting grounds or favourable areas for elk hunting for a long time (Jensen 1977:278; Jensen 1989:208). By diagnostic artefacts and material, a few small settlements have been found in the area where the hunting pit system enters the Näldsjön lake. The Glösa site could be referring to a favourable area next to the rock art site connected the crossing places or lines of movement for elk. The other motifs at Glösa are geometric symbols interpreted as elk hunting pits seen from above (see Figure 305).

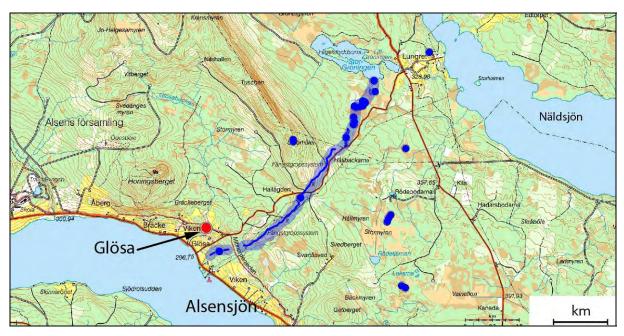


Figure 304 The large hunting pit system east of the Glösa rock art site. The hunting pits and hunting pit systems are marked in blue. The hunting pits form a system that runs between the two lakes. The carvings at Glösa are marked in red. Totally 99 pitfalls are surveyed in this hunting pit system. Background map and data after www.raa.se. Illustration: Jan Magne Gjerde

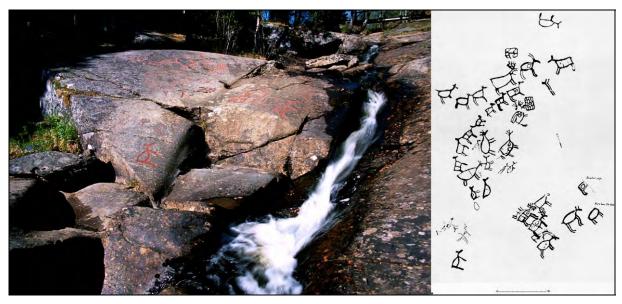


Figure 305 Photo and tracing of the main panel at Glösa (Glösa I). Tracing after Hallström (Hallström 1960:pl. V). Photo and illustration: Jan Magne Gjerde.

To assume that the geometric motifs depicts only one thing or has one meaning would be a bit blunt. Traditionally one assumed that theses geometrical motifs could be hunting pits or hunting nets. However, since the geometrical motifs was interpreted as entoptic phenomena as symbols appearing during trance by the shaman (Grønnesby 1998; Lewis-Williams & Dowson 1988), few has regarded them as anything but representations of entoptic phenomena. They are, however, often associated with animals. Sometimes they can be representations of fishing nets, hunting nets or even hunting traps like at Bergbukten 4 in Alta where it seems that the elk and the hunting trap is depicted connected to a human being with an elk head stick possibly killing an elk stuck in a hunting pit. From the case studies, the Forselv and Vik site has such geometrical figures in close relation to the animals suggesting they are hunting nets or even representations of hunting pits (see Figure 127 and Figure 130). Several of the depictions of geometrical motifs have animals depicted as if they are going into or coming out of them or being stuck in them like in a hunting pit (see Figure 306).



Figure 306 Scenes interpreted as hunting pits from Alta. The left photo is from Bergheim 1, Hjemmeluft in Alta, the middle photo is from Ole Pedersen 1, Hjemmeluft, Alta and the right photo is from Bergbukten 4, Hjemmeluft, Alta. Left photo: Karin Tansem, VAM. Middle photo, right photo and illustration: Jan Magne Gjerde.

Figures interpreted as connected to hunting have been found in other parts of Fennoscandia, e.g. some rock art from eastern Norway have been interpreted as representing a hunting trap by Engelstad (1934:81ff) and Mikkelsen (1973). Looking more carefully at the images, I am convinced that many of the images depicts hunting pits, like in eastern Norway at Ekeberg 2 (Figure 307) and at Skogerveien where it looks like a hunting pit system is depicted connected to elks and elk-tracks (see Figure 308)²²¹. Several hunting fences are known from Alta and sections of fences possibly refers to fences like those at Bergbukten 1 (see Figure 171) or at Ytre Kåfjord (see Figure 178) in Alta, northern Norway, is found at

_

²²¹ This panel may also have a link to the wider landscape in zones and areas. The small whale could refer to the coast while the elk-hunt and elk tracks could refer to the actual place of the rock art (the crossing place) while the hunting pits and the elk-hunt to the left refer to a place further inland. They would then reflect areas or zones like in Inuit perception of landscape (see chapter 4).

Sporanes in southern Norway (see Figure 310) and at Vasstrand (Sandhalsen) and Evenhus in middle Norway (see Figure 309).

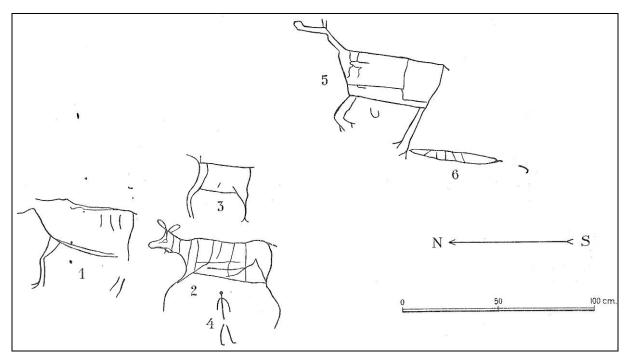


Figure 307 Hunting pit for elk depicted at Ekeberg 2, Oslo, Eastern Norway. Section of the tracing after Engelstad (1934:planche XLIV).

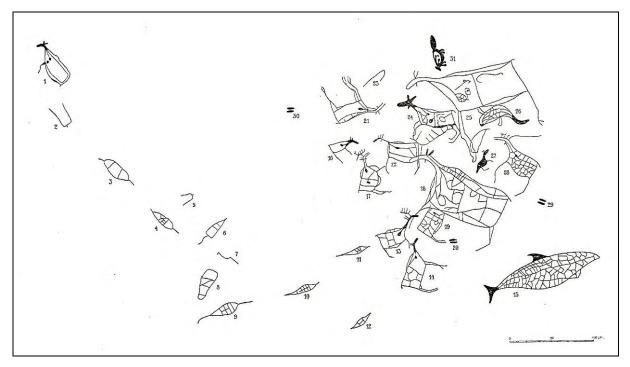


Figure 308 Hunting pits for elks depicted at Skogerveien in Drammen, Eastern Norway. Tracing after Engelstad (1934:Planche XLVII). The scale at the bottom right is 1m.

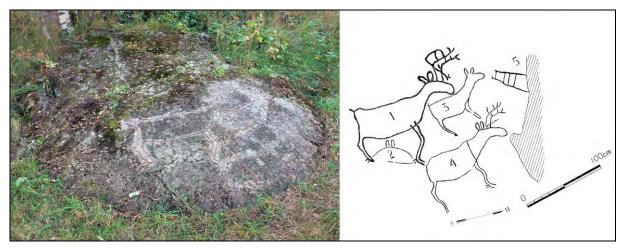


Figure 309 Hunting fence at one of the minor panels at Evenhus, middle Norway. Tracing after Gjessing (1936a). Photo and illustration: Jan Magne Gjerde.

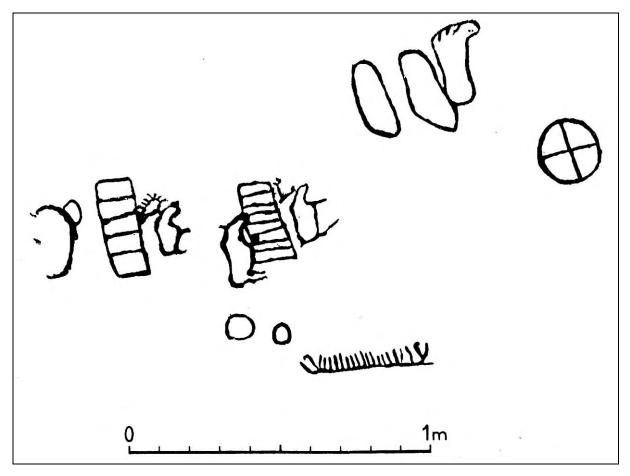


Figure 310 Section of the Sporanes site in Telemark, Eastern Norway. Notice the hunting / guiding fences or elk hunting pits? Where the elks and reindeer are clearly connected. Tracing after Hagen (1969:fig. 64). The site has been dated to the transition between the late Stone Age and Bronze Age suggested by the mixture of motifs that are connected to the different time periods.

The numerous examples of hunting and collective hunting depicted in rock art as seen in the Case studies and other places in Fennoscandia, suggests, that an important theme in the rock art after 5500BC-5000BC was the collective hunting. Most evident is the Beluga Whale

hunting scenes from Vyg. Through several examples I have linked these activities to places, and many of the hunting scenes and depictions refers to places in the hunter-gatherer landscape. The animal tracks may also refer to such places, and I have argued that some of these tracks are referring to large game crossing places. The depicted hunting pits can also link the rock art to hunting places, and undoubtebly some places of rock art is connected to the actual hunting place like in northern Sweden where the elk hunting pits are virtually situated next to the rock art sites. In many motifs and scenes, the successful hunt or the quarry from the collective hunt are depicted.

The animals depicted in the rock art is migrating animals, like the reindeer, the elk, the beluga, geese and even the bear. These are animals that appear and disappear from regions form season to season. The annual cycle is important for hunter-gatherers and their lives are structured in close enactment with the temporality of the year. The seasonal aspect in the rock art with the winter elk hunt (New Zalavruga 4), the summer / autumn Beluga hunt (New Zalavruga 8) and the massive summer / autumn hunt for molting geese 222 (New Zalavruga 6) witness important stories of central aspects in hunter-gatherer societies. The arctic climate with up to 6-8 months of snow would have made hunting more important to the people inhabiting these northern areas.

At Vyg the theme in rock art is dominated by large game and hunting. Some of the stories on the rocks are describe hunting the largest animals. These stories was most likely told and retold acting as mnemic references to the people living and coming to Vyg. At many places the rock surface interacts with the figures on the rocks and could have acted to position the figures or scenes exactly where they are. Sometimes these could be references to actual places and act as memoryscapes for the people that dwelled in the Beluga landscapes of Vyg. According to this notion, the three Beluga hunting scenes are found at Onega where no Beluga hunting has occurred, are a reference to hunting that most likely occurred in the White Sea about 300km north of Onega. This strengthens the idea that people journeyed and took part in the Beluga hunting at Vyg, and telling the stories at Onega.

Our options are limited when it comes to reconstructing the animal worlds of the Stone Age, but, the annual cycles would suggest the importance of being at the right place at the right time when it comes to hunting. The abundance of animals can rarely be seen today mainly due to intensive hunting (like for the Beluga whale) or that species are driven from the

Amongst the Ngasasan in the Taymyr-peninsula in Siberia where traditional hunting lived well into the 20th century, the hunting for molting geese was done from mid july when the molting started un til November (Popov 1966:46).

lands (like for the wild reindeer in northern Norway). However, through analogy we still sometimes get a glimpse of how all inclusive these large congregations of animals would have been and what enormous impact they would have had on hunter-fisher-gatherers in the Stone Age. This can be seen as for the congregation of Beluga whales (Figure 311) or the congregation of wild reindeer (Figure 312).



 $\textbf{Figure 311} \ \, \textbf{Belugas gathering in the river estuary on Sommerset island, Canada. With kind permission of @ National Geographic Society. } \\$



Figure 312 Wild Reindeer at Hardangervidda, southern Norway, in 1966. Notice how the reindeer follows the topography. Photo © Fjellanger Widerøe.

Geographical knowledge and memoryscapes

The environmental changes would most likely make people look for focal places to make their landscape familiar during these changes. Alta, Kanozero, Nämforsen and Vyg could be such focal places fixating memories onto the land with the relations between people and topography. According to Tilley, "Human activity become inscribed within a landscape such that every cliff, large tree, stream, swampy area becomes a familiar place"(Tilley 1994:27). When the environment is rapidly changing, people would have to make changing places familiar. Familiarizing landscapes could be seen as reoccurring "colonization phases" where meanings were adjusted, at times redefined, and constantly interacting with the environment. By "finding" places like Nämforsen, Gärde, Kanozero or Vyg that remained "stable" and main characteristic features in the landscape, I suggest that Nämforsen and other sites of a similar character became places where the inhabitants made unfamiliar landscapes familiar. This was done by manifesting their stories and their memoryscapes into the rocks of Nämforsen. The unique geographical location when it comes to communication for all the large rock art areas made these places central in the Stone Age hunter-gatherer landscape.

When it comes to the location of the rock art sites, the earliet sites, depicting only

large game, seem to have been situated at favourable places for hunting (e.g. Jo Sarsaklubben, Sagelva in Ofoten, Fykanvatn in northern Norway). Many of the early sites are connected to the shortest distance crossing waters (rivers, lakes, fjords) and this seems to be the case for the sites solely depicting large game, like Brennholtet and Sletjord 2 in Ofoten, northern Norway. While the earliest rock art at the large rock at centres also seem to have been connected to hunting and the hunting place, gradually the rock art represents not only a reference to the actual place or location where the rock art and the rock art site is situated but also references to the wider landscape, such as at Alta (see Figure 181, Figure 182 and Figure 183), Nämforsen (see Figure 268, Figure 269 and Figure 270) and Vyg (see Figure 192 and Figure 216). The large rock art areas are located at meeting places with a unique geographical location when it comes to communication and journeying during the Stone Age.

Information could be stored as memoryscapes on the rocks at Nämforsen, communicating and telling stories of geographical knowledge in a way that could be retold over and over again as the stories were manifested into the rock, made visible to the next generations. Journeys like the boats in the rocks at Alta, Nämforsen, Kanozero and Vyg could be laden with stories. The rock art place at Nämforsen could act as a place where communication was central. Inland of Nämforsen were the attractive hunting grounds where elk was hunted in vast numbers (e.g. Bastuloken area). The connection between the elkhunting, the rock paintings and settlements can clearly be seen at the rock painting sites inland of Nämforsen. Innumerable hunting pits and a concentration of 12 rock-painting sites with 20 panels depicting virtually only elk evidence an extremely rich area for the Stone Age hunterfisher-gatherers inhabiting the area. The stories at Nämforsen inhabited animals, humans and activities connected to places both coastal and inland. As previously stated, Nämforsen was a place where people made rock art for c. 4000 years. The new finds of rock paintings shows that the rock art of this area was rich and that it acted on different levels in the landscape. The Nämforsen area with connected paintings shows how the environment was included in the rock art of communication by the depiction of stories where the macrolandscape and the microlandscape interacted in the rocks where man, animals and the spirits interacted at several levels mirroring their world.

The landscape along the coast and water systems in northern Fennoscandia often represents a warren of similar small topographical formations. Detailed knowledge of the terrain related to where animals were found was of crucial importance for the hunter-gatherers as presented in chapter 4 based on ethnography from the circumpolar area. With a mobile hunter-fisher-gatherer strategy one most likely stayed at places most likely for a short period

of time, but it was necessary to mark the landscape with information at a detailed level. Some of the rock art places may pinpoint good hunting places. According to Farbregd, this knowledge must have been important to hunter-gatherers (Farbregd 1980:43). I find this a valid interpretation for some of the earliest rock art places since it seems as if they mark favourable places or areas like in Ofoten at Jo Sarsaklubben, Brennholtet and Sagelva. The example by Farbregd from the Gjølgjavatnet Lake in middle Norway has previously been connected to the hunting place interpretation in relation to collective hunting in water (Petersen 1929:34). At the Gjølgjavatnet Lake, the paintings of large game at the Almfjellet and Rauhammaren site are situated on each side of the Lake Gjølgja, where the lake is at its narrowest. They have been interpreted as places where elks were driven over the cliffs and hunted in the lake (Petersen 1929:34). Since hunter-gatherers in northern Fennoscandia would rely on hunting and fishing, such places would be of importance to them. In relation to geographical knowledge, examples have validated the hunting practice in relation to rock art. In relation to ethnography on hunter-fisher-gatherers perception of landscape (Collignon 2006b; Shirokogoroff 1935), hunting places were important and references in the huntergatherer landscape.

Rock art could have been made at good hunting places at the locational level like the sites Jo Sarsaklubben. Sites are also found at suitable crossing places acting as reference to adjacent cliffs where animals would cross rivers (Nämforsen) lakes, (Sagelva in Ofoten) or fjords (Brennholtet Forselv and Sletjord in Ofoten). Some places the activity adjacent to the actual hunting place reflects such a hunting place like at Vyg (Gjerde 2009) where Beluga whales most likely were hunted in the bay where Beluga hunting scenes were manifested on the rock slopes. The close connection to the hunting place is also present at the sites with paintings inland from Nämforsen where the elk-hunting pits are closely linked to the cliffs with rock art depicting the red elks like at e.g. Boforsklacken, Högberget 1 and Lillklippen (see Figure 257 and Figure 258 in the Nämforsen case study). The rock art in itself could also relate to such places, e.g. the elk-tracks can likely be interpreted as crossing-places like at Forselv and Sletjord in Ofoten, Bergbukten in Alta, New Zalavruga 4 at Vyg and Kamenniy 3 and Kamenniy 6 at Kanozero. Geographical information could be stored in a motif or a scene like the bear-dens in Alta, the reindeer corrals in Alta and the halibut fishing scenes at Forselv and in Alta. These could be links to places in their macrolandscape. They would know where the reindeer corrals were located, they would know where the bear dens were and they would know where the good fishing places for halibut were. As they had knowledge of the landscape, hunter-fishers would also have a similar knowledge of the seascape or the maritime landscape. Finally, it looks like the whole panels at times act like memoryscapes where there is a close link to the actual landscape like at Bergbukten 4 in Alta, northern Norway (see Figure 183) at New Zalavruga 8 at Vyg in northwestern Russia (see Figure 216) or at Nämforsen (Hallström IIQ1) in northern Sweden (see Figure 270). At this level it also seems like the miniature landscapes and elements on the rock surface interact and could act as memoryscapes representing the macrolandscape like at Bergbukten 4 in Alta or at Bradön in Nämforsen or New Zalavruga 8 at Vyg. Geographical knowledge was important to the huntergatherers in the Stone Age and numerous examples indicate that this information was part of the stories in the rocks.

Relating the rock art of hunter-fisher-gatherers to hunter-fisher-gatherer perception of landscapes as presented by Collignon (2006b), (see Figure 67), is fruitful. Based on her theory the Inuit cannot separate knowledge of the land from knowledge of the animals, and animals cannot be separated from land. Areas or zones include certain animals and some areas are favourable places for these animals. The landscape is divided into zones and includes both rich and empty areas. Moving to the rock art, animals then represent zones or areas. These can be directly linked to the actual place and the animals present, like the paintings of elk, connected to favourable areas for elk, or the reindeer at Sagelva in Lofoten that is related to favourable areas for reindeer. Similarly, animals in rock art appear as "rich zones" and empty zones with no animals (see Figure 177). One can argue that rock art seems to be representations of the hunter-gatherer landscape divided in rich and empty zones. These zones and areas are in rock art related to the miniature landscape in the rocks (e.g. Bergbukten in Alta or Nämforsen at Bradön, Figure 266) and the elements of the rock (like the river at New Zalavruga 8 at Vyg, (see Figure 216). Similarly at Bradön at Nämforsen the panel seems to reflect the empty and rich zones in the macrolandscape as viewed from the vantage point when observing the panel Figure 268). When viewing the rock art from the case studies they seem to reflect the hunter-gatherer landscape as represented by the animals and activities in the rocks related to areas or zones in the macrolandscape.

Cosmology and rituals

Rock art in relation to cosmology has to be approached through ethnography. The studies of Helskog (1999) where he relates rock art to the shore connection, thus linking the location of rock art sites to arctic cosmology seems to be valid for all the sites in the case studies. All the rock art scenes and compositions concur with the upper tidal zone (the sea-

spray or the river-spray) area. The rock art is located in the middle world in the three-tier as discussed in chapter 4. There are also rock art sites that by the distribution of motifs seem to reflect the division of the three worlds as previously suggested by Helskog (1999; 2004a). An example of this is from Bergbukten 4 in Alta (see Figure 184).

Nämforsen is one of the places where the shoreline connection has been apparent up to today, linking the rock art sites to the forceful rapids. A well justified interpretation of the Nämforsen site was conducted by Tilley when he related the location of the Nämforsen rock art to the cosmological river (Tilley 1991). The rock art from the Late Stone Age has often been linked to shamanism (as discussed in chapter 4) and in the Case studies there are examples of representations that could be connected to shamanism. There are human representations depicted with elk-head sticks at Alta, Kanozero and Nämforsen (see e.g. Figure 55). There are examples of human representations that are depicted with a drum (see Figure 58). The drums are referred to as the shamans' equipment for a journey and among the Kemi Lapps there is a description where they refer to the drum as a boat applied by the shamans on their journeys. At Kamenniy 7 there is a human representation holding a boat in his hands and an object that could be a drumstick in the other. He also seem to have some form of headgear that may refer to animal antlers (see human figure in area 3 in Figure 225). There are examples of human representations depicted riding reindeer both at Forselv (see the right end of the left section of the panel in Figure 127) and at Storsteinen in Alta, northern Norway. In Alta there are also examples of what I interpret as shaman journeys (Alta and Kanozero). The best examples are found at Bergbukten where it seems that the reindeer is turning into human representation flying over the landscape and later turning into a reindeer again (see Figure 64). Such "transformations" that coincide with people transferring into animals and vice versa can be found e.g. at Kanozero where reindeer are depicted as if they are linked to humans or combined like the bear-human at New Zalavruga 15, Vyg or the bearhuman at Kamenniy 3 at Kanozero.

Numerous examples of what has been interpreted as shamans on their journeys can be found in the rock art from the Stone Age in the Case studies. Since one before 5500-5000BC does not have human representations in the rock art of Fennoscandia, it is hard to relate the rock art to shamanistic practice even if this could be the case. I will briefly turn to the ethnography from Siberia to aid the interpretation of the shamanistic practice and rock art. The association between the hunting practice and rock paintings has been described for the Suruktaakh-khaya cliff (see Figure 84) in the valley of the Markha River, a tributary to the large Lena River in Sibera, Russia (Okladnikov 1970:92f). The association between red paint

and animal blood has been pointed out by several scholars, for South Africa, Australia and northern America. The link between the red paint and animal blood has also been forwarded as relevant for the circumpolar area. Among various primitive tribes, ochre is considered equivalent with blood, the chief element of life and basic source of youth and strength. Indeed, sometimes it is used simultaneously with blood in a ceremony. Among the Chukchi, for instance, the drawings of animals on the magical panels which serve for their "multiplication" were formerly done with blood or ochre, since the figures were to take on vital forced genuine reality thanks to the blood (Sarychev 1802:161 in Okladnikov 1970:102). Hunting large animals was sometimes connected to danger and the animal should be hunted in the proper manner to obtain a balance between man, animals and the spirits. The hunting practice or the cynegetic activities (Collignon 2006b) were often incorporated into elaborate rituals. One description of such a ritual is the Shingkelavun amongst the Evenki of Siberia.

The Shingkelavun was performed to obtain luck and success in hunting. The Shingkelavun rite was described by Animosov (in Russian) in 1949 and retold by Okladnikov in 1970 (Animosov 1949:177 in Okladnikov 1970). Brief references to the ritual is also later made by Animosov (1963a:178; 1963b:109). The Shingkelavun rite lasted for many days, and was carried out by the entire clan near the rock, cliffs, and trees sacred to it—the bugady. On the first day, the shaman "walked" under the bugady asking the dunne-mushunin (that is, the bugady-woman, ancestress) for help in the hunt, but she sent him to another, a zoomorphic bugady which roamed in the form of a giant female elk, or wild doe among a herd of wild animals of the particular species. With the permission of the she-elk bugady, the shaman caught animals in her herd with a lasso. On the shaman's return, if the number of the animals proved inadequate, he revisited the dunne-mushunin, and by stealth stole magical strands of wool which then turned into animals as soon as the shaman shook them out on the home territory of his clan.

The second stage of the ritual included all the males of the clan. The Evenki hunters wore ritual costumes, with caps made from the skulls of reindeer or elks, imitating the heads of these animals. The hunters performed a pantomime dance, portraying the characteristic movements of the animals, and accompanied it with an improvised song addressed to the beasts. The central figure of the rite was the best of the dancers, an actor-hunter. He represented the leader of the animal herd, and his pantomime was supposed to bring all the animals of the taiga to the clan's hunting grounds after the fashion in which he was leading his fellow dancers. At the end of the dance, the group of hunters, embodying the figures of animals in living forms and plastic movements, headed by their leader, who apparently played

the part of the master of the animals, the bugady, developed a new theatrical action, different in character but analogous in aim. The hunters went into the taiga and returned laden with rose willows and young larches, from which they built a kind of decoration representing the taiga surrounding a new clearing covered with bushes, the favourite grazing place of the elk and wild reindeer. Among the rose willows sprang up herds of elks and wild reindeer, represented by wooden figurines. Other animals and birds were to be seen in the larch taiga. Meanwhile, the old men, without pause, recited stories and legends, and to their measured, rhythmic speech, small wooden figures were placed beside the she-elks, representing their calves. The other animals also had plentiful offspring. Thus the magical multiplication of animals took place, and the taiga was filled with life. The final act of the Shingkelavun ceremony began with the hunters again going to the taiga, carefully searching for the tracks of animals. The hunters then performed a hunting scene with figurines before several sacrificial reindeer were slaughtered, and their skins hung on long poles as offerings to the supreme deity Oshkori, the lord of all taiga. The meat was eaten by all participants (Anisimov 1949:177 in Okladnikov 1970:97-98). Living tradition by shamans performing rituals at rock carving sites has recently been documented in Siberia (Célestin-Lhopiteau 2009).

According to Okladnikov, the necessity of such ceremonies for the multiplication of animals during the Neolithic (Late Stone Age) must have been the sacred paintings on cliffs serving as clan shrines, depicting the animals in the same positions in which they were probably represented by the hunters in the Stone Age, who performed their religio-magical pantomines before the matriarchal clan deity represented on the sacred cliff—the "she-elk," the bugady (Okladnikov 1970:98). The performance of the hunt with dancing and imitation of animals shows that the elk hunting scene at Hallström IQ1 could not just be the representation of a communal elk hunt, but also a ritual where the people performed rituals similar to the described Shingkelavun. People that appear to be dancing or walking in procession is also found at New Zalavruga 11 at Vyg and at Ytre Kåfjord in Alta (see Figure 178). Another such "dance" or performance can be witnessed at Bergheim 1 in Hjemmeluft, Alta where five people are "dancing" round an elk-head boat where one of the dancers are holding a long spear and two of the dancers are holding the elk-head boat. The "initiation" of the boat and rituals connected to the hunting season and / or during the launch of the boat is described in various ethnographic sources (e.g. Thornton 1931:165ff) and it is likely that such initiations before the hunt occurred at Bergheim 1, Hjemmeluft, in Alta during the Stone Age (see Figure 313). The spear or harpoon seen at Bergheim 1 in the hands of one of the "dancers" can also be seen at a seal hunt at the contemporary Bergbukten 1 panel in Hjemmeluft Alta (see Figure 314).



Figure 313 The "dancers at Bergheim 1 in Hjemmeluft, Alta. Two of the dancers are holding an elk-head boat and the person at the top is holding a long spear / harpoon. The boatfigure is ca. 30cm. Photo: Jan Magne Gjerde.



Figure 314 A seal hunt from an elk-head boat at Bergbukten 1, Hjemmeluft, Alta. A person is holding a spear / harpoon aiming for the seal. The seal is slightly eroded and could be a small whale. But by comparison to other figures it appear to be a seal. The boatfigure is 16cm long. Photo: Jan Magne Gjerde.

Vast amounts of red ochre found at Nämforsen dated to between about 4200BC-2400BC indicating large production of red ochre at Nämforsen during a long time period (George 2005; Larsson et al. 2003). Inland from Nämforsen there are several cliffs with elks painted in red on the cliffs similar to the painting on the cliffs in Siberia (Sarychev 1802:161 in Okladnikov 1970:102). The rock paintings inland from Nämforsen could be ritual places connected to the hunting of elks similar to the bugady of the Evenki. From the ethnographic records from the circumpolar area, we know that the seasonal hunting events were connected to elaborate rituals that encompassed various social interaction. The most elaborate descriptions is connected to the Inuit whale hunting (e.g. Lantis 1938; Lantis 1940), however we know that the elk hunt (Animosov 1963a; Okladnikov 1970) and reindeer hunting (Popov 1948; Popov 1966) in Siberia was connected to elaborate rituals. The bear hunting represented in the Stone Age rock art, at e.g. Alta, Kanozero, Onega and Vyg, can also be connected to elaborate rituals (Elgström 1971; Hallowell 1926; Honko et al. 1993).

The animals in the rock art of the case studies reflect the animals central place in arctic cosmology and rituals. It is therefore not far-fetched to link both the rock art and the location of rock art among arctic hunter-fisher-gatherer cosmology. As rock art includes the cosmology it is also in close relation to reality. Regarding rock art simply as reflection of cosmological depictions would be to diminish the reality and the geographical knowledge in rock art. These factors are intertwined.

Cosmography of rock art - from reality *or* cosmology to reality *and* cosmology

According to Websters Encyclopedic Unabridged Dictionary of the English Language (1994), *Cosmography* can be defined as a science that describes and maps the main features of the heavens and the earth, including astronomy, geography and geology or a description or representation of the main features of the universe (description of the world).

The rock art in all case studies are made by hunter-fisher-gatherers where hunting and fishing were central parts of their lives. Knowledge of the land and knowledge of the universe is therefore important. Central to this knowledge and wisdom of the universe is in virtually all ethnographic studies from the circumpolar area focused on some form of shaman. This must not be equalled with shamanism. The shaman was a holder of wisdom and he or she had knowledge of the universe. A central function for the shaman was connected to hunting and

thereby the large game that people in the past relied on to return every year. This was crucial for surviving as hunter-gatherers, specially in a harsh robust arctic climate where winter-time normally covers 6-8 months of the year.

Studying the Stone Age rock art in northern Fennoscandia, the theme that seems to fit most of the rock art is depicting large game and cynegetic activities (connected to hunting) as introduced by Collignon representing Inuit perception of landscape (territory) (Collignon 2006b) for the description of hunter-fisher-gatherers knowledge of the land. Adding to Collignons cynegetic activities is the cosmology (the knowledge of the universe).

Cosmography would include the knowledge of both cosmology and reality. The scenes in the rock art depicts actual hunts (like the bear-hunting at Kanozero, the Beluga whale hunting at Vyg, the elk hunting at Nämforsen, the reindeer hunting in Alta and the halibut fishing at Forselv in Ofoten). Closely related to these hunting scenes are the other parts central to the cynegetic activities, representations of journeys, these be real, like the numerous boat depictions where many of them would refer to actual journeys, or cosmological represented by some of the boats, the elk-head sticks, shaman-drums and journeys by shamans like at Kamenniy 7 at Kanozero or at Bergbukten 4 in Alta. Some places one can also see what can be referred to as the transformation between human and animals and connected to one of the characteristics of the shaman where he could transform from human to animal and vice versa. This also included travelling between the worlds. By wide definition, what is depicted in the Stone Age hunter-gatherer rock art are stories reflecting their cosmography.

In the Early rock art, rock art both by location and theme seems to reflect the cynegetic activities located at places connected to hunting or so-called favourable places for animals. They could act as signposts in the landscape. Gradually the stories on the rocks related to places that not necessary was the actual place of the rock art, but could act as memoryscapes relating to real and cosmological places as part of their cosmography, like the inland reindeer corrals and the open sea halibut fishing at Bergbukten 4. Through the case studies, the best example of how the cosmography is represented at one panel is at Bergbukten 4 site (see Figure 183 in relation to Figure 184) where all the three worlds similar to the ethnographic world view is depicted but also clearly refer to the real world with elk-hunting, reindeer hunting and halibut fishing. The rock art including the microlandscapes, at times with clear links to the macrolandscape truly represents interacting landscapes centred around Stone Age hunter-gatherer cosmography.

Chapter 7 The Author's Reflections²²³

Towards an understanding of lost relations of Stone Age Rock Art in northern Fennoscandia

From the beginning, crossing borders and studying the rock art anew has been central to this thesis. Most studies of rock art in northern Fennoscandia is based on documentation that was conducted with different research aims. The central theme was the motif, not its surroundings. In this thesis I have argued that landscape is a central element to rock art at different levels from the canvas of the rock to the wider landscape through viewing rock art in relation to the natural background of northern Fennoscandia. The approach is centred round an understanding of lost relations of hunter-gatherer Stone Age rock art in northern Fennoscandia. The approach relies on the reconstruction of past relations in the landscape in relation to rock art. The reconstruction of the lost relations have focused on reconstructing the natural background (mainly through reconstructing the landscape changes by the land uplift), including ethnographical sources to interpret the rock art at different levels in relation to landscape and a thorough documentation of the rock art and its lost relations. Central to this has been to study the sites *in situ*.

In **chapter 2**, I searched the research history for clues as to which rock art and landscapes had been studied in the past. As with all research this thesis rests on the shoulders of giants. When it comes to northern Fennoscandia this thesis on rock art would have been completely different if I was not triggered by the aims of Gustaf Hallström when he in 1906 set out to study all known rock art in Fennoscandia crossing the national borders. As for Hallström, the recent growth of the material record witnessed during my initial overview was overwhelming. As stated by Bjerck (2002) the shift from where one before could know "all" of the material culture within large regions to the individual shortcomings of knowledge due to the increasing growth of the material record and increasing knowledge production has led to a shift in focus to local and regional studies during the last decades. The lack of the opportunity to grasp large regions crossing national boundaries has also been stressed by Ramqvist where he sees this as a virtually impossible task (Ramqvist 2002b). The problems encountered crossing boundaries have been numerous. However, to get to grip with the material record much time have been spent visiting numerous sites in northern Fennoscandia.

_

²²³ The Author's reflections was Hallström's final chapter in his second volume of Monumental art (Hallström 1960:366) where he summed up some of his ideas on rock art in relation to his life-long work. In many ways I have experienced and walked along the footsteps of Hallström in this thesis and it is in the honour of Hallström that I have initiated the summary of this thesis in the words of Hallström.

Since the final work of Hallström in 1960, few have tried to cross administrative and political boundaries in which the results from this thesis advocates in further research.

The representativeness is problematic when looking at the find distribution of rock art. I am convinced carvings will appear in Finland sooner or later. Some areas have many sites due to large research activity. Within the material record, this is best evidenced by the distribution of rock art on both sides of the Finnish border (see Figure 90). I am amazed if not sometime in the near future, more rock art is found in northwestern Russia. The newly discovered site at Kanozero shows the potential for finding new rock art in this large area. Vital to the research history has been visiting the sites that is the basis for the increasing knowledge of rock art. The importance of the opportunity to visit Kanozero, finding more rock art making this one of the large known concentrations of rock art in northern Fennoscandia is yet to be fully realized. Visiting the photoarchives in St.Petersburg and in Umeå has given me the opportunity to see many of the rock art sites before modern constructions ruined the landscape context of some of the sites. Therefore, some of the sites have been better investigated through the eyes of Hallström and Ravdonikas.

In the research history chapter I have tried to view the growth of the material record because I find this important since there is no general overview of this enormous material record. Central has been to relate how rock art has been dated, thus relating it to its wider archaeological context. Knowledge of the material record is vital in comparative studies, and it is therefore problematic that most comparative studies in rock art has accepted that there is similarity in the material record without even suggesting what grounds their assumtions are based. Through the research history I have focused on how landscape has been studied in relation to rock art. Already in 1906, Hallström saw that there could be an interaction between the elements and rock art, however, it was to take just less than a century before this was appreciated and included in the interpretation of rock art. Accepting that natural elements is part of the storied rocks made me enter the art of documentation.

