

Giving the Past a Future

Essays in Archaeology and Rock Art
Studies in Honour of
Dr. Phil. h.c. Gerhard Milstreu

Edited by

James Dodd and Ellen Meijer



Access Archaeology



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Dr. Phil. h.c. Gerhard Milstreu

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James Dodd and Ellen Meijer

Dedication

In honour of our dear friend, teacher and colleague - Gerhard.

Thank you for making so much possible.

This is for you.



Access Archaeology





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Cover illustration: Part of the panel from Bro Utmark (Tanum 192:1). Photo: Tanums Hällristningsmuseum Underslös

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Editors Preface

This collection of works celebrates the work of Dr. fil. h.c. Gerhard Milstreu in connection with his 40th year as director of Tanum Museum of Rock Carving and Rock Art Research Centre, Underslös, Sweden. In 1978, Gerhard took over the directorship of Tanum Museum of Rock Art, Underslös and the associated Bohuslän Rock Art Research Archive from the Danish Artist, Fred Gudnitz, whom Gerhard has already worked with over many years following his education in Visual Arts at The Royal Danish Academy of Fine Arts.



DR. PHIL H.C. GERHARD MILSTREU. PHOTO HENNING PRØHL

Under Gerhard's leadership, the role of prehistoric art and rock art within the spheres of both the academic world, and that of the general public, have been significantly advanced through the integration of this unique visual information in archaeological discourse. Gerhard started the annual working seminar and transformed the museum's dedicated journal on prehistoric art, *Adoranten* (which was initiated by Gudnitz). At the working seminar, archaeologists and members of the general public alike from around the world, can come to learn the ins and outs of rock art documentation. The seminar, which began in 1978, was the first of its kind in the world, and has established the framework that has been applied in many countries around the world. The workflow developed by Gerhard and the museum is now also becoming incorporated into archaeological teaching practices at both Masters and Undergraduate level in Sweden and Denmark. *Adoranten* has blossomed to become an internationally acclaimed, peer reviewed journal, distributed to museums, universities and rock art experts in 26 countries.

Collaboration and dialogue at a local, national and international level has also been a keystone of Gerhard's strategy for the Museum. Time and again he has brought people and groups together, to share knowledge and encourage understanding, thereby assisting in the achievement of results that are far greater than the sum of their constituent parts. Perhaps key to this is his sense of the importance of inclusivity, his ability to listen and his respect for other people and their views.

A sign of the success of these attributes can partly be gauged by the level and amount of Underlsös Museum's activities on an international level. The Museum and Gerhard have been part of several major national and international collaborations, including several major projects part financed by The European Union. Partly because, and as a result of these efforts, Gerhard's network is enormous. Those that have been asked by the editors to contribute here represent merely the common nodes within our networks. Therefore, as the editors, we apologize to anyone not included in advance!

We believe that all the above-mentioned achievements are the direct result of 40 years of inspiration, dedication, hard work, love and engagement from Gerhard. All these achievements are especially noteworthy considering that everything at the museum is done completely voluntarily.

Here, a feast of scholarly contributions from across Europe, at all levels of study have been collected. Each and every one of the following works addresses aspects connected to the work Gerhard has done over the last 40 years. Through their words and images, these pay respect to and acknowledge Gerhard's achievements in the fields of rock art documentation, research, international collaboration and outreach.

Lastly, it is pertinent to give the reader an explanation of our choice of title for the volume. One of Gerhard's slogans, as well as the title of a project to document the rock art on the island of Møn, Denmark, is "give your past a future". To understand this saying, is to, at least partly, understand the philosophy and rationale behind Gerhard's life work. The images have a timeless, artistic quality. They are a unique and, thanks to natural and human degradation processes, disappearing source material. The knowledge thereof and the skills employed in the study of these representations from the past is not solely about the present. It is about the future. One aspect is what we leave behind for future generations to behold in the records. The other, as important, if not more important, is about involving and motivating the next generation to continue. Gerhard has given, and is still giving the youth the possibility and the means to preserve the past: both for the present and the future. Therefore, we entitle this work in his honour 'Giving The Past A Future'.

James Dodd & Ellen Meijer, Editors

Tanums Hällristningsmuseum Underslös

The Annual Celebration Friday 27 July 2018

Tabula Gratulatoria

There is only a small Tabula Gratulatoria in this book. Gerhard's network is so vast with so many colleagues and friends all over the world, that it was impossible for us to contact them all. Moreover, where do we draw the line? The connections are varied, from: colleagues to artists; to students; participants to the annual international workweeks and so on. We have therefore decided to concentrate on the actual content to produce a worthy tribute honouring Gerhard for decades of hard work. He has been, and hopefully will be for a long time to come, a pioneer and ambassador for the rock carvings, not just in Sweden, but worldwide.

This book comes with a heartfelt gratitude, admiration and best wishes from the board and all members of the Scandinavian Society for Prehistoric Art, friends, colleagues, students and all individuals that have enjoyed and / or supported the important work done by Gerhard from 1964 onwards to protect, document and promote the beauty of the images.

Henning Prøhl, Humlebæk
James Dodd, Aarhus
Inger Marie Aicher Olsrud, Moss
Marijke Houwink, Sandhem
Ann-Zofie Duvander, Stockholm
Mette Johansen Rabitz, Copenhagen
Stefan Nilsson, Malmö
Ellen Meijer, Maassluis
Elisabeth, Jarl, Maria & Catarina Nordbladh, Gothenburg
Johan Ling, Gothenburg
Ulf & Catarina Bertilsson, Gälltö
John Koch, Aberystwyth, Ceredigion, Wales
Kristian Kristiansen, Gothenburg
Tertia Barnett, Edinburgh
Sophie Bergerbrant, Gothenburg
Anna Wessman, Gothenburg
Kjell Brevik, Hovin
Louise Felding, Velje
Jan Magne Gjerde, Tromsø
Heidrun Stebergløkken, Trondheim
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Peter Skoglund, Kalmar
Kalle Sognnes, Trondheim
Magnus Tangen, Fredrikstad
Alberto Marretta & Sara Rinetti, Capo di Ponte
Umberto Sansoni, Capo di Ponte
Elena Man-Estier, Paris
George Nash, Macao, Portugal

Chapter 1

Art, Artists, Rock Art and Underslös

James Dodd

Study of art has historically been divided between the history of art and the history of religion (Nordbladh, this volume; Jorn 1950; 1957). As Jarl so eloquently puts in his article, the person whom this book is produced in honour of, Dr. Phil honoris causae Gerhard Milstreu, has championed, throughout his work, an artistic, but yet nonetheless scientific perspective on the art. Furthermore, as Jarl points out, the roots of this approach lie in Underslös Museum's founder: Fred Gudnitz.

Gerhard, over the years, has sought to foster a greater awareness of the contribution of Underslös Museum's founder, who, as Jarl once again says, saw the potential of the materials in a wider, artistic context and was influenced by a number of other free - and lateral - thinking colleagues. Therefore, in this, the 40th year since Fred drew up the deed charging Gerhard to continue his work "in my spirit"; and as we gather to celebrate Gerhard's achievements; it is most appropriate that we delve deeper into the role of the artistic perspective on the prehistoric imagery.

In this article, we explore the role that art and artists have had in the history in the discipline, in particular, the history of Underslös Museum and The Scandinavian Society for Prehistoric Art. In particular, we focus on the links of Gudnitz with the artistic world; in both fine art and academia; as well as how those viewing prehistoric images from the perspective of, or interest in, art, are a significant research group. Art seems to have the quality of bringing people together around the art, irrespective of the fact that the detail of their views may differ very widely. Whilst it would be easy to pigeon-hole the trend as part of the wider phenomena of art versus religion, this is not sufficient to explain the phenomenon. The artistic perspective on art can, and does, cut across both fields. Those with an artistic perspective are not art historians, moreover, they are better characterised a group that share a common interest and appreciation for the art, that forms a common start and entry point to the material.

Many of the people who are and have been involved in prehistoric art have a background in art. The very first time I met one of my colleagues, I was asked: "Can one have an interest in art and study archaeology? Or are the two incompatible... and is it frowned upon?". As Nordbladh (this volume) pointed out earlier, viewing the art from an artistic perspective was indeed frowned upon for some considerable time, especially during the 18th and 19th centuries. The answer then, as now, is the same: artistic perspectives are very valid and can be traced throughout the history and current position of research into prehistoric art. The relationships between art, artists and Underslös Museum are a case in point. This article explores some of these relationships. Here, in new research specifically undertaken for this volume, we explore the links with, and in between, in particular, Fred Gudnitz, P.V. Glob, Asger Jorn and Gutorm Gjessing - all prominent figures in their respective fields.

Before investigating the relationships between art, artists and Underslös, we should define what we mean when we talk about an approach to prehistoric art from an artistic perspective. Some of the best words used to explain the "phenomenon" come from Gerhard, who we will use as a vehicle for the furtherance of our understanding and the basis to delve deeper into the past.

Art, artists & prehistoric art: past & the present

A number of the people who work with prehistoric art today have an interest, one way or another, in art. In the case of the author, this is a unifying factor that defines many of the closest research collaborations my colleagues and I have been, and still are, engaged in. Art and an interest in art forms common ground, a starting point for people's approach to the material, that draws people together: forming a pretext for the opening up of dialogue: "which is essential, as nobody knows the answers to the many questions presented to us in the field" (Milstreu 2011: 118). Thus, art can be a major force that binds together many of the scholars within the discipline. This approach to the material is not "art for art's sake" and is just as scholarly and scientific as any other approaches to the discipline.

Gerhard and the artistic perspective on prehistoric art



FIGURE 1. "THE MOST BEAUTIFUL SHIP ON BORNHOLM"
CITAT GERHARD MILSTREU, AUGUST 2014. BROGÅRD
1, NORTH WEST BORNHOLM. PAINTED ILLUSTRATION:
KAUL/MILSTREU 2001

Perhaps the best descriptions of the role of art and artists come from Gerhard himself

"What connects / attracts artists to the rock art is the distillation of key elements and key lines to the most basic form. Thereby making very powerful images / symbols. The simplest things, the simplest lines: they are the most powerful. When things are reduced to their most basic form, they become very powerful - and the same can be said of the images. If we look at the naturalistic figures, we can see the sense of line, conveying a lot within just a few small strokes. If one looks at the work of Mogens Hoff (1934-2008: self-taught Danish painter, graphic artist and author) one can see how the artist is distilling things down to the key elements."

(pers. comm., 4 February 2018, author's translation)

Interestingly, Gerhard does not describe himself as educated in art, although the author does hold the opinion that his artistic training has facilitated the creation of what Nordbladh (*this volume*) terms: "the new constellation, where art and archaeology were seen together, as a joined force to strengthen the knowledge of the prehistoric image". Gerhard studied Visual Arts at The Royal Danish Academy of Fine Arts and has a keen eye for presentation: be it the painting of a window of the museum, an exhibition, or created a painted illustration of "the most beautiful ship on Bornholm" - at Brogård.

When instructing the author about how to paint the very weathered lines of a weathered ship found on the upper surface of Madseløkke 1, North West Bornholm, Denmark, Gerhard talked about the importance that was probably attached in prehistory to skill in the execution of the images (Milstreu pers. comm., 16 June 2014). When making the painted interpretation, one should try to find areas where original surface is preserved (remaining from the time of carving), hereby to observe the points of minimum thickness. These can then be used to inform one's painted interpretation, illustrating how the carving may have originally looked.

“Out of respect for the original artist, it is important to show respect for the skill shown in the execution of the figures. At the same time, one can say that from the way that, at least some of the figures, are have been depicted, this indicates that the execution of the image was quite important – in some cases essential”
(Milstreu pers. comm., 16 June 2014).



FIGURE 2. SHIP ON AN UPPER, SLOPING SURFACE OF BMR 3363 MADSELØKKE 1, NORTH WEST BORNHOLM. LEFT TO RIGHT: FROTTAGE (MILSTREU 2014), PAINTED ILLUSTRATION (MILSTREU & DODD 2014). SFM (J. DODD, AARHUS UNIVERSITY IN COLLABORATION WITH BORNHOLMS MUSEUM. PROCESSED ON THE NATIONAL DANISH E-INFRASTRUCTURE COLLABORATION'S HIGH PERFORMANCE COMPUTER, ABACUS 2.0)

The importance of execution in the past is closely linked to the previous quotation concerning their sense of line and the conveyance of a lot of information in a very few strokes. Gerhard continues:

“Art gives you a sense of the aesthetic. You see that you (referring to the author) have a sense of observing things in the sketches, pictures and things you put up; that you have a sense of the aesthetic; to look at things - and are good at breaking the billedsprog down and reading the constituents. Flemming (Kaul) also is someone who is really good at reading the images and breaking them down to their constituents in order to see what they are comprised of.

When we look at the rock art: whilst there were clearly those who had the skills to execute the images correctly and in the most beautiful manner, there were clearly those who did not! There was also, to an extent, a practice of copying what one had seen and reproducing it locally. Where we see it does not look as nice, it is because they don't have the skills. You can see this in the figures that are not executed with the same level of skill.”

(Milstreu pers. comm., 4 February 2018)

“...There were clearly some people who possessed knowledge; about the images and the certain way that they should be depicted...The variations in executions may suggest that one group, with the knowledge of how to produce the art produced the most finely executed examples. However, others, what we might call people on the “ordinary” level of knowledge, did not have that knowledge.

They had a very codified way of communication things in a certain way. They probably became very good at reproducing these images as they portrayed them over and over and over again. Whatever you represent, if you learn to be good at it, it becomes easier and easier to draw it - and with fewer and fewer lines and mistakes.”

(Milstreu pers. comm., 4 February 2018, author's translation)

Therefore, as the author responded at the time, this means that we can use these constructions to think very deeply about the creation of the images, their content, how this emphasis on execution came about, as well as about the transmission of visual culture. All these issues are connected to the wider questions of who produced rock art, style, as well as the creation and transformation of style. Using the perspective of the artist, in respect of the sense of line, Gerhard provides a very helpful lens which we can use to think about what style is and how it is formed. The incompleteness of the knowledge of the creator may have led conceivably to errors in the copying, or reproduction as we might otherwise call it. In turn, in subsequent periods of time, where there is no direct possibility for the transmission of the meaning of the images,

beyond oral history, it is not inconceivable that many more errors crept in during the reproduction process. The new images, were of course, just like ourselves in the present, conditioned by their socio-cultural and political circumstances. Thus, one can see how symbols, bearing similarity with those in the past, are reused, and imbued with new meanings – but yet still reflect their ancestry. In conclusion, we can say that by thinking, as an artist, about how one creates the images, we can gain interesting insights into the *billedspog*, (best translated as imagery or visual language) in order to support our understanding of how the imagery changes over time, but yet reflects its past references.

Art, archaeology and rock art in the present

Another graduate of Royal Danish Academy of Art, is amateur archaeologist Martin Stoltze, whose investigations have led to the discovery of a large amount of the figurative art in North Bornholm. Both Martin and Gerhard share a keen eye for visual design and collaborated over many years during the Bornholm components of the major EU funded RANE (Rock Art in Northern Europe) project. Besides the many finds, Martin has authored chapters and produced the visual layout for Kaul et al. (2005a). Martin, by his own admission, does not always stick to the what might be the optimal angle and intensity most favourable light for an archaeological illustration, but often chose a more artistic rendering, accentuating shadows and using multiple lighting directions to create image collages of night photographs. Taking night photographs at the right time at night of the night in the crossover between the afterglow and full night can produce aesthetically pleasing results showing the figures in clearer detail within their landscape setting.

Gerhard continues to collaborate and include artists in discourse. These have included Steffan Henrik, who has produced a number of installations and sculptures for Underslös Museum. These have often been in the form of installations created by burning material at night shaped or formed to resemble images found in rock art. These have included; a burning hand in the form of the portable stones found in a cult house, at Sandagergård, on Sjælland; a ship; and a sun-horse burning on a metal scaffold (see Henrik's chapter in Milstreu & Prøhl 2004 and the report on the 60th Anniversary celebrations at Underslös in Adoranten 2012). Several artists contributed to the edited volume *Prehistoric Pictures as Archaeological Source* (Milstreu and Prøhl 2004), which was the product of an interdisciplinary seminar, held at Tanums Hällristningsmuseum Underslös, in 2002 to celebrate 50 years of the museum, that sought to assert the importance of the prehistoric image and integrate it more closely within archaeological research. Gerhard invited artists to contribute, in order that they might bring some new insights, on the semiotic level, from their various fields, concerning the symbols themselves and how one might go about deconstructing the images and combinations of images from differing perspectives (pers. comm., Milstreu 2 February 2018).



FIGURE 3. BLÅHOLTSHUSE 1, NORTH WEST BORNHOLM, AT DUSK. J. DODD, BORNHOLMS MUSEUM, 2014.

One of those who thinks deepest about the images, their basic meanings on a fundamental level, and the ways that we have shaped and been shaped by our interpretations of the art, is Jarl Nordbladh. As my co-editor has said on a number of occasions, Jarl “holds up a mirror to us” forcing us to first reflect on the biases our own culture imposes, and then, think once again about the images, often on the most fundamental level. Although there are many examples of this approach amongst his prolific publication record, one only need refer to his contribution here to see the depth of his thinking. Jarl places great emphasis on analysis of the symbols as of themselves. In his contribution here, Jarl refers to his doctoral thesis, that looked at the attributes assigned to the main symbols in order to give additional meaning and explanation. One could also describe this as syntax as known within the study of language and that of computer science. Given the recent and ongoing developments in computing, particularly High Performance Computing, to such issues, the author contends that this is one avenue of investigation that is likely to increase in the coming years and decades.

From the present to history and prehistory

The study of prehistoric art from the perspective of art, and by artists, appears to be an important common element in the backgrounds of a number of present-day Scandinavian rock art researchers: with a common interest in art being a factor that has been the source of, perhaps indirect, inspiration for some. In any case, it appears to bind a number of researchers together. This perspective has much insight to offer us into the images left by past societies. The execution of the figures could be linked to what artists call the sense of line. In turn, this leads us to think about style, how it is formed, transformed and communicated. Gerhard’s thoughts vocalize this is a way that is both clear and neutral and allow us think very deeply about the material.

Having established this as our theoretical background, in the remainder of the article, the author wishes to shift focus onto the history of research, for we can also see in the past that an artistic approach to prehistoric art is a key structuring concept. The vehicle for this exploration centres around Underlsös, the network of its founder Fred Gudnitz, and his associations of contemporary artists and artistic inspired archaeologists.

Fredrik Leth Gudnitz: a Danish “vehicle of culture” in Bohuslän

The author will not repeat details found elsewhere of the life and activities of Fred Gudnitz. For perhaps the best and most complete, see the articles in *Adoranten* 2001, 2004 and 2011 by Lili Kaelas, former director of Göteborgs Museum, and Gerhard (2001; 2011).

Until the 1980’s. much of the documentation of was of individual figures., not whole surfaces. This strategy of collecting images of different categories of figures, was something instigated by Gudnitz. This formed the basis of the archive that Gudnitz built up: *Bohusläns Hallristnings Forsknings Arkiv*. BHFA grew under Gerhard’s leadership to become the core of the similarly named (at Gerhard’s suggestion with a probable nod of recognition to Gudnitz), *Svenskt Hällristnings Forsknings Arkiv*, (SHFA), at that establishment’s foundation in 2007. One of the things that was unusual, if not unique, in the context of the BHFA archive, was not only the collation of material thematically according to the kind of symbol, but also the collation of material to contextualise the material. This was curated from all possible sources and fields, from all over the world, from publications, newspaper articles and correspondence with and between his wide network. Of all the material, one has to praise the integration of anthropology with the archaeology. In this, Gudnitz was far sighted, predating by around 20 years the more widespread integration of anthropology, following the influential work of Peter Ucko (1936-2007).

Gudnitz also produced illustrations, in the form of sketches, drawings, such as Figure 2, as accompaniments to some of the photographs. All was catalogued in a systematic way using an index card system that recorded the source, location and chronology. This created a very powerful system, whereby one could look thematically on the level of the imagery, but also in a chronological way, across space. As a consequence of technological developments and the ability (and desire) to process and visualize large datasets, the image itself has once again become the focus of study for a number of scholars (Bertilsson 2015; Milstreu 2015; 2017b; 2017a; Horn, this volume). Much of this can be attributed to renewed focus on details and the development of our competencies in recognizing information on the rock surface: that have enhanced our capacity for observation. In this work, a cross cultural and temporal overview is essential, coupled closely with the ability to think laterally and deeply on a symbolic level.

Gudnitz saw two things as very important (Bruun Jørgensen and Schou Jørgensen 1972; Kaelas 2011; Milstreu 2011); firstly, the integration of prehistoric art within archaeological discourse, secondly, communication and presentation of this remarkable collection of images to the wider public at large. To realize these ambitions, Gudnitz placed emphasis on contacts with leading archaeologists (which we will discuss in following sections) but also gave talks, guided tours, hosted groups and worked with them on the rocks, mounted exhibitions, delivered lectures and authored newspaper articles. As an artist, he maintained contact and fostered crossover between the worlds of archaeology and art.

Gudnitz's connections with other artists

Gudnitz “saw the visual qualities of the rock carvings and came to inspire – mostly – Danish people of culture to have a close relation to this image world” (Nordbladh 2015: 7) Some of these people are shown in Figure 6. Harald Sverdrup (1923-1992), was a well-known and praised Norwegian author of children’s poetry. Another Norwegian, the sculptor Knut Steen (1924-2011), best known for his work *Whalers Monument* (1960), at Sandefjord, in Southern Norway; and for his controversial statue of King Olaf V, was also part of Gudnitz’s circle. In Figure 6, we see the bust and medal he produced for Gudnitz. Steen is also a signatory to the poem, illustrated by Thorstein Rittun (2009; *Store norske leksikon*. Accessed 26 June 2018: https://snl.no/Thorstein_Rittun)

The bare bones of the concept that Gerhard presides over today at Underslös have clear roots in the approach of Gudnitz. Whilst Gerhard and Gudnitz did differ in opinion, particularly later in Fred’s life, the bare bones of: the concept operating today at Underslös with: the Arbetsseminar, the emphasis placed on the importance of the integration of the pictures within archaeological discourse, an emphasis on an artistic approach to the imagery, and a focus on presentation, communication and dissemination (see Nielsen: *this volume*); can already be seen in Fred’s work. In the view of the author, despite differences in opinion, it was these focus points that made something ‘click’ between the two; in the sense that both realized the common ground between each other and the potential for collaboration. Gerhard has continued and developed Fred’s work, placing it on ever higher scientific levels and always seeking new audiences for the appreciation of the art.

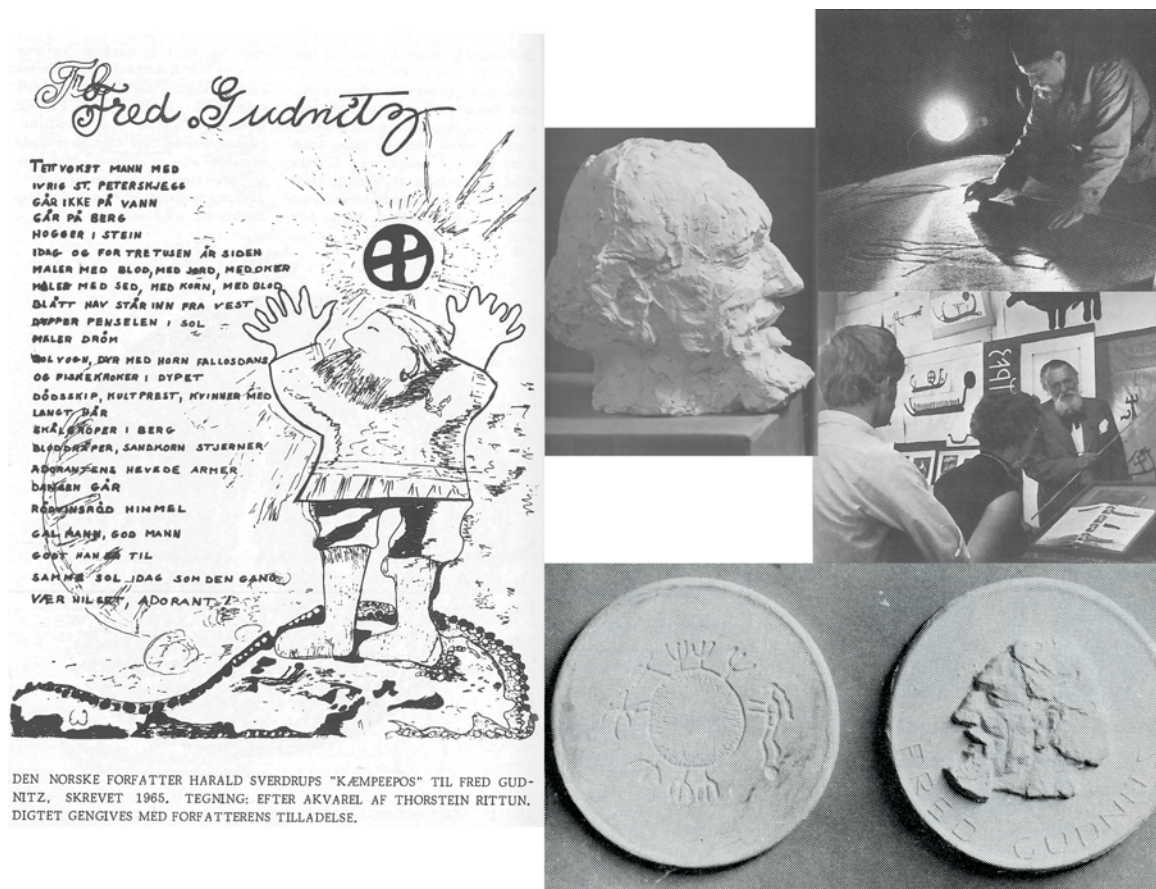
The key linking concept between all these factors is art and the artists involved in the work. In the following sections, we will see that this is not confined to the art world. Moreover, artists, art and archaeology are closely connected, closely overlapping and interacting with one another. Reconsideration of these relationships allow us to reflect on how this approach can advance our understanding of the prehistoric image.



FIGURE 4. GUDNITZ'S COLLECTION OF IMAGES IN BOXES IN THE ARCHIVE AT UNDERSLÖS. IMAGE: J. DODD
 © TANUMS HÄLLRISTNINGSMUSEUM, UNDERSLÖS.



FIGURE 5. SELECTION OF MATERIAL IN THE GUDNITZ ARCHIVE COLLECTED ON THE THEME OF CUP-MARKS. WE SEE: A SYSTEMATIZED INDEX CARD SYSTEM, REFERENCES TO ANTHROPOLOGICAL AND HISTORICAL SOURCES, SUPPLEMENTED WITH REFERENCES TO SOURCE MATERIAL AND AN INK DRAWING, BY GUDNITZ, OF THE PHOTO OF THE STONE IN HUDSON BAY, CANADA, SEEN ON THE INDEX CARD TO THE LEFT. COLLAGE: J. DODD. ARCHIVE MATERIAL © TANUMS HÄLLRISTNINGSMUSEUM, UNDERSLÖS.