In **chapter 3**, a revision of the documentation of rock art was investigated. Most of the rock art studies base their analysis on old documentation with completely different research aims and thereby also results. The available documentation was mainly aiming to document the figures in the most accurate manner in which to identify the motifs. At many of the sites new figures appeared that was not included in the initial documentation. New techniques has made it possible to see more of the actual figures at the sites, and many sites need to be redocumented. In many regards, the interpretation of rock art is never better than the documentation. With a new research aim, the landscape of rock art, I needed to revisit and

redocument rock art sites. Central to the documentation (mainly based on photography) was to take a step back to be able to grasp the landscape of the rock art. To get a better understanding of rock art and landscape I followed the advice by Fett "Everything is allowed, as long as it gives a good impression of the landscapes character and tells us why they made the rock art exactly where it is [my translation²²⁴]" (Fett 1934:80). I do not reject the accurate tracing of figures, however, as a means to get a better foundation for the understanding of rock art, the landscape of rock art may include more information than how many crew members are in a boat in Alta or whether there are 15 or 17 elks in a group at Nämforsen. Documentation and the art of documentation is important since it reflects the research aims and also guides the interpretation and the understanding of the lost relations in the rock art.

Even if the aims of documentation is problematic, my major concern and also one of the main problems in getting an overview of the material record and crossing borders, is the lack of material publication. A rough estimate suggests that more than half of the material record of the rock art in northern Fennoscandia remains unpublished. This is a major obstacle when performing any studies at a regional or an inter-regional level.

In **chapter 4**, the core of the approach to the study of rock art and landscape was presented. In this chapter, I discussed the term landscape and the term landscape in relation to rock art. After an initial approach to the understanding of the indefinable concept of landscape oozing of ambiguity, one moves to the lost relations of landscape and rock art. Since dating rock art sites is crucial for the interpretation of the lost relations in a landscape, I briefly discussed dating in relation to rock art and landscapes. Since rock art in northern Europe has a long tradition of rock art production, it would be problematic studying the polished rock art site at Jo Sarsaklubben and the Aldon²²⁵ site in northern Norway since the distance in time is more than 10000 years. Within the lost relations, change is a major topic. The natural short term changes, or the temporality is discussed in relation to landscape and rock art where e.g. the seasonal aspect in relation to rock art and landscape is discussed. Short term changes seem to be important in the rock art. The majority of the rock art in northern Fennoscandia is located in the shore or the shore spray zone less than 2m above the upper tide, so the shore connection is important. The seasonal aspect is also represented in the rock art as witnessed by the "seasonal" activities in the winter-hunting for elk, the spring time hunting for bear and

²²⁴ "Alt er tillatt, bare det gir et godt inntrykk av landskapets karakter og forteller hvorfor risteren ristet akkurat der" (Fett 1934:80).

²²⁵ Aldon is a rock art site most likely not more than 200 years old. The figures include reindeer, a Saami peron with a shotgun and "modern" boats with sail. It is situated on the Saami holy Aldon mountain in Varanger, northern Norway.

the Beluga whale hunting at late summer / early autumn. By being located in the shore zone this would also mean that the carvings was available throughout the year. However, there are also examples where rock art is most available through the winter months, like the islands in the rapids of Nämforsen or the cliff walls most easily observed standing on frozen lakes during winter.

Accounting for lost relations also includes long-term changes, like the large natural changes and the modern man-made alterations to landscape. The reconstruction of the landscape by accounting for the land uplift has shown for many of the sites that the location of the rock art sites has changed dramatically. Applying old documentation (photos) in order to get a better understanding of the landscape has aided the knowledge of the landscape setting before modern alterations such as hydro-power constructions, modern housing or roadwork.

Central to the reconstruction of lost relations of Stone Age hunter gatherer landscapes has been embracing ethnography. Through ethnographic landscapes of the circumpolar area one may observe analogies to their cosmology which is central to the understanding of rock art. The selection of the animals in Stone Age rock art is also key animals in circumpolar ethnography. Cosmology has been discussed and found important in relation to rock art. Numerous examples show that most likely "shamans" are depicted in the rock art over vast parts of northern Fennoscandia. Central to the shaman performance are knowledge of the universe. This includes knowledge of land. Such knowledge is achieved through journeys, both real and cosmological.

Within the knowledge of the shaman and the hunter-gatherers is the knowledge of land or geographical knowledge. The shaman in this thesis is understood as a holder of knowledge or a holder of wisdom practiced through communication with humans and the spirits. Through a comparison between Inuit knowledge of landscape (territory) (Collignon 2006b) there seemed to be clear similarities between how Inuit perceived the landscape and how Stone Age rock art included information on landscape centred round important animals. According to the Inuit perception of landscape animals cannot be removed from land. They define their landscape or areas and zones within a landscape in relation to animals. Why a rock art site is located at its location or why rock art is positioned at the rock surface in clusters and focus on few areas on a panel instead of being evenly distributed has puzzled researchers. The deliberate placing of the images may refer to such rich and empty zones or areas in Stone Age hunter-fisher-gatherer landscape. Adding to this, some of the motifs or scenes include information that most likely refers to known places in the landscape like the bear-dens in Alta, the geese-hunting at Vyg, the reindeer corrals in Alta and the elk-hunting at Nämforsen. The

makers of the rock art would know where such places were. Adding to this, natural elements or the microlandscapes of the rocks were applied as a backdrop to tell the stories. Numerous examples from the Case studies evidence this. Even if we are not able to pinpoint the actual place like at Nämforsen (see Figure 270) or at Onega (see Figure 88), they are references to places in their landscape. By studying the different levels of landscape one gets closer to an understanding of the rock art including the natural elements that were included in their landscapes of rock art referring to their surroundings or the macrolandscape. The different levels of landscape shows that information interacting with the rock art could be stored in the tiniest crack in the rock surface to the location of the sites.

In **chapter 5** the "cracking" landscapes of rock art in northern Fennoscandia is presented in five case studies. Even though the starting point was crossing boundaries between east and west centred on northern Fennoscandia and the sites. The selection of the case studies was not a straight-forward task and hindsight would *maybe* change the extent and / or selection due to the time consuming fieldwork. Returning to the starting point the concentration of paintings in southern Finland could perhaps have been included. The case studies chosen includes rock art sites that cover all of the Stone Age from the initial pioneers settled northern Fennoscandia to about 2000BC. Central in the case studies was to get a comparable study of large contemporary concentrations of rock art in northern Fennoscandia. The thread in the case studies was the lost relations of rock art through the dating. Dating is also important for the reconstruction of the macrolandscape. Then the scales of rock art and landscape is presented where the macrolandscape and the microlandscape is discussed in the case studies. This was to show how rock art and landscapes interacted at several levels.

Chapter 6 is a discussion of the case studies. The results are viewed in relation to chapter 4 and related to the rest of Fennoscandia where I find it justified. As the case study in Ofoten indicates, the intial rock art in northern Fennoscandia was made in the pioneer phase when people entered to Fennoscandia after the Last Ice Age. About 10 rock art sites are known that can be dated to before 5500 BC in Fennoscandia. The rock art sites includes only large game animal and the figures are generally large, depicted in life-size, like the large killer whale at Leiknes more than 7.5m long and the large elk figure from Gärde in northern Sweden of more than 3.5m in length. Then at about 5500-5000BC, what I have named the rock art explosion, there is an enormous increase in the number of sites and motifs. This is also when one gets the large concentrations e.g. at Alta, Nämforsen and Vyg. Now the variation in motifs are multiplied. However, like the Ofoten case study shows the depiction of large game at close to life-size is still being made. The initial rock art at the large rock art

areas had previously been dated to about 4200-4000BC and the results from this thesis advocates for an origin of the first rock art at these places between 5500BC to 5000BC. That is, the large rock art centres and the change from few large game motifs to more complex compositions including humans and human activity. It is at this point we see collective and communal activities in the rock art like dancing, processions, collective hunting etc. This incident that seems to be all-inclusive seems to occur simoultaneously over large areas at the same time suggesting a rapid spread of ideas and people.

With the new dating suggestion, this shift in rock art or the rock art explosion occurs virtually simultaneously over vast parts of northern Fennoscandia. This incident also seem to concur with the rest of Fennoscandia, even though more research should be made for the results to be conclusive.

The large concentrations of rock art seem to be located at unique geographical locations suggesting they were ideal for meeting other people living by a mobile strategy. These were places where people met and they were central places in the Stone hunter-gatherer landscape. At Alta, Nämforsen and Vyg they are clearly located at unique ecological locations referring to reindeer, elk and Beluga whale.

Knowledge of the landscape would have been extremely important for people during the Stone Age. Ethnographic examples from the Inuit world, suggest that it is the male hunters that through cynegetic activities are holders of the "wisdom of land". By journeys, individual and communal hunting they had the geographical knowledge that must have been vital to them, living as hunter-fisher-gatherers. The rock would work as a membrane between the worlds communicating their activities with the spirits. The rock art would work as memoryscapes that stored information for others to see and communicate. Stories were told and retold over and over since they were manifested in the rocks. New stories were constantly added. The stories of the Stone Age rock art in northern Fennoscandia included animals, humans and activities connected to places both coastal and inland. The miniature landscape and the microlandscape was applied as a backdrop to tell stories like the winter-hunting for elk (see Figure 215) or the Beluga hunting in the river estuary (see Figure 216). Rock art was made at the large rock art areas for more than 3000 years being part of the long memories of people that inhabited the area.

Stone Age rock art includes stories of reality and cosmology. Rock art seem to be narrating an intertwined cosmography of Stone Age hunter-gatherer lives. To get a better understanding of the cosmography of rock art one need to be aware of the lost relations of landscape and rock art. It all boils down to getting to grips with the lost relations of landscape

and rock art, including ethnography. Entering such a large area opens a "landscape" for further comparative studies.

List of Figures

Figure 1 Overview of the "geographical" areas of Fennoscandia. Stone Age rock art sites are marknad with
dots. Notice that middle Norway, northern Sweden, southern Finland and northwestern Russia is at virtually the
same latitude. For an overview of the sites, see inlay in the back of the thesis. Illustration: Jan Magne Gjerde. 12
Figure 2 Polished carving at Valle 2, northern Norway. Photo: Jan Magne Gjerde
Figure 3 Carving from Bergbukten 4, Hjemmeluft, Alta, northern Norway. Photo: Jan Magne Gjerde
Figure 4 Painting from Värikallio, northern Finland. Photo: Jan Magne Gjerde
Figure 5 Cut or "V-shaped carvings" from Hell, middle Norway. Photo: Jan Magne Gjerde
Figure 6 The drilling technique from Ytre Kåfjord, Alta, northern Norway. Photo: Jan Magne Gjerde
Figure 7 Incisions at Reinøya, northern Norway. The figures are estimated to be maximum 200 years old. Photo Jan Magne Gjerde
Figure 8 Overview of the number of figures and motifs at the New Zalavruga 4 panel, Vyg, northwestern Russia.
Figure 9 The New Zalavruga 4 panel at the New Zalavruga site from the Vyg rock art area in northwestern Russia. Reworked from Savvateev (1970:plate 35)
Figure 10 Stone Age rock art discovered before 1900 in Fennoscandia. Two of the sites in northern Sweden are
situated so close at this scale that they appear as one mark on the map. Illustration: Jan Magne Gjerde 23
Figure 11 The Glösa site. The photo to the left shows the steep cliffs and the location of the carvings. The photo
to the right shows the main area with carvings at Glösa. The site is dominated by deer-animals. They have been
interpreted as both elks and reindeer. There are also geometric grid patterns interpreted as hunting traps.
Photos by Gustaf Hallström, 1907. Photos from Gustaf Hallström archive, Univerity of Umeå. Illustration: Jan
Magne Gjerde
Figure 12 The conspicuous Bøla reindeer at Bøla, middle Norway. Photo: Gustaf Hallström 1907, after Gustaf
Hallströms research archive, Umeå, Sweden
Figure 13 Stone Age rock art sites known before 1930 in Fennoscandia. Illustration: Jan Magne Gjerde 26
Figure 14 Hallström and Burkitt documenting rock art at the Peri Nos site, Onega, in 1914. The point in the
background is the large Besov Nos site. Photo after Gustaf Hallströms Research archive Umeå, Sweden 30
Figure 15 The elks at Landverk, in northern Sweden, situated at the rock surface as if they are drinking from the
Lake Ånnsjön. Figures were chalked by Hallström, however when carved they most likely would have appeared
this clear. Photo Gustaf Hallström, 1907. Photo after the Gustaf Hallström Resarch Archive, University of
<i>Umeå</i>
Figure 16 Documentation of the Besovy Sledki South site. From Ravdonikas expedition to Vyg in 1934. Photo
from the archive of Institute of Material Culture, St. Petersburg, Russia
Figure 17 Part of the documentation at Nämforsen. Keeping the tracing paper dry must have been a challenge
next to the rapids of Nämforsen. Photo: Gustaf Hallströms archive, Research Archive, University of Umeå,
northern Sweden34
Figure 18 Stone Age rock art in Fennoscandia discovered before 1960. Illustration: Jan Magne Gjerde 33
Figure 19 One of the comparisons by Zamyatnin of the flint figurines from Late Stone Age settlements from the
White Sea-region and rock art from Onega and Vyg. In this illustration (1) is from Besovy Sledki, Vyg and (6,8)
is from Peri-Nos, Onega and (13) is from Besov-Nos, Onega. The division in the scale in the lower left is 5 cm in
total. After Zamyatnin (1948:106, plate 4)
Figure 20 The main area with polished carvings at Fykanvatn. Photo by Gustaf Hallström, 1908. Photo from
Gustaf Hallström archive, Umeå, Sweden. Some of the figures were chalked by Hallström before the photo was
taken. The figures have been traced in white colour and the figures behind the sea mammal figure above the
middle in the photo is traced from detailed photos. The sea mammal measures about 2m in lenghth. Illustration:
Jan Magne Gjerde
Figure 21 View towards the Fykanvatn site with polished rock art dated to the Early Stone Age. Compare with
Figure 22. The carvings are situated on the rock slopes from about the middle of the photo and upwards on the
rock slopes. Photo by Gustaf Hallström, 1917. Photo from Gustaf Hallström archive, Umeå, Sweden. Illustration
compiled from two photos. Illustration: Jan Magne Gjerde
Figure 22 The landscape setting in the Glomfjord area with the Fykanvatn site with polished carvings dated to
the Early Stone Age on the smooth rock surface situated slightly below the middle of the photo indicated by the
arrow. Compare with figure Figure 21 Photo by Gustaf Hallström, 1908. Photo from Gustaf Hallström archive,
Umeå, Sweden. Photo is also published by Hallström (1938:fig. 26)
Figure 23 Stone Age rock art discovered before 1990. Illustration: Jan Magne Gjerde
Figure 24 Bakka's tracing of Hammer VI after Bakka (1988:plate V) in 1988:plate nr. V. Illustration upper right reworked from Bakka (1975b:14-fig. 9). The elk figure (nr. 2) is between 59-65cm, the sea mammal figure (nr.
reworked from Bakka (197) no 14 tig 9) The elk tighte (nr 7) is netween 19-03cm, the sea mammal tighte (nr

22) is between 42-45cm and the cupmark figures (nr. 24) is between 23 and 27cm. Illustration: Jan Magne
Gjerde
Figure 25 The Astuvansalmi site, southern Finland. One of the anthropomorph cliffs with rock paintings in
Finland. This is the largest site in Finland. The paintings can be seen in red in the middle of the photo. The cliff-
"face" is seen slightly right of the middle with the protruding nose. Photo with kind permission National Board
of Antiquities, Finland
Figure 26 Stone Age rock art sites in Fennoscandia of 2010. This overview is presented with place names in
Figure 90 and a larger version with place names appear in an inlay at the back cover of the thesis. Illustration:
Jan Magne Gjerde
Figure 27 Värikallio, northern Finland. It is somewhat hard to distinguish the figures due to the
superimposition. However, right of the middle of the photo, one can see human figures. Photo Jan Magne
Gjerde
Figure 28 Photo of the lower parts of Bergbukten 1 where the lichen is covering the rock art. The back legs of
the elk is not visible in normal daylight. Photo: Jan Magne Gjerde
Figure 29 Photo of Bergbukten 1 in daylight and photo of Bergbukten 1 under black plastic. The boulder was
chalked after working with black plastic. In photo middle right, one can see is depicting the halibut fishing scne
that is invisible on photo bottom right. All the figures on the boulder are chalked and can be seen in the bottom
left photo. When comparing the two photos of the boulder, on the left side, one can see a ridge on the top left
photo that is not visible at the bottom left. Another interesting observation is that the halibut fishing scene is
depicted where the rock surface is "dropping" There is no fishing scenes in Alta depicted on horizontal rock
surfaces. They are always depicted in vertical locations mirroring the depth of the fish in the fishing scene.
Photos and illustration: Jan Magne Gjerde
Figure 30 Gjessing at Forselv in Skjomen, northern Norway. The grid is laid out over the figures. After
(Gjessing 1932:pl. XLIV, fig1)
Figure 31 Tracing of Evenhus, middle Norway by Gjessing (1936a:pl. LXXVII)
Figure 32 Documentation of the largest panel at Lillforshällan, Nämforsen, northern Sweden. Top: free-hand
drawing by Ekdahl (1828). Middle: free-hand drawing by Mandelgren (1868). Bottom after Hallström (1960).
All figures after (Hallström 1960:fig 79, 80 and pl. 13). One can see that the documentation gradually moved
from an idealistic visualization to a more detailed depiction of the actual rock art. Illustration: Jan Magne
Gjerde
Figure 33 Documentation of Peri Nos, Onega (the Hermitage rock since it was later taken to the Hermitage In
St. Petersburg) of Gustaf Hallström in 1910. With kind permission of the Gustaf Hallström Archive, Umeå
University
the bear and the man is superimpositioning the Beluga hunting scene from two boats. Tracing, frottage and
illustration: Jan Magne Gjerde
uustration. Jan Magne Ojerae
Figure 35 Working digitally with paintings from Pouksashakti. Here one can see that by applying various
Figure 35 Working digitally with paintings from Rouksesbakti. Here one can see that by applying various
techniques the images becomes more clear and stand out from the reddish rock surface. Photo and illustration:
techniques the images becomes more clear and stand out from the reddish rock surface. Photo and illustration: Jan Magne Gjerde
techniques the images becomes more clear and stand out from the reddish rock surface. Photo and illustration: Jan Magne Gjerde
techniques the images becomes more clear and stand out from the reddish rock surface. Photo and illustration: Jan Magne Gjerde
techniques the images becomes more clear and stand out from the reddish rock surface. Photo and illustration: Jan Magne Gjerde
techniques the images becomes more clear and stand out from the reddish rock surface. Photo and illustration: Jan Magne Gjerde
techniques the images becomes more clear and stand out from the reddish rock surface. Photo and illustration: Jan Magne Gjerde
techniques the images becomes more clear and stand out from the reddish rock surface. Photo and illustration: Jan Magne Gjerde
techniques the images becomes more clear and stand out from the reddish rock surface. Photo and illustration: Jan Magne Gjerde
techniques the images becomes more clear and stand out from the reddish rock surface. Photo and illustration: Jan Magne Gjerde
techniques the images becomes more clear and stand out from the reddish rock surface. Photo and illustration: Jan Magne Gjerde
techniques the images becomes more clear and stand out from the reddish rock surface. Photo and illustration: Jan Magne Gjerde
techniques the images becomes more clear and stand out from the reddish rock surface. Photo and illustration: Jan Magne Gjerde
techniques the images becomes more clear and stand out from the reddish rock surface. Photo and illustration: Jan Magne Gjerde
techniques the images becomes more clear and stand out from the reddish rock surface. Photo and illustration: Jan Magne Gjerde
techniques the images becomes more clear and stand out from the reddish rock surface. Photo and illustration: Jan Magne Gjerde
techniques the images becomes more clear and stand out from the reddish rock surface. Photo and illustration: Jan Magne Gjerde
techniques the images becomes more clear and stand out from the reddish rock surface. Photo and illustration: Jan Magne Gjerde
techniques the images becomes more clear and stand out from the reddish rock surface. Photo and illustration: Jan Magne Gjerde
techniques the images becomes more clear and stand out from the reddish rock surface. Photo and illustration: Jan Magne Gjerde
techniques the images becomes more clear and stand out from the reddish rock surface. Photo and illustration: Jan Magne Gjerde

Figure 44 Hide painting from Chukchi presenting a "History of a Year of the Chukch" (Hoffman 1897:938ff),
graphics after Hoffman (1897:plate 81)
Figure 45 Tracing of New Zalavruga 9, Vyg, northwestern Russia. After Savvateev (1970:plate 62)
Figure 46 The tidal area in Hjemmeluft, Alta during winter show how the area above mean tide will "always"
be free of snow, hence, available throughout the year. Photo: Jan Magne Gjerde98
Figure 47 The tidal area in Tromsø during winter. Low tide to the left, middle water level in the middle and high
tide to the right. Photos and illustration: Jan Magne Gjerde
Figure 48 Inuit summer dwelling at Cape Lisburne, Bering Strait located on the shore. Photo © National
Anthropological Archives, Smithsonian Institution
Figure 49 The Valle 1 panel with 72 years between the photos. This shows how little the landscape has changed
the last 70 years. Photo to the left from 1932, after Gjessings (1932:Pl. LIII, fig. 1). Photo to the right from
2004. Photo and illustration: Jan Magne Gjerde.
Figure 50 The Storsteinen site from the sea in 1882 and today (2003) after the residential area has taken over
the scenery. The Storsteinen boulder is marked with red colour. Photo to the left: Karl Krafft, Riksantikvaren and Alta Museum. Photo to the right and illustration: Jan Magne Gjerde
Figure 51 Summary of the world wiev as presented by Napolskikh (1992:fig. 1). Upper World (A), Middle World
(B), Lower World (C). For a description of all legends, See Napolskikh (1992:11ff)
Figure 52 Map of the Oroch cosmography. Map originally published by Avronin and Koz'minskiy. Map from
Okladnikova (1998:fig 8.13). Numbers are added to the map by Okladnikova to better reference to the features
of the map. A more thorough description of the map can be found in Okladnikova (1998:339)
Figure 53 Rock art in the liminal zone. The rock art panel in the middle world. From boat at Onega, the liminal
shorezone becomes very clear viewed from a boat. Photo of the large Besov Nos panel at Onega in representing
the middle world, the sky the upper world and the lake, the lower world Photo: Jan Magne Gjerde
Figure 54 The shamans? At Ytre Kåfjord in Alta, northern Norway, depicted as if they have contact with their
ancestors (spirits from the upper world). The left is interpreted as a female shaman where it looks like she is
giving birth, thereby linking the ancestors to the child. The right is interpreted as a male shaman. For the
internal relation between the figures that are located c. 20cm apart, see the lower left of Figure 178. The figures
are c. 40cm large. Photos and illustration: Jan Magne Gjerde
Figure 55 Staffs or elk-head sticks from Alta (Bergbukten 1), left and Nämforsen (Hallström IIY1), Hallström
(1960:plate XXII), right. Photos and illustration: Jan Magne Gjerde
Figure 56 Early Stone Age burials from Olenii Ostrov, Onega, northwestern Russia (grave nr. 55, 56, 57, 152
and 153). After Gurina (1956:plate 27, 76)
Figure~57~Shaman~with~shaman~costume~with~dress~and~head-gear~spreading~his~coat?~at~Ytre~Kåfjord,~northern~gear~spreading~his~coat.
Norway. Photo: Jan Magne Gjerde
Figure 58 A "ritual" at Bergbukten 4 in Hjemmeluft, Alta northern Norway, where the "hunters" are
represented with elk-head sticks and a shaman is perhaps using his drum to start his journey to one of the other
worlds. Most likely the shaman is holding a drum and one may see the fringes that hang from the drum. These
fringes are frequently represented in the ethnographic record. Photo: Jan Magne Gjerde
Figure 59 Shamans journey through the reindeer. The shaman then connected with the reindeer taking on the
forces and characteristics of the reindeer. Apana Gård, Hjemmeluft, Alta Photo: Jan Magne Gjerde
Figure 60 Shamans journey?, where a human figure is depicted "flying" over a boat. Further to the right and
closer to the sea (that can be seen in the upper right corner of the photo and that was close to the rocks when
made), a boat is depicted upside down, maybe representing the analogous boat from the lower world at Apana Gård, Hjemmeluft, Alta Photo: Jan Magne Gjerde
Figure 61 A "shaman" riding a red deer at Brattebakken in Vingen, western Norway. Notice the "staff" to the
left oh the rider as he holds it during the journey on the back of the red deer. Nightphoto: Jan Magne Gjerde.129
Figure 62 A "shaman" riding a red deer at Brattebakken in Vingen, western Norway. Nightphoto: Jan Magne
Gjerde
Figure 63 Section of Bergbukten 1, Hjemmeluft, Alta. At the upper right of the photo one can see a line of
persons. I interpret this as a journey where the shaman transforms from a reindeer then flying over the
landscape before he/she ends the flight on its way to again transformed into a reindeer. Photo: Jan Magne
<i>Gjerde.</i>
Figure 64 The flying shaman transforming from reindeer in the left to a shaman back into a reindeer at
Bergbukten 1, Hjemmeluft, Alta. Compilation of three photos. Photo and illustration: Jan Magne Gjerde 130
Figure 65 "Wolfnose" mountain ridge at Lodiken near Beskades, one can see the characteristic shape that
yields information in the horizon in all seasons and virtually in all weather conditions since it stands out in the
siluette. Photo © Odd Mathis Hætta. Illustration: Jan Magne Gjerde
Figure 66 The Rundtinden mountain area stands out when moving in the coastal landscape in Nordland, not far
from the Valle and the Leiknes site. Valletindan with Rundtinden (the top slightly left of the middle of the photo)

stands 798m from the surrounding fjordal landscape as a reference point and a landmark both from the inland
and from the coast. Photo: Jan Magne Gjerde
Figure 67 Theoritecial diagram of Inuinnait perception of territory (landscape). After Collignon (2006b:fig 16).
Figure 68 Inuit Land Use and Wildlife in the Melville South Area in Canada. Scale is added to show the size of
the region according to land use. After Riewe (1992:113)
Figure 69 Ritual vessels connected to the annual bear hunt ritual among the Nivkhi. The carvings refer to a bear hunt with geographical references (topography from the skier and ski tracks and the bear den) and movement by
the bear tracks and hunters tracks. Compiled from figures of the ritual vessel after Ivanov (1954:plate 245, 246, 247, 248), decsribed by Okladnikova (1998:344ff). Illustration: Jan Magne Gjerde
Figure 70 The bear hunting scene at Kamenniy 7, Kanozero, northwestern Russia. The bear hunting scene is
superimpositioning a Beluga whale hunting scene. Tracing to the left, where I have extracted only the bear hunting scene in relation to the topography at Kammeniy 7. The whole palimpsest is presented in Figure 225.
One can follow the tracks in the photo to the right. Tracing, photo and illustration: Jan Magne Gjerde 141
Figure 71 The bear hunting scene from Ole Pedersen, Hjemmeluft, Alta. Section of tracing to the left after Helskog (Helskog 1999:fig 7). One can see that the bear-tracks are coming from/moving into the small pond at
the panel perhaps moving into the lower world. Photo and illustration: Jan Magne Gjerde
After Burov (1989:394-395, figure 2 and 2a)
Figure 73 The hunting scene at New Zalavruga 6, northwestern Russia. A person is sitting in the back of the boat while another person with head -gear is standing in front of the boat shooting arrows at the geese. Many of the geese have arrows standing from their backs. The geese are depicted as if they have no wings, as they would appear during the molting season. Photo: Jan Magne Gjerde
Figure 74 The traditional geese hunt by the Nganasan as described by Popov (1948) and Storå (1968). To the
left, a schematical drawing of the rounding up of geese. Legends: 1= tents, 2=sheltered by reindeer sledges, watchmen or helpers during the hunt, 3=hunters assiting the drive, 4=dogs, 5=net enclosure, 6 hunters driving
the geese from boat, 7=geese. To the right, drawing of a geese drive at a smaller lake. Illustration reworked from Storå (1968:fig 9 and 10)
Figure 75 The halibut fishing scene at Forselv, northern Norway. Two persons are fishing. The fisher to the left
has a large halibut attached and the person to the right has a smaller catch. It seems like the hfisher to the right have sinkers attached to the fishing-line The size of the halibut has been questioned, however, the largest
recorded in northern Norway was more than 4m long and weighing more than 400kg. The stem of the boat
appears to be a bird-head representation. Dated to the transition between the Early and the Late Stone Age.
From the top of the boat to the lower end of the halibut measures 55cm. Rubbing by Jan Magne Gjerde 147 Figure 76 The elk-head stem dated to the latter parts of the Early Stone Age from Lehtosjärvi near Rovaniemi in
northern Finland. The elk-had is c. 50cm long and the hole to the right has been suggested as the place for a seating device attaching the head to the stem of a boat. After Erä-Esko (1958:9, fig 1)
Figure 77 Two elks swimming across the Lyngen-fjord near Tromsø, northern Norway. The two elks can be seen
in the lower left of the photo. They distance more than 5 km swimming across the Lyngen-fjord. Photo: © Sara Johansen
Figure 78 Two persons are carrying an umiak-type boat from Ytre Kåfjord, Alta. The persons in a crecent
around the boat-carriers are wearing head-gear. This is known from shaman costumes and from the dress of
$hunters\ from\ arctic\ ethnography\ (Black\ 1991;\ Shirokogoroff\ 1935).\ This\ scene\ could\ refer\ both\ to\ a\ real\ journey$
or an imaginary journey referring to the horizontal landscape or / and the vertical landscape or / and the
cosmological landscape. Tracing with kind permission Karin Tansem, © VAM
Figure 79 Elk-head boats from the north dated to the Late Stone Age. Boats from Alta, northern Norway after Helskog (1989:figure 4). Boats from Nämforsen, northern Sweden after Hallström (1960). Boats from Kanozero,
northwestern Russia (tracing Jan Magne Gjerde). Boats from Onega, NW-Russia after Hallström (1960:plate
XXVIII) and Ravdonikas (1936:plate 1 and plate 13). Boats from Finland are from top to bottom from the sites: Patalahti, Saraakallio, Saraakallio, Pyhänpää. After Lahelma (2005b:fig 1). Illustration: Jan Magne Gjerde
Figure 80 The present shoreline within the Hjemmeluft area, Alta, showing the vegetation free area including
the sea-spray zone from mean tide and in the upper tidal zone that was preferred for the making of rock art, most
likely by both functional and cosmological reasons. The area varies slightly, but normally is c. 2m in elevation. Photo: Jan Magne Gjerde
Figure 81 The red rocks at Onega (Peri Nos 3). Observe the person with what is interpreted as a giant paddle with an elk head. This could also have been part of the paraphernalia for the shamans paddle like the elk head
sticks. Photo: Jan Magne Gjerde
Figure 82 The vertical cliff with rock paintings at Värikallio, northern Finland. Not only the cliff stood out in the flat landscape, but also the rocks were red in colour. The rock surface with the paintings are located slightly to

the right in the photo. Illustration is a compilation of three photos. Photos and illustration: Jan Magne Gjerde.
Figure 83 Close up of section of the vertical cliff with rock paintings at Värikallio, northern Finland. The red coloured figures painted onto the "red rock". The highest figures are located c. 3m above the lake surface.
Photo and illustration: Jan Magne Gjerde
Figure 84 The Suruktaakh-hkaya cliff in Siberia with rock art in the valley of the Markha River. With offerings on ledges, cracks and in crevisses representing 6000 years of continous tradition in offering at a rock art site
visualizing cynegetic acticities of the Stone Age? After Okladnikov (Okladnikov 1970:figure 20) 160
Figure 85 The present shoreline area, about the time of mean sea level, near Hjemmeluft in Alta, Northern
Norway that show the miniature landscape in the vegetation-free tidal zone. One can see rivers, lakes, valleys and mountains etc. Photo: Jan Magne Gjerde
Figure 86 The focus of the rock art changes and due to the growth of lichen one gets a different perception of the
rock art in relation to the rock surface. The visual impression disappears due to the lichen. Top photo before the
removal of lichen. Bottom photo after the removal of lichen. The "only" problem is the red paint that dominates
the visual impression and differs from the manner in which people in prehistory would have seen them (if they
were not also painted in prehistory). Both photos and illustration: Jan Magne Gjerde
Figure 87 Two elk figures at Bergbukten 4, Hjemmeluft, Alta, northern Norway. The top elk figure painted, while
the bottom is not painted. Observing people lokking at the rock art, they will not see the unpainted one before
they are paid attention to it. The red colour dominates the visual perception. Photo: Jan Magne Gjerde 168
Figure 88 The river in the rock at Peri Nos, Onega, northwestern Russia. The only figure in the miniature river
in the rock is a boat depicted in the direction of the Onega Lake marked with white arrow. The lower photo
shows the boat-figure. Photos and illustration: Jan Magne Gjerde
Figure 89 Fennoscandia with the five case studies marked. Background satellite image by www.bingmaps.com.
Illustration: Jan Magne Gjerde
Figure 90 An overview of Stone Age rock art of northern Fennoscandia with site names. Where imperative, site
names have been clustered like at the large concentrations at Alta, Nämforsen, Onega or Vyg. Other places, like
Nes, northern Norway, include four sites. At this scale, including all the sites in Fennoscandia, some clustering
was enforced. Some of the painted sites may belong to the Early Metal Age are included due to the insecure
dating. This is meant as an overview where the reader can relate to the different sites discussed in this thesis and
when reading other rock art works from Fennoscandia, to be able to relate them to what area the sites belong. A
total of 276 places with rock art is marked on the map. A larger version of this map is inserted as an inlay at the
back of this thesis. Illustration: Jan Magne Gjerde
Figure 91 The sites included in the study at Ofoten (see Figure 89). The paintings are marked in red, the
carvings are marked with blue and the polished carvings are marked in green. There are 13 sites with a total of
17 panels with rock art. At Nes, there are four sites; Nes Fort Øst and Nes Fort Vest in the southern part of the
peninsula and Fjellvika and Jo Sarsaklubben about 4km further north (see Figure 102). The landscape is
dominated by steep high mountains and a maze of fjords. The Frostisen glacier is situated south of the Forselv
site. Satelitte image from Google Earth. The scale is total 20km. The Illustration: Jan Magne Gjerde 181
Figure 92 Section of the large Leiknes 1 panel. The photo is taken from helicopter. The size of the figures makes
it easier to see them from a distance. The large whale in the middle of the photo is 7.63m long (Compare with
tracing in Figure 96). Photo: Jan Magne Gjerde
Figure 93 Night photo of a section of the left part of the Forselv site (Compare with tracing in Figure 127).
Central left one can see a grid figure/geometric pattern and to the right of it a reindeer. The largest grid pattern
in the upper left of the photo measures about 50cm in width. There are also several more grid patterns on this
panel and more animal figures to the right. Photo is compiled from two night photos. Photos: Jan Magne
<i>Gjerde.</i>
Figure 94 Examples of pecked carvings from middle and northern Norway and polished rock art from northern
Norway. A: Vågan (polished), tracing from RA-project, B: Bardal (pecked), tracing from Gjessing, 1936, C:
Leiknes (polished), tracing from Gjessing, 1932, D: Leiknes (polished), tracing from Hallström, 1938? Or
Gjessing 1932, E: Klubba (polished), tracing from Gjessing, 1932, F: Forselv (pecked), tracing from Gjessing,
1932, G: Sletjord (Herjangen) (pecked), tracing from Gjessing, 1932, H:Brennholtet (pecked), tracing from RA-
project, I: Stykket (pecked), tracing from Sognnes, 1981:26, figure 7 (figure 4), J: Leiknes (polished), tracing
from Gjessing, 1932. All figures related to same scale, 1m. Illustration: Jan Magne Gjerde
Figure 95 Polished rock art sites and settlement sites dated to be older than 9000BP mapped in relation to the
deglaciation of northern Fennoscandia. Background map show ice recession lines and major ice-marginal
formations in Fennoscandia based on data from Lindström et al. (2002) after Eronen (Eronen 2005:fig: 2.4).
Settlement ¹⁴ C data: Vega 9350±270, Saltstraumen 9580±90, Simavik 9200±200, Slettnes 9610±80, Sarnes
10280±80, Sujala 9265±65, Lagesiid'bakti 9940±101. Settlement data and dating after (Bergman et al. 2004;
Bjerck 2008; Blankholm 2004; Grydeland 2005; Hesjedal et al. 1996; Rankama & Kankaanpää 2008;
Thommesen 1996). Illustration: Jan Magne Gjerde