DEN NORSKE FORFATTER HARALD SVERDRUPS "KÆMPEPOS" TIL FRED GUDNITZ. SKREVET 1965. TEGNING: EFTER AKVAREL AF THORSTEIN RITTUN. DIGTET GENGIVES MED FORFATTERENS TILLADELSE.

FIGURE 6. FRED GUDNITZ. CLOCKWISE, FROM LEFT TO RIGHT; POEM BY NORWEGIAN HARALD SVERDRUP, ILLUSTRATED WITH AN AQUARELLE BY THORSTEIN RITTUN. THE ORIGINAL, IN COLOUR, IS SIGNED BY MANY PROMINENT ARTISTS, INCLUDING PROMINENT NORWEGIAN SCULPTOR AND ARTIST KNUT STEEN, WHO PRODUCED A BUST OF GUDNITZ, IN 1971, SHOWN TO THE RIGHT; UPPER RIGHT AND UPPER RIGHT, LOWER, GUDNITZ IS SEEN ON TANUM 1: 1, VITLYCKE AND SHOWING GUESTS AROUND THE EXHIBITION AT UNDERSLÖS (ILLUSTRATIONS AND PHOTOS AFTER BRUUN JØRGENSEN AND SCHOU JØRGENSEN 1972: 24; 28; 27). THE 'GUDNITZ MEDAL', LOWER RIGHT, WAS MINTED BY KNUT STEEN AND FEATURES THE SUN AND ADORANTS AND OTHER ANTHROPOMOPH FIGURES, WITH PONY TAIL HAIR STYLE, FROM TANUM 12, AT ASPEBERGET (FROM ADORANTEN 1978). COLLAGE: J. DODD.

FIGURE 7. THE COVER PRODUCED BY GUDNITZ FOR BRUUN JØRGENSEN AND SCHOU JØRGENSEN (1972), WHICH ACCOMPANIED THE 'FIRST AND LAST' EXHIBITION OF THE WORK OF FRED GUDNITZ AND GRAPHIC MATERIAL FROM THE BHFA COLLECTION AT UNDERSLÖS MUSEUM, HELD AT ANNEBERGSAMLINGERNE, HOLBÆK, DENMARK



Gudnitz & Glob

One of the most well-known Danish archaeologists of all time, P.V. Glob, is a key person in the relationship between art, artists, Underslös and prehistoric art. In 1962, Gudnitz dedicated his book *Bronzealderens Monumentalkunst*, (The Monumental Art of the Bronze Age: authors' translation) to Glob. One of the things that Gudnitz states, is that he takes the images themselves as his starting point for the work, placing them centre stage, with accompanying text from historical record and the writings of the most influential scholars at the time, in order to tell the story of not only the images, but also the history of different documentations over centuries.

It is not known with certainty, at present, when and how Glob and Gudnitz became acquainted with each other. However, by the time that Gerhard first visited Underslös, in 1965, Glob and Gudnitz were already well acquainted in and in collaboration. In fact, the author understands Glob was present at the time of Gerhard's visit (pers. comm., 2 February 2018) together with his sister, who was also an artist. This was neither the first, nor or the last visit of Glob and his sister, as far as can be understood from Gerhard's impression of what was communicated to him by Gudnitz.

Although the author is not aware that they ever attended simultaneously, both Gudnitz and Glob attended the Valcamonica Symposiums at various time, in Northern Italy (refer front cover of the conference proceedings from 1968 reproduced in Kaelas 2001)

Glob & art

Art is something that ran in the Glob family, with his father having been an artist, educated at The Royal Danish Academy of Art (Østergaard Pedersen 2015: 12). Glob's sister was also an artist. Glob himself was also an artist, albeit never professionally educated, and drew heavily on art to inform his approach to and perspective on archaeology (Nordbladh 2015: 7). Glob cultivated his relationships with artists, drawing a lot of inspiration in the process (ibid). The evidence for this is manifest in Glob's connections with artists and the art world. Perhaps Glob, in another life, would have liked to have been an artist and follow in the steps of his father. Even though his career took a different direction, perhaps, by maintaining his links with artists, Glob was able to maintain that contact with his interest. We will never know for certain, but what we can say, is that Glob took an artistic approach from art to the rock art and prehistoric art more generally.

Glob's (1969) work concerning the overview of the rock carvings known in Denmark remains seminal and still stands as the largest work in the public domain amounting to a catalogue of rock carvings in Denmark. Only the projects: *Ships on Stone*, executed by Milstreu & Kaul, at the National Museum of Denmark, and online at shfa.se (click on the Danish flag!); and the large-scale documentation of rock art being carried out on Bornholm by the author; approach the scale of Glob's attempt to provide an overview of the Danish material. Glob's network was also considerable and international – not only in rock art. Therefore, those connected to Glob are also connected to a much wider network, within which we can think about ideas and thoughts flowing within and between the various persona.

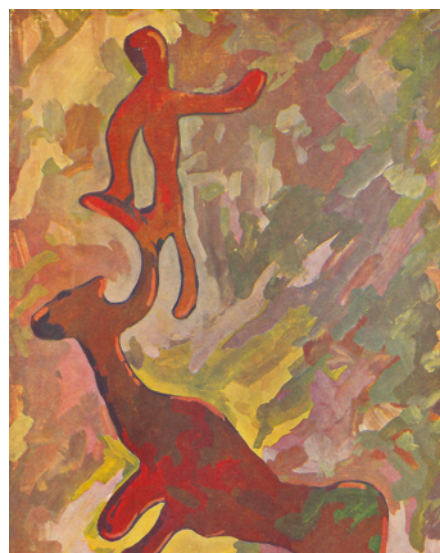


FIGURE 8. COVER ILLUSTRATION, BRONCEALDERENS MONUMENTALKUNST. FROM A PAINTING BY GUDNITZ (1962).



FIGURE 9. PRINT MADE BY GLOB CONSISTING OF A COLLAGE OF FIGURES DRAWN FROM SCANDINAVIAN ROCK ART. (SCREENSHOT FROM RANE'S MUSEUM, DANMARKS RADIO, EPISODE 6. URL: [HTTPS://WWW.DR.DK/TV/SE/RANES-MUSEUM-UDVIKLING/RANES-MUSEUM/RANES-MUSEUM-6-6](https://www.dr.dk/tv/se/ranes-museum-udvikling/ranes-museum/ranes-museum-6-6))

When it comes to the art world, perhaps the most significant connection and source of Glob's inspiration was his contact with and collaboration (until they fell out) one of Denmark's most well-known artists: Asger Jorn (1914-1973). I leave fuller explanations of Jorn's life to the more competent hands of others, especially Teresa Østergaard Pedersen, who examined Jorn and the project *10,000 Years of Danish Folk Art* (2015) and the seminal biography of Jorn by Troels Andersen (2011). Therefore, here I will focus on only the most salient points to our discussion here: key personae and prehistoric art.

Glob & Jorn

Glob & Jorn met very early in their careers, at an exhibition where they were both exhibiting (Østergaard Pedersen 2015: 12). In their conversation, they found they shared much in common, concerning their interest in the roots of Nordic expression and aesthetic and the role that it had played in shaping modern Scandinavian painting. Both also often discussed archaeology, which was of mutual interest (ibid: 13).

Collaboration, with regard to writing, deepened during The Second World War, when they collaborated during the production and authorship of material for the underground newspaper *Helhesten* (1941-1944), which provided a forum for abstract art and its concepts to be discussed. Abstract art was classified by Nazi Germany as "degenerate art", due to its Jewish connections, particularly Jewish artists. The paper was by limited subscription and distributed in secret. Jorn was the one who brought Glob into the production of the paper, and for a short time, in 1941, Glob presided as editor (ibid: 13-15). Secret newspapers and pamphlets were of course banned, and possession would have had the most serious consequences, especially onward from 1943, when the Germans took control of police and security in Denmark. Across the occupied countries under German control, the death penalty was usually given, following SD & Gestapo directives, to producers, printers and distributors of secret printed material. Under such circumstances, one can appreciate how Glob and Jorn became friends with one another, as Østergaard Pedersen states (ibid: 18).

Whilst the author agrees with received opinion that the archaeologists derived more inspiration from Jorn than the reverse (Nordbladh 2015: 7; Østergaard Pedersen 2015: 19), it nonetheless appears that Jorn did derive a fair degree of inspiration from his archaeological collaborators. According to a letter written to one of the giants of Norwegian rock art studies, Gutorm Gjessing, Jorn derived inspiration from Glob's article *Kurve og Keramik* (1941). Jorn describes the article in *Helhesten* as an early inspiration for the concepts he would go onto develop in his own later writing in the 50s and 60's, concerning comparative perspectives/comparative visual analysis (*synsmåde* in Danish) and his theories concerning morphology and changes in shape (ibid: 15).

What is most interesting here, is that Jorn, like Gudnitz, also chose to focus his study on ways of looking at the images; what one could more succinctly refer to as the semiotics of the images. Semiotics is "the science of communication studied through the interpretation of signs and symbols as they operate in various fields" (*Oxford English Dictionary*). In the context of rock art studies, this involves deconstructing the imagery into its constituent parts to create, and subsequently analyse, attributes on a deep symbolic and cross-cultural level. Closely related to our understanding of the semiotics are the two concepts are those of syntax and attribute. Translated to the field of prehistoric art: syntax can be seen as the order and arrangement of the figures; and attribute "the qualities ascribed" (ibid) to those figures.

On this fundamental level, Glob, Jorn and Gudnitz all share a common approach to the material. This is the breaking down of the lines and signs that Gerhard and Jarl, respectively, refer to. One can argue who inspired who, and who influenced who, but this is perhaps to miss the point somewhat; it is their shared interest in the art and the approach to prehistoric art from their backgrounds as artists that is the common denominator. Artists are used to creating images or objects comprised of various visual elements – and constructing plays on them. Conversely, this ability often gives artists a more heightened sense of how to

break down the images of others: be they contemporary, historic or prehistoric. As Jarl, says, we cannot not read the signs as a language, but we can read the order and composition of the symbols and draw logical associations within and between them. Understanding of the artistic approach to prehistoric art also functions on a more practical level; it helps us to understand past networks of researchers and trace developments in the research history.

Glob, Jorn, Gjessing & 10,000 års nordiske folkekunst

Inspired by Glob, Jorn began, in 1948-49, to work on a volume that would examine prehistoric art, co-authored with Glob: *Old Dansk Kunst (Old Danish Art)*. Neither this work, or the parts of *10,000 års Nordisk folkekunst / 10,000 Years of Nordic Folk Art*, that it was later planned to include the material within, were ever published. The cover prepared for *Old Dansk Kunst* by Jorn and The National Museum's' photographer at that time places the well-known Bronze Age plastic figurines from Fårdal and Grevensvænge, centre stage. (Østergaard Pedersen 2015: 19-20; Figure 9, this volume)

Details of the draft manuscript, and accompanying material, for *Old Dansk Kunst* leads Pedersen (2015: 22-23) to suggest that here, we find the blueprint for much of what was later expounded in the books: *Guldhorn og Lykkehjul* (1957) and *Signes Gravés* (1964). *Old Dansk Kunst* aimed to move towards an approach more focused on an artistic perspective on the art, rather than religion, and took as a starting point that, the figurative images at least, represented aspects of everyday life (Andersen 2011: 376; Østergaard Pedersen 2015: 75-76; 22). The approach of Glob and Jorn was perhaps a reaction against the attitude prevailing at that time; that the images from the Stone and Bronze Age; i.e. the rock art, objects and figurines;

“were not art and that artists first appear in Denmark during The Roman Iron Age” (0-400 AD) (Pedersen 2015: 20). This quote came from no less than the archaeologist and Museum Inspector at The National Museum of Denmark, H.C. Broholm, whose four volume treatise of archaeological illustrations of Bronze Age objects (Broholm 1943) still remains a reference work used by many archaeologists in the present

Whilst much Jorn scholarship and publication has focused on shedding light the Iron Age and Early Medieval aspects (Østergaard Pedersen 2015; Magnus et al. 2006b; Magnus et al. 2006a), comparatively less discussion has taken place concerning the prehistoric components of *10,000 års Nordisk folkekunst*. It is very interesting to consider the details of the titles for the prehistoric volumes, known from correspondence and the content of some of the material collated for *10,000 års Nordisk folkekunst* held in the Jorn Archive at Museum Jorn, Silkeborg. Here, the plan written by Jorn, with annotations, has been translated very literally by the author (difficult due to extensive use of the genitive).



FIGURE 10. COVER PREPARED FOR OLD DANSK KUNST. ASGER JORN & LENNART LARSEN. JORN ARCHIVE, MUSEUM JORN. CREDIT: ASGER JORN: © DONATION JORN, SILKEBORG/ VISDA .

Danish	English
<i>Oldtiden. Otte bind</i>	<i>Prehistory. 8 volumes</i>
1. Jægerkunsten. <i>Den ældre stenalders billedverden i Norden.</i> Prof. Dr. Anders Hagen, Bergen .	1. Hunter's art. <i>The Pictorial World of The Early Stone Age in the Nordic Countries.</i> Prof. Anders Hagen, Bergen.
2. Bondekunsten. <i>Den yngre stenalders dysser, stenredskaber, ravsmykker og keramik.</i>	2. Farmer's Art: <i>Dolmens, Stone Tools, Amber Jewelry and Pottery of The Early Stone Age</i>
3. Bronzealderens billedverden. Prof. Dr. P.V. Glob, København.	3. The Pictorial World of The Bronze Age. Prof. Dr. P.V. Glob, Copenhagen.
4. Keltisk og romersk jernalderkunst og irsk kunst fra Vikingetiden. <i>Udenlandsk import.</i>	4. Celtic and Roman Iron Age Art and Irish Art from the Viking Period. <i>Foreign imports.</i>
5. Oldtidens guld . Prof. Dr. Holger Arbmman, Lund.	5. Prehistoric Gold. Prof. Dr. Holger Arbmman, Lund.
6. Jernalderens sølv- og broncekunst.	6. The Iron Age's silver and bronze art
7. Stenens og benenes billeder i jernalderen. <i>Gotlandssten, runesten etc .</i>	7. Images on stone and of the devil in the Iron Age. <i>The Gotland stone, rune stones, etc .</i>
8. Trækunsten og det hellige skib i oldtiden . <i>Centralemnet. De norske vikingeskibe .</i>	8. The art on wood art and the holy ship in prehistory. <i>Central element. The Norwegian Viking ships.</i>

TABLE 1. TITLES OF VOLUMES PLANNED FOR THE PREHISTORIC SECTIONS OF *10.000 ÅRS NORDISK FOLKEKUNST*, WITH ANNOTATIONS BY JORN IN JORN ARCHIVE, MUSEUM JORN (ØSTERGAARD PEDERSEN 2015: 36; ANDERSEN 2011: 376)

Although the author has not had sight of the material prepared for the works, and thus a full examination must wait for the future, there are two things that already really stand out. Firstly, it is very clear from Østergaard Petersen's account that work on *Old Dansk Kunst* was quite advanced, with a considerable amount of visual material amassed and a draft manuscript in existence. Secondly, the author wishes to suggest that it seems rather unlikely to be a coincidence that the title of the volume in *10.000 års Nordisk folkekunst* concerning Bronze Age art: *Bronzealderens Billedverden* – The Pictorial World of The Bronze Age (*author's translation*), forms title of the principal of analysis and discussion in Glob's seminal work *Helleristninger I Danmark* (1969). Further research is needed here, in particular, a comparison between the material prepared in collaboration during Jorn's projects, and the content and images shown in the discussion within Glob (1969). It should not surprise us that one project benefitted the other. In Glob's forward (*ibid*: 8), we are informed that the programme of documentation, study and the collection of visual material took place 1945-1955. Glob's work thus ran in parallel with his collaborations with Jorn concerning the preparation of the volumes under discussion here.

One can see in Table 1 that Glob was not the only respected rock art researcher and leading archaeologist from the Nordic countries contributing to *10.000 års Nordisk folkekunst*. Anders Hagen, was pre-eminent in the field of Stone Age research at the University of Bergen. Until the publication of Mandt and Lødøen (2010), Hagen (1990) was later the author of the standard reference work on the rock art of Norway. Hagen had also, prior to the commencement of Jorn's *Nordisk folkekunst* project, worked extensively during the 1950's on the discovery, documentation and publication of one of Norway's largest Mesolithic rock art sites: Ausevik, near Florø, Western Norway (Lødøen 2014).

One of the editors of *10,000 års Nordisk folkekunst*, was one of the most influential rock art scholars of the last century: Gutorm Gjessing (1906-1979). He, together with Gustav Hällstrom, are the two people who defined, more than any other, understanding of Northern Tradition rock art (the imagery produced by hunter-fisher gatherers) during the last century. As several colleagues have independently observed over the years, Gjessing's tracings remain, in many cases, the main, or only, source of documentation at several of the most well-known panels from The Northern Tradition in Norway. Gjessing's writings are described by Sognnes as having achieved "paradigmatic" status (Sognnes 2010: 263) and have only relatively recently (the last 30 years) been revised or countered; the importance hunting magic as an explanation for the meaning behind the rock art; and his proposals for the stylistic sequence from naturalistic to abstract. Gjessing was reluctant to draw on land uplift following the ice age as a means of dating the art, but he nevertheless used it in combination with style. He also observed differences between locations of the

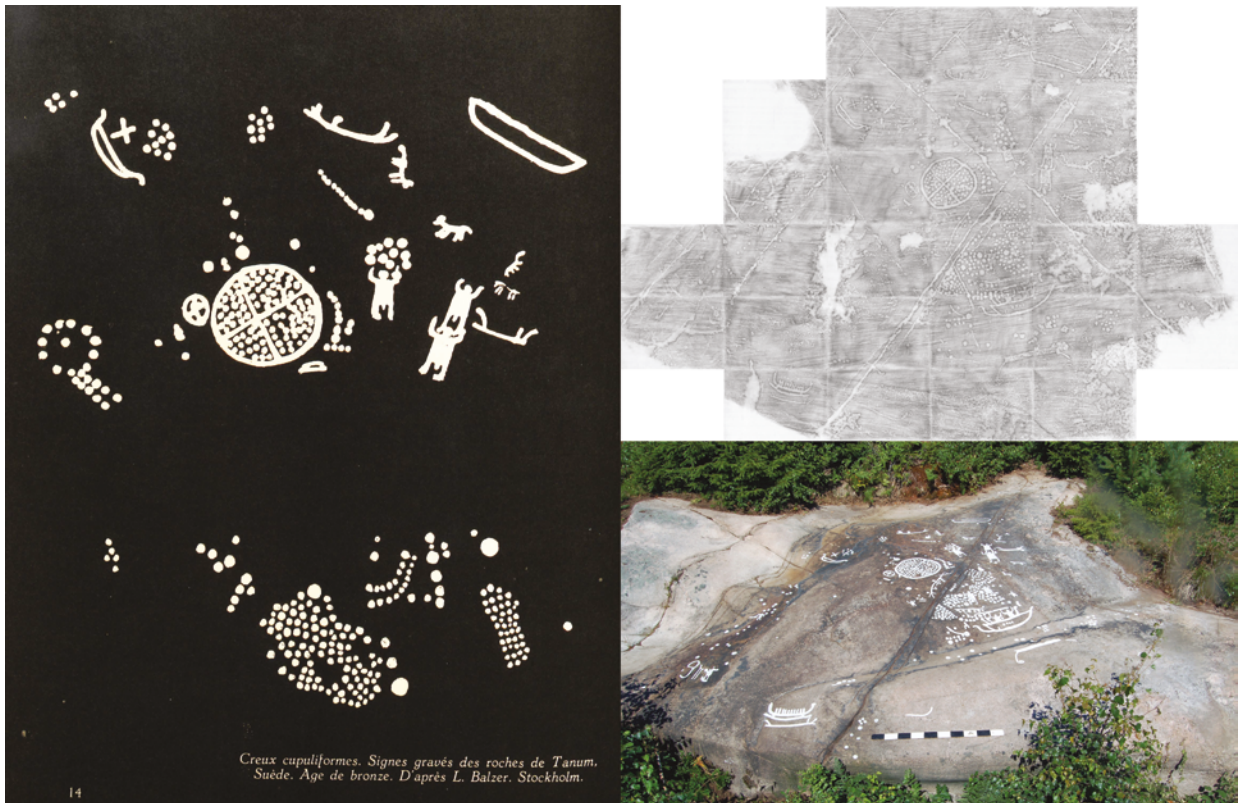


FIGURE 11. LEFT: COLLAGE BY JORN AFTER (BALTZER 1881-1890) OF TANUM 184:1 AND TANUM 14:1, BOTH IN TANUM, BOHUSLÄN, WESTERN SWEDEN, FOR *SIGNES GRAVÉS*. JORN HAS ADDED THE FIGURE FROM OF, WHAT IS ASSUMED FROM COMPARISON WITH CONTEMPORARY BRONZE OBJECTS, TO BE A DEPICTION OF A SOLAR SYMBOL ON A HANDLE FROM ANOTHER LOCALITY: TANUM 14:1, LOCATED SOME DISTANCE AWAY TO THE SOUTH EAST, AT ASPEBERGET. UPPER, RIGHT: FROTTAGE DOCUMENTATION OF TANUM 184:1. LOWER, RIGHT: PAINTED ILLUSTRATION OF TANUM 184:1, SHOWING THE RELATIONSHIP BETWEEN FIGURES AND TOPOGRAPHY. ILLUSTRATIONS RIGHT-HAND SIDE: TANUMS HÄLLRISTNINGSMUSEUM UNDERSLÖS & SHFA

art produced by fisher-gatherer and agricultural societies - that still remain valid, in the general sense, today; the Northern Tradition is more associated with fast flowing water and the sea, whilst the Southern Tradition is found nearer, relatively speaking, to areas more conducive to agriculture (ibid: 273).

Gjessing also contributed, like Glob, to the text of a chapter in Jorn's work *Signes gravés sur les églises de l'Eure et du Calvados*, that examined the vernacular art carved on the walls of Medieval churches in Normandy, Northern France. Gjessing approaches the material from ethnography, conducting a cross cultural look at the symbols found in Eure and Calvados, and contemplating the similar semiotics of representation: in Scandinavia, the megalithic art of Brittany, the Alpine rock art of Northern Italy. Gjessing's (1964: 35) interpretation of the images in Normandy, as symbols drawn from everyday life, can certainly be questioned, as most Medieval scholarship believes that many are associated with vernacular Christian and extra-Christian beliefs and ritual, including structured deposition of remains and objects in buildings, witches signs, together with vignettes from folk stories.

Arguably the remarkable exception to this is the subject of Glob's contribution in *Signes*; round bowl-shaped depressions. Here comparison is drawn with cup-marks. The cup-mark is "the smallest, most frequent, cosmopolitan and most complicated symbol" (Milstreu and Dodd in prep, 2019). Painted dots, whose depiction closely resembles that of cup-marks, are found in linear arrangements of lines and grids as far back as the Paleolithic (Hoffmann et al. 2018; Pearce and Bonneau 2018). With regard to Southern Tradition rock art from the Bronze, Stone and Iron Ages, cup-marks are the most frequent figure represented: probably around 80% (Nimura 2015). The commonality of this symbol does not imply connection or shared

meaning. Moreover, it is probably something that is probably both deep and fundamental when it comes to visual representation among humans. Jorn, in his introduction to *Signes* (Jorn and Franceschi 1964: 8) states how struck he was with the similarities between the depictions in the cider country of Normandy, the rock carvings in Scandinavia. Perusing the book and its contents, arrangements of cup-marks and other round marks dominate many of the scenes selected. These are presented alongside plates from the work of Baltzer, as well as illustration from other scholars, including Glob. As will be examined in the forthcoming work between the author and Gerhard, arrangements of lines (parallel and non-parallel), grids and circles of cup-marks around a cup-mark are key structuring elements concerning the representation and occurrence of cup-marks within Scandinavia. Gudnitz (1970), in the first issue of *Adoranten* also chose to focus, like Glob does in *Signes Gravés* on the universality of the cup-mark as a symbol across space and time. Therefore, given the contact between Glob, Gudnitz, Jorn and Gjessing, we can start to think about the concept of a broader milieu of archaeologists and artists all demonstrating using art to think laterally about the deeper patterns and possible meanings of signs and symbols.

Jorn and rock art

Although Jorn was acquainted with some archaeologists who were not rock art researchers, most notably Viggo Nielsen; (refer photo of Glob, Nielsen & Jorn on page 23 of Østergaard Pedersen 2015), who conducted important survey, mapping and excavation of Danish prehistoric field systems (Nielsen and Clemmensen 2000; 2010; 2015); we have seen, in the previous sections, that many of Jorn's archaeological collaborations 1948-1966 were with people who were prominent in the field of rock art research.

Jorn was struck by the images found in the rock (Jorn and Franceschi 1964: 8), and even though his work became more and more involved with the Middle Ages (Andersen 2011: 390), Jorn still maintained focus on it, probably due to the belief that Jorn held; that the roots of Nordic folk art were evident in prehistory (Østergaard Pedersen 2015: 22-23). This is evident from the propensity he had to select illustrations used in for many of his writings. *Guldhorn og lykkkehjul* (1957) and *Signes Gravés* (1964) abound with images drawn from Scandinavian rock carvings, forming key points of reference, both visually and texturally; for both Jorn as well as contributory authors.

Throughout, Jorn's visual layout and selection of images is dominated by the use of juxtaposition to present imagery drawn from differing contexts. At the time, there were those who criticized Jorn's presentation of the material: cropping or zooming on details, a lot of shadow in the images almost obscuring detail, and an organisation on a symbolic/thematic level as opposed to the chronological norm expected by science at that time (Østergaard Pedersen 2015: 75-77) .

When viewing many of the images, with the absence of any scale, the viewer is forced to focus on the form as the common element between the illustrations. When looking at some of the images, from *Signes Gravés*, as well as the posthumously published volumes from the *10.000 års project* (Magnus et al. 2006b; Magnus et al. 2006a), one recalls remarks made by the film director David Lean. When commenting about his motivation behind his passion for creating film, Lean said, in an interview recorded to accompany the restored director's cut produced in 1989 of *Lawrence of Arabia* (dir. Lean 1962): "I like framing things. The camera is like a frame - like a picture - and when one has a frame, the viewer is forced to focus solely on what is in that frame."

Jorn employs similar principles to Lean. As the viewer, you are disorientated in *Signes Gravés* and you are forced by the frame to focus on the carvings. Thus, the parallels are much clearer to the viewer than would be the case in a conventional archaeological photograph. Figures found in, for example, Normandy, are placed alongside strikingly similar symbols largely taken from Scandinavian rock art, (although other areas of the world are represented).

Despite the breakdown of relations between Glob and Jorn in 1966, that we will come to shortly, Jorn continued to collect material for *10.000 års Nordisk folkekunst*. For example, Andersen (2011: 390) presents a picture of Jorn in what appears to be (according to the author's observation) the garden of University Museum of Bergen, in Western Norway, brushing off a cup-marked rock. Another, more telling view, shows Jorn standing on the Bardal 1 panel. Whilst the panel is very well known, given Jorn's collaborations with Gjessing, the choice of this site for study is unlikely to have been coincidental. Bardal was crucial to Gjessing's understanding of Northern and Southern Tradition art (Gjessing 1935; 1936; Sognnes 2008). This very large panel is a palimpsest of carving activity and has, most unusually, multiple superimpositions of Southern Tradition carvings over Northern Tradition carvings. Whilst not iconoclasm, the figures are imposed in completely different arrangements (Sognnes 2008: 231). The motifs themselves are remarkable and resemble those from Østfold and Bohuslän – unusual within the context of Central Norway. It seems not inconceivable that such a visit might have been the product of discussions between Gjessing and Jorn, particularly given the potential for comparisons over great geographic space.