Figure 96 The Leiknes panel with elevation data. Compositions are sectioned and one see that the compositions
is lying within the 2m parameter discussed in chapter 4. One can also see that one of the compositions centred
round the large elk looking backwards at 47-48masl is repeated at c 45masl. Tracing after Hallström
(1938:plate 5-6). Illustration: Jan Magne Gjerde
Figure 97 The Jo Sarsaklubben site at Nes, Lødingen, northern Norway. The reindeer is c. 1.80m long and is
situated on the panel in the middle of the photo. The photo is taken from helicopter at 55 m elevation to see how
the rock art would appear from sea when it was made. With a shoreline at the animals feet (compare Figure
105). One can see that there are "available" surfaces close-by with no rock art. Photo: Jan Magne Gjerde 193
Figure 98 Night photo of the new grid figure that appeared during the excavations in 2007. The grid figure
measures about 30cm in length. Photo: Jan Magne Gjerde
Figure 99 The dating of the sites in the Ofoten region based on shoreline data representing the maximum dates
for the sites. The sites marked with * all are situated at the Nes peninsula. Thereby I have grouped them in this
diagram. The dates in this diagram is dating the lowest part of the lowest figure at the panel. The Calibration is
done by OxCal ver. 3.10 (2005). The data is given with 2 sigma
Figure 100 Chronological overview of the sites in the Ofoten area based on the data from Figure 99. Not all the
figures are included, but they show the main trend in the development of rock art in the Ofoten area. Tracings
after Gjessing, Hallström and Simonsen (Gjessing 1932; Hallström 1938; Simonsen 1958). All the figures are in
the same scale making it easier to compare the figures. Illustration: Jan Magne Gjerde
Figure 101 Reconstructed landscape at Valle to show the large impact on the available favourable land for
hunter gatherers. The present secluded Vallebukta (Valle Bay) becomes part of the fjord, and the "flatter" land
strip along the coast is replaced by steep cliffs and mountains with "few" favourable places. The Valle site is
marked with white dots right of the centre of the figure. The contemporaneous coastline at about 73masl is
marked with red. Background image from Google Earth. Contours at 100m. The highest mountain south of the
Valle site, the Breiskardtind raises 883masl. The mountain ranges in the area restricts movement, and the
coastal location would favour boats as communication in the area. Illustration: Jan Magne Gjerde
Figure 102 Reconstruction of the landscape at Nes by GIS. The shoreline in dashed red colour is situated at c.
50masl. Notice the ESA site (marked in green), located between the eastern hilltop Neshaugen and the western
hilltop Klokkatohaugen situated at c. 55masl on what was a small island just east of the rock art sites. The Nes
Fort Øst is situated at c. 50masl and the Nes Fort Vest site is situated at 55masl. Contour lines are 20m. The
mountain east of the Jo Sarsakluben site is the Lødingaksla of 569m. The Jo Sarsaklubben and the Fjellvika site
are facing the Kanstadfjord while the Tjeldsundet sound is east of the Nes Peninsula. Illustration:. Jan Magne
<i>Gjerde.</i>
Figure 103 Reconstruction of the landscape at Jo Sarsaklubben and Fjellvika by GIS. The red dashed lines are
representing the shorelines at 50masl and 55 masl. Especially at Jo Sarsaklubben one can see the favourable
place for settlement in the secluded bay where the present small pond is situated. There is also a sheltered area
suitable for settlement just south of the Fjellvika site. North of the Fjellvika site is also a favourable small bay,
suitable for settlement. Vegetation in this area makes it hard to find rock art if it was made near that bay too.
Contour lines at 20m, background map contour lines 5m. Illustration: Jan Magne Gjerde
Figure 104 Tentative reconstruction of the Jo Sarsaklubben area based on the reconstruction of the landscape in
Figure 103 and the view towards the site from helicopter at the elevation of the carvings. Illustration: Jan
Magne Gjerde
Figure 105 Tentative reconstruction of the Jo Sarsaklubben area based on the reconstruction of the landscape in
Figure 103 and the view towards the site from helicopter at approximately the same elevation of the carvings.
Illustration: Jan Magne Gjerde
Figure 106 Reconstruction GIS of the landscape at Nes Fort. Notice the ESA site marked with green dot, located
between the eastern hilltop Neshaugen and the western hilltop Klokkatohaugen situated at c. 55masl. The Nes
Fort Øst is situated at c. 50masl and the Nes Fort Vest site is situated at 55masl. One can see the favourable
· ·
places for settlement in the secluded bay where the present Nesvatnet is located following the bay southwest of
the two rock art sites. Also the favourable isthmus with two bays north and northwest of the two rock art sites
seems to be favourable places for settlement. Contour lines at 20m. Illustration: Jan Magne Gjerde 205
Figure 107 Reconstructed landscape at Valle. Notice the flat area where the Valle carvings are situated. The
present secluded Valle Bay becomes part of the fjord, and the "flatter" landstrip along the coast is replaced by
steep cliffs and mountains with "few" favourable places. The Valle site is marked with red dots and the coastline
at about 73masl is marked with red. The Moldforvika River is the one that runs past Valle 1, the southern site of
the two sites at Valle. Contours at 20m. The highest mountain south of the Valle site, the Breiskardtind raises
883masl. The mountain ranges in the area restricts movement, and the coastal location would favour boats as
communication in the area. Illustration: Jan Magne Gjerde
Figure 108 Photo and tracing of the Valle 1 site. Tracing after Gjessing (1932:plate XXVIII). The porpoise in
the left of the tracing can be seen beneath the three to the left in the photo. With a shore connection, the sea

would have filled in what is now the river. One can also see that no figures are made at the lower part of the
panel. Scale under the seal to the right in the tracing is 1m. Photo and illustration: Jan Magne Gjerde 208
Figure 109 Reconstructing the lost relations at Leiknes with a raised shoreline to 31masl, 43masl and 50masl.
The dashed red lines are at 31masl, 43masl and at 50masl. The Early Stone Age site is marked based on
Gjessings descriptions (Gjessing 1937). The small peninsula beneath the carvings that today is a landscape
characteristic would have been submerged at the time of the carvings. Contours are 20m. Illustration: Jan
<i>Magne Gjerde.</i>
Figure 110 The Leiknes area from the air. Photo taken from helicopter. One can clearly see the favourable bay
with a raised shoreline, compare with Figure 111. Photo: Jan Magne Gjerde
Figure 111 Rough reconstruction after data from Figure 109. The Leiknes 1 site is marked with a red dot. The
elevated shoreline at 50masl is drawn by free hand after the elevation data as can be seen in Figure 109. The
settlement would have been at the promontory left of the reconstructed bay. Photo and illustration: Jan Magne
<i>Gjerde.</i>
Figure 112 The Leiknes 1 panel as seen from the same elevation as the carvings from helicopter at about
45masl. From a distance of more than 100m one could see the figures even with poor light conditions (little
contrast due to sun directed at the panel). The area with figures are marked with red on the photo. The large
whale figure is in the middle of the photo (Compare with Figure 92). Tracing to the right after Hallström
(1938:plateV-VI). Photo and illustration: Jan Magne Gjerde
Figure 113 The Leiknes 2 site. Photo taken from helicopter at the "same" elevation as the carvings, at about
30masl. The two swans can be seen in the middle of the left photo at the point of the black arrow. An
enlargement of the swans is found in the right photo. Compare Figure 135 taken from the ground by the
carvings. The swan figures could be seen at c. 150m distance. When the carvings were made, they were most
likely situated in the upper shore-level. The Leiknes 1 marked by the black arrow at the top of the left photo. Photo and illustration: Jan Magne Gjerde
Figure 114 The Sagelva site. The panel with the two reindeer figures located in the middle of the photo are
marked with red. Most likely when the carvings were made, the water level would be just below the reindeer
figures. Compare with Figure 115 and Figure 116. Photo Gustaf Hallström (photo 88), 1908. Hallström
Research Archive, University of Umeå, Sweden. Illustration: Jan Magne Gjerde
Figure 115 Photo of the panel with polished carvings at Sagelva by Gustaf Hallström, 1908. Notice the steep
mountains in the background. Hallström Research Archive, University of Umeå, Sweden
Figure 116 Reconstruction of the panel at Sagelva with a raised water-level at the ledge beneath the carvings.
The difference between mean water level and high tide is c. 1m. That is that the carvings would have been made
in the upper tidal zone, the liminal zone visualized as if the reindeer are running along the water line. Original
photo from 1908 from Hallströms Research Archive, University of Umeå, Sweden. Illustration: Jan Magne
<i>Gjerde</i>
Figure~117~Reconstructing~the~lost~relations~at~Sagelva~with~a~raised~shoreline~to~48 masl.~The~dashed~red~line~is
situated at 48masl. Notice the narrow strait where the carvings are located and the flat areas on both sides of
the strait where the Sagelva carvings are situated. These "flat" areas would be suitable for settlements.
Contours at 20m interval. Illustration: Jan Magne Gjerde
Figure 118 The Sagelva site with the sea level reconstructed at 48masl marked with red line. The Sagelva site is
marked in white with red dot in the narrow sound between the Nervatnet lake and the Sagfjorden fjord (compare
with Figure 117). Notice the long fjord of about 9km where Nervatnet is today. The three crossing places for
reindeer with hunting pits are marked in white with blue dots. Background satellite image after Google Earth.
White contour lines at 100m interval. Notice how the steep terrain would force movement in the landscape.
Illustration: Jan Magne Gjerde
Figure 119 Photo of Sletjord 2. Notice the elk-tracks in the lower right of the photo (compare tracing in Figure
136) Photo from 1908 from Hallström's research Archive at University of Umeå (photo 68)
Figure 120 Photo of Sletjord 2 from 2008. The large greyish spot on the rock outcrop is from a caster mould of
the large elk figure (the middle of the photo in Figure 120). Photo: Jan Magne Gjerde
Figure 121 Reconstructed landscape at Sletjord with red dashed lines at 24masl, 26masl and 36masl to show
how the sites would have been located with a raised shoreline. The Herjangsholmen would be submerged when
the carvings were made, and the Sletjordhaugen hilltop would have been a protruding point with a secluded bay
west of the carvings. Contour lines at 20m. Illustration: Jan Magne Gjerde
Figure 122 Location photo of Sletjord 2. The elk figures can be seen slightly left of the middle of the photo on the
rock outcrop. Photo from 1908 from Hallström's research Archive at University of Umeå (photo 74) 221
Figure 123 Location photo of Sletjord 2. Photo from 2008. One can see the vegetation since Hallströms visit 100
years ago and I could not take the photo from the same angle further back due to the growth of trees. Photo: Jan
Magne Gjerde
magne Operation

Figure 124 Reconstructing the lost relations at Forselv with a raised shoreline to 32masl. The dashed red line is at 32masl. Background map 20m contour lines. In the background the map has 10m contour lines.Illustration:
Jan Magne Gjerde
Figure 125 Night photo of section of the Forselv site with a large reindeer to the left and halibut fishing to the
right (Compare tracing Figure 127). Photo: Jan Magne Gjerde
Figure 126 Reindeer figure at Forselv found in 2005. One can here see that the elaborate antlers were not
documented during the tracing (compare with figure in the right end in Figure 127). The stripes moving from the upper left to the lower right are striation marks. Both striation marks and erosion complicates the
documentation of the Forselv site. Frotage: Jan Magne Gjerde
Figure 127 Tracing of the Forselv site. Top tracing, Gjerde after fieldwork 2005. Bottom tracing after Gjessing
(1932:plate X). The new documentation more than doubled the amount of figures at Forselv. However, the use of night photography and frotage in 2007 on parts of the panel (see Figure 93 and Figure 125) revealed details that were not perceived during the tracing and a few new figures. Therefore a new documentation should be made at Forselv based on tracing, frotage and night photography. The top of the new figure found during excavation in 2007 (see Figure 98) was located between the legs of Gjessings figure 1. Illustration: Jan Magne Gjerde
Figure 128 Tentative situation with a reconstructed shoreline at Forselv. The figures are related to the
positioning at the rock outcrop. It seems like the elks and the reindeer are coming ashore at Forselv, perhaps after crossing the Skjomen fjord. They are all facing land. Photo is taken from a tree at the end of the site. Notice the steep edge at the right side of the panel, a cliff at most 5m high. Tracing, photo and illustration: Jan Magne Gjerde
Figure 129 The Forselv site. Notice the cliff at the right side of theis panel. This would have been a steep cliff
linking the panel to the shore location after the sea retreated from the panel where the carvings are situated.
Compare with Figure 128. Photo: Jan Magne Gjerde
Figure 130 Photo of the figures at the Vik 1 site. Photo by Povl Simonsen. The erosion makes it hard to detect
the complete figures. However, by looking carefully at the photo one can see that there are part of the carvings
that were not chalked by Simonsen. Part of the grid pattern to the left in the photo has not been documented.
However, the zig-zag line can be seen on the photo. Top.ark. Tromsø Museum
Figure 132 The large elk depiction at Brennholtet. The elk figure is 2,15m tall and 1,85m long. The carving is
pecked into the rock with the pecking technique. Photo: Jan Magne Gjerde
Figure 133 Reconstructing the lost relations at Brennholtet in Narvik with a raised shoreline with a dashed red
line at 27masl. 20m contour lines. Illustration: Jan Magne Gjerde
Figure 134 Photo of the reindeer at JoSarsaklubben. The reindeer is c. 1.80m long. Standing in front of the
panel, the only thing one observes is the rock art and the rock surface due to the high inclination of the rock.
Compare with Figure 97 to see the wider context of the rock art site. Notice the only crack at the rock outcrop
that represents the mouth of the reindeer. Photo: Jan Magne Gjerde233
Figure 135 Photo of the swan figures at Leiknes 2. Notice the quartz line crossing the figures on the lower part
of the swan. Photo: Jan Magne Gjerde
are located at the waters edge. The two elk-tracks are most likely referring to the two elks further up the panel.
Notice that the elevation difference between the lowest and the highest figures are less than 2m. Background photo after Hallström archive, Umeå. Tracing after Gjessing (Gjessing 1932:plate 17). Illustration Jan Magne
Gjerde
Figure 137 The Brennholtet site with the large elk figure. The elk is depicted as if it is moving along the cliff coming onto land, perhaps after crossing the Herjangsfjord. For a tracing of the figure, see Figure 100. Photo:
Jan Magne Gjerde
Figure 138 The Sagelva site represented with three shorelines. The red dotted line is at 48masl, the green dotted line is at 45masl while the black dotted line is at 40masl. This is to illustrate the large changes at te Sagelva site that transformed the fjord to a lake and the tidal stream became powerful rapids. Illustration: Jan Magne Gjerde
Figure 139 The Sagelva site in 1908 before the hydro system was altered. The panel with the carvings are facing
the river in the lower half of the photo. The rapids are seen in the middle of the photo. In the background, one
can see the Sagfjorden fjord. Photo after Hallström archive, Umeå
Figure 140 The vegetation picture of the Forselv area. The location of the site is marked in red in the centre of the photo. To the right in the photo, the large Forselva river is dominant and in the upper right of the photo, the
mountains more than 1700masl where the Frostisen glacier is today. Photo and illustration: Jan Magne Gjerde.

Figure 141 Map of the rock art sites in the Altafjord region. The carvings are marked in blue while the paintings
are marked in red. The majority of the carvings are situated at the head of the Altafjord (Altafjorden).
Hjemmeluft is the largest concentration. For an overview of the Hjemmeluft sites, see Figure 169. The rock art
in the Porsangerfjorden fjord (3 painted sites and a carving) and the Kvænangen area with one carving is also
marked since they are close to the Altafjord area. Background satellite photo after www.bing.com. Illustration:
Jan Magne Gjerde
Figure 142 The small whales or salmon diving into a water pool or a maelstrom or rings in the water naturally
formed as part of the background bedrock. Previously presented by Tansem and Johansen (2008:80). Photo Jan
Magne Gjerde
Figure 143 Some of the figures at the Bergbukten I, Hjemmeluft, Alta. In the middle of the photo is the bear-
hunting scene. To the middle right one see the natural feature (oval in the rock) interpreted as a bear den. The
bear-tracks are recently found and thereby not visible (compare Figure 175). Notice how the black discolouring
shows where the miniature river runs in the valley at the lower part of the photo. Photo: Jan Magne Gjerde. 244
Figure 144 Some of the figures at the Ytre Kåfjord site, Alta, northern Norway. In the middle of the photo a
group of people is holding hands standing in a circle. In the middle of this circle could be a human figure or a
bear. Photo: Jan Magne Gjerde
Figure 145 Photo of the whale hunting scene from Ole Pedersen 1, Hjemmeluft, Alta. The figures are filled in
with white chalk during documentation. Photo: Karin Tansem
Figure 146 The halibut fishing scene at Bergbukten 4. This seems like a representation of the three worlds, the
upper, middle and the lower world where the reindeer and the "necklace" is in the upper world. The people in
the boat fishing in the middle world and the halibut and the elk situated in the lower world. It also brings the
real aspect in as the halibut fishing is performed at deep water. Looking at all the halibut fishing scenes, this is
by far the longest fishing line representing deep-sea fishing. It is also the one which is depicted furthest towards
the fjord in relation to the interpretation of Bergbukten 4 in Figure 181. This also shows the elk depicted with the
halibut in the Lower World. Photo: Jan Magne Gjerde245
Figure 147 Helskog's chronology for the carvings in Alta as presented in Helskog (2000:figure 2) 247
Figure 148 The boulder with carvings at Slettnes 2, northern Norway. One can clearly see that the figures on the
lower parts of the boulder are more eroded than the higher elevated ones. The leg of the big elk and the bear
paw is clearly more eroded than the upper parts of the elk. Photo: Jan Magne Gjerde248
Figure 149 The different erosion of the figures at Ole Pedersen 1, Hjemmeluft, Alta where the reindeer clearly is
carved into the surface after the human figure. The erosion of the human figure shows that it must have been
water eroded after it was made for some time before the reindeer was carved into the surface. However, the
striation marks can be seen clearly as opposed to some of the higher elevated ones (see Figure 150). Photo
Karin Tansem © VAM
Figure 150 The polishing of the glacier marks, but not the figures. From Bergbukten 4, Hjemmeluft, Alta. One
can see the furrows (remains of striation marks) going virtually horizontal in the photo. The most prevailing is
the one that is seen as a line where the reindeer's antlers are. Then virtually in the middle by the big bears head
is and beneath the bears in the lower part of the photo. The rock art in this photo shows most likely a reindeer
and a bear with two cubs. The bear tracks is coming out of the large crevasse in the left of the photo as if it is
appearing from the lower world. Photo: Jan Magne Gjerde
Figure 151 Dating suggestion for the Alta carvings. Shoreline data after Sealev 32 (Møller & Holmeslet 1998),
where isobase 23, 25 and 27 are marked. The current isobase 27 and the suggested isobase 25 are applied in the
dating discussion for the Alta carvings. Tapes maximum after Tanner and Martinussen marked with blue
(Marthinussen 1945; Marthinussen 1960; Tanner 1906:114, plate 4). ¹⁴ C data after Bell (2004; 2005; 2006).
from the Tollevika area, number 2-9 and Helskog (personal communication 2008), number 1 from Ole Pedersen
area in Hjemmeluft and 10 from Apana Gård area in Hjemmeluft, are marked with black lines including the
deviation. ¹⁴ C data: 1: 5107±36BP, 2: 4455±90, 3: 4463±114, 4: 4120±44, 5: 3747±92, 6: 3638±55, 7:
3546±40, 8: 3744±82, 9: 3700±40, 10: 2138±32. The ¹⁴ C samples from the Ole Pedersen area at 26.5masl is
part of the same settlement excavated at 24masl, hence the elevation difference is marked for ¹⁴ C number 1 in
the illustration. The Gressbakken house had four ¹⁴ C dates: number 5 and 6 is from the fireplace, number 7 is
from the house floor and number 9 is from the midden. Elevation of the carvings in Alta marked in light red
based on Helskogs data (Helskog 1983). Illustration: Jan Magne Gjerde
data from the large Melkøya and Slettnes excavations in relation to the geological data and the elevation of the
· · · · · · · · · · · · · · · · · · ·
carvings in Alta. The different phases are based on Helskogs division according to elevation (Helskog 1983). 252 Figure 153 Summary table of the dating suggestion for the Alta material. Since the limit of my PhD is the Stone
Age, the panels from phase 4 and phase 5 in Hjemmeluft will not be further discussed. The highest carvings are
situated at 26masl, I apply 25masl when dating the oldest. The Storsteinen would have been connected to the
shoreline between 17 and 22masl. However, the carvings are made between 21 and 22 on the falt surface at the
top of the large stone

Figure 154 Section of the Ytre Kåfjord panel where superimposition is presented. One can also see how a
traditional tracing appears compared to the steps interpreted from on site studies of the superimposition. The top
left photo shows the rock surface with no markings. The photo is taken early morning to get the right angle of the sunlight to better see the figures. By comparing the tracing from the scanning (see Figure 155), it looks like the
long line is a fishing line and the figure depicted as a "circle" looks like a boat. Photo and illustration: Jan
Magne Gjerde
Figure 155 Documentation of the Ytre Kåfjord site with elevation marked roughly. One can see how the scenes
and compositions roughly fall within 2m in elevation even though they horizontally could run for more than 8m.
The scale in the upper left of the illustration measures 1m in total. Illustration Karin Tansem © VAM 255
Figure 156 The relations between the sites in the Alta-fjord. The landscape is tilted in Google Earth. Thereby
distance relations are distorted. The sites from the Porsanger-fjord and Kvænangen are also shown on the
satellite photo. One can here see how the tributary fjords are channelled into Alta and the Alta-fjord. For the
distance between the sites, compare with Figure 141. Illustration: Jan Magne Gjerde
Figure 157 The relations between the sites in the Alta-fjord. The landscape is tilted in Google Earth. Thereby
distance relations are distorted. The sites from the Porsanger-fjord and Kvænangen are also shown on the
satellite photo. One can here see how the tributary fjords are channelled into Alta and the Alta-fjord. Looking at
the macrolandscape from the inland, one can also see that the communication lines are funnelled into the Alta
fjord. For the distance between the sites, compare with Figure 141. Illustration: Jan Magne Gjerde 257
Figure 158 Map of the Slettnes area. The four boulders with rock art is located at the southern side of the
Slettnes Peninsula marked with red dots and site numbers. The Slettnes 2 and Slettnes 3 site is only a couple of
metres from each other, hence their location becomes virtually the same at this scale (see Figure 159). The area
where the carvings were located is defined as Selttnes IVB, while the area on the terrace above the boulders are
defined as Slettnes IVA. The data suggests that the carvings are associated with the settlements at Slettnes IVA
(Hesjedal et al. 1996:65). The red line marks the 12masl line. Contour lines at 5m interval. Illustration: Jan
Magne Gjerde
Figure 159 The site Slettnes 2 (white arrow to the left) and Slettnes 3 (white arrow to the right) today. Photo:
Jan Magne Gjerde
Figure 160 The situation at the boulders near Tromsø when the boulders would have been in the upper tidal
area. The photo is taken at mean water level. The example is not of boulders with rock art. However, the
boulders is located in the shoreline like the boulders at Slettnes most likely would have been situated in the
upper tidal zone. Photo: Jan Magne Gjerde
is the situation at mean water level and the right photo is at high tide. The example is not of houlders with rock
is the situation at mean water level and the right photo is at high tide. The example is not of boulders with rock
art. However, the boulders are located in the shoreline, as the boulders at Slettnes most likely would have been
art. However, the boulders are located in the shoreline, as the boulders at Slettnes most likely would have been situated in the upper tidal zone. Photo and illustration: Jan Magne Gjerde
art. However, the boulders are located in the shoreline, as the boulders at Slettnes most likely would have been situated in the upper tidal zone. Photo and illustration: Jan Magne Gjerde
art. However, the boulders are located in the shoreline, as the boulders at Slettnes most likely would have been situated in the upper tidal zone. Photo and illustration: Jan Magne Gjerde
art. However, the boulders are located in the shoreline, as the boulders at Slettnes most likely would have been situated in the upper tidal zone. Photo and illustration: Jan Magne Gjerde
art. However, the boulders are located in the shoreline, as the boulders at Slettnes most likely would have been situated in the upper tidal zone. Photo and illustration: Jan Magne Gjerde
art. However, the boulders are located in the shoreline, as the boulders at Slettnes most likely would have been situated in the upper tidal zone. Photo and illustration: Jan Magne Gjerde
art. However, the boulders are located in the shoreline, as the boulders at Slettnes most likely would have been situated in the upper tidal zone. Photo and illustration: Jan Magne Gjerde
art. However, the boulders are located in the shoreline, as the boulders at Slettnes most likely would have been situated in the upper tidal zone. Photo and illustration: Jan Magne Gjerde
art. However, the boulders are located in the shoreline, as the boulders at Slettnes most likely would have been situated in the upper tidal zone. Photo and illustration: Jan Magne Gjerde
art. However, the boulders are located in the shoreline, as the boulders at Slettnes most likely would have been situated in the upper tidal zone. Photo and illustration: Jan Magne Gjerde
art. However, the boulders are located in the shoreline, as the boulders at Slettnes most likely would have been situated in the upper tidal zone. Photo and illustration: Jan Magne Gjerde
art. However, the boulders are located in the shoreline, as the boulders at Slettnes most likely would have been situated in the upper tidal zone. Photo and illustration: Jan Magne Gjerde
art. However, the boulders are located in the shoreline, as the boulders at Slettnes most likely would have been situated in the upper tidal zone. Photo and illustration: Jan Magne Gjerde
art. However, the boulders are located in the shoreline, as the boulders at Slettnes most likely would have been situated in the upper tidal zone. Photo and illustration: Jan Magne Gjerde
art. However, the boulders are located in the shoreline, as the boulders at Slettnes most likely would have been situated in the upper tidal zone. Photo and illustration: Jan Magne Gjerde
art. However, the boulders are located in the shoreline, as the boulders at Slettnes most likely would have been situated in the upper tidal zone. Photo and illustration: Jan Magne Gjerde
art. However, the boulders are located in the shoreline, as the boulders at Slettnes most likely would have been situated in the upper tidal zone. Photo and illustration: Jan Magne Gjerde
art. However, the boulders are located in the shoreline, as the boulders at Slettnes most likely would have been situated in the upper tidal zone. Photo and illustration: Jan Magne Gjerde
art. However, the boulders are located in the shoreline, as the boulders at Slettnes most likely would have been situated in the upper tidal zone. Photo and illustration: Jan Magne Gjerde
art. However, the boulders are located in the shoreline, as the boulders at Slettnes most likely would have been situated in the upper tidal zone. Photo and illustration: Jan Magne Gjerde
art. However, the boulders are located in the shoreline, as the boulders at Slettnes most likely would have been situated in the upper tidal zone. Photo and illustration: Jan Magne Gjerde
art. However, the boulders are located in the shoreline, as the boulders at Slettnes most likely would have been situated in the upper tidal zone. Photo and illustration: Jan Magne Gjerde
art. However, the boulders are located in the shoreline, as the boulders at Slettnes most likely would have been situated in the upper tidal zone. Photo and illustration: Jan Magne Gjerde
art. However, the boulders are located in the shoreline, as the boulders at Slettnes most likely would have been situated in the upper tidal zone. Photo and illustration: Jan Magne Gjerde

is located today. The "Komsa Peninsula" is still situated between the Kåfjord fjord and the "Alta River fjord".
Illustration: Jan Magne Gjerde
Figure 168 Top photo, compilation of 7 photos from the Komsa mountain. Bottom photo: reconstructed sea-level
based on the reconstructed sea-level in Figure 166 compared to the compiled photo. Bottom photo: Tentative
reconstruction of the landscape where the sea is placed like it was at the initial carving phase at 25masl, at
about 5200BC. One can then see the Alta River fjord to the left, leaving the Komsa Peninsula between the Alta
River-fjord and the head of the Alta-fjord. The two first places where carvings were made in Alta are at
Hjemmeluft and at Ytre Kåfjord. At the carvings at Ytre Kåfjord, the fjord today is named Kåfjord as a small
tributary to the Alta fjord. Notice the Auskarnes promontory that then was a small island west of the Ytre
Kåfjord site. (see Figure 141 and Figure 166).
Figure 169 Map of the rock art sites in the Hjemmeluft area. The sites are marked in red. The black contour line
is at 50masl interval. The red lines are at 25masl 14masl and 8masl. The lowest carvings at the highest panels
are located at 25masl, while the carvings dated to about 2000BC is situated at c. 14masl, while the lowest
carvings are located at 8masl (confer with Figure 152). This is to illustrate the landscape at the time of the first
carvings and how the land uplift gradually changed the landscape in the Hjemmeluft area. Adding to the rock art
sites there are numerous settlements in the area. The large building complex in the lower middle of the
illustration with connected car parks is Alta Museum. Illustration: Jan Magne Gjerde
Figure 170 Interpretation of the function of battue structures at Aasivissuit, a caribou-hunting site in West
Greenland. After Grønnow et.al. (Grønnow et al. 1983;fig. 45)
Figure 171 Bergbukten 1. The largest panel at Bergbukten. The tracing above the photo covers about 10m of the
large outcrop that is about 20m long, covered in rock art. The size makes the panel difficult to present and the
sheer size of the outcrop makes one walk along the panel to see the rock art. Tracing after Helskog (1999:fig. 5).
The photo illustration in the lower part is a compilation of 12 photos. The "whitish rock" in the right end of the
photo is the Bergbukten 4 site. Photo and illustration: Jan Magne Gjerde271
Figure 172 Bergbukten 1. Here one can see how the valleys, rivers, lakes and hills are interacting with the rock
art. Illustration compilated from 3 photos, warped in Photoshop. Photo: Jan Magne Gjerde
Figure 173 Section of the large Bergbukten 1 composition. One can here see how the valleys, rivers and lakes
appear in the microlandscape of he panel. The figures are carefully placed in relation to the micro landscape. It
is not unlikely that the upper tide would fill the lower area where the water pool can be seen today. Photo: Jan
Magne Gjerde
Figure 174 The river with the elk standing by the river. The river would have entered the sea virtually where the
vegetation is today. Here one can see a small depiction of an elk in the direction as if it is walking up the valley
next to the river. Notice the elk track in the lower left part of the section. This can be interpreted as a referring to
a crossing place or the place where the elk come ashore after crossing the fjord or a river. It is located in the
lower part, in the "shorezone" related to the elks on the panel. Photo: Jan Magne Gjerde273
Figure 175 The natural bear-den at Alta. One can see that the bear tracks (chalked white) are coming out of the
den towards the previously discovered bear. A few other figures also appeared Photo: Karin Tansem © VAM.
Figure 176 The tidal zone in Alta and its microtopography with its valleys, lakes, rivers etc. Photo: Jan Magne
Gjerde
Figure 177 Section of the Bergbukten 1 site, Hjemmeluft, Alta. The natural features and the micro landscape
related to the tracing of Bergbukten 1. Compare schematic representation to Figure 38 and Figure 175. The
grey areas refer to Collignon's (Collignon 2006b) Inuit perception of landscape (see Figure 67). Background
tracing after Helskog (1999:fig 5)
traced from the scanning by Karin Tansem, VAM. Top left is the small reindeer corral. To the right is the large
reindeer corral. The distance between the entrances of the two reindeer corrals is c. 6.4m. The bear tracks run
more than 8m on the panel and the large reindeer corral is c. 3m in diameter. The boulder is situated to the left
in the middle. Bottom left of the boulder from a crack can be seen the bear tracks ending in the bear-den, then
continuing to the right into the large reindeer corral. The amount of figures and the size of the composition at
Ytre Kåfjord is the most impressive in northern Fennoscandia
Figure 179 Photo of the area with the boulder and the small reindeer corral at Ytre Kåfjord. The figures of the
reindeer corral is fixed on the photo. This means that the size ratio is distorted. The closest figures are larger
compared to the ones in the background in relation to real size (Compare with tracing in Figure 178. One of the
bear dens at Ytre Kåfjord can be seen in the photo above the boulder. Photo and illustration: Jan Magne Gjerde.
277
Figure 180 Photo of a section of the Ytre Kåfjord site, centred round the large boulder. The small reindeer
corral is situated left of the boulder, the bear den and bear tracks above the boulder and the large reindeer
corral is located in the right of the photo (compare with Figure 178). Photo: Jan Magne Gjerde

Figure 181 View towards the Alta fjord with the Bergbukten 4 panel in Hjemmeluft, Alta in the foreground. In the middle of the photo one can see a line that divides the rock, interpreted as a miniature river. The figures can be seen and the relation to the sea with a raised shoreline is obvious even with the changed landscape of today.
Photo: Jan Magne Gjerde
Figure 182 "Reindeer corral" at Bergbukten 4 to the left, the microtopography aiding the interpretation of the
congregation of figures as representing a reindeer corral. At the left half of the photo one can see the large
cracks interpreted as rivers, real or cosmological. Compilation of 6 photos. Photos and illustration: Jan Magne
Gjerde
Figure 183 Bergbukten 4, Hjemmeluft Alta. Landscape features interpreted on the basis of the macro and the
micro landscape and the figures/scenes in relation to Innanuit perception of territory. Background tracing after
Helskog (2004a:fig 13.4). Illustration: Jan Magne Gjerde
Figure 184 The division of the Bergbukten 4 panel into an Upper World, a Middle World and a Lower World.
Background tracing after Helskog (2004a:fig 13.4). Illustration: Jan Magne Gjerde
Figure 185 Photo of section of the panel Bergbukten 4 with the elk-track that has not previously been
documented. The elk-track is situated virtually where the elk would come ashore after crossing. When comparing
this scene with the interpretation of the micro landscape and the figures, one can see that this could represent
such a crossing place for animals. Notice also that the eroded areas makes part of the figures missing (see
especially the stem of the boat in the right of the photo). This is also problematic when figures are applied e.g. in
stylistic studies based on tracings and not studies in situ. The main difference on this panel from the tracing is
the animal figure above the reindeer in front of the boat figure. The bear tracks ending up in the two cubs
located in the middle of the photo and the large elk-track (inside the black circle) interpreted as a place where
animals come ashore (a crossing place). Compare with Figure 188. Photo: Jan Magne Gjerde
Figure 186 Photo of section of the panel Bergbukten 4 before removal of lichen in 2003. Compare with Figure
185. One can not see the elk-track figure and the lichen covered details in the rock art figures. Photo: Jan
Magne Gjerde
Figure 187 Section of the Bergbukten 4 panel. Compare with Figure 188. One can see that when the lichen was
removed, more figures appeared and some parts that are missing due to flaking / erosion of the rock surface. At
the lower left is a human (maybe a shaman hunter) with an elk-head stick connected to the elk. The elk appear to
be stuck in a hunting pit / trap with its back leg. The figure to the right of this hunting scene might be part of the
composition representing a hunting pit / trap from another perspective, seen from above. Photo: Jan Magne
<i>Gjerde.</i>
Figure 188 Section of the Bergbukten 4 panel where new figures are added and the interpretation of the relation
between the micro landscape and the figures appear to represent the fjord and a place in the landscape where
animals come ashore. This is represented by the elk-track. Compare tracing and drawing with Figure 183 to
Figure 187. Photo and illustration: Jan Magne Gjerde
Figure 189 The four sites included in the study at Vyg. Satellite image from Google Earth. One can see how the
dams connected to the Hydro Power construction and the White Sea Canal has changed the macrotopography at
Vyg, leaving the sites on "dry land". The distance between Zalavruga and Besovy Sledki is about 1.4km.
Illustration: Jan Magne Gjerde
Figure 190 The impressive whale hunting scene at New Zalavruga 4 with 12 people in the boat. The whale
hunter has just thrown the harpoon and the "rope" is not tightened yet. Beneath it we see a bear hunting scene.
Photo: Jan Magne Gjerde
Figure 191 Two Beluga whale hunting scenes from boat at New Zalavruga 2. In the upper right of the photo a
ski track with connected ski pole marks are depicted. Photo: Jan Magne Gjerde289
Figure 192 The hunting of birds at New Zalavruga 6 from boat. Most likely they are hunting geese while they are
molting. The hunter is depicted with a bow and one can see the arrows from the hunters in the birds depicted.
Photo: Jan Magne Gjerde
Figure 193 Besovy Sledki South. Notice the congregation of Beluga whales. Tracing after Ravdonikas
(1938:plate 32)
Figure 194 Schematic map of the relation between the different rock art sites at Vyg including elevation
information. Images from the 3 main areas are presented in the same scale. The large elk figure in the middle of
the Old Zalavruga tracing measures 2.8m. The distance between Besovy Sledki and Zalavruga is about 1.4km.
Map reworked from Kosmenko et.al. (1996) Sawwatejew in Archaeologija Karelii 1996. Illustration: Jan Magne
<i>Gjerde.</i>
Figure 195 Jerpin Pudas 3 with the 2 phases of rock art witnessed by the erosion of the rock art. 3 of the figures
are clearly eroded (marked with red) to such an extent that one clearly can separate them from the others.
Tracing after Savvateev (1983:122). Illustration and photo by Jan Magne Gjerde
Figure 196 The local topography at Zalavruga shown with photo. Compare with Figure 197. The photo is taken
from the area between panel nr. XXII and XXVI towards panel nr. IV (see Figure 198). This shows that the
central area of New Zalayruga is virtually flat. Photo: Jan Magne Gierde

Figure 197 The local topography at Zalavruga shown with photo. Compare with Figure 196. The photo is taken
from the area between panel nr. XXII and XXVI (see Figure 198). The Old Zalavruga panel is in the distance
behind and to the left of the foremost person slightly left of the middle of the photo. Here you can also see how
the central part of Zalavruga is flat. Photo: Jan Magne Gjerde
Figure 198 The topography at Zalavruga based on Savvateev's maps show that the whole area would be a small
promontory, not a place near the river and that this can be witnessed in the change of the rock art. Map after
(Kosmenko et al. 1996:139, plate 29; Savvateev 1970:73, plate 16). In the 1970' publication, the 14.5masl
contour line is given as 14.9. This is later corrected. There are also two panels nr. 16. This is corrected to panel
nr. 16, and panel nr. 17. The easiest way to see the point with the raised sea-level at Zalavruga ending in the Old Zalavruga area is to follow the 15m contour line
Figure 199 Relation between Old and New Zalavruga. Here you can see the horizontal strategraphy of the
northernmost panels at Zalavruga. One can also see that there is a clear difference in elevation and that this
western part is situated lower than the flat area of Zalavruga shown in Figure 196 and Figure 197. Photo and
illustration: Jan Magne Gjerde297
Figure 200 Presentation of the different geological and archaeological dating that have implications for the
dating of the Vyg area rock art. The dark red lines are ¹⁴ C dates from the Vyg area after Savvateev (1970; 1977)
and and Savveteev et.al. (1978). The blue lines are geological data after Deviatova (1976). The green areas are
representing the transgressions documented by Kaplin and Selivanov (2004). The bright red horizontal line
between 14.5masl and 19.5masl is representing the elevation of the carvings at Vyg. Illustration: Jan Magne
Gjerde
Figure 201 Whale hunting scenes at Vyg. Many of the scenes are fragmented and are not included in the
illustration. This illustration includes 31 of the whale hunting scenes at Vyg. The figures are placed in
accordance to their elevation. Elevation data to the right and suggested dating to the right. At the top, above
19.5masl are whale hunting scenes from Besovy Sledki and Jerpin Pudas 3. The rest of the hunting scenes are
from New Zalavruga. One can clearly see how the whale hunting gradually became a highly advanced hunting
strategy where up to 50 people and 6 boats cooperated in the whale hunt. Tracings after (Ravdonikas 1938) and
(Savvateev 1970). All the tracings are made into the same scale. The scale in the lower right of the illustration is
10cm. Illustration: Jan Magne Gjerde
Figure 202 The relations between the sites "related" to Vyg. The landscape is tilted in Google Earth. Thereby
distance relations are distorted. Vyg according to leading communication lines from the Onega to the White Sea.
The distance as the crow flies from the Onega carvings to the Vyg carvings are c. 300km as the crow flies and
the distance to the Kanozero carvings from Vyg are c. 280km. Note that the Finnish rock paintings are not
presented in this illustration. The distance from Onega to the closest Finnish rock painting, at Louhisaari
situated northwest of Lake Ladoga (see Figure 90), is about 300km. Illustration: Jan Magne Gjerde 301
Figure 203 Reconstruction of the physical landscape at Vyg when the first carvings were made at c. 19.5masl.
The present day map in the background shows how large the changes have been. The islands with the rock art is
located to the left under the V in Vyg in the river estuary area. Map compiled from Russian maps from
www.poehali.org with 5m elevation resolution. These maps were not available before end of 2008. Illustration:
Jan Magne Gjerde
Figure 204 Reconstruction of the physical landscape at Vyg when the first carvings were made at c. 19.5masl
and when the last ones were made at c. 14.5masl. The red line marks the 20m elevation curve and the blue line
marks the 15m elevation curve. The present day map in the background. Map compiled from detailed Russian
maps from www.poehali.org with 5m elevation resolution. These maps were not available before end of 2008. When looking at the difference between the 15m curve and the 20m curve one can see how the area between the
Jerpin Pudas island and the Besovy Sledki area looses its direct connection to the White Sea. Illustration: Jan
Magne Gjerde
rapids is the one in the middle of Figure 206. The carvings are found on the rock slope marked with red colour
in the middle of the panel. Location information from Ravdonikas (Ravdonikas 1936b:plate 62). The water from
the river flows over the carvings at times. The village Vyg Ostrov can be seen in the background. The photo is
also published by Ravdonikas (1936b:plate 62). Illustration: Jan Magne Gjerde
Figure 206 Photo of the Shoirukshin rapids from the western shore of the River Vyg by Ravdonikas from the
1930's Ravdonikas (1936b:plate 36). Notice the small ponds (miniature lakes) with water and miniature rivers
in the lower left of the photo. Photo after (Stolyar 2000:fig 154)
Figure 207 Photo of the Shoirukshin rapids towards the western shore of the River Vyg by Ravdonikas from the
1930's. Photo from Stolyar's private collections. Compare the photo to the map of the Besovy Sledki / Jerpin
Pudas area (Figure 209)
Figure 208 Photo of the Besovy Sledki / Jerpin Pudas bay today from the roof of the building covering Besovy
Sledki North. The Jerpin Pudas 3 site is marked with red colour in the middle of the photo. The area is
unrecognisable from the time when Ravdonikas visited the site. However, one can see flat landscape in the

horizon and the shallow bay that would have been between the Besovy Sledki area and the Jerpin Pudas area.
Compare with map (Figure 209). Photo: Jan Magne Gjerde
Figure 209 Beluga Landscapes at Vyg. The Besovy Sledki/Jerpin Pudas area. Base map modified from
Ravdonikas 1938:14, plate 4 with added information. The different sections in tracing nr. 1 (Jerpin Pudas 1)
have been put together in Photoshop (Ravdonikas 1938:plate 20). Tracing nr. 2 (Jerpin Pudas 2) is made from
photo with scale in Photoshop. Tracing nr. 3 (Jerpin Pudas 3) is from Savvateyev 1977a:72 figure 15. Tracing
nr. 4 (Besovy Sledki North) is a section of the panel from Ravdonikas 1938:plate 22. Tracing nr. 5 (Besovy
Sledki South) is a section from Ravdonikas 1938:plate 32. All the tracings are made into the same scale to make
it easier to compare the different sites and figures. The scale under each tracing is a total of 40 cm. Illustration:
Jan Magne Gjerde310
Figure 210 Photo of the last rapids of Vyg in Belomorsk where the river Vyg enters the White Sea today. Notice
the extremely flat landscape where the river becomes a major geographical reference. Photo: Jan Magne
<i>Gjerde.</i> 311
Figure 211 Photo of the Vyg River estuary where it enters the White Sea today. Notice the extremely flat
landscape where the river is the geographical reference. The houses on the island in the middle of the photo
where the settlement is located at the waters edge, like it was also in the Stone Age at the River Vyg. Photo: Jan
Magne Gjerde.
Figure 212 The Beluga Landscape in the McKenzie River Delta. After McGhee (McGhee 1974:21, map 3) 313
Figure 213 The area of New Zalavruga. Top image: general view towards the North from the southern part of
New Zalavruga. The New Zalavruga 4 panel is marked inside the black circle. Bottom left and right, photo of
New Zalavruga 4 with water in front of the panel. Photo and illustration: Jan Magne Gjerde
Figure 214 Tracing of New Zalavruga 4 from Savvateev 1970:plate 35. Tracing is modified by marking the area
with maritime motifs and figures with blue. Illustration: Jan Magne Gjerde
Figure 215 Elk hunt during winter. Three hunters are skiing when hunting elks. The skiing scene depicts the
movement of the skiers where the ski tracks give reference to the topography. New Zalavruga 4. Photo: Jan
Magne Gjerde
Figure 216 Tracing and photo of New Zalavruga 8. Some of the figures in the tracing can be seen in the photo.
In the photo, the whale is situated slightly above the middle. One can here see the "miniature" river running
over the whale hunting scene as a geographic reference to where the hunt occurred in the lower parts of the
river or in the river estuary. Tracing after (Savvateev 1970:fig. 48). Photo and illustration: Jan Magne Gjerde.
Figure 217 The "river" at Vyg. Tracing of New Zalavruga 15. Tracings from Savvateyev 1970:plate 70 and
Raydonikas 1938:plate 19. The tracings from Savvateev and Raydonikas are reworked and joined together. The
left part of the "river" is Ravdonikas documentation. One can here clearly see that Ravdonikas and Savvateev
documented the carvings with different techniques. Above photo compilation of the same composition where the
carvings have been marked with white chalk to make them visible on photo. Photo and illustration: Jan Magne
Gjerde
Figure 218 Human representations with elk-head sticks at New Zalavruga 15, Vyg. Tracing after Savveteev
(1970:62)
Figure 219 Location photo of the Kanozero sites from helicopter. The clearing to the left of the middle of the
photo is Kanozero village. Note the general flat landscape in the area. Photo and illustration: Jan Magne
Gjerde
Figure 220 Map of the sites at Kanozero. Map is compiled from 4 maps from www.poehali.org. Scale: the
squares are 1km in size. The lines in the map is also showing the compass points. The Kamenniy island is
located above the e in the Kamenniy place name and the Odinnakaya is located at the shore below the capitol O
in the placename. Illustration: Jan Magne Gjerde
Figure 221 Rock art at Kanozero. Section of the Kamenniy 7 panel. There are figures on this side of the outcrop,
and on the top stretching to the back of the outcrop. A total of 430 figures are documented at the Kamenniy 7
panel. Compare with tracing in Figure 225. The dark line at the lower part of the site is the shadow of a tree.
Photo: Jan Magne Gjerde
Figure 222 Section of one of the whale hunting scenes at Kamenniy 7. The illustration is made up of 3 frotage
sheets. The lenghth of each sheet is about 1m. The total lenght of this scene is about 3m. Frotage and
illustration: Jan Magne Gjerde
Figure 223 The large whale figure at Kamenniy 7. Lines from the whale shows that this is a large Beluga whale
hunting scene. Compare with the tracing in Figure 225. Photo: Jan Magne Gjerde
Figure 224 Central part of the Eloviy 1 site. Right of the large cracks in the middle of the photo one can see
several human representations and elk-head boats. There are also whale figures and reindeer at the site. To the
left of the cracks are reindeer, whale figures, elk-head boats and a cross-shaped figure. Photo: Jan Magne
Gierde 325

Figure 225 Tracing of the Kamenniy 7 site. The number of figures (about 430) and the amount of
superimposition makes it virtually impossible to number the individual figures when presenting the site at this
scale. Therefore to make it easier to follow the references to Kamenniy 7, I have divided the site into 3 areas,
Area 1-3 (see middle left in the illustration). Tracing and illustration: Jan Magne Gjerde
Figure 226 Superimposition at Kamenniy 7 visualized by tracing and frotage (rubbing). The tracing is fitted onto
the rubbing of the bear-hunting scene. The figures are fully carved, however to better show the superimposition,
they have not been filled in. Tracing, frotage and illustration: Jan Magne Gjerde
Figure 227 Section of the Kammeniy 7 site. One can see that the bear-and the bear hunter superimpositions the
Beluga whale hunting scne underneath. The photo also shows that there is a large difference in the erosion at
the panel. Photo: Jan Magne Gjerde
Figure 228 Odinnokaya with Kamenniy in the background. One can see how the water/ice have polished the
rock surface and the lichen growth is only present in the striation marks. An eroded elk head-boat is seen inside
the black circle in the middle of the photo (Compare with photo in Figure 229 and tracing in Figure 230).
Photo: Jan Magne Gjerde
Figure 229 A footprint and an elkhead boat figure at Odinnokaya. The figures are figure 60 and 61 in tracing of
the site (see Figure 230). Notice the smooth surface due to water and ice activity. Photo: Jan Magne Gjerde. 330
Figure 230 Tracing of the Odinnokaya rock at Kanozero. The lower area is heavily water / ice eroded. Compare
the boat and the footprint in the lower half of the illustration (nr. 60 and 61) with photos in Figure 228 and
Figure 229. Tracing and illustration: Jan Magne Gjerde
Figure 231 Cross-figures. The left is from Ytre Kåfjord in Alta and the right is from Eloviy 1 in Kanozero. The
figures are similar and also are virtually the same size. The Ytre Kaafjord is about 18cm and the Eloviy 1 figure
measures about 16cm. The photo to the right is taken at an angle to make the figure appear better. Photos and
illustration: Jan Magne Gjerde
Figure 232 The coastal region between the Kanozero Lake and the White Sea with a raised sea level to about
20masl. Background map is a compilation of 9 maps from www.poehali.org. Scale: the squares are 2km in size.
Notice that the Umba area where the river Umba disembarks into the White Sea today becomes an archipelago
with long fjords penetrating inland. This archipelago would most likely be a favourable ecological area for sea
mammals and sea mammal hunting. Illustration: Jan Magne Gjerde
Figure 233 Relative sea level curve for the Umba region after (Kolka et al. 2008:fig.3.8.). I have marked the
level at about 5000BP and 3600BP. This shows that at the respective dates, the shore level was 22m and 14m
higher than today. Illustration: Jan Magne Gjerde
Figure 234 The large Kuyva (the old man) figure in the rocks at Seydozero. Photos and illustration: Jan Magne
Gjerde
Figure 235 Central part of the Kola Peninsula with the waterway from the White Sea to the Barents Sea slightly
indicated. Central at the Kola Peninsula lies the Khibiny Mountains and the Lovozero Mountains. About 50km
indicated. Central at the Kola Peninsula lies the Khibiny Mountains and the Lovozero Mountains. About 50km east of the Lovozero Lake, the Ponoy River has its source at the Keivy Uplands, flowing about 426km eastwards.
indicated. Central at the Kola Peninsula lies the Khibiny Mountains and the Lovozero Mountains. About 50km
indicated. Central at the Kola Peninsula lies the Khibiny Mountains and the Lovozero Mountains. About 50km east of the Lovozero Lake, the Ponoy River has its source at the Keivy Uplands, flowing about 426km eastwards.
indicated. Central at the Kola Peninsula lies the Khibiny Mountains and the Lovozero Mountains. About 50km east of the Lovozero Lake, the Ponoy River has its source at the Keivy Uplands, flowing about 426km eastwards. Along the Ponoj River is the rock art site Chalmn Varre (Ponoj, Ponoy, Chalmi Varre, Čalmn-Varrė) with 10 boulders with carvings. Sattelite images compiled from www.bingmaps.com. Illustration: Jan Magne Gjerde. 337
indicated. Central at the Kola Peninsula lies the Khibiny Mountains and the Lovozero Mountains. About 50km east of the Lovozero Lake, the Ponoy River has its source at the Keivy Uplands, flowing about 426km eastwards. Along the Ponoj River is the rock art site Chalmn Varre (Ponoj, Ponoy, Chalmi Varre, Čalmn-Varré) with 10 boulders with carvings. Sattelite images compiled from www.bingmaps.com. Illustration: Jan Magne Gjerde. 337 Figure 236 Map of Kamenniy Island with the 7 sites marked. The figures are traced onto the map. Contour
indicated. Central at the Kola Peninsula lies the Khibiny Mountains and the Lovozero Mountains. About 50km east of the Lovozero Lake, the Ponoy River has its source at the Keivy Uplands, flowing about 426km eastwards. Along the Ponoj River is the rock art site Chalmn Varre (Ponoj, Ponoy, Chalmi Varre, Čalmn-Varrė) with 10 boulders with carvings. Sattelite images compiled from www.bingmaps.com. Illustration: Jan Magne Gjerde. 337 Figure 236 Map of Kamenniy Island with the 7 sites marked. The figures are traced onto the map. Contour interval 1m. Map by Kola Archaeological Expedition. E. Kolpakov
indicated. Central at the Kola Peninsula lies the Khibiny Mountains and the Lovozero Mountains. About 50km east of the Lovozero Lake, the Ponoy River has its source at the Keivy Uplands, flowing about 426km eastwards. Along the Ponoj River is the rock art site Chalmn Varre (Ponoj, Ponoy, Chalmi Varre, Čalmn-Varrė) with 10 boulders with carvings. Sattelite images compiled from www.bingmaps.com. Illustration: Jan Magne Gjerde. 337 Figure 236 Map of Kamenniy Island with the 7 sites marked. The figures are traced onto the map. Contour interval 1m. Map by Kola Archaeological Expedition. E. Kolpakov
indicated. Central at the Kola Peninsula lies the Khibiny Mountains and the Lovozero Mountains. About 50km east of the Lovozero Lake, the Ponoy River has its source at the Keivy Uplands, flowing about 426km eastwards. Along the Ponoj River is the rock art site Chalmn Varre (Ponoj, Ponoy, Chalmi Varre, Čalmn-Varrė) with 10 boulders with carvings. Sattelite images compiled from www.bingmaps.com. Illustration: Jan Magne Gjerde. 337 Figure 236 Map of Kamenniy Island with the 7 sites marked. The figures are traced onto the map. Contour interval 1m. Map by Kola Archaeological Expedition. E. Kolpakov
indicated. Central at the Kola Peninsula lies the Khibiny Mountains and the Lovozero Mountains. About 50km east of the Lovozero Lake, the Ponoy River has its source at the Keivy Uplands, flowing about 426km eastwards. Along the Ponoj River is the rock art site Chalmn Varre (Ponoj, Ponoy, Chalmi Varre, Čalmn-Varrė) with 10 boulders with carvings. Sattelite images compiled from www.bingmaps.com. Illustration: Jan Magne Gjerde. 337 Figure 236 Map of Kamenniy Island with the 7 sites marked. The figures are traced onto the map. Contour interval 1m. Map by Kola Archaeological Expedition. E. Kolpakov
indicated. Central at the Kola Peninsula lies the Khibiny Mountains and the Lovozero Mountains. About 50km east of the Lovozero Lake, the Ponoy River has its source at the Keivy Uplands, flowing about 426km eastwards. Along the Ponoj River is the rock art site Chalmn Varre (Ponoj, Ponoy, Chalmi Varre, Čalmn-Varrė) with 10 boulders with carvings. Sattelite images compiled from www.bingmaps.com. Illustration: Jan Magne Gjerde. 337 Figure 236 Map of Kamenniy Island with the 7 sites marked. The figures are traced onto the map. Contour interval 1m. Map by Kola Archaeological Expedition. E. Kolpakov. 338 Figure 237 Elevation above the present Kanozero Lake of the sites at Kanozero. Data after (Kolpakov et al. 2009). 340 Figure 238 The Kammeniy Island seen from the site Eloviy 2. Notice the flat landscape. Photo: Jan Magne Gjerde. 340
indicated. Central at the Kola Peninsula lies the Khibiny Mountains and the Lovozero Mountains. About 50km east of the Lovozero Lake, the Ponoy River has its source at the Keivy Uplands, flowing about 426km eastwards. Along the Ponoj River is the rock art site Chalmn Varre (Ponoj, Ponoy, Chalmi Varre, Čalmn-Varrė) with 10 boulders with carvings. Sattelite images compiled from www.bingmaps.com. Illustration: Jan Magne Gjerde. 337 Figure 236 Map of Kamenniy Island with the 7 sites marked. The figures are traced onto the map. Contour interval 1m. Map by Kola Archaeological Expedition. E. Kolpakov. 338 Figure 237 Elevation above the present Kanozero Lake of the sites at Kanozero. Data after (Kolpakov et al. 2009). 340 Figure 238 The Kammeniy Island seen from the site Eloviy 2. Notice the flat landscape. Photo: Jan Magne Gjerde. 340 Figure 239 Kammeniy with the different sites marked. Kammeniy 3 is located at the rock ridge and the flat
indicated. Central at the Kola Peninsula lies the Khibiny Mountains and the Lovozero Mountains. About 50km east of the Lovozero Lake, the Ponoy River has its source at the Keivy Uplands, flowing about 426km eastwards. Along the Ponoj River is the rock art site Chalmn Varre (Ponoj, Ponoy, Chalmi Varre, Čalmn-Varrė) with 10 boulders with carvings. Sattelite images compiled from www.bingmaps.com. Illustration: Jan Magne Gjerde. 337 Figure 236 Map of Kamenniy Island with the 7 sites marked. The figures are traced onto the map. Contour interval 1m. Map by Kola Archaeological Expedition. E. Kolpakov. 338 Figure 237 Elevation above the present Kanozero Lake of the sites at Kanozero. Data after (Kolpakov et al. 2009). 340 Figure 238 The Kammeniy Island seen from the site Eloviy 2. Notice the flat landscape. Photo: Jan Magne Gjerde. 340
indicated. Central at the Kola Peninsula lies the Khibiny Mountains and the Lovozero Mountains. About 50km east of the Lovozero Lake, the Ponoy River has its source at the Keivy Uplands, flowing about 426km eastwards. Along the Ponoj River is the rock art site Chalmn Varre (Ponoj, Ponoy, Chalmi Varre, Čalmn-Varrė) with 10 boulders with carvings. Sattelite images compiled from www.bingmaps.com. Illustration: Jan Magne Gjerde. 337 Figure 236 Map of Kamenniy Island with the 7 sites marked. The figures are traced onto the map. Contour interval 1m. Map by Kola Archaeological Expedition. E. Kolpakov. 338 Figure 237 Elevation above the present Kanozero Lake of the sites at Kanozero. Data after (Kolpakov et al. 2009). 340 Figure 238 The Kammeniy Island seen from the site Eloviy 2. Notice the flat landscape. Photo: Jan Magne Gjerde. 340 Figure 239 Kammeniy with the different sites marked. Kammeniy 3 is located at the rock ridge and the flat
indicated. Central at the Kola Peninsula lies the Khibiny Mountains and the Lovozero Mountains. About 50km east of the Lovozero Lake, the Ponoy River has its source at the Keivy Uplands, flowing about 426km eastwards. Along the Ponoj River is the rock art site Chalmn Varre (Ponoj, Ponoy, Chalmi Varre, Čalmn-Varrė) with 10 boulders with carvings. Sattelite images compiled from www.bingmaps.com. Illustration: Jan Magne Gjerde. 337 Figure 236 Map of Kamenniy Island with the 7 sites marked. The figures are traced onto the map. Contour interval 1m. Map by Kola Archaeological Expedition. E. Kolpakov
indicated. Central at the Kola Peninsula lies the Khibiny Mountains and the Lovozero Mountains. About 50km east of the Lovozero Lake, the Ponoy River has its source at the Keivy Uplands, flowing about 426km eastwards. Along the Ponoj River is the rock art site Chalmn Varre (Ponoj, Ponoy, Chalmi Varre, Čalmn-Varrė) with 10 boulders with carvings. Sattelite images compiled from www.bingmaps.com. Illustration: Jan Magne Gjerde. 337 Figure 236 Map of Kamenniy Island with the 7 sites marked. The figures are traced onto the map. Contour interval 1m. Map by Kola Archaeological Expedition. E. Kolpakov
indicated. Central at the Kola Peninsula lies the Khibiny Mountains and the Lovozero Mountains. About 50km east of the Lovozero Lake, the Ponoy River has its source at the Keivy Uplands, flowing about 426km eastwards. Along the Ponoj River is the rock art site Chalmn Varre (Ponoj, Ponoy, Chalmi Varre, Čalmn-Varrė) with 10 boulders with carvings. Sattelite images compiled from www.bingmaps.com. Illustration: Jan Magne Gjerde. 337 Figure 236 Map of Kamenniy Island with the 7 sites marked. The figures are traced onto the map. Contour interval Im. Map by Kola Archaeological Expedition. E. Kolpakov
indicated. Central at the Kola Peninsula lies the Khibiny Mountains and the Lovozero Mountains. About 50km east of the Lovozero Lake, the Ponoy River has its source at the Keivy Uplands, flowing about 426km eastwards. Along the Ponoj River is the rock art site Chalmn Varre (Ponoj, Ponoy, Chalmi Varre, Čalmn-Varrė) with 10 boulders with carvings. Sattelite images compiled from www.bingmaps.com. Illustration: Jan Magne Gjerde. 337 Figure 236 Map of Kamenniy Island with the 7 sites marked. The figures are traced onto the map. Contour interval 1m. Map by Kola Archaeological Expedition. E. Kolpakov
indicated. Central at the Kola Peninsula lies the Khibiny Mountains and the Lovozero Mountains. About 50km east of the Lovozero Lake, the Ponoy River has its source at the Keivy Uplands, flowing about 426km eastwards. Along the Ponoj River is the rock art site Chalmn Varre (Ponoj, Ponoy, Chalmi Varre, Čalmn-Varré) with 10 boulders with carvings. Sattelite images compiled from www.bingmaps.com. Illustration: Jan Magne Gjerde. 337 Figure 236 Map of Kamenniy Island with the 7 sites marked. The figures are traced onto the map. Contour interval 1m. Map by Kola Archaeological Expedition. E. Kolpakov. 338 Figure 237 Elevation above the present Kanozero Lake of the sites at Kanozero. Data after (Kolpakov et al. 2009). 340 Figure 238 The Kammeniy Island seen from the site Eloviy 2. Notice the flat landscape. Photo: Jan Magne Gjerde. 340 Figure 239 Kammeniy with the different sites marked. Kammeniy 3 is located at the rock ridge and the flat surface beneath the ridge towards Kammeniy 1. Kammeniy 6 and 7 is covered by trees, however, one may get a glimpse of the Kammeniy 7 rock looking carefully at the photo. Kammeniy 4 is slihtly covered by vegetation and Kammeniy 2 is located past Kammeniy 5 about 70m from Kammeniy 5 (see Figure 236) Photo and illustration: Jan Magne Gjerde. 341 Figure 240 The bear-hunting scene at Kamenniy 7. One can see how the skier and the manner in which the ski tracks are reflecting the topography that also is present in the microlandscape of the rock surface. The skiers
indicated. Central at the Kola Peninsula lies the Khibiny Mountains and the Lovozero Mountains. About 50km east of the Lovozero Lake, the Ponoy River has its source at the Keivy Uplands, flowing about 426km eastwards. Along the Ponoj River is the rock art site Chalmn Varre (Ponoj, Ponoy, Chalmi Varre, Čalmn-Varrė) with 10 boulders with carvings. Sattelite images compiled from www.bingmaps.com. Illustration: Jan Magne Gjerde. 337 Figure 236 Map of Kamenniy Island with the 7 sites marked. The figures are traced onto the map. Contour interval 1m. Map by Kola Archaeological Expedition. E. Kolpakov. 338 Figure 237 Elevation above the present Kanozero Lake of the sites at Kanozero. Data after (Kolpakov et al. 2009). 340 Sigure 238 The Kammeniy Island seen from the site Eloviy 2. Notice the flat landscape. Photo: Jan Magne Gjerde. 340 Sigure 239 Kammeniy with the different sites marked. Kammeniy 3 is located at the rock ridge and the flat surface beneath the ridge towards Kammeniy 1. Kammeniy 6 and 7 is covered by trees, however, one may get a glimpse of the Kammeniy 7 rock looking carefully at the photo. Kammeniy 4 is slihtly covered by vegetation and Kammeniy 2 is located past Kammeniy 5 about 70m from Kammeniy 5 (see Figure 236) Photo and illustration: Jan Magne Gjerde. 341 Figure 240 The bear-hunting scene at Kamenniy 7. One can see how the skier and the manner in which the ski tracks are reflecting the topography that also is present in the microlandscape of the rock surface. The skiers marks reflects the topography of the rock including the inclination in the rock art scene. The dark line at the
indicated. Central at the Kola Peninsula lies the Khibiny Mountains and the Lovozero Mountains. About 50km east of the Lovozero Lake, the Ponoy River has its source at the Keivy Uplands, flowing about 426km eastwards. Along the Ponoj River is the rock art site Chalmn Varre (Ponoj, Ponoy, Chalmi Varre, Čalmn-Varre) with 10 boulders with carvings. Sattelite images compiled from www.bingmaps.com. Illustration: Jan Magne Gjerde. 337 Figure 236 Map of Kamenniy Island with the 7 sites marked. The figures are traced onto the map. Contour interval Im. Map by Kola Archaeological Expedition. E. Kolpakov. 338 Figure 237 Elevation above the present Kanozero Lake of the sites at Kanozero. Data after (Kolpakov et al. 2009). 340 Figure 238 The Kammeniy Island seen from the site Eloviy 2. Notice the flat landscape. Photo: Jan Magne Gjerde. 340 Figure 239 Kammeniy with the different sites marked. Kammeniy 3 is located at the rock ridge and the flat surface beneath the ridge towards Kammeniy 1. Kammeniy 6 and 7 is covered by trees, however, one may get a glimpse of the Kammeniy 7 rock looking carefully at the photo. Kammeniy 4 is slihtly covered by vegetation and Kammeniy 2 is located past Kammeniy 5 about 70m from Kammeniy 5 (see Figure 236) Photo and illustration: Jan Magne Gjerde. 341 Figure 240 The bear-hunting scene at Kamenniy 7. One can see how the skier and the manner in which the ski tracks are reflecting the topography that also is present in the microlandscape of the rock surface. The skiers marks reflects the topography of the rock including the inclination in the rock art scene. The dark line at the lower half of the photo is the shadow of a tree. Photo: Jan Magne Gjerde. 342
indicated. Central at the Kola Peninsula lies the Khibiny Mountains and the Lovozero Mountains. About 50km east of the Lovozero Lake, the Ponoy River has its source at the Keivy Uplands, flowing about 426km eastwards. Along the Ponoj River is the rock art site Chalmn Varre (Ponoj, Ponoy, Chalmi Varre, Čalmn-Varrė) with 10 boulders with carvings. Sattelite images compiled from www.bingmaps.com. Illustration: Jan Magne Gjerde. 337 Figure 236 Map of Kamenniy Island with the 7 sites marked. The figures are traced onto the map. Contour interval Im. Map by Kola Archaeological Expedition. E. Kolpakov. 338 Figure 237 Elevation above the present Kanozero Lake of the sites at Kanozero. Data after (Kolpakov et al. 2009). 340 Sigure 238 The Kammeniy Island seen from the site Eloviy 2. Notice the flat landscape. Photo: Jan Magne Gjerde. 340 Figure 239 Kammeniy with the different sites marked. Kammeniy 3 is located at the rock ridge and the flat surface beneath the ridge towards Kammeniy 1. Kammeniy 6 and 7 is covered by trees, however, one may get a glimpse of the Kammeniy 7 rock looking carefully at the photo. Kammeniy 4 is slihtly covered by vegetation and Kammeniy 2 is located past Kammeniy 5 about 70m from Kammeniy 5 (see Figure 236) Photo and illustration: Jan Magne Gjerde. 341 Figure 240 The bear-hunting scene at Kamenniy 7. One can see how the skier and the manner in which the ski tracks are reflecting the topography that also is present in the microlandscape of the rock surface. The skiers marks reflects the topography of the rock including the inclination in the rock art scene. The dark line at the lower half of the photo is the shadow of a tree. Photo: Jan Magne Gjerde. 342 Figure 241 Soutwestern part of Kamenniy with the placing of the figures at Kamenniy 1, 3, 6 and 7. Contours at
indicated. Central at the Kola Peninsula lies the Khibiny Mountains and the Lovozero Mountains. About 50km east of the Lovozero Lake, the Ponoy River has its source at the Keivy Uplands, flowing about 426km eastwards. Along the Ponoj River is the rock art site Chalmn Varre (Ponoj, Ponoy, Chalmi Varre, Čalmn-Varrė) with 10 boulders with carvings. Sattelite images compiled from www.bingmaps.com. Illustration: Jan Magne Gjerde. 337 Figure 236 Map of Kamenniy Island with the 7 sites marked. The figures are traced onto the map. Contour interval 1m. Map by Kola Archaeological Expedition. E. Kolpakov
indicated. Central at the Kola Peninsula lies the Khibiny Mountains and the Lovozero Mountains. About 50km east of the Lovozero Lake, the Ponoy River has its source at the Keivy Uplands, flowing about 426km eastwards. Along the Ponoj River is the rock art site Chalmn Varre (Ponoj, Ponoy, Chalmi Varre, Čalmn-Varre) with 10 boulders with carvings. Sattelite images compiled from www.bingmaps.com. Illustration: Jan Magne Gjerde. 337 Figure 236 Map of Kamenniy Island with the 7 sites marked. The figures are traced onto the map. Contour interval 1m. Map by Kola Archaeological Expedition. E. Kolpakov
indicated. Central at the Kola Peninsula lies the Khibiny Mountains and the Lovozero Mountains. About 50km east of the Lovozero Lake, the Ponoy River has its source at the Keivy Uplands, flowing about 426km eastwards. Along the Ponoj River is the rock art site Chalmn Varre (Ponoj, Ponoy, Chalmi Varre, Čalmn-Varre) with 10 boulders with carvings. Sattelite images compiled from www.bingmaps.com. Illustration: Jan Magne Gjerde. 337 Figure 236 Map of Kamenniy Island with the 7 sites marked. The figures are traced onto the map. Contour interval 1m. Map by Kola Archaeological Expedition. E. Kolpakov
indicated. Central at the Kola Peninsula lies the Khibiny Mountains and the Lovozero Mountains. About 50km east of the Lovozero Lake, the Ponoy River has its source at the Keivy Uplands, flowing about 426km eastwards. Along the Ponoj River is the rock art site Chalmn Varre (Ponoj, Ponoy, Chalmi Varre, Čalmn-Varre) with 10 boulders with carvings. Sattelite images compiled from www.bingmaps.com. Illustration: Jan Magne Gjerde. 337 Figure 236 Map of Kamenniy Island with the 7 sites marked. The figures are traced onto the map. Contour interval Im. Map by Kola Archaeological Expedition. E. Kolpakov. 338 Figure 237 Elevation above the present Kanozero Lake of the sites at Kanozero. Data after (Kolpakov et al. 2009). 340 Sigure 238 The Kammeniy Island seen from the site Eloviy 2. Notice the flat landscape. Photo: Jan Magne Gjerde. 340 Sigure 239 Kammeniy with the different sites marked. Kammeniy 3 is located at the rock ridge and the flat surface beneath the ridge towards Kammeniy 1. Kammeniy 6 and 7 is covered by trees, however, one may get a glimpse of the Kammeniy 7 rock looking carefully at the photo. Kammeniy 4 is slihtly covered by vegetation and Kammeniy 2 is located past Kammeniy 5 about 70m from Kammeniy 5 (see Figure 236) Photo and illustration: Jan Magne Gjerde. 341 Figure 240 The bear-hunting scene at Kamenniy 7. One can see how the skier and the manner in which the ski tracks are reflecting the topography that also is present in the microlandscape of the rock surface. The skiers marks reflects the topography of the rock including the inclination in the rock art scene. The dark line at the lower half of the photo is the shadow of a tree. Photo: Jan Magne Gjerde. 342 Soutwestern part of Kamenniy with the placing of the figures at Kamenniy 1, 3, 6 and 7. Contours at 10cm interval. Compare with Figure 239. Notice how the footprints that can be seen in the tracing at Figure 243 appear as if they are walking up the rock ridge at Kammeniy 3 (see Figure 242). With a higher water-level in the lake, these would com
indicated. Central at the Kola Peninsula lies the Khibiny Mountains and the Lovozero Mountains. About 50km east of the Lovozero Lake, the Ponoy River has its source at the Keivy Uplands, flowing about 426km eastwards. Along the Ponoj River is the rock art site Chalmn Varre (Ponoj, Ponoy, Chalmi Varre, Čalmn-Varre) with 10 boulders with carvings. Sattelite images compiled from www.bingmaps.com. Illustration: Jan Magne Gjerde. 337 Figure 236 Map of Kamenniy Island with the 7 sites marked. The figures are traced onto the map. Contour interval 1m. Map by Kola Archaeological Expedition. E. Kolpakov