Jorn's involvement with rock art researchers, at least in publications, decreases after the point where Glob decided to go behind Jorn's back and attempted to take over *10.000 års Nordisk folkekunst*. Glob planned to create a volume, structure under more "academic" principles, in line with what many grant giving bodies and publishers had expressed a preference for, using the material Jorn and Franceschi had collected (Østergaard Pedersen 2015: 66-72). Relations deteriorated further when Glob (1970) wrote a critical review of *Tegn og underlige gerninger* in Politiken. Due to space and to keep to the point, we will not dwell on the detail of this betrayal by Glob, other than to refer the reader to Østergaard Pedersen (2015) To sum up the relationship between Glob and Jorn, the author turns to the viewpoints communicated by Østergaard Pedersen; "Glob opened doors for Jorn that he would otherwise not have been able to open" and "legitimized" Jorn's work within wider academic circles; in return Glob derived a lot of inspiration and could connect his work to Jorn and the art world (Østergaard Pedersen pers. comm., 2017).

There were fundamental differences of opinion between the scientific world and Jorn. Academics felt Jorn's presentation of the material was too artistic and neglected chronological structure (Østergaard Pedersen 2015: 68-72). Before the fallout, Glob (1965) defended Jorn's position to The National Museum of Denmark, emphasizing that Jorn had placed the images freely after purely artistic considerations, thematically, and that thematic groupings, created by Jorn, were necessary. Nevertheless, it is important to remain mindful that Jorn did have his own views. To continue with Østergaard Pedersen (pers. comm., 2017) communication: "Jorn's approach was very different and he felt he had a privileged position, as an artist, to re-find an image-based and generative understanding of visual language".

Reflecting on events, all this has to be seen against the background of an archaeology largely dominated by a focus on economic and quantitative methods comprising the processualist approaches and New Archaeology that is emerging between the early 1950s early 70's - at the same time Jorn was writing. The attitudes of the time are humourously encompassed in the much later later critique by Madsen (1988: 15):

"The joy of being able to state the unrefutable fact that a flint axe is 21.6 cm long, give or take half a millimetre, is surpassed only by the joy of being able to state that the exact mean length of say 200 axes is 19.6781 cm. The exactness of the statements however, does not add to the amount of information gained on prehistoric societies."

Given the above, it is not surprising at all that, any approaches involving lateral, thematic thinking, removed from space and time, i.e. thematic analysis of aspects of prehistoric imagery, not only by Jorn, received a cool reception from contemporaries.

This is where most accounts would normally end. However, this is not the end of our story of art, artists and Underlsös Museum.

Gudnitz & Jorn

The Jorn archive, at Museum Jorn, Silkeborg, holds hitherto unknown, unpublished correspondence between Gudnitz and Jorn. In this research I am most grateful for the assistance of Jorn's leading biographer, Troels Andersen, who is transcribing Jorn's papers in preparation for eventual publication. The work to catalogue and transcribe this material has unearthed a letter from Gudnitz to Jorn, as well as a reply from Jorn. The author took contact, first with Teresa Østergaard Pedersen, and subsequently with Troels Andersen, as it seemed remarkable, during the early stages of research, how both Gudnitz and Jorn were both, unusually for that time, collecting thematically – albeit of course in their own particular ways. Given the independent connections already known between Glob to both and Jorn and Gudnitz, the author decided further enquiries should be made to ascertain the extent of any contact, and perhaps influence.

Even if they had never met, it would not be far-fetched to content that Glob would not have entered into discussions concerning his work with the other party. Given that there is currently evidence for at least three separate known examples of contact between Gudnitz and Jorn, it seems even more likely that Glob would have discussed his work with Jorn with Gudnitz, and maybe even *vice versa* – perhaps we will never know for certain. In any case, this gives further credence to the main contention of this article; that artists and the study of prehistoric art are intertwined, form a research perspective, and have interacted and been influenced by one another in varying ways and to differing extents.

The remaining part of the discussion is dedicated to an annotated commentary on the contents of the two letters from Gudnitz to Jorn and from Jorn to Gudnitz. Our supplementary knowledge allows us to put flesh on the bones concerning several items referred to or mentioned in the text. In Jorn's reply, we are also lucky enough to gain a small insight into his own personal take on the early work of Tanums Hällristningsmuseum Underslöv, The Scandinavian Society for Prehistoric Art and Bohusläns Forsknings Arkiv.

According to Gerhard the only contact he knew of between Gudnitz and Jorn was when they met once in a bar in Christiania, greater Copenhagen, on a street in with a lot of hostels and artists. Gerhard knew of no evidence from any letters, although very few of these have been preserved (pers. comm., 2 February 2018). However, the letter in the Jorn Archive at Museum Jorn shows Gudnitz wrote to Jorn in 1963.

Text of letter transcribed by Andersen:

Kære Asger Jorn.

Jeg har i dag med stor interesse læst deres artikel (aktuelt 30/8-63) hvori De bl.a. navner helleristningerne og nogle af de værker, der er på trapperne om fortidens kunst (prof Glob's monografi over danske ristninger har været det i 20 år!)

I den anledning lilleder på mig at gøre opmærksom på min bog om de skandinaviske helleristninger Bronzealderens Monumentalkunst som morkom i fjor Malius Forlag, og hvoraf jeg og hvoraf jeg sender Dem et prøve-tryk.

I 16 år har jeg rejst rundt i Skandinavien, og indsamlet materialet og der er i bogen særlig lagt vægt på ristningernes kunstneriske indhold. Bogen anvendes mange steder i undervisnings øjehed og er netop en folkelig introduktion til vore forfædres kunstværker. At "folk" interesse sig for andet end kulørte ugeblade, turde salget af bogen bevise. Den er trods ringe reklame i mindre end et år solgt 2.000 eksempl.

I det af mig oprettede arkiv og museum findes den største samling af helleristningsgengivelser (25.000 billeder) fremstillet ved fotografering og kalkering fra bergfladerne.*

Skal/skulle De til brug for deres arbejde have anvendelse for billedmateriale står i med glæde til Deres disposition.

Med venlig hilsen

Gudnitz

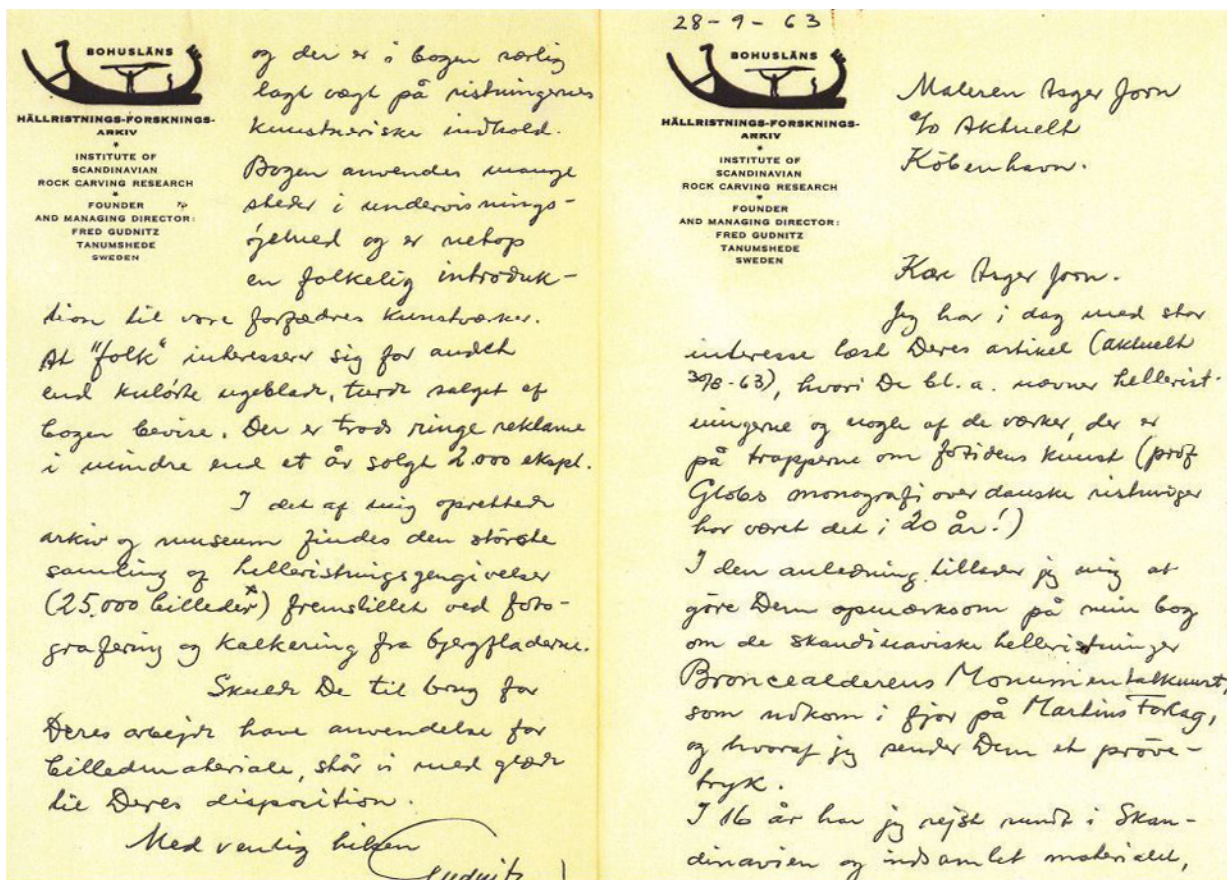


FIGURE 12. LETTER FROM GUDNITZ TO JORN, 28/9/1963 HELD IN THE JORN ARCHIVE, MUSEUM JORN, SILKEBORG. SCAN: TROELS ANDERSEN. REPRODUCED WITH PERMISSION FROM MUSEUM JORN (ORIGINAL COPYRIGHT TANUMS HÄLLRISTNINGSMUSEUM UNDERSLOS).

In the opening paragraph, Gudnitz states he is writing in response to an article in the Danish national newspaper *Aktuelt*, that interested him due it's mention of rock carvings and works on the way to publication, naming Glob 1969. Gudnitz enclosed a proof copy of *Bronzealderens monumentalkunst* for Jörn's perusal. Gudnitz emphasizes the book's artistic content as an accessible introduction for the public to the artworks of our forebears. Here, we can clearly see, the emphasis placed by Gudnitz on teaching, communication to the public and an artistic approach to prehistoric pictures. Gudnitz continues by summarizing his work to create and curate the Bohuslän Forsknings Arkiv, consisting of photographs and tracings of rock surfaces. Gudnitz finishes by saying that he would be pleased to place the image material in BHFA at Jörn's disposal, if or should Jörn should have need for it. It took several years before Jörn replied, illustrating that the contact between them cannot be described as either close or sustained. Both also address each other in formal terms, which probably supporting this conclusion. Despite the long delay, the reply is no less illuminating.

Text of letter transcribed by Andersen:

To Fred Gudnitz. 7.2.1970. 1 page, typewritten. Jorn's copy. Jorn Archive.

*7 2 70 82 rue st Denis
Colombes 93
Paris. Frankrig.*

Kære hr. Fred Gudnitz.

Igennem længere tid har jeg villet skrive til Dem for at lykønske Dem med deres arbejde i helleristningsfeltet. Vi har så vidt jeg husker truffet hinanden engang for mange år siden på nationlmusæet, da De havde udgivet en lille bog med helleristninger. Når jeg ikke før har skrevet, da er det tiden, der mangler. Selv har jeg beskæftiget mig en del med helleristningerne, specielt på basis af Baltzers gengivelser, som man nu hævder er forældede. Det vilde jo være en fornøjelse om en dansk kunstner nu kunde forny stoffet, om end allerede Baltzers materiale mangler en systematisk undersøgelse, som går ud over Almgren.

Selv har jeg begivet mig ind i arbejdet, men andre beskæftigelser forhindrer mig i at gøre dette mer end periferisk. Ifølge Berlingske tidende 24 aug. 69 beklager De, at ingen religionshistoriker har turdet tage dette materiale op til alvorlig overvejelse. I en anmeldelse i Information af Glob's bog: Helleristninger i Danmark og Peter Gellings "The chariot of the sun" har jeg påvist det håbløse i dette ønske, som disse forfattere også deler med Dem, og påstår at en kunstnerisk systematik idag var mere på sin plads. Jeg har talt med direktøren i Gøteborg, jeg har glemt hans navn. Han er kun interesseret i tal og beregninger. Jeg tror, at De netop ud fra hvad man må forudsætte som en kunstnerisk interesse i disse billeder skulde være interesseret i et direkte samarbejde om denne sag, hvorfor jeg foreslår Dem et sådant.

Hvad der først og fremmest var ønskeligt var en typologisk opdeling af de forskellige billedtemaer og deres varrianter, udført mere følsomt end Gelling gør det. Med billedtemaer mener jeg kombinationer af elementer som gentages. Jeg har en lang række af sådanne efter min mening væsentlige billedtemaer med paralleller i andre folkeslags kunst, og kunde De tænke Dem at indsamle alle de eksemplarer, der eksisterer blandt helleristningerne kunde jeg fremskaffe det supplerende materiale. Jeg er overbevist om, at helleristningerne genspejler en årstidskult, og at derfor /er/ et kalendersystem, og at dette må være den systematiserende struktur i forhold til hvilken billedmateriale kan disponeres kan disponeres på den mest overskuelige måde.