15 footprints are depicted as if they are walking up the rock ridge. The footsteps start above the crack to the left	
of the green grass in right of the middle of the photo. For a general distribution of the figures, compare with the	
tracing in Figure 243. Photo: Jan Magne Gjerde	4
Figure 243 Tracing of the Kamenniy 3 site. The lowest figures depicting a reindeer hunt is seen in Figure 242.	
The footprints are walking up the rock as if it is appearing from the lake. For the general distribution of the	
figures, see Figure 241. Tracing and illustration, Jan Magne Gjerde34	5
Figure 244 The natural line connected to the large elk figure at Kamenniy 7 (area 2). Compare tracing in Figur	$\cdot e$
225. Photo: Jan Magne Gjerde	6
Figure 245 Panoramaphoto of Nämforsen from the area where Ställverksboplatsen once were. Compiled from 6	í
photos. Photos and illustration: Jan Magne Gjerde34	
Figure 246 The rock art area of Nämforsen and its surroundings. The rock art is situated on the islands in the	
rapids area and on the river bank on both sides of the river. Photo from Gustaf Hallströms Archive at the	
Research Archive, University of Umeå, Sweden	8
Figure 247 The rock art area of Nämforsen. to show where the carvings are located in relation to the waterfall.	
The shaded area in the lower part of the drawing is the excavated Ställverksboplatsen. Map from Hallström	
(1960:129, XXVIIa)	9
Figure 248 Map of the different groups at Nämforsen. Map from Hallström (1960:129, XXVIIb)34	
Figure 249 Rock art at Nämforsen. Lillforshällen (Hallström IG) at Laxön with some of the earliest figures from	
Nämforsen. Compilation of three photos. Photo and illustration: Jan Magne Gjerde	
Figure 250 Rock art at Laxön, Nämforsen. The elk antlers have been interpreted as boat representations. Photo.	
Jan Magne Gjerde	
Figure 251 Carvings at Bradön in Nämforsen where the three styles (Lindqvist style A-C) of rock art is situated.	
The superimposition of the carvings shows that the scooped out elk is superimpositioned by an outline elk almost in the middle of the illustration. In the lower part of the illustration are seen as a bountle outline elk in	i
in the middle of the illustration. In the lower part of the illustration one can see how the outline elk is	
superimpositioned by the footsole motif. This panel is vital to the internal chronology between the figures at	
Nämforsen. Section of tracing after Hallström (1960:plate 25), superimposition documented by Forsberg	
(1993:222, fig 18). Photo and illustration: Jan Magne Gjerde	3
Figure 252 Shore displacement curve for the Näsåker/Nämforsen area. Based on data from Berglund	,
(Berglund 2004:fig 5A) and Berglund (personal communication 2009). The numbers 1-13, marked with dots and	l
dashed lines, are the dating results of the isolation event of core sediments from lakes making up the shore	
displacement curve. The data in Berglunds figure is given in calibrated years. Based on the data from Berglund	
and extrapolation of the shore displacement curve relating the curve to Näsåker in the Nämforsen area, a more	
accurate shore displacement curve, for the Nämforsen area, has been extrapolated marked with a red line. The	
elevation between 90masl and 73masl is marked by giving a date to between 5000BC and 4250BC. That was the	
time when the rocks at Nämforsen was "coast-bound". Illustration: Jan Magne Gjerde	5
Figure 253 Sea-level reconstructed at 78masl at Nämforsen. At 78masl, the dark blue is the river and the light	
blue is the sea in this illustration. Base map after Hallström (1960:129). The scooped out figures are located	
above 78masl (with few exceptions) suggesting they are the oldest and made between c. 5000 and 4600BC. It	
also shows that the area adjacent to the Bradön and Notön islands would have been less dramatic than later. It	
also shows that the Notön island was in the sea, not in the river. Illustration: Jan Magne Gjerde	7
Figure 254 Relative chronology of the figures at Nämforsen. The typology is based mainly on Lindqvist	
(Lindqvist 1994:213-220). Tracings reworked after Hallström (1960:plate XIII, XIV, XXI, XVII, XXII, XVIII,	
XXVI). The figures belonging to phase A are the oldest. Figures of phase A and B type belong to the Stone Age	
while the figures belonging to phase C are the youngest with a Bronze Age origin. The first carvings at	
Nämforsen could have been made as early as 5000BC, while the latter was made in the Early Bronze Age. The	
internal chronology between the different styles can not be separated further than with the older / younger line	
of argument. Illustartion: Jan Magne Gjerde	8
Figure 255 Previous page. Rough schematic map based on 70-75masl from the Gulf of Bothnia to inland of	
Nämforsen with rock art sites. Map based on data from http://www.fmis.raa.se/cocoon/fornsok/search.html. The	,
map follows the 70-75masl elevation for the entire area. The gradual difference in land uplift at the coast has	
not been accounted for. However, this shows a tentative map of the shoreline situation from the coast to	
Nämforsen when the carvings were made. The present day map in the background shows how minor the change.	C
in the macro topography would be between the present situation and the situation with a raised shoreline. The	
Nämforsen site is the only site with carvings, while the others are paintings. Illustration: Jan Magne Gjerde. 36	1
Figure 256 The relations between the nearest sites "related" to Nämforsen with waterways viewed from inland	
towards the Gulf of Bothnia. The waterways are slightly highlighted The landscape is tilted in Google Earth.	
Thereby distance relations are distorted (Compare with Figure 255). With a raised sea-level, the fjord would have some all the way to Nämforson where the present Ångermanähven runs. These waterways most likely ware	
have come all the way to Nämforsen where the present Ångermanälven runs. These waterways most likely were	
the Stone Age highways of northern Sweden. Illustration: Jan Magne Gjerde	2

Figure 257 The relation between the Bastuloken area with the sites Brinnåsklippen, Boforsklacken and
Lillklippen and the Högberget area with the sites Högberget 1-4. The distance between the Bastuloken area and
the Högberget area is c. 10km. The distance from Nämforsen to Högberget is c. 30km. The red dots are rock
paintings while the blue dots are hunting pits and hunting pit systems. Data from
http://www.fmis.raa.se/cocoon/fornsok/search.html. Illustration: Jan Magne Gjerde
Figure 258 Map of the area with the three rock painting sites Lillklippen, Boforsklacken and Brinnåsklippen
marked in red. The hunting pits and hunting pit systems marked with blue. The two large settlements Sörånäset
and Bastuloken marked with green. Other minor settlements are marked with small green dots. Data from
http://www.fmis.raa.se/cocoon/fornsok/search.html. Illustration: Jan Magne Gjerde
Figure 259 The hunting pit system and rock paintings at Högberget. The Högberget hilltop is located between
the two lakes Nässjön and Ramselesjön slightly left of the middle of the map. The hunting pit system is marked
blue. The sites with paintings are marked white. The settlement (Ramsele 185) that was excavated in 2003 is
connected to the Högberget 3 site. A Stone Age settlement (Ramsele 20:1) is located at the other end of the
southern part of Nässjön. Map and data from http://www.fmis.raa.se/cocoon/fornsok/search.html. Illustration:
<i>Jan Magne Gjerde</i>
Figure 260 Photo of the Högberget 1 site with the Högberget hilltop in the background. The panel with paintings
are situated just right of the middle of the photo marked with black arrow. The hunting pits are located in front
of the panel with rock paintings. The nearest hunting pit is less than 10m from the vertical cliff with rock art
under the black arrow in the photo. Photo and illustration: Jan Magne Gjerde
Figure 261 Photo of the Högberget 1 site with the hunting pits in front of the rock art site. The large crack in the
middle of the photo is interpreted as a river. To the left of the crack one can see the red paint that is depicting
the elks. The elk figures are depicted just above another crack that forms a small ledge as if they appear from a
valley. The paintings to the right of the crack is somewhat dubious due to lichen and moss covering the surface.
They are placed as if they are standing on the small ledge. Photo: Jan Magne Gjerde
Figure 262 Map of the Nämforsen area with connected sites. Settlements marked with green dots. The
Nämforsen site is marked with red colour, and the hunting pits and hunting pit systems marked with blue colour.
Råinget (Ådals-Liden 123:1, 123:2). Ställverksboplatsen (Ådals-Liden 10:1). Map and data from from
http://www.fmis.raa.se/cocoon/fornsok/search.html. Illustration: Jan Magne Gjerde
Figure 263 The landscape view at Nämforsen where changes are observed. The top left photo shows Nämforsen
in 1916 during spring. The top right photo shows Nämforsen in 1924 during winter. Now the bridge has been
built. The bottom left shows Nämforsen in 2004. The rapids are shut down by the power Station. In 2008, I got
the chance to experience a glimpse of the massive rapids of Nämforsen again. The changes in the landscape can
be quite comprehensive. Top photos by Gustaf Hallström by courtesy of the Gustaf Hallströms Archive at the
Research Archive, University of Umeå, Sweden. The bottom two photos: Jan Magne Gjerde
Figure 264 The massive rapids at Nämforsen with the island Bradön midsummer 1907 from the Notön island.
Photo by Gustaf Hallström by courtesy of the Gustaf Hallströms Archive at the Research Archive, University of
Umeå, Sweden
Figure 265 The surroundings at Nämforsen and the miniature landscape with the river. The Ångermanälven
River can be seen to the left in the compiled photo. The dark lichen where the water runs are representing the
river in this miniature landscape. Photo and illustration: Jan Magne Gjerde
Figure 266 The miniature river at Bradön is situated slightly left of the middle of the photo. It stands out by the
discolouring in the rock. When it is raining water runs in these "rivers". One can here see how the elks are
places along the river as if they are moving along the shore of the river. Photo: Jan Magne Gjerde 374
Figure 267 Documentation of a boat figure at Bradön, northern Sweden where the boat is situated in a miniature
landscape. Tracing top left after Hallström (1938: plate XXIII). Photos and illustration Jan Magne Gjerde 375
Figure 268 The miniature landscape at the Notön panel (Hallström IIQ1). The boats are depicted where the
water occasionally is, at the lower part of the panel. A human figure and an elk is placed on a quartz line as if
they are walking along this line that might represent the shore. Compare with Figure 269 and Figure 270.
Photo: Jan Magne Gjerde
Figure 269 The elk hunt at Nämforsen (Hallström IIQ1) after Hallström (1960:plate 20). Tracing to the right
reworked colouring in the different types of figures to more clearly visualize the elk-hunt scenes. Illustration:
Jan Magne Gjerde
Figure 270 The figures are traced onto the photo to show how they are related to the rock surface at the panel
(Hallström IIQ1). The figures are given different colour to better visualize the elk-hunt. Compare with Figure
268 and Figure 269. Photo and illustration: Jan Magne Gjerde
Figure 271 The pool with connected rivers and lakes at Laxön by Hallström (ID6). This might represent the
macrolandcape where the figures are placed in a microlandscape within a miniature Hydrosystem. Photo: Jan
Magne Gierde

Figure 272 The pool with connected rivers and lakes at Laxön by Hallström (ID6). This might represent the
macrolandcape where the figures are placed in a microlandscape within a miniature Hydrosystem. Photo: Jan
Magne Gjerde
Figure 273 Tracing of the panel at HID:9. Tracing after Hallström (1960:plate XI)
Figure 274 The elks placed in relation to the micro-landscape at HID:9. The rivers and valleys can be seen both
to the right and to the left of the elks. The elk at the upper left is deliberately placed as if it is moving round a
hilltop along a valley. Photo: Jan Magne Gjerde
Figure 275 Overview of the dating suggestion for the rock art from the Case studies in this thesis. The Ofoten
Case is marked in bright grey for the total rock art production. The different sites maximum dates are marked as
200 year intervals. Based on the dating of the sites, I do not consider there to have been a "long" discontinuity
period of rock art production in the Ofoten area even if there are no sites with a maximum date between 6830BC
and 5485BC. Illustration: Jan Magne Gjerde
Figure 276 Shoreline dating at the Skavberg site. The isobase 15 and 17 curve in blue. The elevation of the
Skavberg 1 site at 18,5masl, the elevation of the Skavberg 2 site at 17masl and the elevation of the Skavberg 3
sitye at 12masl in red. This shows that the shoreline at the Skavberg area is virtually standstill between about
8500BP and 5400BP. Thereby the carvings at Skavberg 1 and Skavberg 2 could have been made between 8500
$to~5400~assuming~they~were~shorebound.~Data~after~Sea Lev~(M \phi ller~\&~Holmes let~1998).~Illustration:~Jan~Magne$
<i>Gjerde.</i>
Figure 277 The Skavberg 2 site before removing the lichen (top photo from 2003) and after removing the lichen
(bottom photo from 2007). The previous documentation is painted red on the rock surface and visually
dominates the rock surface making it difficult to see the vague lines that appeared clearer after the removal of
the lichen (compare night photo in Figure 278). Photos and illustration: Jan Magne Gjerde
Figure 278 The large elk figure at Skavberg 2 when first found in august 2008. One can see that some of the
lines were already painted in red (compare Figure 277). Looking carefully one may see the elk figure in Figure
277 by comparing it with the night photo. The bear figure under the elk becomes clear on this photo. One can
see vague lines on the rock surface, however it is hard to discern motifs due to the erosion on the rock surface.
The night-photo is taken after the figure was marked. The elk figure is about 2.9m long. Photo: Jan Magne
<i>Gjerde</i>
Figure 279 The Gärde site in northern Sweden. The carvings appear in three groups. The group with the large
elk figures is located at the island. The large elk figure to the left could be a bear. The carvings with the elk and
elk tracks are located at the riverbank to the left in the photo. The third group is made up of lines that cannot be
identified as a motif. Tracings after Hallström (1960:plate 3 and 4). The figures are made into same scale. The
scale to the right under the large elk figures measure 2m. The largest elk to the right measures 3.65m. Photo and
illustration: Jan Magne Gjerde
Figure 280 The large elk figures at Gärde. Tracing to the right after Hallström (1960:plate 4). The scale to the
right of the tracing measures 2m. The largest elk figure is total 3.65m long. Photo and illustration: Jan Magne
<i>Gjerde.</i>
Figure 281 The Hammer 5A panel at Hammer, middle Norway. Scale at the lower right in the tracing is 1m.
Tracing after (Bakka 1988:plate iv). The large life size figures to the right in the tracing
Figure 282 Examples of elk-head boats from the north dated to the Late Stone Age. Boats from Alta, northern
Norway after Helskog (1989b:fig. 4). Boats from Nämforsen, northern Sweden after Hallström (1960). Boats
from Kanozero, NW-Russia after authors' tracings. Boats from Onega, NW-Russia after Hallström (1960:plate
XXVIII) and Ravdonikas (1936b:plate 1 and 13). Boats from Finland are from top to bottom from the sites:
Patalahti, Saraakallio, Saraakallio, Pyhänpää after Lahelma (2005b:fig 1). The Pyhänpää boat figure is
depicted as the antlers of an elk and is included in this overview to show the link between the elk and the boat.
Illustration: Jan Magne Gjerde
Figure 283 Distribution map of sites with elkhead boats in Fennoscandia. This show that the elkhead boat is
clearly an eastern phenomena. Compare with distribution map of all Stone Age rock art sites (see Figure 90) to
see the clear eastern distribution of elkhead boats in relation to the distribution of Stone Age rock art. Alta in
this map also includes the sites in the Hjemmeluft area. Illustration: Jan Magne Gjerde
Figure 284 The clear difference between the "Early Stone Age" and the "Late Stone Age" rock art. Images are
• • • • • • • • • • • • • • • • • • • •
not presented in the same scale. However, the Early Stone Age animal depictions are with a few exceptions much
larger. Thereby this illustration shows a relative difference in scale. Top left: Polished bear from Valle
(Finnhågen), northern Norway, after Gjessing (1932:plate XXVIII). Middle left: pecked elk from Gärde,
northern Sweden, after Hallström (1960:plate IV). Bottom left: Pecked reindeer from Bøla, middle Norway, after
Gjessing (1936a:plate LIII). Top right: pecked whale-hunting scene from New Zalavruga 8, Vyg, northwestern
Russia, after Savvateev (1970:plate 48). Middle right: Pecked reindeer corral and bear hunting scene,
Bergbukten 1, Alta, Northern Norway, after Helskog (1999:figure 5). Bottom right: pecked elk-hunting scene
from Nämforsen, northern Sweden, after Hallström (1960:plate XX). Illustration: Jan Magne Gjerde 400
· · · · · · · · · · · · · · · · · · ·

Figure 285 The Stykket site in Trøndelag, middle Norway. Tracing after Sognnes (1981:fig 7). The original
tracing did not show the relation between the elk in the rest of the figures. The distance is about 2m. The figures
can be seen at about 50m distance. In this illustration, the relation between the figures are fixed and the two
initial tracings joined together. Photo and illustration: Jan Magne Gjerde
Figure 286 The large salmons at Honnhammer III (Honnhammerneset), northern part of western Norway. The
salmon figures measures between 1m and 1.20m. The vertical cliff stands about 5m up from the small ledge
beneath the paintings. Illustration is compiled from 5 photos. The lowest salmon seems to appear from the crack
where the red line in the rock twirls like flowing water. The salmon above this also seem to appear from this
same natural feature possibly referring to the flowing river? Photos and illustration: Jan Magne Gjerde 407
Figure 287 Modern carving from Lake Onega in northwestern Russia. This carving was made more than 20
years ago according to a local informant. The person holding the spear is about 20cm tall. Photo: Jan Magne
<i>Gjerde.</i>
Figure 288 The relations between the sites "related" to Vyg. The landscape is tilted in Google Earth. Thereby
distance relations are distorted. Vyg according to leading communication lines from the Onega to the White Sea.
Note that the Finnish rock paintings are not presented in this illustration. The distance as the crow flies from the
Onega carvings to the Vyg carvings are c. 300km as the crow flies and the distance to the Kanozero carvings
from Vyg are about 280km. Illustration: Jan Magne Gjerde
Figure 289 Boat image from Lillforshällen, Laxön in Nämforsen. These large boats made Hallström suggest they
were illustrating long journeys. This boat has about 15 crew members. The boat measures about 1.8m in length.
Photo: Jan Magne Gjerde
Figure 290 Boat images at Bergbukten 3 in Hjemmeluft, Alta. The size of the large boat, above the middle of the
photo, with three crewmembers, is about 67cm long. These boats belong to phase 2 and is dated to about
4200BC-3000BC (see Figure 152). Photo: Jan Magne Gjerde
Figure 291 The whale hunting scenes at Onega. Only the whale hunting scenes are chalked to make them more
clear on the photo. This is the left and the middle whale hunting scene at Besov Nos. Scale in the middle of the
photo is 10cm. Tracing of the figures at Besov Nos can be found in Ravdonicas publication on the Onega
carvings (Ravdonikas 1936b:plate 25). Photo: Jan Magne Gjerde
Figure 292 The Flatruet site in northern Sweden where one can see how the figures are placed in relation to
cracks and ledges as if the animals appear from cracks in the rocks. At a closer look it seems like the human
representations and the elk figures are appearing from the cracks connected to the ledges from inside the rock
surface, the "other world" Photo: Jan Magne Gjerde
Figure 293 One of the elks at the Flatruet site in northern Sweden where the elk is appearing form the crack
interacting with the elemnts in the rock. Photo: Jan Magne Gjerde
Figure 294 Painted figures at Gjølgjavatnet middle Norway. Notice how the large elk figure appears as if it is
coming out of the rock. Photo: Jan Magne Gjerde
Figure 295 After Savvateyev (1970:253, plate 51). A whale hunting scene from New Zalavruga 9, Vyg. It
appears as if the people have been thrown out of the boat during the hunt. The front of the boat is eroded 421
Figure 296 Section of Jerpin Pudas 3. After Savvateyev (1977:72). The copulation scenes connected to the
Beluga Whale can be seen in the middle of the tracing
Figure 297 Rubbing of the large whale hunting scene at New Zalavruga 4. This has been interpreted as a
training or initiation scene of the whale hunt. Note the clear erection on some of the male hunters. Rubbing: Jan
<i>Magne Gjerde.</i>
Figure 298 View of a typical aggregation of a large group of reindeer occupying an entire jassat (snow patch)
during a hot summer day from Kvænangsfjellet in Troms, northern Norway, 1985. Notice how the reindeer
congregate and virtually "fill" the jassat but are not standing outside the jassat. Photo © Arne C. Nilssen,
Tromsø University Museum. 427
Figure 299 Swan figures at Peri Nos 3, Onega. Photo: Jan Magne Gjerde
Figure 300 The "collection" of halibuts at Kvennavika, middle Norway. The halibut figures are depicted on the
upper half of the rock outcrop. The position of figure nr. 10 is indicated by the black arrow. When made, the sea-
spray would most likely wash over the rock outcrop at high tide. Tracing after Gjessing (1936a:pl. LXX). Photo
and illustration: Jan Magne Gjerde
Figure 301 A selection of the regional variation of animals in Late Stone Age rock art in Fennoscandia. Animals
in rock art in Fennoscandia: 1: Hammer 5A after Bakka (1988:iv), 2: Forselv, authors tracing 3: Bergbukten 4,
Hjemmeluft, Alta after Helskog (1988:44), 4: Kamenniy 7, Kanozero, authors tracing 5: Besovy Sledki South,
Vyg after (1938:plate 32), 6: Besov Nos, Onega after (Ravdonikas 1936b:plate 27), 7: Verla after Miettinen
(Pentikäinen & Miettinen 2003:41), 8: Notön, Nämforsen after Hallström (1960:plate XXVI 0:2), 9:
Katsundholmen (Kløftefoss) after Engelstad (1934:Planche LIV), Vangdal 2 after Mandt (1972:pl. 38a), 11:
Elva, Vingen after Hallström (1938:plate XXXVI), 12: Bogge 2 after Hallström (1938:plate 33), 13: Stykket
after Sognnes (1981:fig 7). Illustration: Jan Magne Gjerde

Figure 302 The Elva site in Vingen after Hallströms documentation. Notice how the red deer is following the
ledge running up the "valley" interacting with the landscape. The whole Vingen area is dominated by such
ledges (see Figure 303). Tracing after Hallström (1938:plate XXXVI). Photo from Gustaf Hallströms Archive at
the Research Archive, University of Umeå, Sweden. Illustration: Jan Magne Gjerde
Figure 303 Vingen in western Norway. Main parts of the carvings are located on rock slopes and cliffs. The Elva
site is marked and the figures in Figure 302 are situated on the left side of the Vingen River. The white arrow
marks the outflow of the Vingen River. Notice the ledges that are restricting movement for man and animal
walking between the coast and the mountain area. Photo and illustration: Jan Magne Gjerde
Figure 304 The large hunting pit system east of the Glösa rock art site. The hunting pits and hunting pit systems
are marked in blue. The hunting pits form a system that runs between the two lakes. The carvings at Glösa are
marked in red. Totally 99 pitfalls are surveyed in this hunting pit system. Background map and data after
www.raa.se. Illustration: Jan Magne Gjerde
Figure 305 Photo and tracing of the main panel at Glösa (Glösa I). Tracing after Hallström (Hallström 1960:pl.
V). Photo and illustration: Jan Magne Gjerde
Figure 306 Scenes interpreted as hunting pits from Alta. The left photo is from Bergheim 1, Hjemmeluft in Alta,
the middle photo is from Ole Pedersen 1, Hjemmeluft, Alta and the right photo is from Bergbukten 4,
Hjemmeluft, Alta. Left photo: Karin Tansem, VAM. Middle photo, right photo and illustration: Jan Magne
<i>Gjerde.</i>
Figure 307 Hunting pit for elk depicted at Ekeberg 2, Oslo, Eastern Norway. Section of the tracing after
Engelstad (1934:planche XLIV)
Figure 308 Hunting pits for elks depicted at Skogerveien in Drammen, Eastern Norway. Tracing after Engelstad
(1934:Planche XLVII). The scale at the bottom right is 1m
Figure 309 Hunting fence at one of the minor panels at Evenhus, middle Norway. Tracing after Gjessing
(1936a). Photo and illustration: Jan Magne Gjerde
Figure 310 Section of the Sporanes site in Telemark, Eastern Norway. Notice the hunting / guiding fences or elk
hunting pits? Where the elks and reindeer are clearly connected. Tracing after Hagen (1969:fig. 64). The site
has been dated to the transition between the late Stone Age and Bronze Age suggested by the mixture of motifs
that are connected to the different time periods435
Figure 311 Belugas gathering in the river estuary on Sommerset island, Canada. With kind permission of ©
National Geographic Society
Figure 312 Wild Reindeer at Hardangervidda, southern Norway, in 1966. Notice how the reindeer follows the
topography. Photo © Fjellanger Widerøe
Figure 313 The "dancers at Bergheim 1 in Hjemmeluft, Alta. Two of the dancers are holding an elk-head boat
and the person at the top is holding a long spear / harpoon. The boatfigure is ca. 30cm. Photo: Jan Magne
Gjerde
Figure 314 A seal hunt from an elk-head boat at Bergbukten 1, Hjemmeluft, Alta. A person is holding a spear/
harpoon aiming for the seal. The seal is slightly eroded and could be a small whale. But by comparison to other
figures it appear to be a seal. The boatfigure is 16cm long. Photo: Jan Magne Gierde

References

- 1994. Webster's encyclopedic unabridged dictionary of the English language, New York: Gramercy Books.
- Almgren, O., 1926. Hällristningar och kultbruk: bidrag till belysning av de nordiska bronsåldersristningarnas innebörd, Stockholm: Kungl. vitterhets historie och antikvitets akademien.
- Almgren, O., 1934. *Nordische Felszeichnungen als religiöse Urkunden*, Frankfurt am Main: Diesterweg.
- Andersen, B. G., F. Boen, A. Rasmussen & P. N. Vallevik, 1979. Deglaciation between Skjerstadfjord and Svartisen, North Norway. *Boreas*, 8(2), 199-201.
- Anderson, J. R. & A. C. Nilssen, 1998. Do reindeer aggregate on snow patches to reduce harassment by parasitic flies or to thermoregulate? *Rangifer*, 18(1), 3-17.
- Animosov, A. F., 1963a. Cosmological Concepts of the Peoples of the North, in *Studies in Siberian shamanism*, ed. H. N. Michael Toronto: University of Toronto Press, 157-229.
- Animosov, A. F., 1963b. The Shaman's Tent of the Evenks and the Origin of the ShamanisticRite, in *Studies in Siberian shamanism*, ed. H. N. Michael Toronto: University of Toronto Press, 84-123.
- Aporta, C., 2004. Routes, trails and tracks: Trail breaking among the Inuit of Igloolik. *Études/Inuit/Studies*, 28(2), 9-38.
- Aporta, C., 2005. From map to horizon; from trail to journey: Documenting Inuit geographic knowledge. *Études/Inuit/Studies*, 29(1-2), 221-31.
- Arnold, J. E., 1995. Transportation Innovation and Social Complexity among Maritime Hunter-Gatherer Societies. *American Anthropologist, New Series*, 97(4), 733-47.
- Arntzen, M. S. S., 2007. Bilder på stein: en studie av helleristninger på flyttblokker i Vest-Finnmark og Nord-Troms elektronisk ressurs, [Tromsø]: Universitetet i Tromsø.
- Arsenault, D., 2004a. From natural settings to spiritual places in the Algonkian sacred landscape: an archaeological, ethnohistorical and ethnographic analysis of Canadian Shield rock-art sites, in *The Figured Landscape of Rock-Art. Looking at Pictures in Place*, eds. C. Chippindale & G. Nash Cambridge: Cambridge University Press, 289-317
- Arsenault, D., 2004b. Rock art landscape and sacred places: attitudes in contemporary archaeological theory, in *The Figured Landscape of Rock-Art. Looking at Pictures in Place*, eds. C. Chippindale & G. Nash Cambridge: Cambridge University Press, 69-84.
- Arsenault, D., L. Gagnon, D. Gendron & C. Pinard, 2005. Kiinatuqarvik. A Multidisciplinary Archaeological Project on Dorset Petroglyphs and Human Occupation in the Kangirsujuaq Area, in *Contributions to the Study of the Dorset Palaeo-Eskimos*, ed. P. D. Sutherland Canadian Museum of Civilization, 105-20.
- Bahn, P. & A. Fossati (eds.), 1996. Rock art studies: news of the world. 1, Recent developments in rock art research: (acts of symposium 14D at the NEWS95 World Rock Art Congress, Turin and Pinerolo, Italy), Oxford: Oxbow Books.
- Bahn, P. & A. Fossati (eds.), 2003. Rock art studies: news of the world 2: developments in rock art research 1995-1999, Oxford: Oxbow Books.
- Bahn, P., N. R. Franklin & M. Strecker, 2008. *Rock art studies : news of the world 3*, Oxford: Oxbow Books.

- Bahn, P. & M. Lorblanchet (eds.), 1993. Rock art studies: the post-stylistic era, or Where do we go from here?: papers presented in symposium A of the 2nd AURA Congress, Cairns 1992, Oxford: Oxbow.
- Bakka, E., 1966. To helleristningar frå steinalderen i Hardanger. Viking, (1966), 77-95.
- Bakka, E., 1973. Om Alderen på Veideristningane. Viking, XXXVII, 151-87.
- Bakka, E., 1975a. Bergkunst i barskogbeltet i Sovjetsamveldet. Viking, 95-124.
- Bakka, E., 1975b. Geologically dated Arctic rock carvings at Hammer near Steinkjer in Nord-Trøndelag. *Arkeologiske Skrifter. Historisk Museum. Universitetet i Bergen*, 2, 7-48.
- Bakka, E., 1976. Arktisk og nordisk i bronsealderen i Nordskandinavia = Nordic and arctic in the bronze age of Northern Scandinavia, Trondheim.
- Bakka, E., 1979. On Shoreline Dating of Arctic Rock Carvings in Vingen, Western Norway. *Norwegian Archaeological Review*, 12(2), 115-22.
- Bakka, E., 1988. Helleristningane på Hammer i Beitstad, Steinkjer, Nord-Trøndelag: granskingar i 1977 og 1981, Trondheim.
- Bakka, E. & F. Gaustad, 1975. *Helleristningsundersøkelser 1974 i Beitstad, Steinkjer, Nord-Trøndelag*, Trondheim.
- Barth, F., 1990. The Guru and the Conjurer: transactions in knowledge and the shaping of culture in Southeast Asia and Melanesia. *Man*, 25(4), 640-53.
- Basso, K. H., 1984. Stalking with stories: Names, Places and Moral Narratives among the Western Apache, in *Text PLay and Story*, ed. E. Bruner Washington D.C, 19-55.
- Baudou, E., 1993. Hällristningarna vid Nämforsen datering och kulturmiljö, in *Ekonomi och näringsformer i nordisk bronsålder*, eds. L. Forsberg & T. B. Larsson Umeå: Umeå Universitet/Arkeologiske Institutionen, 247-61.
- Baudou, E., 1995. Norrlands forntid: ett historiskt perspektiv, Bjästa: CEWE-förlaget.
- Baudou, E. & K.-G. Selinge, 1977. *Västernorrlands förhistoria*, Härnösand: Västernorrlands läns landsting.
- Bednarik, R. G., 1995. The Côa petroglyphs: an obituary to the stylistic dating of Palaeolithic rock-art. *Antiquity*, 69(266), 877-83.
- Bednarik, R. G., 2004. The figured landscapes of rock-art: looking at pictures in place, edited by CHRISTOPHER CHIPPINDALE and GEORGE NASH. 2004. Cambridge University Press, Cambridge, 400 pages, monochrome plates and line drawings, bibliographies and index. Softcover, ISBN 0-521-52424-5. *Rock Art Research*, 21(2), 200-1.
- Bednarik, R. G., 2009. To be or not to be Palaeolithic, that is the question. *Rock Art Research*, 26(2), 165-77.
- Bell, T. G., 2004. Tollevika. Rapport i Tromsø Museums Topografiske Arkiv, Tromsø: Tromsø University Museum, 41+Appendix.
- Bell, T. G., 2005. Tollevika. Rapport i Tromsø Museums Topografiske Arkiv, Tromsø: Tromsø University Museum, 24.
- Bell, T. G., 2006. Tollevika. Rapport i Tromsø Museums Topografiske Arkiv, Tromsø: Tromsø University Museum, 13.
- Bendixen, B. E., 1879. Fornlevninger i Nordmøre og Romsdal. *Foreningen til norske fortidsmindesmærkers bevaring*, 1878, 62-160.
- Benedict, J. B., 2005. Tundra game drives: an Arctic-Alpine comparison. *Arctic Antarctic and Alpine Research*, 37(4), 425-34.
- Berezkin, Y., 2005. The Cosmic Bear Hunt: Variants of a Siberian North-American Myth. *Folklore*, 31, 79-100.
- Berglund, M., 2004. Holocene shore displacement and chronology in Angermanland, eastern Sweden, the Scandinavian glacio-isostatic uplift centre. *Boreas*, 33(1), 48-60.

- Bergman, I., A. Olofsson, G. Hornberg, O. Zackrisson & E. Hellberg, 2004. Deglaciation and colonization: Pioneer settlements in northern Fennoscandia. *Journal of World Prehistory*, 18(2), 155-77.
- Bergman, I., T. Passe, A. Olofsson, O. Zackrisson, G. Hornberg, E. Hellberg & E. Bohlin, 2003. Isostatic land uplift and Mesolithic landscapes: lake-tilting, a key to the discovery of Mesolithic sites in the interior of Northern Sweden. *Journal of Archaeological Science*, 30(11), 1451-8.
- Bergsvik, K. A., 1995. Bosetningsmønstre på kysten av Nordhordland i steinalder. En geografisk analyse, in *Steinalderkonferansen i Bergen 1993*, eds. K. A. Bergsvik, S. Nygaard & A. J. Nærøy Bergen: Arkeologisk Institutt / Bergen Museum / Universitetet i Bergen, 111-30.
- Bergsvik, K. A., 2009. Caught in the middle: functional and ideological aspects of Mesolithic shores in Norway, in *Mesolithic horizons / papers presented at the Seventh International Conference on the Mesolithic in Europe, Belfast 2005*, eds. S. McCartan, R. Schulting, G. Warren & P. Woodman Oxford: Oxbow Books, 602-9.
- Bicho, N., A. F. Carvalho, C. Gonzàlez-Sainz, J. L. Sanchidriàn, V. Villaverde & L. G. Straus, 2007. The Upper Paleolithic Rock Art of Iberia. *Journal of Archaeological Method and Theory*, 14(1), 81-151.
- Bing, J., 1913. Helleristningsstudier. *Oldtiden. Tidsskrift for norsk forhistorie*, 3(1913), 77-116.
- Birket-Smith, K., 1929. *The Caribou Eskimos. Material and Social Life and their Cultural Position. II. Analytical Part*, Copenhagen: Gyldendalske Boghandel, Nordisk Forlag.
- Birket-Smith, K., 1961. *Eskimoerne*, [København]: Udgivet af Det Grønlandske Selskab / Rhodos.
- Bjelland, T. & B. H. Helberg (eds.), 2006. *Bergkunst. En veiledning i dokumentasjon, skjøtsel, tilrettelegging og overvåking av norsk bergkunst*: Riksantikvaren / Directorate for Cultural Heritage
- Bjerck, H. B., 1986. The Fosna-Nøstvet problem. A consideration of archaeological units and chronozones in the south Norwegian Mesolithic Period. *Norwegian Archaeological Review*, 19(2), 103-22.
- Bjerck, H. B., 1990. Mesolithic site types and settlement patterns at Vega, northern Norway. *Acta Archaeologica*, 60 1989, 1-32.
- Bjerck, H. B., 1994. Nordsjøfastlandet og pionerbosetningen i Norge. Viking, LVII, 25-58.
- Bjerck, H. B., 1995. Malte menneskebilder i "Helvete": betraktninger om en nyoppdaget hulemaling på Trenyken, Røst, Nordland. *Universitetets Oldsakssamling Årbok*, 1993-1994, 121-50.
- Bjerck, H. B., 2002. Om oversiktskunnskapen. Refleksjoner i anledning Anders Hagens 80 års dag|. *Primitive tider*, 5, 161-71.
- Bjerck, H. B., 2007. Mesolithic coastal settlements and shell middens (?) in Norway, in *Shell Middens in Atlantic Europe*, eds. N. Milner, O. E. Craig & G. N. Bailey Oxford: Oxbowbooks, 5-30.
- Bjerck, H. B., 2008. Norwegian Mesolithic Trends: A Review, in *Mesolithic Europe*, eds. G. Bailey & P. Spikins New York: Cambridge University Press, 60-106.
- Bjerck, H. B., 2009a. Colonizing seasscapes: Comparative perspectives on the development of Maritime Relations in Scandinavia and Patagonia. *Arctic Anthropology*, 46(1-2), 118-31.
- Bjerck, H. B., 2009b. Colonizing seasscapes: comparative perspectives on the development of maritime relations in the Pleistocene/Holocene transition in north-west Europe, in *Mesolithic horizons / papers presented at the Seventh International Conference on the*

- *Mesolilthic in Europe, Belfast 2005*, eds. S. McCartan, R. Schulting, G. Warren & P. Woodman Oxford: Oxbow Books, 16-23.
- Bjørn, A., 1929. Nogen Norske Stenaldersproblemer. *Norsk Geologisk Tidsskrift*, 10(1928 og 1929), 53-75.
- Bjørn, A., 1933. Ny litteratur om de naturalistiske helleristninger. *Naturen*, 2-1933, 54-61.
- Black, L. T., 1988. Peoples of the Amur and Maritime Regions, in *Crossroads of continents : cultures of Siberia and Alaska*, eds. A. Crowell & W. W. Fitzhugh Washington, D.C.: Smithsonian Institution Press, 24-31.
- Black, L. T., 1991. *Glory remembered : wooden headgear of Alaska sea hunters*, [Juneau]: Friends of the Alaska State Museum.
- Blankholm, H. P., 2004. Earliest mesolithic site in northern Norway? A reassessment of Sarnes B4. *Arctic Anthropology*, 41(1), 41-57.
- Blehr, O., 1982. Når villreinen løper dit du vil. Tromura. Kulturhistorie, 1, 1-29.
- Boas, F., 1888. The Central Eskimo, Washington: Government Printing Office.
- Bolin, H., 2000. Animal Magic. The Mythological Significance of Elks, Boats and Humans in North Swedish Rock Art. *Journal of Material Culture*, 5(2), 153-76.
- Bollingmo, T., 1991. Andefugler, in *Norges Dyr. Fuglene 1*, eds. O. Hogstad & Semb-Johansson J.W. Cappelens Forlag.
- Boltunov, A. N. & S. E. Belikov, 2002. Belugas (Delphinapterus leucas) of the Barents, Kara and Laptev seas, in *Belugas in the North Atlantic and the Russian Arctic*, eds. M. P. Heide-Jørgensen & Ø. Wiig Tromsø: The North Atlantic Marine Mammal Commission, 149-69.
- Book, T., 2008. Kartmanipulation i öst, in *Kartan och Verkligheten*, eds. T. Lundén & M. Elg Stockholm: Svenska sällskapet för antropologi och geografi, 235-50.
- Bostwick, L. G., K. Born & M. Jaukkuri, 1998. Fortidskunst i Nordland, Stamsund: Orkana.
- Bradley, R., 1991. Rock Art and the Perception of Landscape. *Cambridge Archaeological Journal*, 1(1), 77-101.
- Bradley, R., 1993. Altering the earth: the origins of monuments in Britain and Continental Europe: the Rhind lectures 1991-92, Edinburgh: Society of Antiquaries of Scotland.
- Bradley, R., 1994. Symbols and signposts understanding the prehistoric petroglyphs of the British Isles, in *The ancient mind. Elements of cognitive archaeology*, eds. C. Renfrew & E. B. W. zubrow Cambridge: Cambridge University Press, 95-106.
- Bradley, R., 1997. *Rock art and the prehistory of Atlantic Europe : signing the land*, London: Routledge.
- Bradley, R., 1998. The significance of monuments: on the shaping of human experience in Neolithic and Bronze Age Europe, London: Routledge.
- Bradley, R., 2000a. An archaeology of natural places, London: Routledge.
- Bradley, R., 2000b. *The Good Stones. A new investigation of the Clava Cairns*, Edinburgh: Past Historic, Kings Stanley, Gloucestershire.
- Bradley, R., F. C. Boado & R. F. Valcarce, 1994. Rock art research as landscape archaeology: a pilot study in Galicia, north-west Spain. *World Archaeology*, 25(3), 374-90.
- Bradley, R., C. Chippindale & K. Helskog, 2002a. Post-Paleolithic Europe, in *Handbook of Rock Art Research*, ed. D. S. Whitley Walnut Creek, California: AltaMira Press, 482-530.
- Bradley, R., A. Jones, L. N. Myhre & H. Sackett, 2002b. Sailing through Stone: Carved Ships and the Rock Face at Revheim, Southwest Norway. *Norwegian Archaeological Review*, 35(2), 109-18.
- Brandstrup, L., 1985. *Dyrenes liv og død : de eskimoiske og sibiriske jægere*, København: Borgen.
- Bratrein, H. D., 1968. Ny Nordnorsk Veideristning. Nicolay, 2, 17-9.

- Brjusov, A. J., 1940. *Istorija drevnej Karelii*, Moscow: Gosudarstvennoe izdatelstvo kulturno-prosvetitelnoj literatury.
- Brjussow, A. J., 1957. Geschichte der neolithischen Stämme im europäischen Teil der UdSSR, Berlin: Akademie Verlag.
- Brunius, C. G., 1868. Försök till förklaringar öfver hällristningar, Lund: [Gleerup].
- Brück, J., 2005. Experiencing the past? The development of a phenomenological archaeology in British prehistory. *Archaeological Dialogues*, 12(1), 45-72.
- Brøgger, A. W., 1906. Elg og ren paa helleristninger i det nordlige Norge. *Naturen*, 10(3), 356-60.
- Brøgger, A. W., 1909. *Den arktiske stenalder i Norge*, Christiania: I kommisjon hos Jacob Dybwad.
- Brøgger, A. W., 1925. Det norske folk i oldtiden, Oslo: Aschehoug.
- Brøgger, A. W., 1931. Die arktischen Felsenzeichnungen und Malereien in Norwegen *IPEK. Jahrbuch für Prähistoriche & Ethnographische Kunst*, 1931, 11-24.
- Buggey, S., 1999. *An Approach to Aborigional Cultural Landscapes*, Ottawa: Historic Sites and Monuments Board of Canada, Parks Canada.
- Burenhult, G., 1973. The rock carvings of Götaland (excluding Gothenburg county, Bohuslän and Dalsland): Part II Illustrations, Lund: Institute of Archaeology, University of Lund
- Burkitt, M. C., 1921. *Prehistory : a study of early cultures in Europe and the Mediterranean basin*, Cambridge.
- Burov, G. M., 1989. Some Mesolithic Wooden Artifacts from the Site of Vis I in the European North East of the U.S.S.R, in *The Mesolithic in Europe: papers presented at the third International Symposium Edinburgh 1985*, ed. C. Bonsall Edinburgh: John Donald, 391-401.
- Bäärnhielm, G. & I. Zachrisson, 1994. De Finnis, "Omm samerna", ur Historia Norvegiæ. *Fornvännen*, 89, 161-4.
- Bøe, J., 1931. Steinalderens naturalistiske kunst. Nordisk Kultur, XXVII, 13-30.
- Bøe, J., 1932. Felszeichnungen im westlichen Norwegen, Bergen.
- Bøe, J., 1940. En helligdom med malte veggbilder i Hardanger. Viking, 1940(IV).
- Carpelan, C., 1975. Älg- och björnhuvudföremål från Europas nordliga delar. *Finskt Museum*, 1975, 5-67.
- Célestin-Lhopiteau, I., 2009. A testimony of the present use of rock art by a Bouriat Shaman in Siberia (Russian Federation). *International Newsletter on Rock Art*, 53, 25-30.
- Chaloupka, G., 1992. Retouch events, in *Retouch: Maintenance and Conservation of Aboriginal Rock Imagery*, ed. G. K. Ward Australian Rock Art Association, 12-6.
- Chandler, J. H., J. G. Fryer & H. T. Kniest, 2005. Non-invasive three -dimentional recording of aborigional rock art using cost-effective digital photogrammetry. *Rock Art Research*, 22(2), 119-30.
- Chippindale, C., 2001. Theory and meaning of prehistoric European rock art: "informed methods", "formal methods" and questions of uniformitarianism, in *Theoretical Perspectives in Rock Art Research*, ed. K. Helskog Oslo: Institutt for Sammenlignende Kulturforskning, 68-98.
- Chippindale, C., 2004. From millimetre up to kilometre: a framework of space and of scale for reporting and studying rock-art in its landscape, in *The Figured Landscapes of Rock-Art. Looking at Pictures in Place*, eds. C. Chippindale & G. Nash Cambridge: Cambridge University Press, 102-17.
- Chippindale, C. & G. Nash (eds.), 2004a. *The Figured landscapes of rock art*, Cambridge: Cambridge University Press.

- Chippindale, C. & G. Nash, 2004b. Pictures in place: approaches to the figured landscapes of rock-art, in *The Figured Landscapes of Rock-Art. Looking at Pictures in Place*, eds. C. Chippindale & G. Nash Cambridge: Cambridge University Press, 1-36.
- Chippindale, C. & P. S. C. Taçon (eds.), 1998. *The Archaeology of rock-art*, Cambridge: Cambridge University Press.
- Coll, A. L., 1902. Fra Helleristningernes Område. Første Stykke. Foreningen til norske fortidsmindesmærkers bevaring. Aarsbøger, 1901, 34-59.
- Coll, A. L., 1903. Fra Helleristningernes Område. Andet Stykke. *Foreningen til norske fortidsmindesmærkers bevaring. Aarsbøger*, 1902, 106-40.
- Coll, A. L., 1906. Fra Helleristningernes Område. Tredje Stykke. Foreningen til norske fortidsmindesmærkers bevaring. Aarsbøger, 1905, 1-34.
- Collignon, B., 2006a. Inuit Place Names and Sense of Place, in *Critical Inuit studies : an anthology of contemporary Arctic ethnography*, eds. P. R. Stern & L. Stevenson Lincoln, Neb.: University of Nebraska Press, 187-205.
- Collignon, B., 2006b. *Knowing places : the Inuinnait, landscapes and the environment,* [Edmonton]: CCI Press.
- Cooney, G., 2000. Landscapes of Neolithic Ireland, New York: Routledge.
- Cooney, G., 2002. So Many Shades of Rock: Colour Symboloism and Irish Stone Axeheads, in *Colouring the past: the significance of colour in archaeological research*, eds. A. Jones & G. MacGregor Oxford: Berg, 93-107.
- Corner, G. D., V. Y. Yevzerov, V. V. Kolka & J. J. Moller, 1999. Isolation basin stratigraphy and Holocene relative sea-level change at the Norwegian-Russian border north of Nikel, northwest Russia. *Boreas*, 28(1), 146-66.
- Dahl, R., 1968. Late-Glacial Accumulations, Drainage and Ice Recession in the Narvik-Skjomen District, Norway. *Norsk Geografisk Tidsskrift*, 22(1968), 101-65.
- Damm, C., A. Hesjedal, B. Olsen & I. Storli, 1993. *Arkeologiske undersøkelser på Slettnes, Sørøy 1991*, Tromsø: Universitetet i Tromsø.
- Danielsen, J. S., 2001. A land uplift map of Fennoscandia. Survey Review, 36(282), 282-91.
- Darvill, T., 2002. White on Blonde: Quartz Pebbles and the Use of Quartz at Neolithic Monuments in the Isle of MAn and Beyond, in *Colouring the past: the significance of colour in archaeological research*, eds. A. Jones & G. MacGregor Oxford: Berg, 73-91
- Descola, P., 1994. *In the society of nature : a native ecology in Amazonia*, Cambridge: Cambridge University Press.
- Descola, P. & G. Pálsson (eds.), 1996. *Nature and society : anthropological perspectives*, London: Routledge.
- Deviatova, E. I., 1976. Geologija i Palinologija golocjenja i Kronologija pamjatnikov pervobytnoi epoki jugo-zaladnom Belomorje.
- Devlet, E., 2008. Rock Art Studies in Northern Russia and the Far East, 2000-2004, in *Rock art studies : news of the world 3*, eds. P. Bahn, N. R. Franklin & M. Strecker Oxford: Oxbow Books, 120-37.
- Devlet, E. G., A. Kochanovich, E. Miklashevich, M. Slobodzian, S. Zini & E. Antipina, 2006. *The Pegtymel Working Papers*, Moscow: IA RAN.
- Dunfjeld, M., 2006. *Tjaalehtjimmie : form og innhold i sørsamisk ornamentikk*, Snåsa: Saemien sijte.
- Edmonds, M., 1999. *Ancestral geographies of the Neolithic : landscape, monuments and memory*, London: Routledge.
- Edsman, C. M., 1965. The Hunter, the Games, and the Unseen Powers. Lappish and Finnish Bear Rites, in *Hunting and fishing*, ed. H. Hvarfner Luleå: Norrbottens museum, 159-88.

- Ekholm, G., 1917. De skandinaviska hällristningarna och deras betydelse. Ymer, 36, 275-308.
- Ekman, J. & E. Iregren, 1984. Archaeo-zoological investigations in northern Swewden.
- Eliade, M., 1998. Sjamanisme: henrykkelsens og ekstasens eldgamle kunst, Oslo: Pax.
- Engelmark, R. & J. Harju, 2005. Rapport över arkeologisk förundersøkning av Raä 183, Ramsele sn, Ångermanland, 2005, in *UMARK. Arkeologisk rapport* Umeå: Institutionen för arkeologi och samiska studier. Umeå Universitet.
- Engelmark, R. & T. B. Larsson, 2005. Rock Art and Environment: Towards increased Contextual Understanding, in *Reflexiones sobre Arte Rupestre*, *paisaje*, *forma y contenido*, eds. M. Santos Estévez & A. T. Melèndez Santiago de Compostela: Instituto de Estudos Galegos Padre Sarmiento, 113-22.
- Engelstad, E., 1983. The Iversfjord locality: a study of behavioral patterning during the late stone age of Finnmark, North Norway, Tromsø.
- Engelstad, E. S., 1934. Østnorske ristninger og malinger av den arktiske gruppe, Oslo: Aschehoug.
- Engelstad, E. S., 1935. Stil und Technik der Ostnorwegischen Felsbilder der Steinzeit. *IPEK. Jahrbuch für Prähistoriche & Ethnographische Kunst*, 1934, 17-22.
- Eriksson, D., 2005. Rapport över undersökning av fångstgrop RAÄ 16, Högberget I, Ramsele sn, Ångermanland, 2002, in *UMARK 39. Arkeologisk rapport* Umeå: Institutionen för arkeologi och samiska studier. Umeå Universitet, 32.
- Eronen, M., 2005. Land Uplift: Virgin Land from the Sea, in *The Physical geography of Fennoscandia*, ed. M. Seppälä Oxford: Oxford University Press, 17-34.
- Erä-Esko, A., 1958. Die Elchkopfskulptur vom Leärojärvi in Rovaniemi *Suomen Museo*, LXV, 8-18.
- Europaeus, A., 1917. Kalliomaalaus Vitträskin rannalla Kirkkonummella. *Suomen Museo*, 1917, 45-51.
- Europaeus, A., 1922. Hällmålningarna vid Vitträsk. *Finska Fornminnesföreningens tidsskrift*, XXXII(1), 61-7.
- Fandén, A., 2001. Hällmålningar en ny synsvinkel på Norrlands förhistoria, in *Fordom då alla djur kunde tala- : samisk tro i förändring*, ed. Å. V. Kroik Stockholm: Rosima, 88-118.
- Fandén, A., 2002. Schamanens berghällar nya tolkningsperspektiv på den norrländska hällristnings- och hällmålningstraditionen, Nälden: Lofterud produktion.
- Faradjev, A. A., 1993. Zalavruga's petroglyphs and the prehistoric ego. *Rock Art Research*, 10(2), 134-8.
- Farbregd, O., 1980. Veideristningar og veidemåte. Festskrift til Sverre Marstrander. Universitetets Oldsakssamling Skrifter. Ny Rekke, 3, 41-7.
- Farbregd, O., 1994. Bergkunst og Samfunn. Spor, (1), 6-10.
- Fett, E. N. & P. Fett, 1941. *Sydvestnorske helleristninger: Rogaland og Lista*, Stavanger: Stavanger museum.
- Fett, P., 1934. Fotografering av helleristninger. *Naturen*, 58, 77-85.
- Fett, P., 1941. Nye ristningar i Nordfjord. Vingelva og Fura. *Bergen Museums Årbok. Historisk-antikvarisk rekke*, 6(1941), 9.
- Fett, P. & E. N. Fett, 1979. Relations West Norway Western Europe Documented in Petroglyphs. *Norwegian Archaeological Review*, 12(2), 65-107.
- Fischer, A., 1995. An entrance to the Mesolithic world below the ocean, in *Man and sea in the Mesolithic : coastal settlement above and below present sea level : proceedings of the international symposium, Kalundborg, Denmark 1993*, ed. A. Fischer Oxford: Oxbow, 371-84.
- Fjellström, P., 1981 [1755]. Kort berättelse om lapparnas björna-fänge: samt deras der wid brukade widskeppelser, Umeå: Två förläggare bokförlag.

- Fjellström, P. & L. Bäckman, 1981[1755]. *Kort berättelse om lapparnas björna-fänge : samt deras der wid brukade widskeppelser*, Umeå: Två förläggare bokförlag.
- Forsberg, L., 1993. En kronologisk analys av ristningarna vid Nämforsen, in *Ekonomi och näringsformer i nordisk bronsålder*, eds. L. Forsberg & T. B. Larsson Umeå: Umeå Universitet/Arkeologiske Institutionen, 195-261.
- Forsberg, L., 2000. The Social Context of the Rock Art in Middle Scandinavia During the Neolithic, in *Myanndash. Rock art in the ancient Arctic*, ed. A. Kare Rovaniemi: Arctic Centre Foundation Rovaniemi, 50-87.
- Forsberg, L. & E. M. W. Saetersdal, 2004. Carved in Stone? In Search of a Finnish Rock Carving Tradition. *BAR International Series*, 1210, 201-16.
- Fossati, A., 2002. Landscape representations on the boulders and menhirs in the Valcamonica Valtellina area, Alpine Italy, in *European Landscapes of Rock-Art*, ed. G. Nash London: Routledge, 93-115.
- Fossati, A., 2003. Topographical representations in the Valcamonica rock art tradition: Typology, Chronology and Interpretation, in *Rock art in landscapes landscapes in rock art*, ed. K. Sognnes Trondheim: Tapir akademisk forlag, 31-49.
- Franklin, R. & P. Bunte, 1994. When sacred land is sacred to three tribes. San Juan Paiute sacred sites and Hopi-Navajo-Paiute suit to partition the Arizona Navajo Reservation, in *Sacred Sites, Sacred Places*, eds. D. L. Carmichael, J. Hubert, B. Reeves & A. Schanche London: Routledge, 245-58.
- Fredén, C. & K. Grånäs, 2002. "Världens högsta kustlinje". Geologiskt Forum, 36, 20-6.
- Freeman, M. M. R., 1976a. *Inuit land use and occupancy project. Report, volume 1: Land Use and Occupancy*, Ottawa: Department of Indian and Northern Affairs.
- Freeman, M. M. R., 1976b. *Inuit land use and occupancy project. Report, volume 2: Supported Studies*, Ottawa: Department of Indian and Northern Affairs.
- Freeman, M. M. R., 1976c. *Inuit land use and occupancy project. Report, volume 3: Land Use Atlas*, Ottawa: Department of Indian and Northern Affairs.
- Friesen, T. M., 1999. Resource structure, scalar stress, and the development of Inuit social organization. *World Archaeology*, 31(1), 21-37.
- Friesen, T. M. & C. D. Arnold, 1995. Zooarchaeology of a Focal Resource Dietary Importance of Beluga Whales to the Precontact Mackenzie Inuit. *Arctic*, 48(1), 22-30.
- Gage, J., A. Jones, R. Bradley, K. Spence, E. J. W. Barber & P. C. Taçon, 1999. What Meaning had Colour in Early Societies? *Cambridge Archaeological Journal*, 9(1), 109-26.
- Gamvik museum, 1997. Kveita: havets dronning, Gamvik: Gavik museum.
- Gansum, T., G. B. Jerpåsen & C. Keller, 1997. *Arkeologisk landskapsanalyse med visuelle metoder*, Stavanger: Arkeologisk museum i Stavanger.
- Gentile, M., 2008. Den kartografiska transitionen i före detta Sovjetunionen, in *Kartan och verkligheten*, eds. T. Lundén & M. Elg Stockholm: Svenska sällskapet för antropologi och geografi, 17-27.
- George, O., 2005. Rapport 2005:4. Arkeologisk kursundersökning av Raä 158 Ådals-Lidens sn. Boplats och lämningar från stenålder-historisk tid, Länsmuseet Västernorrland. Kulturmiljöavdelingen, 26.
- Gimbutas, M., 1956. The prehistory of eastern Europe, Cambridge, Mass.: Peabody Museum.
- Gjerde, J. M., 1998. A different use of landscape? The visual landscape study of rock art styles in Hardanger, Western Norway. A method of dating?, in *Department of Archaeology* Reading: University of Reading, 100.
- Gjerde, J. M., 2002. Lokalisering av helleristninger i landskapet, in *Bilder av bronsålder ett* seminarium om förhistorisk kommunikation. Rapport från ett seminarium på Vitlycke

- *Museum 19.e 22.e oktober 2000*, ed. J. Goldhahn Stockholm: Almqvist & Wicksell International.
- Gjerde, J. M., 2005. Beluga Landscapes. New interpretations of rock art and landscapes by the Vyg River, NW-Russia, in *World of Rock Art. Papers presented at the International Conference*, ed. E. G. Devlet Moskow: Institute of Archaeology RAS, 338-43.
- Gjerde, J. M., 2006. The *location* of rock pictures *is* an interpretive element, in *Samfunn*, *symboler og identitet Festskrift til Gro Mandt på 70-årsdagen*, eds. R. Barndon, S. M. Innselset, K. K. Kristoffersen & T. K. Lødøen Bergen: Universitetet i Bergen, 197-209.
- Gjerde, J. M., 2008. Boats of the North, in *Kanozero Petrogliphs. The Kirovsk International Conference on rock art*Kirovsk, 58-63.
- Gjerde, J. M., 2009. Kvitkvalens landskap og helleristningar ved Vyg, Kvitsjøen, Nordvest-Russland. *Viking*, 49-72.
- Gjerde, J. M., in prep-a. Rock art in landscapes of Vingen, western Norway.
- Gjerde, J. M., in prep-b. Skavberg revisited. New readings of the Stone Age rock art site at Skavberg.
- Gjerde, J. M., in press-a. Beluga landscapes. Rock Art and Landscapes in the Vyg area, NW-Russia, in *Cognition and Signification in Northern Landscapes*, eds. E. M. Walderhaug & L. Forsberg Bergen: University of Bergen.
- Gjerde, J. M., in press-b. "Cracking" Landscapes. New documentation new knowledge?, in *Changing pictures rock art traditions and visions in northernmost Europe*, eds. J. Goldhahn, I. Fuglestvedt & A. Jones Oxford: Oxbowbooks.
- Gjessing, G., 1931. The Skjomen Carving. Acta Archaeologica, II, 278-85.
- Gjessing, G., 1932. Arktiske helleristninger i Nord-Norge, Oslo: Aschehoug.
- Gjessing, G., 1935. Die Chronologie der schiffsdarstellungen auf den felsenzeichnungen zu Bardal, Trøndelag. *Acta Archaeologica*, 5(1935), 125-39.
- Gjessing, G., 1936a. *Nordenfjelske ristninger og malinger av den arktiske gruppe*, Oslo: Aschehoug.
- Gjessing, G., 1936b. Vom Naturalismus zur Schematisierung. Neuere Untersuchnungen der Felsbilder in Trøndelag und Nord-Norwegen. *IPEK. Jahrbuch für Prähistoriche & Ethnographische Kunst*, 1935, 4-18.
- Gjessing, G., 1937. Innberetning om arkeologiske undersøkelser på Leiknes, Korsnes. Tysfjord pgd. Nordland, in *Topografisk Arkiv, Tromsø Museum* Tromsø: Tromsø Museum, 3.
- Gjessing, G., 1938. Nyoppdagete veideristninger i Nord-Norge. Viking, II, 137-44.
- Gjessing, G., 1939. Østfolds jordbruksristninger: Idd, Berg og delvis Skjeberg, Oslo: Aschehoug.
- Gjessing, G., 1941. Litteratur och Kritik. Gustaf Hallström: Monumental Art of Northern Europe from the Stone Age I. The Norwegian Localities. Stockholm 1938. *Fornvännen*, 36, 106-16.
- Gjessing, G., 1942. Yngre steinalder i Nord-Norge, Oslo: Aschehoug.
- Gjessing, G., 1944. *Veideristningen ved Drotten i Fåberg*, <Oslo>: Universitetets Oldsaksamling.
- Gjessing, G., 1945. *Norges steinalder*, Oslo: Norsk arkeologisk selskap: I kommisjon: Tanum.
- Gjessing, G., 1974. Veidekunst i Nord-Norge litt spreidd småplukk. Nicolay, 18(1974), 3-9.
- Gjessing, G., 1978. Rock-pictures in northern Fenno-Scandia and their eastern affinities, in *Acts of the International Symposium on Rock Art*, ed. S. Marstrander

- Oslo/Bergen/Tromsø: Universitetesforlaget/Institutt for Sammenlignende Kulturforskning, 14-30.
- Glørstad, H., 1992. Paleopsykologi på Svartangen. Nicolay, 57, 20-6.
- Goldhahn, J., 2002a. Hällornas dån ett audiovisuellt perspektiv på kustbunden hällkonst i norra Sverige, in *Bilder av bronsålder : ett seminarium om förhistorisk kommunikation : rapport från ett seminarium på Vitlycke Museum 19.e-22.e oktober 2000*, ed. J. Goldhahn Stockholm: Almqvist & Wiksell.
- Goldhahn, J., 2002b. 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. *Hällbildsstudier i norra Europa : trender och tradition under det nya milleniet*, Göteborg: Göteborgs universitet. Institutionen för arkeologi.
- Goldhahn, J., 2008. Rock Art Studies in Northernmost Europe, 2000-2004, in *Rock art studies* : news of the world 3, eds. P. Bahn, N. R. Franklin & M. Strecker Oxford: Oxbow Books, 16-36.
- Gosden, C. & L. Head, 1994. Landscape a usefully ambiguous concept. *Archaeologia Oceania*, 29(1994), 113-6.
- Granlund, J., 1940. Styggberget En Älgstupa. Folk-Liv Acta Ethnologica. Et Folkloristica Europaea, IV(1940), 5-9.
- Grewingk, C., 1854. Ueber die in Granit Geritzten Bildergruppen a Ostuffer des Onega-Sees. Bulletin de la classe Des Sciences Historiques, Philologiques et Politiques, 271.272(Tome XII. No. 7. 8), 97-103.
- Grewingk, C., 1878. Zur Archäologie des Balticum und Russlands. Zwiter Beitrag. Ueber ostbaltische, vorzugsweise dem heidnischen Todtencultus dienende schiffförmige und anders gestaltete grosse Steinsetzungen, in *Arkiv für Anthropologie. Zeitchrift für Naturgeschichte und Urgeschichte des Menschen*, eds. A. Ecker & L. Lindenschmit Braunschweig: Friedrich Vieweg und Sohn, 73-100.
- Grydeland, S. E., 2000. Nye perspektiver på eldre steinalder i Finnmark. En studie fra indre Varanger. *Viking*, 2000, 10-50.
- Grydeland, S. E., 2001. *De sjøsamiske siida-samfunn en studie med utgangspunkt i Kvænangen, Nord-Troms*, Sørkjosen: Nord-Troms museum.
- Grydeland, S. E., 2005. The pioneers of Finnmark from the earliest coastal settlements to the encounter with the inland people of Northern Finland, in *Pioneer settlements and colonization processes in the Barents region*, ed. H. Knutsson Vuollerim, 43-78.
- Grönhagen, J., 1994. Ristiinan Astuvansalmi, muinainen kulttipaikkako? *Suomen Museo*, 1994, 5-18.
- Grønnesby, G., 1998. Skandinaviske helleristninger og rituell bruk av transe. *Arkeologiske Skrifter fra Universitetet i Bergen*, 9, 59-82.
- Grønnow, B., M. Meldgaard & J. Berglund Nielsen, 1983. *Aasivissuit the great summer camp : archeological, ethnographical and zoo-archaeological studies of a caribouhunting site in West Greenland*, Copenhagen: Nyt Nordisk Forlag Arnold Busck.
- Gurina, N. N., 1956. Oleneostrovskij mogil'nik: so vstupitel'noj stat'ej V.I. Ravdonikasa, Moskva.
- Gurina, N. N., 1980. Initative art of ancient tribes on the Kola Peninsula, in *Fenno-ugri et slavi 1978: papers presented by the participants in the Soviet-Finnish symposium* "The cultural relations between the peoples and countries of the Baltic Area during the Iron Age and the Early Middle Ages" in Helsinki May 20 23, 1978, 14-36.
- Gurina, N. N., 1987. Main stages in the cultural development of the ancient population of the Kola Peninsula. *Fennoscandia archaeologica*, 4, 35-48.

- Gurina, N. N., 1997. *Istorija kul'tury drevnego naselenija Kol'skogo poluostrova*, Sankt-Peterburg: Tsentr "Peterburgskoe vostokovedenie".
- Gurina, N. N. & A. Stalsberg, 2005. *The petroglyphs at Calmn-Varre on the Kola peninsula : analysis and analogies,* Trondheim: Vitenskapsmuseet Tapir.
- Hagen, A., 1969. Studier i vestnorsk bergkunst: Ausevik i Flora, Oslo.
- Hagen, A., 1976. Bergkunst: jegerfolkets helleristninger og malninger i norsk steinalder, Oslo: Cappelen.
- Hajdú, P., 1963. The Samoyed peoples and languages, Bloomington,: Indiana University.
- Halén, O., 1995. Allträsket a Mesolithic coastal site in northernmost Sweden, 25 km inland, and 100 m above the present sea, in *Man and sea in the Mesolithic : coastal settlement above and below present sea level : proceedings of the international symposium, Kalundborg, Denmark 1993*, ed. A. Fischer Oxford: Oxbow.
- Hallowell, A. I., 1926. Bear ceremonialism in the northern hemisphere, [S.l.]: [s.n.].
- Hallström, G., 1907a. Hällristningar i norra Skandinavien. Ymer, 27, 211-27.
- Hallström, G., 1907b. Nordskandinaviska hällristningar. Fornvännen, 2, 160-89.
- Hallström, G., 1908a. Hällristningarna kring Trondhjemsfjorden. *Det Kongelige Norske Videnskabers Selskabs Skrifter*, 10(1907), 3-10.
- Hallström, G., 1908b. Nordskandinaviska hällristningar. II. De norska ristningarna. *Fornvännen*, 3, 4-86.
- Hallström, G., 1909. Nordskandinaviska hällristningar. II. De norska ristningarna. *Fornvännen*, 4, 126-59.
- Hallström, G., 1910. *Nordskandinaviska hällristningar 2 De norska ristningarna*, Stockholm?: [s.n.].
- Hallström, G., 1919. En nyupptäckt hällmålning. Fornvännen, 1909, 55-6.
- Hallström, G., 1920. Nämnforsens Hällristningar. Svenska Turistföreningens Årsskrift, 1920, 105-14.
- Hallström, G., 1921. Gravplatser och Offerplatser i Ryska Lappmarken, in *Etnologiska Studier Tillägnade Nils Edvard Hammerstedt*Stockholm: A.-B. Svenska Teknologföreningens Förlag, 183-94.
- Hallström, G., 1925. En importvara til Västerbotten för 4000 år sedan. Ett bidrag til vår kunnskap om hur länet bebyggdes. *Västerbotten*, 1924-1925, 88-109.
- Hallström, G., 1931. Böra runstenar och hällristningar uppmålas? *Fornvännen*, 26(1931), 257-83.
- Hallström, G., 1937. Nordeuropäische Felskunst und Entwicklungsprobleme. *IPEK. Jahrbuch für Prähistoriche & Ethnographische Kunst*, 1936/1937, 50-61.
- Hallström, G., 1938. *Monumental art of Northern Europe from the Stone Age. The Norwegian Localities*, Stockholm: Thule.
- Hallström, G., 1943. En nyopptäkt svensk hällmålning. Fornvännen, 38(1943), 146-61.
- Hallström, G., 1945. *Hällristningarna vid Nämforsen. En vägledning för besökande*, Stockholm: Nordisk Rotogravyr.
- Hallström, G., 1960. *Monumental art of northern Sweden from the Stone Age : Nämforsen and other localities*, Stockholm: Almqvist & Wiksell.
- Hansen, A. M., 1904. *Landnåm i Norge : en utsigt over bosætningens historie*, Kristiania: Fabritius.
- Hansson, A., 2006a. Hällmålningen på Flatruet en arkeologisk undersökning. *Jämten*, 99, 88-92.
- Hansson, A., 2006b. The rock paintings at Flatruet an archaeological survey. *Adoranten*, 2006, 109-15.
- Harner, M., 1980. The way of the shaman a guide to power and healing, San Francisco: Harper & Row.