Nu kan De jo tænke over, om De er interesseret i et samarbejde. Jeg har i sin tid nedskrevet nogle af mine synspunkter i bogen "Guldhorn og lykkehjul" som de ovennævnte forfattere ikke synes at kende.

*Venlig hilsen
Asger Jorn*

In Jorn's reply, from February 1970, it seems we have come full circle. Despite the animosity between Glob and Jorn as a result of Glob's actions, Jorn still writes to Gudnitz, and does not appear to show any grudge against Gudnitz himself as a result of his connections with Glob (that are known at this time from a personal handwritten dedication to Gudnitz from Glob in Fred's copy of *Helleristninger I Danmark*, dated August 1969).

We first learn, that in addition to their meeting in Christiania, that Gerhard speaks of, they also met at The National Museum at a book release. In Andersen's notes, supplied with this text, he is of the opinion that that "the little book" referred to here is Gudnitz 1962. The author begs to differ, as to the best of his knowledge, the book was not released at The National Museum. It is unclear, searching through the library catalogues, to which publication this could refer. The only possibility in the period 1935-1970, is an article on Glob's fieldwork on Bornholm, published in *Nationalmuseets Arbejdsmark* (Glob 1948). However, this seems unlikely, and it is more likely that we are thinking of some kind of popular book, for general public interest.

Jorn, apologizes for the delay, due to lack of time, and states that other commitments have prohibited his involvement in the work more than in a peripheral sense. He writes that he has “wanted for a long time to wish you well with your work in the field of rock art”. Whether this refers to Gudnitz’s work mentioned in his original letter, and/or whether Jorn was referencing Gudnitz’s active promotion of the SSfPA and its activities in the public domain, is unclear.

In any case, at the time Jorn wrote, Gerhard’s involvement with Underslös had already begun. In 1970, or around this time, following national service in The Royal Danish Life Guards, Gerhard returned to Tanum to collaborate with Gudnitz in the localization and documentation of the carvings: mainly during summer. The Scandinavian Society for Prehistoric Art (SSfPA), the world’s first archaeological interest group formed specifically for the purpose of the promotion of prehistoric art, was found in 1969 (Milstreu 2011: 118), and the first edition of *Adoranten* - the world’s dedicated rock art journal - including Gudnitz’s insightful work on the long-term use, organization and symbolism of cup-marks, was published in 1970

In the second paragraph, we see a repetition of Jorn’s key ideas concerning a separation between historians of religion and an artistic approach to the art. Jorn expressed that he feels historians of religion do not seem to take the material up seriously. In this Jorn is absolutely right: study of Southern Tradition rock art was dominated at this time by an understanding based on an emphasis on fertility, advocated by Glob (1969), supported by an analysis of the location of Southern Tradition by Almgren (1927), that suggested panels were situated in proximity to agricultural land. Only recent studies of land uplift, using revised shore displacement curves and differential GPS have dispelled this assertion (Ling 2008; Ling 2013), and shown that much of the rock art near the Western and Eastern coasts of Sweden was near to and associated with prehistoric shorelines. Only in the relatively recent works of Kaul (1998; 2004) and Kristiansen (2010), concerning the religion of the Bronze Age, do we see this taken up in a truly serious manner. A fellow contributor to this volume, Peter Skoglund, has also just started up a new project working with experts in the field of semiotics. In light of this, when one evaluates Jorn’s attempts to collate images of parallels from “other kinds of folk art”, Jorn’s approach appears remarkably contemporary in its methodology.

In the last two lines of paragraph three, we are reminded that Jorn did have his opinions, in this case expressing that he “is convinced that rock carvings reflect a seasonal cult, and that therefore /are/ a calendar system, and that that must be the systematized structure in relation to which imagery can be organised can be organised in the clearest way” (N.B: repetition in original text). Jorn, earlier in the letter refers to “the director in Gothenburg”, whose name he has forgotten. The author is not sure who this refers to. It might be Åke Fredsjö, the director of archaeology at the time in the county of Västergötland, who at the time heavily involved in an extensive program of rock art documentation. However, the reference to someone “only interested in numbers and calculations” points, in my mind, to another person: a co-collaborator with Fredsjö at that time in the documentation of rock art in Kville Parish - Jarl Nordbladh. Jarl was one of the first in his doctorate (Nordbladh 1980) to use apply statistics to a very large dataset drawn from the rock art: in this case to look at the signs. Nordbladh has and continues to participate, now as a lecturer, at the Arbetsseminars at Underslös Museum. Jarl and his colleague, Jan Roswell, were approached by Jorn, just before Jorn died “to collaborate on a rock art mission” (Nordbladh 2015: 7). If Jorn was referring in his letter to Jarl, clearly, he must have changed his opinion along the way before he made his approach!

In any case, perhaps the acorn of this mission that Jorn later approached Jarl about can be seen in Jorn’s letter to Gudnitz. Jorn, on the basis of their common artistic perspective and approach to the art, proposes collaboration with Gudnitz. Jorn writes: “I think, that you, from what one must presuppose as an artistic interest in these pictures, should be interested in a direct collaboration on this matter, for which reason I propose to you such a thing”. Jorn’s idea seems to be to combine Gudnitz’s material from the rock carvings with that Jorn had already gathered from other folk art traditions, presumably for *10.000 års Nordisk folkekunst*. Jorn sees “first and foremost” the construction of a typology arranged according to “artistic methodology/classification”, in order to identify that elements that repeat themselves. Jorn parts

by saying that Gudnitz can think over if he is interested in a collaboration and refers to some of the views he previously expressed in *Guldhorn og lykkehjul*. We don't know if there was a reply from Gudnitz, or what Gudnitz's reaction was to Jorn's letter.

The most important conclusions here are that Jorn directly mentions the artistic perspective on the rock art and proposes collaboration with another artist working in the field based upon this common ground between them. Furthermore, Jorn clearly appears to be aware of the work of Gudnitz's work – that Gerhard was just beginning to figure in.

Art, artists & Underslös

In this article, we have explored the links between artists, art, prehistoric art through the vehicle of this institution: Tanums Hällristningsmuseum. These values are deeply rooted in the history and vision of the museum; the connection between art, artists and Underslös continues to this day. Gudnitz laid the foundations of the dialectic found at Underslös Museum today between art, artists and prehistoric pictures, but Gerhard has built the house that stands upon them and integrated it more fully within the scientific community.

We began by defining what we mean to say by the artistic perspective. Gerhard's words have provided a useful definition for the future concerning what we mean to say when we refer, in the broader sense, to an artistic approach to prehistoric imagery. At the same time, Gerhard's reflections, based on a lifetime of experience, make us think very deeply, and without so many prejudices, about what is depicted in the art and how it was created.

Having defined our theoretical background, we have worked back from the present day to uncover a network of relations, some hitherto unknown, concerning the network of Fred Gudnitz to other artists, including the Norwegian sculptor Knut Steen and the Danish artist Asger Jorn. The latter has been revealed by new, previously unpublished letters uncovered in the Jorn Archive by Jorn's biographer, Troels Andersen, between Gudnitz and Jorn. Gudnitz was unusual for his time in the collection of material along thematic lines, which is deserved of further reappraisal and wider recognition. However, he was not alone in taking this approach, as the contemporary work and writings of Asger Jorn show. P.V. Glob was an important node, connecting the networks of both Gudnitz and Jorn.

In the latter sections of the article, we have explored the Jorn's network from the perspective of prehistoric art: focusing on Jorn's interaction, views and relation to it. Jorn had many links to archaeologists prominent in the field of rock art research, and their contributions in books that Jorn produced have been explored intensively, alongside Jorn's presentation of visual material: that drew heavily on prehistoric art as a source of comparative visual material to support his ideas. Time and again, evidence for a desire surfaces amongst all parties to place more emphasis on the study of images from an artistic perspective.

All in all, examination of Jorn's work, and its web of relations, leads to a more general reconsideration of art and artists within the research history of rock art research. When we look at the past, we see networks of like-minded people assimilating themselves into an interest around centred around a desire to increase understanding of prehistoric art through the thematic study of images across space, time and culture. Through this, it was hoped that deeper understanding of, what we would now term, the syntax and attributes assigned to the figures could be arrived at.

Given the influence of the artistic perspective on the art contended in all the previous sections, it is herewith contended that connections between art and artists have shaped and continue to be pervasive within the discipline. Taking the thoughts expounded by Gerhard, and other colleagues, as a foundation, we can see how an artist's approach to the rock art, allows us to make a number of conclusions concerning semiotics, as well as the transmission and conveyance of visual culture.

Epilogue

Lastly, I will finish with a personal conclusion, concerning the individual whom this book is given in honour of. In 1978, 40 years ago at the time of writing, Gerhard agreed to continue the work “in the spirit” of its founder – artist - Fred Gudnitz. This Gerhard has tirelessly and unceasingly done ever since, and it is your perspective of that of an artist, yet open to science and scholarship, that lies at the heart of the definition of this spirit.

Gerhard: your appreciation of the beauty of the images and your desire to include others, in both the study and appreciation thereof, is an inspiration, and has given an everlasting legacy to the discipline that it is hard, if not impossible to evaluate. You set focus on the beauty of the images, and are equally glad whether people come to stand and stare in wonderment, or whether they come to study the art. It is the uniqueness of your personhood, personal charisma and down to earth approach to the art, coupled with the warmest of Danish welcomes - from not only you, but also your whole family - that have inspired generations.

Prehistoric pictures no longer lie at the periphery of archaeology. Instead, they now lie at the centre (pers. comm., Jens Andresen, 9 May 2018), and the world-wide network of rock art studies owes a great debt and has been transformed through the result of your focus on collaboration, discussion and dialogue: from individual landowners on Bornholm; to international collaborations. Everyday folk have a greater awareness, involvement and appreciation, and the proof can be seen in the results of the countless, sometimes ingenious, initiatives you have presided over and collaborated within. In the academic sphere, the art now lies at the core and the very highest level of scholarship. This is due, in no small part, to your efforts. Last, but certainly not least, I hope you can always take comfort, that those of us to whom you have reached out to, who have been inspired and derive the same enjoyment of these masterpieces of the past; will continue – “as long as we still live” - in *the same* spirit.

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I also thank Jarl Nordballdh, for giving some pointers in the literature during the early stages of research, and providing details to me of his findings to date concerning links between Asger Jorn and rock art.

Finally, I humbly thank Ditte Kofod for introducing me to Jorn’s work - and looking over the first draft of the paper. Were it not for this piece of good fortune, this article would never have been written and a fascinating piece of Underslös’ history might not have come to light.

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Chapter 2

The Sensitive Finger, The Observing Eye And The Sensation Of A Place

Jarl Nordbladh

Focusing

Through the years, you may have had a number of teachers; some of them you will never forget and some of them you may have been lucky to be a colleague with. GERHARD MILSTREU is one of them. It is easy to see him as a person of natural talents as a teacher and researcher, far away from pedagogical courses at the university. However, behind Gerhard's activities in the rock art arena is a deep knowledge from close work, during many years, on different kinds of bedrock. He and his crews have been testing and improving special documentation techniques to get out archive-safe, distinct reproductions, in natural size - of the figures, signs and traces of the fantastic world of pictures which we call rock art.

Documentation – that is the collecting, recording and dissemination of specialized knowledge - forms the basis of the archives, which have been created in various places, to make large amounts of pictorial facts accessible. Many are the individual people and organizations who have worked together to gradually form a mass of pictures, that makes it possible to investigate the material quantitatively.

The process of collecting is dynamic, changing and critical both with regard to loyalty to original, as well as sustainability in documentation materials and how and in which order this material is stored. It is a long tradition Gerhard is part of, where a sort of double-world is created to win knowledge. This information is sometimes of a kind that only some archaeologists and persons with a special interest can get (for themselves) a grip on how the material looks like in its known totality. And that is far beyond what was known by a single person in ancient times.

But – the documents are not completely good, unless they are presented by a mediator, who has a total grasp of the whole documentation process, and discusses, in a balanced way, that allows for all opinions to be present, and, not least, that we don't know everything and that all is not possible to know. The sad thing is that we are not able to appeal to all possible questions at any situation.

It is difficult to find a better person for this task than Gerhard, who is able to perform such an acrobatic act – and land on his feet.

The concept of *fact* in archaeology includes not only the very artefact itself, but also all information around it, including research history, literature, other close finds etc. Moreover, other dimensions are brought to the fore, such as how the object looks like as a quantitative phenomenon. We know that rock art doesn't exist everywhere and in the same frequencies. What we call distribution is a result of different activities, which science brings together and observes together and at one time. With the mass which is available, it is possible to mark out what is common, typical and rare. In relation to this, it is conceivable to wonder at what should have been present and what was not chosen to be used amongst the symbols.

As archaeology is an appreciated and dispersed phenomenon, the field is part of different networks of persons, museums, institutions, archives, libraries and culture activities, which are already there for use. All of them have their traditions. Over time other relations are added, which sometimes don't always originate from the place, where the research was established. The very phenomenon of rock art is a social gathering force, which can encourage the public, promote printing of books, photography and filming, and even create a professional milieu, that sees rock art as an important part of contemporary cultural activities.

The sensitive finger

Common to all persons interested in rock art is the fascination to discover that rocks and stones may show you visual messages and comments made in other circumstances than our own.

To finger-trace marks in the stone surface: you cannot come closer to the figures of rock art, physically. Different depressions, which form more comprehensive compositions on a surface, sometimes warmed by the sun, sometimes ice-cold, sometimes dry or wet, give many people a special experience of a direct contact with an image left long ago. This situation, kneeling and searching with the palms of the hand, and the mosses, ice groves and the micro topographies of the bedrock can lead to those figures, known long ago, emerging from the surface or –which in fact happens – that one loses the support from earlier documentation and discovers the unexplored.