- Hauan, M. A., 1996. Kveita som mangetydig symbol i fiskerimiljø. *Ottar. Populære småskrifter fra Tromsø Museum*, 10-7.
- Hauglid, Martinus A., 2006. Reguleringsplanarbeid for Nes Fort Saksnummer 200600529, Nordland Fylkeskommune. Kultur og Miljøavdelingen., 9.
- Heimann, C., 1999. Places of rock art and settlements. The use of rock art in the transformation of a neolithic landscape, in *Glyfer och arkeologiska rum : en vänbok till Jarl Nordbladh*, eds. J. Nordbladh, H. Karlsson & A. Gustafsson Göteborg: Göteborg University, Department of Archaeology, 31-44.
- Helberg, B., 2001. Killer whales in rock art hunting magic or totemic figures?, in *Killer Whales*, 59-60.
- Helberg, B. H., 2004. Rapport fra utgravinga i Indre Sandvik/Ruksesbákti, Porsanger Kommune, Finnmark 2003., Tromsø Museum, 10.
- Helberg, B. H., 2008. Helleristningene på Forselv, in Årbok 2008 fra bane, bygd og byNarvik: Museum Nord-Ofoten museum, 47-53.
- Helland, A., 1908. *Topografisk-Statistisk Beskrivelse over Nordlands Amt. Anden del. Den almindelige del*, Kristiania: H.Aschehoug & Co.
- Helms, M. W., 1988. *Ulysses' sail: an ethnographic odyssey of power, knowledge, and geographical distance*, Princeton, N.J.: Princeton University Press.
- Helms, M. W., 1992. Long-Distance Contacts, Elite Aspirations, and the Age of Discovery in Cosmological Context, in *Resources, power, and interregional interaction*, eds. P. A. Urban & E. M. Schortman New York: Plenum Press, 157-74.
- Helskog, K., 1976. Helleristningene ved Bossekop: kulturspor eller fortidens veidefolk. *Ottar. Populære småskrifter fra Tromsø Museum*, 89(Mars 1976), S. 24-9.
- Helskog, K., 1977. Nye helleristninger ved Kvalsund. *Ottar. Populære småskrifter fra Tromsø Museum*, 98, 6-9.
- Helskog, K., 1980. The Chronology of the Younger Stone Age Settlements in Varanger, North Norway. *Acta Borealia*, 1(1), 39-69.
- Helskog, K., 1983. Helleristningene i Alta i et tidsperspektiv en geologisk og multivariabel analyse, in *Folk og ressurser i nord. Foredrag fra Trondheims-symposiumet om midtog nordskandinavisk kultur 1982*, eds. J. Sandnes, I. Østerlie & A. Kjelland Trondheim: Universitetsforlaget, 47-60.
- Helskog, K., 1984. Helleristningene i Alta. En presentasjon og en analyse av menneskefigurene. *Viking*.
- Helskog, K., 1985a. Bjørnejakt og ritualer for 6200-3700 år siden. *Ottar. Populære småskrifter fra Tromsø Museum*, 156(5), 7-11.
- Helskog, K., 1985b. Boats and Meaning: A Study of Change and Continuity in the Alta Fjord, Arctic Norway, from 4200 to 500 Years B.C. . *Journal of Anthropological Archaeology*, 4, 177-205.
- Helskog, K., 1985c. Helleristningene i Alta kilder om levekår i forhistorien? *Heimen*, 4(1985 XXII), 193-201.
- Helskog, K., 1987. Selective Depictions: A study of 3700 years ofrock carvings from arctic Norway and their relationship to the Sami drums, in *Archaeology as long-term history*, ed. I. Hodder Cambridge: Cambridge University Press.
- Helskog, K., 1988. *Helleristningene i Alta : spor etter ritualer og dagligliv i Finnmarks forhistorie*, Alta: K. Helskog ; distributør: Alta museum.
- Helskog, K., 1989a. Helleristningene i Alta i et nordlig perspektiv. Kronologi og symbolisme *Iskos*, 7, 67-75.
- Helskog, K., 1989b. Naturalisme og skjematisme i nord-norske helleristninger, in *Framskritt* for fortida i nord: i Povl Simonsens fotefar, eds. A. Utne, R. Bertelsen & P. K. Reymert Tromsø, 87-104.

- Helskog, K., 1990. Sjamaner, Endring og Kontiunitet. Relasjoner mellom Helleristninger og Samfunn med utgangspunkt i Helleristningene i Alta. *Finlands Antropologiska Sällskaps Publikationer*, 1, 30-6.
- Helskog, K., 1999. The Shore Connection. Cognitive Landscape and Communication with Rock Carvings in Northernmost Europe. *Norwegian Archaeological Review*, 32(2), 73-94.
- Helskog, K., 2000. Changing Rock Carvings Changing Societies. A case from arctic Norway. *Scandinavian Society for Prehistoric Art*, 5-16.
- Helskog, K., 2001a. The rock carvings at Hjemmeluft/Jiepmaluokta, Alta: Alta Museum.
- Helskog, K., 2001b. Следы, повествования и ландщафты в наскальном искусстве севера Tracks, stories and landscapes in northern rock art., in в путн или путн археолога. Часть 2. к 80-летию профессора Абрама Давидовича Столяра, ed. A. Stoliar St. Petersburg: tmu, 64-88.
- Helskog, K., 2004a. Landscapes in rock-art: rock-carving and ritual in the old European North, in *The Figured Landscapes of Rock-Art. Looking at Pictures in Place*, eds. C. Chippindale & G. Nash Cambridge: Cambridge University Press, 265-88.
- Helskog, K., 2004b. The Rock Art North of the Arctic Circle, in *Archaeology in North Norway*, ed. S. Wickler Tromsø: Tromsø University Museum, 11-21.
- Helskog, K., 2005. Depictions of prehistoric reindeer corrals. Hunting, domestication or both, in *World of Rock Art. Papers presented at the International Conference*, ed. E. G. Devlet Moskow: Institute of Archaeology RAS, 344-51.
- Helskog, K., in prep. Samtaler med Maktene.
- Helskog, K., in press. From the Tyranny of the figures to the interrelationship between myths rock art and their surfaces. Observations from the top of Europe, in *Seeing and Knowing: Ethnography and Beyond in Understanding Rock Art. Papers in Honour of David Lewis-Williams*, eds. C. Chippindale, B. W. Blundell & B. Smith Witswaterstand: University of Witswaterstand Press, 1-24.
- Helskog, K. & E. Høgtun, 2004. Recording landscapes in rock carvings and the art of drawing, in *Prehistoric Pictures as Archaeological Source. Förhistoriska bilder som arkeologisk källa*Tanumshede: Tanums Hällristningsmuseum, 23-31.
- Hesjedal, A., 1990. Helleristninger som tegn og tekst: en analyse av veideristningene i Nordland og Troms, Tromsø: [A. Hesjedal].
- Hesjedal, A., 1993a. Finnmarks eldste helleristninger? *Ottar. Populære småskrifter fra Tromsø Museum*, 194(1), 24-35.
- Hesjedal, A., 1993b. Veideristninger i Nord-Norge, datering og tolkningsproblematikk. *Viking*, 27-53.
- Hesjedal, A., 1993c. Världens nordligaste hällristning finns i Slettnes *Populär Arkeologi*, 11(4), 7-9.
- Hesjedal, A., 1994. The Hunters's Rock Art in Northern Norway. Problems of Chronology and Interpretation *Norwegian Archaeological Review*, 27(1), 1-28.
- Hesjedal, A., 1996. Norges eldste helleristninger : de slipte helleristninger i Nordland. *Ottar. Populære småskrifter fra Tromsø Museum*, xx, S. 30-3.
- Hesjedal, A., C. Damm, B. Olsen & I. Storli, 1996. *Arkeologi på Slettnes : dokumentasjon av 11.000 års bosetning*, Tromsø: Tromsø museum.
- Hesjedal, A., B. Olsen, I. Storli & C. Damm, 1993. *Arkeologiske undersøkelser på Slettnes, Sørøy 1992*, Tromsø: Universitetet i Tromsø, Institutt for museumsvirksomhet.
- Hesjedal, A., M. Ramstad & A. R. Niemi, 2010. Melkøya. Report from the excavations at Melkøya, Hammerfest Council, Tromsø: Tromsø University Museum.

- Hirsch, E., 1995. Landscape: between place and space, in *The Anthropology of Landscape:* perspectives on place and space, eds. E. Hirsch & M. O'Hanlon Oxford: Claredon Press, 1-30.
- Hirsch, E. & M. O'Hanlon, 1995. *The Anthropology of landscape : perspectives on place and space*, Oxford: Clarendon Press.
- Hoffman, W. J., 1897. *The graphic art of the Eskimos*, Washington: Government Printing Office.
- Holmblad, P., 2005. Rapport över arkeologisk undersökning av Högberget III, Ramsele sn, Ångermanland, 2003, Umeå: Institutionen för arkeologi och samiska studier, Umeå universitet.
- Holmboe, 1861. Om Helleristninger i Norden. Forhandlinger i Videnskabs-Selskabet i Christiania, 1960, 25-210.
- Holmboe, J., 1916. En "arktisk helleristning" i Balsfjorden, omtalt av Martin Vahl. *Naturen*, 40(4/10), 349-51.
- Honko, L., S. Timonen & M. Branch, 1993. *The Great bear : a thematic anthology of oral poetry in the Finno-Ugrian languages*, Helsinki: Suomalaisen kirjallisuuden seura.
- Hood, B. C., 1988. Sacred Pictures, Sacred Rocks: Ideological and Social Space in the North Norwegian Stone Age. *Norwegian Archaeological Review*, 21(2), 65-84.
- Huggert, A., 1984. Flint also Came from the East A Contribution to the Knowledge of Upper Norrland's Prehistory. *Archaeology and Environment*, 2, 57-74.
- Hultkrantz, Å., 1986. Rock drawings as evidence of religion: some principal points of view, in *Words and objects: towards a dialogue between archaeology and history of religion*, ed. G. Steinsland Oslo: Skrifter / Instituttet for sammenlignende kulturforskning. Serie B, 42-66.
- Hyvärinen, H., 1997. The Fennoscandian Ice Sheet and the Deglaciation History of Lapland. *Helsinki Papers in Archaeology*, 10, 19-24.
- Hætta, O. M., 1990. Samiske navn kart og kompass for vandreren. *Fjell og vidde. Den norske Turistforeningens Årbok*, 1990(6), 39-40.
- Hætta, O. M., 1994. The ancient religion and folk-beliefs of the Sámi, [Alta]: Alta museum.
- Hætta, O. M., 2008. Med samehilsen artikler og innlegg i utvalg Del II: Artikler og inlegg i utvalg 1986-1994 (gjennom 9 år), in *Med samehilsen : artikler og innlegg i utvalg*, ed. O. M. Hætta Alta: [O.M. Hætta], 50-3.
- Ingold, T., 1993. The temporality of the landscape. World Archaeology, 25(2), 152-74.
- Ingold, T., 2000. *The perception of the environment : essays on livelihood, dwelling and skill,* London: Routledge.
- Ipsen, J., 1995. Pictographs and landscape in the Saimaa Lake district, Finland, in *Perceiving rock art : social and political perspectives*, eds. K. Helskog & B. Olsen Oslo: Novus : Instituttet for sammenlignende kulturforskning, 389-95.
- Itkonen, T. I., 1946. *Heidnische Religion und späterer Aberglaube bei den finnischen Lappen*, Helsinki: Suomalais-ugrilainen seura.
- Ivanov, S. V., 1954. *Materialy po izobrazitel'nomu iskusstvu narodov Sibiri XIX-nacala XX v.* : sjuzetnyj risunok i drugie vidy izobrazenij na ploskosti, Moskva ,.
- Janik, L., R. Corinne & K. Szczęsna, 2007. Skiing on the Rocks: the Experimental Art of Fisher-gatherer-hunters in Prehistoric Northern Russia. *Cambridge Archaeological Journal*, 17(3), 297-310.
- Jenness, D., 1922. The life of the Copper Eskimos.
- Jensen, R., 1977. Hällbilder och fångstmiljø. Jämtland / Härjedalen. *Svanska turistföreningens årsskrift*, 270-86.
- Jensen, R., 1989. Härjedalen och Jämtland, in *Hällristningar och hällmålningar i Sverige*, eds. S. Janson, U. Bertilsson & E. B. Lundberg Stockholm: Forum, 198-212.

- Jernsletten, N., 1997. Sami Traditional Terminology: Professional Terms Concerning Salmon, Reindeer and Snow, in *Sami culture in a new era : the Norwegian Sami experience*, ed. H. Gaski Karasjok: Davvi Girji, 86-108.
- Johansen, O. S., 1972. Nordiske Petroglyfer. Terminologi kronologi kontaktpunkter utenfor Norden. *Universitetets Oldsakssamling Årbok*, 1969, 220-34.
- Johnston, R., 1998. The Paradox of Landscape. *European Journal of Archaeology*, 1(3), 313-25.
- Jordan, P., 2003. *Material culture and sacred landscape : the anthropology of the Siberian Khanty*, Walnut Creek, California: AltaMira Press.
- Kalstad, J. A., 1994. Litt samisk kulturhistorie rundt to gamle fotografi, in *Festskrift til Ørnulv Vorren*, ed. Ø. Vorren Tromsø: Tromsø Museum, 168-77.
- Kalstad, J. A. & O. T. Brantenberg, 1987. *Reindrift, samisk samfunn og kultur på Saltfjellet : vassdragsutbygging i Saltfjellet-Svartisen området,* Tromsø: Samisk-etnografisk avd. Tromsø Museum. UiTø.
- Kankaanpää, J. & T. Rankama, 2005. Early Mesolithic pioneers in Northern Finnish Lapland, in *Pioneer settlements and colonization processes in the Barents region*, ed. H. Knutsson Vuollerim, 109-62.
- Kaplin, P. A. & A. O. Selivanov, 2004. Lateglacial and Holocene sea level changes in semienclosed seas of North Eurasia: examples from the contrasting Black and White Seas. *Palaeogeography, Palaeoclimatology, Palaeoecology*, 209(1-4), 19-36.
- Kehoe, A. B., 2002. Emerging trends *versus* the popular paradigm in rock-art research. *Antiquity*, 76(292), 384-5.
- Kelly, R. L., 2003. Colonization of new land by hunter-gatherers. Expectations and implications based on ethnographic data, in *Colonization of unfamiliar landscapes:* the archaeology of adaptation, eds. M. Rockman & J. Steele London: Routledge, 44-58.
- Kelly, R. L. & L. C. Todd, 1988. Coming into the Country: Early Paleoindian Hunting and Mobility. *American Antiquity*, 53(2), 231-44.
- Keyser, J. D. & G. Poetschat, 2004. The canvas as the art:landscape analysis of the rock-art panel, in *The Figured Landscapes of Rock-Art. Looking at Pictures in Place*, eds. C. Chippindale & G. Nash Cambridge: Cambridge University Press, 118-30.
- Keyser, J. D. & D. S. Whitley, 2006. Sympathetic Magic in Wertern North American Rock Art. *American Antiquity*, 71(1), 3-26.
- Kivikoski, E., 1964[1961]. Finlands förhistoria, Stockholm: Almqvist & Wiksell.
- Kivikäs, P., 1995. Kalliomaalaukset: muinainen kuva-arkisto, Jyväskylä: Atena.
- Kivikäs, P., 2005. Kallio, maisema ja kalliomaalaus, Finland: Minerva.
- Kivikäs, P., T. Jussila & R. HKupiainen, 1999. Saimaan ja päijänteen alueen kalliomaalausten sijanti ja syntaika, Jyväskylä.
- Kjellén, E. & Å. Hyenstrand, 1977. *Hällristningar och bronsålderssamhälle i sydvästra Uppland*, Uppsala: Almqvist & Wiksell.
- Kleiva, Ø., 2006. Fang kvalen! Tankar langs ristningsberga på Nordvestlandet, in *Samfunn*, *symboler og identitet Festskrift til Gro Mandt på 70-årsdagen*, eds. R. Barndon, S. M. Innselset, K. K. Kristoffersen & T. K. Lødøen Bergen: Universitetet i Bergen, 493-509.
- Kolka, V., O. Korsakova, S. Nikolaeva & V. Yevzerov, 2008. The Late Pleistocene interglacial, late glacial landforms and Holocene neotectonics of the Kola Peninsula, Apatity: Geological Institute of the Kola Science Centre, Russian Academy of Sciences, Apatity.
- Kolpakov, E. M., 2008. Petroglyphs of Kanozero: typological analysis, in *Kanozero Petrogliphs*. The Kirovsk International Conference on rock artKirovsk, 64-5.

- Kolpakov, E. M., A. I. Murashkin & V. Y. Shumkin, 2008. The Rock Carvings of Kanozero. *Fennoscandia archaeologica*, XXV, 86-96.
- Kolpakov, E. M., V. Shumkin & A. I. Murashkin, 2009. *Канозерские петроглифы*, Kola Archaeological Expedition.
- Kosmenko, M. G., I. V. Mel'nikov, S. I. Kockurkina & A. M. Spiridinov (eds.), 1996. *Archeologija Karelii*, Petrozavodsk: Karel'skij naucnyj centr.
- Kristiansen, K., 2002. Langfærder og helleristninger. *In Situ. Västsvensk Arkeologisk Tidsskrift*, 2000-2001, 67-80.
- Kristiansen, K., 2004. Sea faring voyages and rock art ships, in *The Dover Bronze Age boat in context: society and water transport in prehistoric Europe*, eds. P. Clark & B. Arnold Oxford: Oxbow Books, 111-21.
- Kristiansen, K. & T. B. Larsson, 2005. *The rise of Bronze Age society : travels, transmissions and transformations*, Cambridge: Cambridge University Press.
- Krupnik, I., 1993. *Arctic adaptations : native whalers and reindeer herders of northern Eurasia*, Hanover, NH: University Press of New England.
- Krupnik, I., R. Mason & T. W. Horton (eds.), 2004. *Northern ethnographic landscapes : perspectives from circumpolar nations*, Washington, D.C: Arctic Studies Center, National Museum of Natural History, Smithsonian Institution in collaboration with the National Park Service.
- Kühn, H., 1952. Die Felsbilder Europas, Stuttgart: W. Kohlhammer.
- Käck, B.-O., 2001. Boplatsen vid forsen, in *Tidsspår : forntidsvärld och gränslöst kulturarv*, eds. M. Bergvall & O. George Härnösand: Hemströms tryckeri AB, 25-42.
- Käck, J., 2009. Samlingsboplatser? En diskussion om människors möten i norr 7000 f Kr med särskild utgångspunkt i data från Ställverksboplatsen vid Nämforsen, in *Institutionen för idè- och samhällsstudier* Umeå: University of Umeå, 225.
- Lahelma, A., 2005a. Between the Worlds. Rock Art, Landscape and Shamanism in Subneolithic Finland. *Norwegian Archaeological Review*, 38(1), 29-47.
- Lahelma, A., 2005b. The boat as a symbol in Finnish rock art, in *World of Rock Art. Papers* presented at the International Conference, ed. E. G. Devlet Moskow: Institute of Archaeology RAS, 359-62.
- Lahelma, A., 2006. Excavating art: a 'Ritual Deposit' associated with the rock painting of Valkeisaari, Eastern Finland. *Fennoscandia archaeologica*, XXIII, 3-23.
- Lahelma, A., 2007. 'On the Back of a Blue Elk': Recent Ethnohistorical Sources and 'Ambigious' Stone Age Rock Art at Pyhänpää, Central Finland. *Norwegian Archaeological Review*, 40(2), 113-37.
- Lahelma, A., 2008. A touch of red: archaeological and ethnographic approaches to interpreting Finnish rock paintings, Helsinki: Finnish Antiquarian Society.
- Lantis, M., 1938. The Alaskan Whale Cult and Its Affinities. *American Anthropologist, New Series*, 40(3), 438-64.
- Lantis, M., 1940. Note on the Alaskan whale cult and its affinities. *American Anthropologist, New Series*, 42(2), 366-8.
- Larsson, T. B. & R. Engelmark, 2005. Nämforsens ristningar är nu fler än tvåtusen. *Populär Arkeologi*, 4, 12-3.
- Larsson, T. B., R. Engelmark & J. Olofsson, 2003. Förhistorisk rödfärgfabrik vid Nämforsen? *Populär Arkeologi*, 3, 16-7.
- Laushkin, K. D., 1959. Onezhskoe svyatilishche, 1: Novaya rasshifrovka petroglifov Karelii. *Skandinavskij sbornik*, 4, 83-111.
- Laushkin, K. D., 1962. Onezhskoe svyatilishche, 2: Opyt novoi rasshifrovki nekotorykh petroglifov Karelii. *Skandinavskij sbornik*, 5, 177-298.

- Layton, R., 1992. The role of ethnography in the study of Australian Rock Art, in *Rock Art and Ethnography*, eds. M. J. Morwood & D. R. Hobbs Melbourne Australian Rock Art Research Association, 7-10.
- Layton, R. & P. J. Ucko, 1999. Introduction: gazing on the landscape and encountering the environment, in *The Archaeology and anthropology of landscape: shaping your landscape*, eds. P. J. Ucko & R. Layton London: Routledge, 1-20.
- Leroi-Gourhan, A., 1968. *The art of prehistoric man in Western Europe,* London: Thames & Hudson.
- Lewis-Williams, D., 1998. *Quanto*?: The Issue of "many meanings" in southern African San Rock Art Research. *South African Archaeological Bulletin*, 53, 86-97.
- Lewis-Williams, J. D., 1981. *Believing and seeing : symbolic meanings in southern San rock paintings*, New York: Academic Press.
- Lewis-Williams, J. D., 2002a. *A cosmos in stone: interpreting religion and society through rock art*, Walnut Creek, Calif.: AltaMira.
- Lewis-Williams, J. D., 2002b. *The mind in the cave consciousness and the origins of art*, London: Thames & Hudson.
- Lewis-Williams, J. D. & T. Dowson, 1989. *Images of power: understanding Bushman rock art*, Johannesburg: Southern Book Publishers.
- Lewis-Williams, J. D. & T. A. Dowson, 1988. The Signs of All Times. *Current Anthropology*, 29(2), 201-39.
- Lewis, G. M., 1998. Maps, Mapmaking, and Map Use by Native North Americans, in *Cartography in the Traditional African, American, Arctic, Australian, and Pacific Societies*, eds. D. Woodward & G. M. Lewis Chicago / London: The University of Chicago Press, 51-183.
- Lewis Williams, J. D., 2003. Putting the record straight: Rock art and shamanism. *Antiquity*, 77(295), 165-70.
- Lewis Williams, J. D. & T. A. Dowson, 1990. Through the veil: San Rock Paintings and the Rock Face. *South African Archaeological Bulletin*, 45, 5-16.
- Lidén, R., 1913. Geokronologiska studier öfver det finglaciala skedet i Ångermanland. *Sveriges Geologiska Undersökning. Series Ca.*, 9, 4-39.
- Lidén, R., 1938. Den senkvartära strandförskjutningens förlopp ach kronologi i Ångermanland. *Geologiska F¨reningens Förhandlingar*, 60(3), 397-404.
- Likhatchev, V., 1999. New discoveries of rock carvings on Kola Peninsula. *Adoranten*, 1999, 44-6.
- Lindgren, B., 2002. Hällmålningar ett uttryck för materiella och immateriella dimensioner, in *Studier i Regional Arkeologi*, eds. L. Klang, B. Lindgren & P. H. Ramqvist Örnsköldsvik: Mitthögskolan, 55-75.
- Lindgren, B., 2003. De bemålade bergen flertusenåriga dokument. *Populär Arkeologi*, 1(2003), 10-2.
- Lindgren, B., 2004. *Hällbilder i norr*, Umeå: Institutionen för arkeologi och samiska studier, Umeå universitet.
- Lindgren, C., 2007. The importance of being a traveller, in *On the road : studies in honour of Lars Larsson*, eds. B. Hårdh, K. Jennbert & D. S. Olausson Stockholm: Almqvist & Wiksell International, 161-4.
- Lindgaard, E., 1999. Jegernes Bergkunst i et Øst-Vest Perspektiv. En analyse av motiv og stiler i Midt-Norge og Mellan-Norrland, in *Department of Archaeology* Trondheim: NTNU, 138.
- Lindqvist, C., 1983. ARKTISKA HÂLLRISTNINGSBÅTAR spekulationer om kulturellt utbyte via kust- och inlansvattenvägar i Nordfennoscandia. *Meddelanden från Marinarkeologiska Sällskapet*, 6(1), 2-14.

- Lindqvist, C., 1984. ARKTISKA HÄLLRISTNINGSBÅTAR OCH DEN MARINA ANPASSINGEN. Meddelanden från Marinarkeologiska Sällskapet, 7(2), 4-34.
- Lindqvist, C., 1985. Motivational continuty and change in 5,000 years of Fennoscandian rock art; a quantative approach with an african outlook. *Kontaktstencil*, 26-27, 89-131.
- Lindqvist, C., 1994. Fångstfolkets bilder: en studie av de nordfennoskandiska kunstanknutna jägarhällristningarna, Stockholm: C. Lindqvist.
- Lindqvist, C., 1999. Nämforsenristningarna- en återspegling av jägarnas liv och värdsbild, in *Tidsspår : hembygdsbok för Ångermanland och Medelpad*, ed. M. Bergvall Härnösand: Ångermanlands och Medelpads hembygdsförbund, 105-19.
- Lindström, M., J. Lundqist & T. Lundqvist, 2002. *Sveriges geologi från urtid till nutid*, Lund: Studentlitteratur Lund AB.
- Linevskii, A. M., 1939. *Rock engravings of Karelia Part 1*, Petrozavodsk: Karelian Scientific Research Institute of Culture. Karelian State Publishing House.
- Ling, J., 2004. Beyond transgressives earths and forgotten seas. Towards a Maritime understanding of rock art in Bohuslän. *Current Swedish Archaeology*, 12, 121-40.
- Ling, J., 2008. Elevated rock art: towards a maritime understanding of Bronze Age rock art in northern Bohuslän, Sweden, in *GOTARC*. *Series B, Gothenburg archaeological theses*; no. 49 Göteborg: Göteborgs universitet. Institutionen för arkeologi, 271.
- Linge, T. E., 2004. Mjeltehaugen: fragment frå gravritual, Bergen: [T.E. Linge].
- Linge, T. E., 2006. Båtar på berg utmed havet Om to ristningslokalitetar på kysten av Sogn og Fjordane, in *Samfunn, symboler og identitet Festskrift til Gro Mandt på 70-årsdagen*, eds. R. Barndon, S. M. Innselset, K. K. Kristoffersen & T. K. Lødøen Bergen: Universitetet i Bergen, 539-49.
- Linge, T. E., 2007. *Mjeltehaugen : fragment frå gravritual*, Bergen: Universitetet i Bergen. Lobanova, N., 1995a. Economy and mode of life of the Neolithic population on the Eastern shore of Lake Onega. *Fennoscandia archaeologica*, XII(1995), 103-11.
- Lobanova, N., 1995b. Petroglyphs of the Kochkovnavolok Peninsula: dating, natural environment and the material culture of their creators, in *Perceiving Rock Art: Social and Political Perspectives*, eds. K. Helskog & B. Olsen Oslo: Novus Forlag/The Institute for Comparative Research in Human Culture, 359-66.
- Lobanova, N., 2006. Karelian petroglyphs: problems of protection and reasonable use, in *People, Material Culture and Environment in the North. Proceedings of the 22nd Nordic Archaeological Conference, University of Oulu, 18-23 August 2004*, ed. V.-P. Herva Oulu: Gummerus Kirjapaino Oy, 171-9.
- Lobanova, N., 2007. Petroglyphs at Staraya Zalavruga: New Evidence New Outlook. *Archaeology, Ethnology & Anthropology of Eurasia*, 29(1), 127-35.
- Loendorf, L. L., 1994. Traditional Archaeological Methods and Their Applications at Rock Art Sites, in *New light on old art : recent advances in hunter-gatherer rock art research*, eds. D. S. Whitley & L. L. Loendorf Los Angeles: Institute of Archaeology, University of California, 95-103.
- Lossius, K., 1898. Arkæologiske undersøgelser i 1897. *Det Kongelige Norske Videnskabers Selskabs Skrifter*, 1897(5).
- Lowenstein, T., 1993. *Ancient Land: Sacred Whale. The Inuit Hunt and its Rituals*, New York: Farrar, Straus and Giroux.
- Lucier, C. V. & J. W. VanStone, 1995. *Traditional beluga drives of the Iñupiat of Kotzebue Sound, Alaska*, Chicago: Field Museum of Natural History.
- Luho, V., 1968. En hällmålning i Taipalsaari. Finskt Museum, 1968(75), 33-9.
- Luho, V., 1971. Om de förhistoriska hällmålningarna i Finland. Finskt Museum, 1970, 5-11.

- Lund, H. E., 1941. To nyoppdagede veideristninger i Vistnesdalen, Vevelstad sogn, Tjøtta prestegjeld, Helgeland *Det Kongelige Norske Videnskabers Selskabs Skrifter*, 1940(3), 21 s.
- Lundén, T. & M. Elg (eds.), 2008. *Kartan och verkligheten*, [Stockholm]: Svenska sällskapet för antropologi och geografi.
- Lødøen, T., 2009. Confronting important animals, in *Mesolithic horizons / papers presented* at the Seventh International Conference on the Mesolithic in Europe, Belfast 2005, eds. S. McCartan, R. Schulting, G. Warren & P. Woodman Oxford: Oxbow Books, 576-82.
- Lødøen, T. K., 2003. Late Mesolithic Rock Art and Expressions of Ideology, in *Mesolithic on the Move. Papers presented at the Sixth International Conference on the Mesolithic in Europe, Stockholm 2000*, eds. L. Larsson, H. Kindgren, K. Knutsson, D. Loeffler & A. Åkerlund Oxford: Oxbow Books, 511-20.
- Lødøen, T. K., 2006. Exploring the contemporary context of rock art. *Adoranten*, 2006, 5--18. Mack, A., 2004. One landscape, many experiences: Differing perspectives of the temple districts of Vijayanagara. *Journal of Archaeological Method and Theory*, 11(1), 59-81.
- Maggs, T., 1995. Neglected Rock Art: The Rock Engravings of Agriculturalist Communities in South Africa. *South African Archaeological Bulletin*, 50, 132-42.
- Maggs, T., 1998. Cartographic Content of Rock Art in Southern Africa, in *The History of Cartography. Volume two, book three. Cartography in the Traditional African, American, Arctic, Australian, and Pacific Societies*, eds. D. Woodward & G. M. Lewis Chicago / London: The University of Chicago Press, 13-23.
- Magnus, B. & B. Myhre, 1976. Norges Historie. Bind 1. Forhistorien. Fra jegergrupper til høvdingsamfunn: J.W. Cappelens Forlag AS.
- Malmer, M. P., 1975. The Rock Carvvings at Nämforsen, Ångermanland, Sweden, as a Problem of Maritime Adaptation and Circumpolar Interrelations in *Prehistoric maritime adaptations of the circumpolar zone*, ed. W. W. Fitzhugh The Hague/Paris: Mouton Publishers, 41-6.
- Malmer, M. P., 1981. A chorological study of North European rock art, Stockholm: Almqvist & Wiksell.
- Mandt, G., 1972. Bergbilder i Hordaland : en undersøkelse av bildenes sammensetning, deres naturmiljø og kulturmiljø, Bergen: Norwegian Universities Press.
- Mandt, G., 1978. Is the location of rock pictures an interpretative element?, in *Acts of the International Symposium on Rock Art*, ed. S. Marstrander Oslo/Bergen/Tromsø: Universitetesforlaget/Institutt for Sammenlignende Kulturforskning, 170-84.
- 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, Bergen: Universitetet i Bergen, 626.
- Mandt, G., 1998. Vingen Revisited. A Gendered Perspective on "Hunters" Rock Art. *KVHAA Konferanser*, 40, 201-24.
- Mandt, G., 1999. Tilbakeblikk på Vingen Forskning Forvaltning Næring, in *Glyfer och arkeologiska rum en vänbok till Jarl Nordbladh*, eds. A. Gustafsson & H. Karlsson Gothenburg.
- Manker, E., 1957. *Lapparnas heliga ställen : kultplatser och offerkult i belysning av Nordiska museets och Landsantikvariernas fältundersökningar*, Stockholm: Gebers.
- Manker, E., 1960. Fångstgropar och stalotomter: kulturlämningar från lapsk forntid, Stockholm: Geber.
- Manker, E., 1963. People of eight seasons, Gothenburg: Tre tryckare.
- Marstrander, S., 1963. Østfolds jordbruksristninger: Skjeberg, Oslo: Universitetsforlaget.

- Marstrander, S., 1978. The problem of European impulses in the Nordic area of agrarian rock art, in *Acts of the International Symposium on Rock Art : lectures at Hankø 6-12 August, 1972*, ed. S. Marstrander Oslo: Universitetsforlaget, 45-67.
- Marthinussen, M., 1945. Yngre Postglaciale nivåer på Varangerhalvøya. *Norsk Geologisk Tidsskrift*, 25, 230-65.
- Marthinussen, M., 1960. Coast- and fjord area of Finnmark. With remarks on some other districts, in *Geology of Norway*, ed. O. Holtedahl Oslo, 416-34.
- Matiskainen, H., 1996. Discrepacies in Deglaciation Chronology and the Appearance of Man in Finland, in *The Earliest Settlement of Scandinavia and its relationship with neighbouring areas*, ed. L. Larsson Stockholm: Almquist & Wiksell International, 251-62.
- McGhee, R., 1974. *Beluga hunters : an archaeological reconstruction of the history and culture of the Mackenzie Delta Kittegaryumiut*, St. John's: Institute of Social and Economic Research, Memorial University of Newfoundland.
- McGhee, R., 1977. Ivory for the Sea Woman: The Symbolic Attributes of a Prehistoric Technology. *Canadian Journal of Archaeology*, 1(1977), 141-9.
- Meisingset, E. L., 2008. Alt om hjort: biologi, jakt, forvaltning, Oslo: Tun.
- Meløe, J., 1990. The Two Landscapes of Northern Norway. Acta Borealia, 7(1), 68-80.
- Miettinen, T., 2000. Kymenlaakson Kalliomaalaukset.
- Mikkelsen, E., 1973. Fangstinnretninger i veidekunsten. Nicolay, 14(1973), 3-7.
- Mikkelsen, E., 1977. Østnorske veideristninger Kronologi og Øko-kulturelt Miljø. *Viking*, XL, 147-201.
- Mikkelsen, E., 1979. Seasonality and Mesolithic Adaption in Norway, in *New Directions in Scandinavian Archaeology*, eds. K. Kristiansen & C. Paludan-Müller Copenhagen: The National Museum of Denmark, 79-119.
- Mikkelsen, E., 1985. Mesolithic Hunters' Rock Carvings at Geithus, Buskerud, Norway. *Ars Praehistorica*, 1983(2), 61-86.
- Mikkelsen, E., 1986. Religion and Ecology: Motifs and Location of Hunters' Rock Carvings in Eastern Norway, in *Words and objects: towards a dialogue between archaeology and history of religion*, ed. G. Steinsland Oslo: Skrifter / Instituttet for sammenlignende kulturforskning. Serie B, 127-41.
- Miller, U. & A.-M. Robertsson, 1979. Biostratigraphical Investigations in the Anundsjö Region, Ångermanland, Northern Sweden, in *Geological Investigations in the Anundsjö Region, Northern Sweden*, eds. U. Miller, S. Modig & A.-M. Robertsson Stockholm: Kungliga Vitterhets Historie och Antikvitets Akademien, 1-76.
- Moberg, C.-A., 1957. Vilka hällristningar är från bronsåldern? *Tor. Meddelanden från Uppsala Universitets Museum för Nordiska Fornsaker*, III, 49-64.
- Moberg, C.-A., 1971. Regional och global syn på hällristningar. *KUML. Årbog for Jysk Arkæologisk Selskab*, 1970, 223-32.
- Montelle, Y. P., 2003. Rock-art as mapping. Before Farming, 2003(2), 1-7.
- Mulk, I.-M., 1994. Sacrificial places and their meaning in Saami society, in *Sacred Sites*, *Sacred Places*, eds. D. L. Carmichael, J. Hubert, B. Reeves & A. Schanche London: Routledge, 121-31.
- Mulk, I.-M. & T. Bayliss-Smith, 2006. *Rock Art and Sami Sacred Geography in Badjelànnda, Laponia, Sweden. Sailing Boats, Anthropomorphs and Reindeer*, Umeå: University of Umeå, Department of Archaeology.
- Murashkin, A. I. & V. Shumkin, 2008. Images of reindeer in figurines from the cemetery of Bolshoy Oleny island of the Barents sea and in the petroglyphs of the Northern Fenno-Scandia., in *Kanozero Petrogliphs. The Kirovsk International Conference on rock art*Kirovsk, 71-2.