The observant eye

The graffiti of today has opened our eyes for a widened concept of imagery, which not only contains iconic figures but also cut and pecked surfaces, depressions, marks, signs and the topography of the bedrock, which even has been used as a component to build up the image. This contributes to changes in the pictures we look at, depending on how our observations are developing. A phenomenon which is apparent during night observation of the site can confirm and strengthen what the fingertip already has suspected, and gives further credence to existence.

There are also several depths of time in the rock art sites – and a recurrent dimension on our latitudes – namely the snow and ice cover every season that also disappears with the arrival of spring. Sometimes the sites are not directly visible, as they are covered by small or considerable layers, accumulated by nature's mosses, leaves and landslides.

From the middle of the 20th century rock art could be appreciated as art, which at that time probably was an expression of resistance against academic ways of seeing and their falling short for interpretation, education and appreciation around rock art. A pioneer in discovering artistic qualities in these rough images was Gerhard's predecessor at Underslös Museum, the Danish artist Fred Gudnitz. Early on he saw the potential of the material in a much bigger context than archaeology only, and was in consequence regarded with some suspicion by the academic professionals. Influenced by Gudnitz and other more free-thinking Danes such as R. Broby-Johansen and P.V.Glob, Gerhard created a new constellation, where art and archaeology were seen together, as a joined force to strengthen the knowledge of the prehistoric image.

The sense of place

Alongside the ability of the hand and eye there is another capacity, difficult to obtain, which appears rather magical and is quite necessary, if you are not willing to be limited by luck and chance alone. That is the question of *where?* When you have become acquainted with the image world of rock art and the character of the landscape, your experiences can be productive and signal additional sites, which may conceal undiscovered rock art. Such a feeling of room and space is also valuable when searching for sites,

or compiling inventories, or when earlier known places are lost, often because of insufficient information on locality. The fact that neither nature nor culture stands still, but may change considerably over time is a challenge to every archaeologist.

Even the place, as such, is historically filled in with contents that are difficult to catch, and sometimes you experience something special on the same spot, that in some way makes the place stand out just waiting for you to appear, through its looks and placement. In other cases, there seems to be nothing to catch your eyes or imagination, even if rock art is there.

The stonemasons of our time

In searching and finding good rocks it would have been beneficial to work together closely with stone workers, who indeed were connoisseurs of different types of bedrock and their qualities. I am thinking of the no longer active stone-cutters, who, a century ago, broke off and formed rocks for Europe's autostradas, where some rock art may be a destroyed puzzle impossible to refit. The growing car traffic demanded a strong support and the granite of Bohuslän was chosen.

Stone workers, who had to earn their living the hard way, had no knowledge of the traditions of several thousands of years of stone craft, and they seldom came in contact with the envoys of the learned world.

Archaeology as discoveries

We archaeologists and rock art researchers, of course, have traditions for our activities and it is my intention in this short text to connect some activities which aren't seen as immediately related, but which are logically bound up.

The history of archaeology, that is the knowledge of how archaeology has been created and how it has worked, often exercises a strong influence on the archaeology of contemporary times. You are offered a place in this annual chairman's report and find a research identity, which takes into account some positions and disregards others. Since about 150 years ago, it is generally accepted that the archeology in the Nordic Countries was created by a small number of brilliant men in humanities and the natural sciences, with very strong egos. They were all known to each other, some were friends, some were foes. At this time, your own self-esteem was strengthened by having important opponents. Over time, a sort of canon was built up and most people were convinced that the right archaeology and the right way to manoeuvre archaeology had almost luminously appeared to us, the lucky ones. It should just be captured.

Frederik Münter, a predecessor fallen into oblivion

However, archaeology could have been different, if other, possible ways had been chosen ahead of the nationalistic direction, which in the long run became a burden and a glue. I would like to present an unusual personality, a pioneer researcher, now almost forgotten. I am thinking of Frederik Münter (1761-1830) in Copenhagen, who is a more exciting and broadminded individual than the famous fathers of research we are more in keep with.

The situation was not entirely pleasant. Suddenly, there seemed to be a new source material, in the now accessible country of Egypt, which could confirm or threaten the contents of the Old Testament and thereby the very narrative of the Creation. There were found scripts with names of pharaohs, who were not known from biblical texts. An almost desperate searching for clues and keys could be absolutely absurd as contact with the ancient worlds was sought out by sleeping in some grave buildings of ancient times. It is possible to imagine, that mystical values by some people were seen as an extra and direct medium, which could guarantee access to past times.

An interest in ancient times must always be read against a background. In the case of Münter, his work with languages and his developed ability to interpret scripts formed a basis, upon which he connected an ambition to seek historical information, that it is enough to take our breath away. Through his church position as a bishop, as well as a professor at the University of Copenhagen, and memberships in several academies and secret societies, including the Free Mason's, he could argue for and influence changes in how science and its materials should be organized. He was the one who suggested that a Royal commission should be appointed to establish a national museum in Copenhagen. In his residence as a bishop he created a small museum for his Classical and Egyptian objects, some of which are still on display.

Especially the newly found objects from the Nile country and the hieroglyphic script which was understood only partly, became a source of inspiration for the very active lodges of Free Masonry, more generally within Europe. That the script was not instantly readable rather increased the curiosity in the holy and secret contents of text and image. For the sake of Münter, there is another possible influence. During his study travels in Europe he used a secret script of his own, for his learned reflections, not to get caught by the controls of the local powers on foreigners and their activities. Maybe this experience was a bonus for his attempts to explain Egyptian and Persian scripts.

This happened in the beginning of the 18th century, when Denmark was under pressure from the Napoleonic wars, with a marked economic setback, that was a consequence of the loss of the whole Danish fleet and several bombardments of Copenhagen. Nevertheless, many efforts were made to develop the scientific field. Münter proposed more systematic collections, which were taken good care of and organized at a central place, as an archive or a museum. Remarkably enough, the working process in numismatics seems to bring about a clear view of how collections could be organized. The collections were appreciated as a locale for work and not as a facility for storage and exhibition only.

Despite that the era of the scientific congresses had not yet appeared, Münter's generation developed a very comprehensive correspondence with the most famous learned men of Europe. Their book production was followed, and private journeys to historic places, collections and famous persons gave direct experiences of things, earlier available only from the literature. Autopsy was the most secure method to reach knowledge about the world around you. Among Münter's acquaintances, were a large part of the early prehistorians of the continent, who opened their libraries and cabinets to him.

Napoleon and Egyptology

The French revolution and its aftermath was, absolutely, the most frequent topic of conversation at the end of the 18th century and a quarter of a century thereafter. A large part of Europe was constantly at war, and during twenty-two years Napoleon fought 713 battles. To many people, the young Napoleon became a symbol of a changeable future; society could be of another order. Others saw the successful general with disgust and as a dangerous person, threatening the world order. However, the revolution faded away and suddenly the rebel had become Emperor. Most things were back to old regime again. But for the linguistic research, geography and the natural sciences, the Egyptian excursion 1798-1801 was of greatest importance.

To Europeans, Egypt had been a difficult part to reach for over a thousand years, as the Arabians more or less closed off the land. Very few Europeans had visited the large Nile country. Some knowledge had been possible to grasp from the big monuments, mainly obelisks, which had been transported to Rome. During the Roman era and the Renaissance, very hazardous transportations of stone sculpture had been made across the Mediterranean, to be part of the arrangements of the metropolis. However, their script could not be understood. The interpretations accomplished by the Jesuit and linguist Athanasius Kirchner, during the 1650ies, could after some time be exposed as falsifications. On the other hand, there was some

truth in his observations that a relation was evident between the old Egyptian language and Coptic. Also, he thought that the different hieroglyphs could be carrying language sounds. All the attempts to make interpretations, from the renaissance and onwards were parts of a vast research activity and experiments, where the construction of the hieroglyphs and their meaning could present rather curious statements. The monuments themselves were seen as exotic, gigantic and without an evident relationship with European sculpture. Because of that, they became filled with meanings, which were invented in the new context.

One of the few Europeans who made journeys into Egypt, not in the interest of business but in the interest of discovery, was the Danish captain Frederik Ludvig Norden (1708-42), who published his experiences in *Voyage d'Egypte et de Nubie*, printed in several editions and in many languages. Norden was a well-educated officer and a talented illustrator and he was among the early visitors, who pictured an almost unknown country. Some years later, Carsten Niebuhr (1733-1815) followed, as a link in his famous oriental journey. After Napoleon many more travelers came, often more military men, hunting for antiquities and souvenirs - and not least knowledge of historical circumstances.

The scientific group of Napoleon's army managed to escape from giving over to the British all their documents and measurements which had been accomplished in the Nile delta and the Nile valley. However, all physical objects from the scientific Institute that Napoleon created in Cairo were forced into British hands. Among these objects, was a big stone with scripts in two languages and in three sign versions. This stone, called Rosetta, would be central in the linguistic research at the beginning of the 19th century. But, rather soon it was reduced to a famous museum piece.

The interpreter of the hieroglyphs, Jean François Champollion (1790-1832) had to wait until 1824 before he himself could analyze the stone at The British Museum. At that time, he had, strictly speaking, lost his interest in the stone as a central point in the interpretation of the texts, and he never published a translation of his own.

Before the slab of stone, which weight is over 700 kg, ended up in London, some documentation was made of the three divisions of texts on the stone slab. At the 200-years jubilee of its discovery the stone was cleaned, where thick layers of shoe polish and chalk was taken away. The chemicals were used at the documentation of the stone surface, over the years.

These circumstances connect to the eternal discussion on the documentation of rock art, namely its accurateness, its relevance and its clearness. Imprints instead of a drawn or painted document were wanted by the language researchers. Many of the previously recorded images were not evident, wrong, fragile, but they were all nevertheless used by the linguists. Even the most advanced researchers accepted in the beginning such failures, which could lead to mistakes after the motto "Better one illustration than none at all". Even the finale, enormous publication of the expedition was not reliable, when dealing with the details of the script.

At the same time, there were false hieroglyphs, made on objects for commercial purposes, to offer antiquities with another historical content or as stylistic loans.

Sometimes access was denied, entrances were blocked and visits were privileged to a limited number of persons.

In Egypt the French consul general Bernardo Drovetti, with a great interest in the expanding trade with antiquities, fabricated false data, lying about hostilities among local tribes, damages etc. On the question from Champollion, even his Rosetta-colleague Thomas Young answered in a deceptive way, that indistinctness in the documentation corresponded to indistinctness on the slab.

Monuments, buildings, excavations, documents and notes were used in the position-taking of the researchers and collectors. However, at the same time, a publication could lead to fame or criticism and a possibility to be recognized as a work of reference in the research. A modern science demands access to data as a general principle and a right to take part of and control data in scientific contexts.

Champollion and his milieu

As mentioned earlier, one of the big research enterprises was the French conquest of the Mameluke's Egypt in 1798, where the great army was strengthened with 150 researchers from Institute de France. Their mission was to investigate the almost unknown country from *all* aspects. With much effort, the group collected materials and made surveys, mostly in the Nile delta and along the river. The survivor Vivant Devon made thousands of illustrations of ruins and monuments, but also military battles. Devon's description of his observations in *Voyages dans la Base et le Haute Egypt* was printed in over 40 editions and meant a lot for the interest of Egypt in the western world. The Egyptian landscape became from this point on a wanted picture in European art. After the secret escape by Napoleon back to France in 1799, an enormous editing work took place in Paris. After some years the result of the scientific report could be presented as 23 gigantic books that were offered in the most exclusive and technically advanced printing and binding. The linguistic research had a re-start and the Rosetta-stone became a symbol for the progress of its scholarship. Thus, many were engaged in the endeavor to understand the traces of script which were found in the Mediterranean area. More works on the theory of languages were published and one of the most remarkable was a book on methods of decipherment by Bishop William Warburton, who even created general rules for such a work.

Many discoveries of a linguistic character were made by men, who had other education than classical languages. The engraver Jean Barthélemy found that oval rings on the monuments with hieroglyphs may contain the names of pharaohs. The same idea was taken over by, among others, the Danish archaeologist Georg Zoëga (1755-1809), who improved the analysis of the hieroglyphs.

The Swedish diplomat and linguist researcher David Åkerblad (1763-1819) who was well known in these circles in Italy and France, managed to identify all the proper nouns in the demotic and Greek texts on the Rosette-stone. After that the work more or less ceased, as the building up of the demotic script was misinterpreted. Åkerblad is, incidentally, the Nordic researcher who identified the runic inscription on the Pireus lion in Venezia.

In 1822 Champollion managed to find a way which functioned for the mysteries of the hieroglyphs, under big resistance from his colleagues. It took a long time before he took his place at Institute de France and College de France. In this situation, it is of some interest that his efforts were recognized at the Royal Academy of Letters, History and Antiquities in Stockholm already in 1827, where his correspondence with the secretary Johan Gustaf Liljegren shows, that both the research on runes and rock art (called glyphs) were known to Champollion. He encouraged the Swedish learned persons to advance their studies and to look for the origin of languages. Supposedly Champollion had too much to do with defending his own decipherment of the hieroglyphs. Also, the correspondences between Münter in Copenhagen and Champollion in Paris lost its continuation.