- Murdoch, J., 1892. Ethnological Results of the Point Barrow Expedition, in *Ninth Annual Report of the Bureau of Ethnology to the Secretary of the Smithsonian Institution 1887-'88*, ed. J. W. Powell Washington: Washington Government Printing Office.
- Myhre, L. N., 2004. *Trialectic archaeology: monuments and space in Southwest Norway 1700-500 BC*, Stavanger: Arkeologisk museum i Stavanger.
- Myrstad, R., 1996. Bjørnegraver i Nord-Norge: spor etter den samiske bjørnekulten, Tromsø: R. Myrstad, 100.
- Møllenhus, K. R., 1962. En ny bergmaling på Fosenhalvøya. *Det Kongelige Norske Videnskabers Selskab Museet Årbok*, 1962, 95-8.
- Møllenhus, K. R., 1968. Helleristningene på Holtås i Skogn. *Det Kongelige Norske Videnskabers Selskabs Skrifter*, 1968(4), 19.
- Møller, J., 1987. Shoreline relation and prehistoric settlement in northern Norway. *Norsk Geografisk Tidsskrift*, 41, 45-60.
- Møller, J. & B. Holmeslet, 1998. Sealevel Change, Tromsø: University of Tromsø.
- Møller, J. J., 1996. Issmelting og strandforskyvning. *Ottar. Populævitenskapelig tiddskrift fra Tromsø Museum*, 212(96-4), 4-13.
- Møller, J. J., 2003. Late Quaternary Sea Level and Coastal Settlement in the European North. *Journal of Coastal Research*, 19(3), 731-7.
- Napolskikh, V. V., 1992. Proto-Uralic World Picture: A Reconstruction, in *Northern religions and shamanism*, eds. M. Hoppál & J. Pentikäinen Budapest: Akadémiai Kiadó, 3-20.
- Nash, G., 2002. The landscape brought within: a re-evaluation of the rock-painting site at Tumlehed, Torslanda, Göteborg, west Sweden, in *European Landscapes of Rock-Art*, ed. G. Nash London: Routledge, 176-94.
- Nash, G. & C. Chippindale, 2002. Images of enculturing landscapes: a European perspective in *European landscapes of rock-art*, eds. G. Nash & C. Chippindale London: Routledge, 1-19.
- Naskali, E., 1999. On Ancient Skis, in *Dig it all : papers dedicated to Ari Siiriäinen*, eds. M. Huurre & A. Siiriäinen Helsinki: Finnish Antiquarian Society, 295-306.
- Nelson, E. W., 1983[1899]. *The Eskimo about Bering Strait*, Washington, D.C.: Smithsonian Institution Press.
- Nordbladh, J., 1980. *Glyfer och rum. Kring hällristningar i Kville*, Gothenburg: Intitute of Archaeology, Gothenburg.
- Nordenskiold, E., 1919. Finland: The Land and the People. *Geographical Review*, 7(6), 361-76.
- Nummedal, A. J., 1929. Stone age finds in Finnmark, Oslo: Aschehoug.
- Nunn, P. D., 2001. On the convergence of myth and reality: examples from the Pacific Islands. *The Geographical Journal*, 167(2), 125-38.
- Nunn, P. D., 2003. Fished Up or Thrown Down: The Geography of Pacific Island Origin Myths. *Annals of the Association of American Geographers*, 93(2), 350-64.
- Nuttall, M., 1992. Arctic homeland: kinship, community and development in Northwest Greenland, London: Belhaven Press.
- Okladnikov, A. P., 1970. *Yakutia before its incorporation into the Russian state*, Montreal: McGill-Queen's University Press.
- Okladnikova, E., 1998. Traditional Cartography in Arctic and Subarctic Eurasia, in *The History of Cartography. Volume two, book three. Cartography in the Traditional African, American, Arctic, Australian, and Pacific Societies*, eds. D. Woodward & G. M. Lewis Chicago / London: The University of Chicago Press, 329-49.
- Olsen, B., 1994. Bosetning og samfunn i Finnmarks forhistorie, Oslo: Universitetsforlaget.
- Olsrud, I.-M., 1996. *Bilder i landskap : bergmalingene på Kjeøya i Harstad*, Bergen: [I.-M. Olsrud].

- Olsson, P., 1898. Om hällmålningar och hällristningar i Jämtland. *Jämtlands läns fornminnesförenings tidskrift*, 1, 54-7.
- Olsson, P., 1899. Hällmålningar på Flatruet i Herjeådalen. *Jämtlands läns fornminnesförenings tidskrift*, 2, 139-42.
- Olwig, K., 1993. Sexual Cosmology: Nation and Landscape at the Conceptual Interstices of Nature and Culture; or What does Landscape Really Mean, in *Landscape : politics and perspectives*, ed. B. Bender Providence, R.I.: Berg, 307-43.
- Oshibkina, S. V., 1989. the Material Culture of the Veretye-type Sites in the Region to the East of Lake Onega, in *The Mesolithic in Europe*, ed. C. Bonsall Edinburgh: John Donald Publishers LTD, 402-13.
- Ouzman, S., 1998. Towards a mindscape of landscape: rock art as expression of world-understanding, in *The Archaeology of Rock-Art*, eds. C. Chippindale & P. C. Taçon Cambridge: Cambridge University Press, 30-41.
- Pentikäinen, J. & T. Miettinen, 2003. Pyhän merkkejä kivessä, Helsinki: Etnika Oy.
- Petersen, T., 1929. Bergmalingene ved Gjølgjavannet i Stjørn, Sør-Trøndelag. *Det Kongelige Norske Videnskabers Selskabs Forhandlinger*, 1(1926-1928), 32-5.
- Petersen, T., 1940. En bjørnegrav. Trekk av lappisk overtro. Viking, IV(1940), 153-66.
- Piccardi, L. & W. B. Masse, 2007. Myth and geology, London: Geological Society.
- Poikalainen, V., 2004. Rock art of Lake Onega, Tartu.
- Poikalainen, V. & E. Ernits, 1998. *Rock carvings of Lake Onega : the Vodla Region*, Tartu: Estonian Society of Prehistoric Art.
- Popov, A. A., 1948. *Nganasany : Vyp. 1: Material'naja kul'tura* Moskva: Akademii Nauk SSSR.
- Popov, A. A., 1966. *The Nganasan the material culture of the Tavgi Samoyeds*, Bloomington: Indiana University.
- Poutiainen, H. & A. Lahelma, 2003. Uusia kalliomaalauksia Päijät-Hämeestä. *Suomen Museo*, 59-80.
- Preucel, R. W. & I. Hodder, 1996. Nature and Culture, in *Contemporary archaeology in theory*. *A reader*Oxford: Blackwell, 23-38.
- Price, T. D. & K. Jacobs, 1989. Olenii Ostrov: Radiocarbon dates from a major Mesolithic cementary in Karelia. *Mesolithic Miscellany*, 10(2), 3-6.
- Paasche, K., 1999. Nye helleristninger på Geithus. Dokumentasjon, motiv og kunst. *Universitetets Oldsakssamling Årbok*, 1999, 25-37.
- Påsse, T. & L. Andersson, 2005. Shore-level displacement in Fennoscandia calculated from empirical data. *Gff*, 127, 253-68.
- Qvigstad, J., 1944. De lappiske appellative stedsnavn, Oslo: Aschehoug.
- Rączkowski, V., 2001. Post-processual landscape: the lost world of aerial archaeology, in *One land, many landscapes: papers from a session held at the European Association of Archaeologists fifth annual meeting in Bournemouth 1999*, eds. T. Darvill & M. Godja Oxford, England: Archaeopress, 3-7.
- Ramqvist, P. H., 1992. Hällbilder som utgangspunkt vid tolkningar av jägarsamhället. *Arkeologi i norr*, 3, 31-54.
- Ramqvist, P. H., 2002a. Digitala och andra älgar. Bidrag till dokumentationen av hällmålningar, in *Studier i Regional Arkeologi*, eds. L. Klang, B. Lindgren & P. H. Ramqvist Örnsköldsvik: Mitthögskolan, 119-29.
- Ramqvist, P. H., 2002b. Rock-art and settlement: issues of spatial order in the prehistoric rock-art of Fenno-Scandinavia, in *European landscapes of rock-art*, eds. G. Nash & C. Chippindale London: Routledge, 144-57.
- Ramqvist, P. H., M. Backe & L. Forsberg, 1985a. Hällristningar vid Stornorrfors. *Västerbotten*, 2 . 1985, 66-75.

- Ramqvist, P. H., L. Forsberg & M. Backe, 1985b. ...and Here was an Elk too... A preliminary Report of New Petroglyphs at Stornorrfors, Ume River, in *Ekonomi och näringsformer i nordisk bronsålder*, eds. L. Forsberg & T. B. Larsson Umeå: Umeå Universitet Arkeologiska Institutionen, 313-37.
- Ramstad, M., 2000. Veideristningene på Møre. Teori, kronologi og dateringsmetoder. *Viking*, 51-86.
- Rankama, T., 2003. The Colonisation of Northernmost Finnish Lapland and the Inland Areas of Finnmark, in *Mesolihic on the Move. Papers presented at the Sixth International Conference on the Mesolithic in Europe, Stockholm 2000*, eds. L. Larsson, H. Kindgren, K. Knutsson, D. Loeffler & A. Åkerlund Oxford: Oxbow Books, 37-46.
- Rankama, T. & J. Kankaanpää, 2008. Eastern Arrivals in post-glacial Lapland: the Sujala site 10 000 cal BP. *Antiquity*, 82(2008), 884-99.
- Ravdonikas, V. I., 1936a. K izucheniyu naskal'nykk izobrazhenii Onezhskogo ozera i Belogo Morya. *Sovetskaja archeologija*, 1936(1), 9-50.
- Ravdonikas, V. I., 1936b. *Naskal'nye izobrazenija Onezskogo ozera i Belogo morja*, Moskva: Izdatel'stvo Akademii nauk SSSR.
- Ravdonikas, V. I., 1937a. Elementy kosmicheskikk predstavleni v obrazakk naskalnykk izobrazheni. *Sovetskaja archeologija*, 1937(4), 11-32.
- Ravdonikas, V. I., 1937b. Sledy totemicheskikh predstavleni v obrazakh naskatoykh izobrazheni Onezhskogo ozera i Belogo morya. *Sovetskaja archeologija*, 1937(3), 3-32.
- Ravdonikas, V. I., 1938. Naskal'nye izobrazenija Belego morja / Наскальные изображения Белого моря, Leningrad.
- Ravdonikas, V. I., 1940. Neoliicheski mogilnik na Onechskan Ozere. *Sovetskaja archeologija*, 1940(6), 46-62.
- Reinach, S., 1903. L'art et la magie à propos des peintes et les gravures de l'âge du renne. *Anthropologie*, XIV.
- Rekstad, J., 1916. Et nyt fund av helleristninger i Nordland. Naturen, 40(5/10), 374-8.
- Rekstad, J., 1919. Geologiske iakttagelser fra strekningen Folla-Tysfjord. *Norges Geologiske Undersøkelser*. Årbok, 83(1), 1-60.
- Riewe, R., 1992. *Nunavut atlas*, Edmonton, Alta.: Published by the Canadian Circumpolar Institute and the Tungavik Federation of Nunavut.
- Roepstorff, A. & N. Bubandt, 2003. General introduction: The critique of culture and the plurality of nature, in *Imaging Nature. Practices of Cosmology and Identity*, eds. A. Roepstorff, N. Bubandt & K. Kull Aarhus: Aarhus University Press, 9-30.
- Rundstrom, R. A., 1990. A Cultural Interpretation of Inuit Map Accuracy. *Geographical Review*, 80(2), 155-68.
- Saksa, A. I., 2006. The Karelian Isthmus: Origins of the Natural and Human Environment. *Archaeology, Ethnology and Anthropology of Eurasia*, 26(2), 35-44.
- Sarvas, P., 1969. Die Felsmalerei von Astuvansalmi. Suomen Museo, 1969, 5-33.
- Sarvas, P., 1975. Kallio-maalauksistamme. Taide, 5/75, 40-7.
- Savelle, J. M., 1995. An Ethnoarchaeological Investigation of Inuit Beluga Whale and Narwhal Harvesting, in *Hunting the Largest Animals. Native Whaling in the Western Arctic and Subarctic*, ed. A. P. McCartney Alberta: The Canadian Circumpolar Institute, University of Alberta, 127-48.
- Savvateev, J. A., 1970. Zalavruga: archeologiceskie pamjatniki nizov'ja reki vyg: cast' perbaja Petroglify / Залавруга. Часть 1: Петроглифы, Leningrad: Izdatel'stvo Nauka.
- Savvateev, J. A., 1977. Zalavruga : archeologiceskie pamjatniki nizov'ja reki vyg : cast' etoraja Stojanki / Залавруга. Часть 2: Стоянки. Л., Leningrad: Izdatel'stvo Nauka.

- Savvateev, J. A., 1983. Naskal'nye risunki Karelii, Petrozavodsk: Karelija.
- Savvateev, J. A., 1985. *Наскальные изображения Фенноскандии (охотничьи традиции)*, Moscow
- Savvateev, Y. A., E. I. Déviatova & A. A. Liiva, 1978. Dating of the rock art by the White Sea / ОПЫТ ДАТИРОВКИ НАСКАЛЬНЫХ ИЗОБРАЖЕНИЙ БЕЛОГО МОРЯ. *Sovetskaja archeologija*, 1978(4), 16-36.
- Savvatejev, J. A., 1967. Onovych petroglifach Karelii Sovetskaja archeologija, 1967(2), 3-21.
- Savvatejev, J. A., 1968. Petroglify novoj Zalavrugi Sovetskaja archeologija, 1968(1), 134-57.
- Savvatejev, J. A., 1984. Karelische Felsbilder, Leipzig: Seemann.
- Savvateyev, Y. A., 1977. Rock Pictures (Petroglyphs) of the White Sea. *Bolletino del Centro Camuno di Studi Preistorici*, XVI, 67-86.
- Savvateyev, Y. A., 1982. Rock Pictures of Lake Onega. *Bolletino del Centro Camuno di Studi Preistorici*, XIX, 27-48.
- Savvateyev, Y. A., 1988. Ancient Settlements connected with Rock Art in Karelia. *Bolletino del Centro Camuno di Studi Preistorici*, XXIV, 45-68.
- Scarre, C., 2002. Monuments and landscape in Atlantic Europe: perception and society during the Neolithic and early Bronze Age, London: Routledge.
- Schanche, K., 1994. Gressbakkentuftene i Varanger: boliger og sosial struktur rundt 2000 f. Kr, in *Institutt for samfunnsvitenskap, University of Tromsø* [Tromsø]: Institutt for samfunnsvitenskap, Universitetet i Tromsø, 271.
- Schanche, K., 2004. Kan bergmalerier være samiske? Noen refleksjoner på bakgrunn av funn av bergmalerier på Ruksesbákti i Cuoppogieddi/Indre Sandvik, Porsanger, in *Samisk forhistorie : rapport fra konferanse i Lakselv 5.-6. september 2002*, eds. M. H. Krogh & K. Schanche Varangerbotn: Varanger samiske museum, 102-12.
- Schefferus, J., 1956. Lappland, Uppsala: Gebers.
- Schreyer, C., 2006. "What You See is Where You Are": An Examination of Native North American Place Names, in *Space and spatial analysis in archaeology*, eds. E. C. Robertson, J. D. Seibert, D. C. Fernandez & M. U. Zender Calgary, Alta.: University of Calgary Press, 227-32.
- Seitsonen, O., 2005a. Shoreline displacement chronology of rock paintings at Lake Saimaa, eastern Finland. *Before Farming*, 2005(1), 1-21.
- Seitsonen, O., 2005b. Shoreline displacement dating of Finnish rock painting motifs comparison between Lake Saimaa and Lake Päijänne areas, in *World of Rock Art.*Papers presented at the International Conference, ed. E. G. Devlet Moskow: Institute of Archaeology RAS, 405-9.
- Selinge, K.-G., 2001. Fångstgropar i Nämforsens uppland, in *Tidsspår : forntidsvärld och gränslöst kulturarv*, eds. M. Bergvall & O. George Härnösand: Hemströms tryckeri AB, 151-86.
- Sergejeva, J., 2000. The Research History of Kola and Skolt Sami Folklore, in *Sami folkloristics*, ed. J. Pentikäinen Turku: Nordic Network of Folklore, 155-88.
- Shetelig, H., 1922. Primitive tider i Norge: en oversigt over stenalderen, Bergen: Grieg.
- Shetelig, H., 1925. Norges forhistorie: problemer og resultater i norsk arkæologi, Oslo,.
- Shirokogoroff, S. M., 1927. What is shamanism? *The China Journal of science & arts*, 6, 275-9 + 368-71.
- Shirokogoroff, S. M., 1935. *Psychomental Complex of the Tungus*, London: Kegan Paul, Trench, Trubner.
- Shumkin, V., 1990a. On the Ethnogenesis of the Sami: An Archaeological View. *Acta Borealia*, 2(1990), 3-20.
- Shumkin, V., 2000. The Rock Art, Labyrinths, Seids and Beliefs of Eastern Lapland's Ancient Population in *Myanndash*, ed. A. Kare Rovaniemi, 210-41.

- Shumkin, V., 2004. Наскальные изобоажения Кольского полуостоова как часть монументального творчества Фенноскандии. 371-82.
- Shumkin, V., A. I. Murashkin & E. M. Kolpakov, 2006. Археологические памятники о. Кильдин и прилегающего участка побережья Кольского полуострова., in Первобытная и средневековая культура Европейского Севера: проблемы изучения и научной реконструкции. Изд-во «СОЛТИ»Соловки, 42-52.
- Shumkin, V. J., 1990b. The Rock Art of Russian Lappland. *Fennoscandia archaeologica*, VII, 53-67.
- Shumkin, V. J., 1991. Rock Art of Russian Lappland. Rock Art Research, 8(2), 109-12.
- Sidenbladh, K., 1869. Fornlemningar i Norrland. *Antiquarisk Tidsskrift för Sverige*, 1869, 192-214.
- Siikala, A.-L., 1981. Finnish Rock Art, Animal-Ceremonialism and Shamanism. *Temenos*, 17, 81-99.
- Siikala, A.-L., 1992. Finnish Rock Art, Animal Ceremonialism and Shamanic Worldview, in *Studies on shamanism*, eds. A.-L. Siikala & M. Hoppál Helsinki: Finnish Anthropological Society, 56-67.
- Simonsen, P., 1958. Arktiske helleristninger i Nord-Norge II, Oslo: Aschehoug.
- Simonsen, P., 1969. Ny bergkunst fra Finnmark. *Ottar. Populære småskrifter fra Tromsø Museum*, 61(3), 13-9.
- Simonsen, P., 1970. Fortidsminner nord for polarsirkelen, Tromsø: Universitetsforlaget.
- Simonsen, P., 1978. New elements for evaluating the origin and end of northern Scandinavian rock art, in *Acts of the International Symposium on Rock Art*, ed. S. Marstrander Oslo/Bergen/Tromsø: Universitetesforlaget/Institutt for Sammenlignende Kulturforskning, 31-6.
- Simonsen, P., 1979. *Veidemenn på Nordkalotten. Hefte 3: Yngre steinalder og overgang til metall tid*, Tromsø: Institutt for samfunnsvitenskap.
- Simonsen, P., 1982. The Rock Art of the Huntsman in Troms, in *The Hunters. Their Culture* and Way of Life, eds. Å. Hultkrantz & Ø. Vorren Tromsø Oslo Bergen: Universitetsforlaget, 139-42.
- Simonsen, P., 1986. The Magic Picture: Used Once or More Times?, in *Words and objects : towards a dialogue between archaeology and history of religion*, ed. G. Steinsland Oslo: Skrifter / Instituttet for sammenlignende kulturforskning. Serie B, 197-211.
- Simonsen, P., 1991. Fortidsminner nord for polarsirkelen, Oslo: Universitetsforlaget.
- Simonsen, P., 2000. North-Norwegian Rock Art, in Myanndash, ed. A. Kare.
- Simpson, A., P. Clogg, M. Díaz-Andreu & B. Larkman, 2004. Towards three-dimensional non-invasive recording of incised rock art. *Antiquity*, 78(301), 692-8.
- Sjölander, M., 2007. Rapport 2007:12. Rapportering av innkommet stenmaterial från Bastuloken, Ramsele, Länsmuseet Västernorrland.
- Slinning, T., 2002. Bergmalingene i Telemark: kultstedenes tidfesting og sosiale sammenheng, Bergen: T. Slinning.
- Smith, B. & B. W. Blundell, 2004. Dangerous ground: a critique of landscape in rock art studies, in *The Figured Landscape of Rock-Art. Looking at Pictures in Place*, eds. C. Chippindale & G. Nash Cambridge: Cambridge University Press, 239-62.
- Smith, C. D., 1982. The Emergence of 'Maps' in European Rock Art: A Prehistoric Preoccupation with Place. *Imago Mundi*, 34, 9-25.
- Sognnes, K., 1981. Helleristningsundersøkelser i Trøndelag 1979 og 1980, Trondheim.
- Sognnes, K., 1982. Helleristninger i Stjørdal, 1 Skatval sogn, Trondheim.
- Sognnes, K., 1983a. Bergkunsten i Stjørdal: helleristningar og busetjing, Trondheim.
- Sognnes, K., 1983b. Helleristninger i Stjørdal 2 Stjørdal og Lånke sogn, Trondheim.

- Sognnes, K., 1987a. *Bergkunsten i Stjørdal. 2 : Typologi og kronologi i Nedre Stjørdal,* Trondheim: Universitetet i Trondheim, Vitenskapsmuseet.
- Sognnes, K., 1987b. Rock Art and Settlement Pattern in the Bronze Age. Example from Stjørdal, Trøndelag, Norway. *Norwegian Archaeological Review*, 20(2), 110-9.
- Sognnes, K., 1990. *Bergkunsten i Stjørdal Hegraristningane 3*, Trondheim: Universitetet i Trondheim, Vitenskapsmuseet.
- Sognnes, K., 1992. A Spatial Approach to the Study of Rock Art in Tröndelag, Norway, in Ancient Images, Ancient Thought. The Archaeology of Ideology. Proceedings of the Twenty-Third Annual Conference of the Archaeological Association of the University of Calgary, eds. A. S. Gooldsmith, S. Garvie, D. Selin & J. Smith Calagry: The University of Calgary, Archaeological Association, 107-20.
- Sognnes, K., 1994. Ritual Landscapes. Toward a Reinterpretation of Stone Age Rock Art in Trøndelag, Norway *Norwegian Archaeological Review*, 27(1), 29-50.
- Sognnes, K., 1995. The social context of rock art in Trøndelag, Norway: rock art at a frontier, in *Perceiving rock art : social and political perspectives*, eds. K. Helskog & B. Olsen Oslo: Novus : Instituttet for sammenlignende kulturforskning, 130-45.
- Sognnes, K., 1996. Recent Rock Art Research in Northern Europe, in *Rock Art Studies. News of the World*, eds. P. Bahn & A. Fossati Oxford: Oxbow, 15-28.
- Sognnes, K., 1998. Symbols in a changing world: rock-art and the transition from hunting to farming in mid Norway in *The Archaeology of Rock-Art*, eds. C. Chippindale & P. C. Taçon Cambridge: Cambridge University Press, 146-62.
- Sognnes, K., 1999. Å se eller ikke se. Midt-Norske bergmalerier i en historisk-kognitiv kontekst, in *Glyfer och arkeologiska rum : en vänbok till Jarl Nordbladh*, eds. J. Nordbladh, H. Karlsson & A. Gustafsson Göteborg: Göteborg University, Department of Archaeology, 465-75.
- Sognnes, K., 2001. *Prehistoric imagery and landscapes : rock art in Stjørdal, Trøndelag, Norway,* Oxford: Archaeopress.
- Sognnes, K., 2002. Land of elks sea of whales. Landscapes of the Stone Age rock-art in central Scandinavia, in *European landscapes of rock-art*, eds. G. Nash & C. Chippindale London: Routledge, 195-212.
- Sognnes, K., 2003a. On Shoreline Dating of Rock Art. Acta Archaeologica, 74, 189-209.
- Sognnes, K., 2003b. Rock Art Research in northern Europe 1995-1999, in *Rock Art Studies*. *News of the World*, eds. P. Bahn & A. Fossati Oxford: Oxbow, 12-24.
- Sognnes, K., 2004. Arctic Rock-Art in Norway. *Upper Palaeolithic and Mesolithic Art*, 1311, 151-61.
- Sognnes, K. & A. Haug, 1998. Searching for hidden images: Rock art geography in Stjørdal, Trøndelag, Norway. *Rock Art Research*, 15(2), 98-108.
- Solomon, A., 1998. Ethnography and method in southern African rock-art research, in *The Archaeology of Rock-Art*, eds. C. Chippindale & P. C. Taçon Cambridge: Cambridge University Press, 268-84.
- Sommerseth, I., 2009. *Villreinfangst og tamreindrift i Indre Troms : belyst ved samiske boplasser mellom 650 og 1923*, Tromsø: Universitetet i Tromsø, Fakultet for humaniora, samfunnsvitenskap og lærerutdanning, Institutt for arkeologi og sosialantropologi.
- Spier, L., 1930. Klamath ethnography. *University of California Publications in American Archaeology and Ethnology*, 30.
- Statens_Kartverk, 2009. *Tidevannstabeller for den norske kyst med Svalbard samt Dover, England,* Stavanger: Statens Kartverk Sjø.
- Stefansson, V., 1913. My life with the Eskimo, London: Macmillan and Co.

- Stefansson, V., 1914. *The Stefansson-Anderson Arctic expedition of the American Museum : preliminary ethnological report*, New York: Order of the Trustees.
- Stewart, A. M., D. Keith & J. Scottie, 2004. Caribou crossings and cultural meanings: Placing traditional knowledge and archaeology in context in an Inuit landscape. *Journal of Archaeological Method and Theory*, 11(2), 183-211.
- Stolyar, A. D., 1977. Opyt analiza kompozitsionnykh struktur petroglify Belomoria (Karelija). *Sovetskaja archeologija*, 1977(3), 24-41.
- Stolyar, A. D., 1999. Neolithic Rock Art of Karelia: the Problem of its Historical Mission. News95 - International Rock Art Congress, Proceedings. CeSMAP.
- Stolyar, A. D., 2000. Spiritual treasures of ancient Karelia, in *Myanndash*, ed. A. Kare Jyväskylä: Gummerus Kirjapaino Oy, 136-73.
- Stolyar, A. D., 2001. Milestones of Spiritual Evolution in Prehistoric Karelia. *Folklore*, 18&19, 80-126.
- Storå, N., 1968. Massfångst av sjøfågel i Nord-eurasien: en etnologisk undersøkning av fångstmetoderna, Åbo.
- Sørensen, S., 1993. Skifunnet fra Steinhaugmo og de skinnkledde skiene i Fennoskandias fortid. *Viking*, LVI, 87-109.
- Taçon, P. C. & C. Chippindale, 1998. An archaeology of rock-art through informed methods and formal methods, in *The Archaeology of Rock-Art*, eds. C. Chippindale & P. C. Taçon Cambridge: Cambridge University Press, 1-10.
- Tacon, P. S. C., 2002. Rock-Art and Landscapes, in *Inscribed Landscapes. Marking and Making Place*, eds. B. David & M. Wilson Honolulu: University of Hawai'i Press, 122-36.
- Taçon, P. S. C., 1992. 'If you miss all this story, well bad luck': Rock art and the validity of ethnographic interpretationin western Arnhem Land, Australia, in *Rock Art and Ethnography*, eds. M. J. Morwood & D. R. Hobbs Melbourne Australian Rock Art Research Association, 11-8.
- Taçon, P. S. C., 1994. Socialising landscapes: the long-term implications of signs, symbols and marks on the land. *Archaeologia Oceania*, 29, 117-29.
- Tallgren, A. M., 1933. Inner Asiatic and Siberian Rock Pictures. Two Lectures delivered at the London University May 23rd and 25th 1932. *Eurasia Septentrionalis Antiqua*, VIII(1933), 175-210.
- Tanner, V., 1906. Studier öfver kvartärsystemet i Fennoskandias nordliga delar, Helsingfors
- Tansem, K. & H. Johansen, 2008. The World Heritage Rock Art in Alta. *Adoranten*, 2008, 65-84.
- Tarasov, A. & A. I. Murashkin, 2002. The new material from the site Zalavruga I and the problem of dating new Zalavruga's Rock Carvings / Новые материалы с лоселения эалавруга 1 и проблема датировки петроглифов новой эалавруга. *Arkeologicestkie Vesti*, 10, 41-4.
- Taskinen, H., 2000. Hällkonsten i Finland forskningshistoria och dokumentation, in *Ristad och Målad. Aspekter på nordisk bergkonst*, eds. T. Edgren & H. Taskinen Vammala: Vammala Kirjapaino Oy, 20-33.
- Taskinen, H., 2006. Rock Painting Sites in Finland. Archaeological Excavations and Underwater Investigations. *Adoranten*, 19-27.
- Terebikhin, B. M., 1993. Cultural geography and cosmography of the Sami. *Acta Borealia*, 1(1993).
- Thackery, J. F., 2005. Eland, Hunters and Concepts of 'Sympathetic Control' Expressed in Southern African Rock Art. *Cambridge Archaeological Journal*, 15(1), 27-34.

- Thomas, J., 1996. The materiality of the Mesolithic-Neolithic transition in Britain *Analecta Praehistorica Leidensia*, 29, 57-64.
- Thommesen, T., 1996. The Earliest Settlement of Northern Norway, in *The Earliest Settlement of Scandinavia and its relationship with neighbouring areas*, ed. L. Larsson Stockholm: Almquist & Wiksell International, 235-40.
- Thornton, H. R., 1931. *Among the Eskimos of Wales, Alaska 1890-93*, Baltimore: Johns Hopkins.
- Tilley, C., 1991. Material culture and text: the art of ambiguity, London: Routledge.
- Tilley, C., 1994. *A phenomenology of landscape : places, paths and monuments*, Oxford: Berg.
- Tilley, C., 2004. *The materiality of stone : explorations in landscape phenomenology*, Oxford: Berg.
- Tilley, C. Y., 2008. *Body and image: explorations in landscape phenomenology*, Walnut Creek, Calif.: Left Coast.
- Tjarnoluskij, V. V., 1993. Den vilda renen i myt och rit, Jokkmokk: Ájtte.
- Taavitsainen, J.-P., 1978. Somussalmen Värikallio. Kalliomaalaus Nämforsen ja Itä-KARJALAN kalliopiirrosten välissä. *Kotiseutu*, 1978(1-2), 109-17.
- Ucko, P. J. & R. Layton, 1999. *The Archaeology and anthropology of landscape : shaping your landscape*, London: Routledge.
- Vasilevich, G. M., 1963. Early Concepts about the Universe among the Evenks (Materials), in *Studies in Siberian shamanism*, ed. H. N. Michael Toronto: University of Toronto Press, 46-83.
- Viklund, B. O., 1997. Nyopptäkta hällmålningar i Anundsjö, Fjellsjö och Ramsele. *Oknytt*, 1997(3-4), 21-33.
- Viklund, B. O., 1999. Älgar målade i älgens eget rike, in *Tidsspår : hembygdsbok för Ångermanland och Medelpad*, ed. M. Bergvall Härnösand: Ångermanlands och Medelpads hembygdsförbund, 49-58.
- Viklund, B. O., 2002. Några av hällmålningarna i västra Ångermanland, in *Studier i Regional Arkeologi*, eds. L. Klang, B. Lindgren & P. H. Ramqvist Örnsköldsvik: Mitthögskolan, 103-18.
- Viklund, B. O., 2003. Hällmålningar i Ångermanland. Skikt, 9, 6-7.
- Viklund, B. O., 2004a. Bastuloken. Ett boplatsområde vid våtmark i Stenvikstrand i Ramsele socken, Ångermanland, Västernorrlands län. Rapport 2004:1, Härnösand: Forntid i Ramsele. Kulturmiljövårderna AB i Härnösand.
- Viklund, B. O., 2004b. Harahällen Nagasjöån. Nyupptäkta hällmålningar innom Fjällsjö socken och Bodums socknar i Ångermanland, Strömsunds kommun, Jämtlands län, Härnösand: Kulturmiljövårderna AB, 10.
- Viklund, B. O., 2004c. Nyupptäkta hällmålningar. Fjällsjö socken, Ångermanland, Strömsunds kommun, Jämtlands län, Härnösand: Kulturmiljövårderna AB, 10.
- Viklund, B. O., 2004d. The Space of Red Ochre. The Stone Age Gallery in the Province of Ångermanland, Northern Sweden. *Adoranten*, 2004, 41-54.
- Viklund, B. O., 2004e. Tre nyupptäkta hällmålningar i västra Ångermanland, Härnösand: Forntid i Ramsele och Kulturmiljövårderna AB, 10.
- Viklund, B. O. & M. Tjärnström, 2006. Alces Ocra Röda älgens rike. Nyupptäckta hällmålningar i Fjällsjö socken, Strömsunds kommun, landskapet Ångermanland, Jämtlands län, Härnön: Skogsstyrelsen, 17.
- Viste, S., 2003. Bildene forteller: sjamanistiske element i veideristningene fra Vingen og Ausevik?, Bergen: S. Viste.
- Vitaliano, D. B., 1973. *Legends of the earth: their geologic origins*, Bloomington: Indiana University Press.

- Vitebsky, P., 1995. The shaman, Boston, Mass.: Little, Brown.
- Vitebsky, P., 2005. *Reindeer people / living with animals and spirits in Siberia*, London: HarperCollinsPublishers.
- Vogt, D., 2006. Helleristninger i Østfold og Bohuslän. En analyse av det økonomiske og politiske landskap, in *Det Humanistiske Fakultet. Universitetet i Oslo* Oslo: Universitetet i Oslo, 275.
- Vorren, Ø., 1978. Siida-områder på "Sör-Fieldit" under veidekulturens siste fase. *By og bygd. Norsk Folkemuseums Årbok*, 26(1977), 259-74.
- Vorren, Ø., 1980. Samisk bosetning på Nordkalotten, arealdisponering og ressursutnytting i historisk-økologisk belysning. *Umeå Studies in the Humanities*, 24, 235-61.
- Vorren, Ø., 1998. *Villreinfangst i Varanger fram til 1600-1700 årene*, Stonglandseidet: Nordkalott-forlaget.
- Vorren, Ø. & H. K. Eriksen, 1993. *Samiske offerplasser i Varanger*, Stonglandseidet: Nordkalott-forlaget.
- Wahlgren, K. H., 1998. Encultured Rocks. Encounter with a Ritual World of the Bronze Age. *Current Swedish Archaeology*, 6, 85-97.
- Walderhaug, E. M., 1998. Changing art in a changing society: the hunters' rock-art of western Norway, in *The Archaeology of Rock-Art*, eds. C. Chippindale & P. S. C. Tacon Cambridge: Cambridge University Press, 285-301.
- Watson, L., 1981 [1988]. Sea guide to whales of the world, London: Hutchinson.
- Wetterberg, C. A., 1845. Hälleristningar i Glösebäcken, Alsens Socken, Jemtlands Län. *Antiquarisk Tidsskrift*, 1843-1845(1844), 175-7.
- Wikan, S., 1985. Samiske ritualer under bjørnejakt. *Ottar. Populære småskrifter fra Tromsø Museum*, 12-9.
- Worsaae, J. J. A., 1846. Blekingske Mindesmærker fra Hedenhold, Copenhagen.
- York, A., R. Daly & C. Arnett, 1993. They write their dream on the rock forever: rock writings of the Stein River Valley of British Columbia, Vancouver: Talonbooks.
- Zamyatnin, S. N., 1948. Miniatyurnye kremnyovye skulptury v neolite Severo-Vostochnoi Yevropy / МИНИАТЮРНЫЕ КРЕМНЕВЫЕ СКУЛРТУРЫ В НЕОЛИТЕ СЕОЛИТЕ СЕВЕРО-ВОСТОЧНОЙ ЕВРОПЫ. Sovetskaja archeologija, 10, 85-123.
- Zhulnikov, A. M., 2006. K voprosu o datirovke Belomorskih petroglifov, in *Pervobytnaya i srednevekovaya istorija i kultura evropeiskovo Severa: problemy, izucheniya i rekonstruktsii*Arkhangelsk, 238-47.
- Ziegler, R., 1901. Arkæologiske Undersøgelser i 1900. *Det Kongelige Norske Videnskabers Selskabs Skrifter*, 7, 3-5.
- Zilhãu, J., 1995. The age of the Côa valley (portugal) rock-art: validation of archaeological dating to the Paleolithic and refutation of 'scientific' dating to historic or proto-historic times. *Antiquity*, 69(266), 883-901.
- Zvelebil, M., 1997. Hunter-gatherer ritual landscapes: spatial organisation, social structure and ideology among hunter-gatherers of northern Europe and western Siberia *Analecta Praehistorica Leidensia*, 29, 33-50.
- Zvelebil, M., 2003. Enculturation of Mesolithic Landscapes, in *Mesolithic on the Move*. Papers presented at the Sixth International Conference on the Mesolithic in Europe, Stockholm 2000, eds. L. Larsson, H. Kindgren, K. Knutsson, D. Loeffler & A. Åkerlund Oxford: Oxbow Books, 65-73.
- Åkerlund, A., 1996. *Human responses to shore displacement : living by the sea in Eastern Middle Sweden during the Stone Age*, Stockholm: Riksantikvarieämbetet.