Brunius

During three centuries, the majority of the Scandinavian antiquarians seem to have a social background within the clergy for their education, choice of profession and possible investigations in the landscape or among the books. This is also true for Carl Georg Brunius, who made a great contribution within rock art studies. However, looked upon in the perspective of his life, he was much more engaged in the restauration of the cathedral of Lund, besides his position as a professor in Greek at the local university. He was the one

who for the first time called a rock carving a *glyph*. His childhood home in Tanum became a starting point for the first, large survey of rock art in Sweden and probably also for the rest of the world. These were a real advancement. More than a hundred sites were visited, documented and commented upon. From his youth and over half a century he was now and then occupied with his rock art. He found a stable hand and a trained eye to produce documents of high quality: uniform scale on top of a grid network, just about the same procedure as painters of church walls and roofs transferred their chalk paintings from paper to full scale. The same technique was used by the private antiquarian of the nobleman Pehr Tham, Carl Gustaf Gottfried Hilferling, when working on a survey in Bohuslän. Remarkable enough, Hilferling lived as a guest temporarily at the home of Brunius, but this young person was just in his first year.

Brunius saw in his great number of documents possibilities to elaborate them, and not only as “bergtaflor” (rock pictures). In his documents, there are traces of a rearrangement of the figures of rock carvings, to find out patterns of compositions and figure types. This was new, but may be an inspiration from Zoëga, who, in his studies of hieroglyphs, arranged them in categories, that is he broke them off – metaphorically speaking – from their stone surfaces to create new contexts on the desk through comparative studies. When Brunius, at the age of seventy-six, rewrote his original report in French from 1818, he had given up his ideas about an Egyptian origin of his rock art. Most evident is his preface from 1868: “How lovely wouldn’t it be if one via continued research could demonstrate, that our rock art is not, as I have presumed, depictions of figures, without partly signs of concepts, partly signs of sounds, as J.F. Champollion has shown, that the hieroglyphs are sometimes hieratic, sometimes phonetic. I regard, however, the rock carvings in no way can be compared with the hieroglyphs ...”.

As a pioneer, Brunius effected his rock art studies in a very conscious way. Direct prototypes were not at hand. Some rock art had previously been found and described briefly, in some cases even illustrated already from 1627, but no more. Technically, he prepared a well-functioning documentation process. He also looked for models in the ethnographical literature on primitive people and he introduced analytical concepts used in linguistic studies.

The interpretation of images, their representations and what seemed to happen on the rock surface took a more direct reading in terms of events or almost a picture puzzle, which should be solved.

Brunius looked upon rock art as a primitive language of images, which represented events of importance. Often his argumentation was dealing with the estimated age of the rock art and, as a more precise chronology was lacking, the interpretation could not be very extensive.

The opinion was that rock art constituted a sort of language, which did not allow more detailed interpretations. Supplementary archaeological observations were not used to promote the possibilities of understanding. This attitude had the effect that Brunius’ rock art studies were put aside by posterity. Much later, when Brunius was taken into account again, it was an art historian, Bo Grandien, who found and commented on his old documents.

Inspiration from older materials and research

Much more could have been tested from the linguistic desk. For example, the additive signs at the hieroglyphs, helping to make the meaning more precise and context-bound could have been a possibility – that is to see the figures as a sort of main sign with sometimes subsidiary informative signs. In connection with this the coexistence of the signs could have been analyzed – exactly this is what I tried to do in my thesis *Glyfer och rum*, from 1980, before computers existed more commonly.

Principles of organization of the rock art on the bedrock are not easy to uncover. There are of course different scales of the figures, sometimes there is a clear center visible, sometimes complemented with

an above and a below and a left and a right side. There may also be notifications of numbers, mostly cup-marks, which can have cubic formation, in small fields. Egyptian monuments show that the differences in sign sizes are remarkable. The stiff compositions are arranged in columns and rows, which guarantees that the figures are not mixed or overrun but are kept in isolation. The main rule – which also applies for rock art – is clearness in design, in surfaces and in lines that should be connected. It is the merit of Zoëga that we early on could “read” the hieroglyphs from the top down and the rows both from left and right, depending on the direction of the designs.

Several researchers have observed the oval cartouches around some signs and concluded that the inscribed hieroglyphs were names of pharaohs. As there were some foreign names, which did not exist in Egypt, it was suspected, that the signs corresponded to sounds. For example, some of these signs were found in the names of Cleopatra and Ptolemy, where their names reappeared in Greek on the fundament of the monuments.

Such royal names were a frequent gateway when starting the interpretative work in unknown scripts.

Closing words

To “read” hieroglyphs is not the proper expression. Hieroglyphs are meant to be seen as pictures and they are not supposed to be the ground for a hidden text, which is the same independently of who is taking part. If the script is read (loudly), it is a sort of interpretation, which has a specific meaning. It must be forced forward as a statement, and maybe it must be adjusted in relation to an actual situation. This presentation may vary between different readers, but the meaning is fixed.

To be able to write and to read is not a necessary combination of facilities. The one who is making the script and gives form to the message is the one who creates the mystery of the talking stones. The scribe as a social being was very important and pharaoh himself could be represented in a writing position.

Thoughts like these suggest that the Scandinavian rock art sites constitute the places and the scenes of the (collective) interpretation which the images offer. It is quite another sphere of sign use than the images as a total system is capable to communicate in the prehistoric society.

A big difference between Egyptian hieroglyphs and Scandinavian rock art are the intentional damages which can be found close to the hieroglyphs. If it deals with living creatures, names of pharaohs and their faces can be cut off, even the dogs of pharaoh may have lost their faces. In a few cases rock art is placed on top of sculptures, which seem to be culturally different from the pharaonic ones.

In Scandinavia there is very little of intentionally made damages or “revenge” on deserted rock art. These may have been seen as part of history, which was respected and did not start any anti-activities.

That rock art during time disappears or ceases to be used, suggests that rock art is not abandoned in a marked, hostile way. It is just abandoned when it no longer seems to function in the service of society.

Finally, back to Gerhard at the bedrock: just as Bronze Age officiants he has often found his way back to the point, the platform, where to stay everything and all *once* to keep a view of everything. This is the place where it happened long ago. The focus today is on the memories / documents that are the building blocks in the carefully fabricated fiction, which we call archaeology.

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Chapter 3

To Let Mute Stones Speak – on the Becoming of Archaeology

Joakim Goldhahn

Abstract

This article presents some thoughts on the emergence of the archaeological science in the 18th century. My starting point is the debate that occurred in the wake of the discovery of rock art in the famous Bronze Age cairn Bredarör on Kivik in Scania, southern Sweden. Here we find one of the first documented attempts to formulate an archaeological method based on the study of prehistory without explicit support from historical sources – a brave attempt ‘to let mute stones speak’. The authors of this attempt, Anders Forssenius and Sven Lagerbring, introduced an innovative comparative dating method and a novel use of distribution maps. Either way, this bold attempt to formulate a free-standing archaeological method for the study of prehistory did not attain any direct followers, and it was several decades before these methods were revisited again.

Keywords: The history of archaeology, Bronze Age, rock art, Archaeological methods, Three-Age System, Comparative dating, Distribution maps, Bredarör on Kivik

Introduction

One of the many things that have concerned archaeologists in recent years is when archaeology became archaeology, and what it is that defines and characterizes this scientific field of knowledge. In northern Europe, we witness different approaches to this quest. It might be fair to differentiate a “Danish” from a “Swedish” school. The former habitually explain the birth of archaeology in the admiring light of instructed geniuses, such as Christian Jürgensen Thomsen (1788-1865), placing this event in the first half of the 19th century (e.g. Hildebrand 1937-1938; Klindt-Jensen 1975; Gräslund 1987; Malmer 1989; 2016; Jensen 1992; Rowley-Conwy 2006, 2007; Nicklasson & Petersson 2012). Archaeology was born in 1836, motherless, but the father’s name was Thomsen (1836). The latter school are also interested in exploring other forms of archaeologies and scholars’ contribution to the formation of this field of knowledge (e.g. Svestad 1995; Jensen 2002; Baudou 2004; Nicklasson 2011a; 2011b; 2012; Goldhahn 2013a). The Danish school are more favourable, descriptive and inductive while the latter are more candid, analytical and theoretical. The Danish school is markedly focused on specific individuals, and keen to point out particular excavations as formative for the archaeological field (Fischer & Kristiansen 2002; Kaul 2010). The Swedish school, on the other side of Öresund, aims to decentralize individual researchers (Olsen & Svestad 1994; Welinder 2003; Goldhahn 2012). It also explores other perceptions of the past, as well as how the biographies of specific objects and monuments changed our understanding of the bygone (Olsen 1991; Svestad 1995; Goldhahn 2013a). Specific exceptions aim to confirm the outlined pattern.

A question that all actors in this discourse address is what it is that constitutes a scientific field? Is it a chronological framework unfettered by written sources? Is it an interest and study of past times through material culture? Does it require a distinct methodology? Does it need to have been put into practice? Is an explicit theoretical framework needed? Must it have been accepted by other scientists and the rest of society?

For some researchers, such as Peter Rowley-Conwy (2006; 2007), these questions are easy to answer. He only demands a conceptual understanding of a term or notion that refers to a time before the written word, a time before history, a notion about prehistory. The requested concept, in turn, seems primarily to refer to Rowley-Conwy's own sympathetic understanding of the specific term (see Rowley-Conwy 2006 in particular). In short: presentism. Rowley-Conwy argues that a concept of prehistory was not formulated until the 19th century. In France, Paul Tournal used the term "anté-historique" in 1833, but Rowley-Conwy questioned if he understood the meaning of it. The reason for his doubt is not revealed. A similar term "ante-historic" was used in 1834 in England by H.N. Coleridge in relation to Greek poetry, which Rowley-Conwy dismisses as a non-archaeological application of the term. We might question if that seems fair. It was not until 1845 that Gustav d'Eichthal used the concept "prehistorique" in France, and 1851 that Daniel Wilson used the term "prehistoric" in England (Rowley-Conwy 2006: 103–104). The Danes were first. As early as 1834, Christian Molbech used the term "forhistorisk", but he did not have a full understanding of the term according to Rowley-Conwy (2006: 106–107). Again, we do not know why. As usual when it comes to the Danish school, Thomsen is seen as the architect behind archaeology and the first ever to possess a correct understanding of the notion "forhistorisk" (Rowley-Conwy 2006: 110, 115; 2007). No surprises.

A conceptual tactic to solve the question of when archaeology became archaeology is of course anachronistic. It denies the idea that other societies and cultures had other concepts and beliefs about the bygone that may or may not have been decoded into a formalised practice to understand the past (cf. Schnapp 1996; Trigger 2006). It also denies the fact that many people contributed to change the understanding of the past. Thomsen did not act in a vacuum. It also divides the actors within this field in righteous and unrighteous scholars (cf. Malmer 1989; 2016), which does not help us in our quest to understand how archaeology came about. Instead of devoting ourselves to admiration of enlightened geniuses, which on and off is done in a naïve spirit of nationalism, or to mirror a better self in past scientists' achievements (Goldhahn 2012; 2013b), we ought to focus on the various processes that lead to a changed perception of form about the past.

This article will present such an overlooked contribution from the late 18th century, in this case, some overlooked thoughts that originated from an oversized monument, some lost Roman coins and a long since forgotten distribution map. Here we will argue that they had relevance for the formation of an archaeological practice. The attempt to explain this monument in a new and novel way was formulated in the wake of the infected debate that arose after the discovery of rock art in the well-known Bronze Age cairn Bredarör on Kivik in Scania in southernmost Sweden (Randsborg 1993; Goldhahn 2013a). In the flaming debate about the meaning of these "hieroglyphs", we find one of the first trials in Northern Europe of forming an archaeological methodology with the aim "to let mute stones speak" and to study the past without the guidance of historical sources. The minds behind this bold attempt belonged to an eccentric professor of history at Lund University and a "witty and genius but also easy-minded and unstable" student. We will return to both of them shortly.

The power of the written word

In the beginning, the Bible was *doxa* for those who wanted to try to understand the past (Trigger 2006). However, during the 17th to 19th centuries independent archaeological methods came to be formed first to complement and later to replace the power of the written word in studying the oldest history of Man with

a capital M (Schnapp 1996). Paradoxically, it was the rediscovery of a number of historical sources in the 15th to 18th centuries, such as the Roman Publius Cornelius Tacitus' (c. 58-120) *Germania*, rediscovered 1455, and Snorri Sturluson's (1179-1241) assembly of Old Norse sagas and myths, which created an awaking interest that challenged the written word (Baudou 2004; Randsborg 2015). It was especially Snorri's mention of the immigration of Odin, or Wodan, to northern Europe from Asia Minor that hinted pre-existed societies and cultures, which were not possible to study through historical sources. In the encounter with the ideal of the Enlightenment, something that the German philosopher Immanuel Kant (1724-1804) described as "man's emergence from his self-imposed immaturity", thoughts of "Ante-Odin Times" came to be formulated (Goldhahn 2013a: 53–70); i.e. an idea of a time before the written word (e.g. Münter 1803: 292–293; Sjöborg 1830: 145). Shortly thereafter, the question arose how a practice could be formulated that allowed "mute stones to speak". Appropriately enough, northern Europe's largest pile of stones played a major role in this scenario – Bredarör on Kivik (Figure 1).



FIGURE 1. GUSTAF FREDRICH FELDT'S DOCUMENTATION OF BREDARÖR FROM NILS WESSMAN'S VISIT TO KIVIK 1756, NOW AT ATA IN STOCKHOLM.

Bredarör on Kivik

Our knowledge of Bredarör begins in the light of torches on June 14, 1748 (Goldhahn 2009). It was a pleasant and lukewarm summer evening when two local farmers found a "burial vault" in the monumental cairn that they had been plundering for stones for the past week. Before daring to enter the vault to see what was hidden in the interior of the stone cist, they protected themselves from malicious forces by the help of a strike-a-light and a smoke. They stayed all night in the wide cairn.

Their names were Lasse Pärsson and Andreas Sahlberg. The reason they were at this now so renowned monument was not to seek treasures. On the contrary, they obviously felt a certain reverence and discomfort in defacing the old monument that lay there along the road between the thriving fishing villages Kivik and Karakas on the coast of Österlen in Scania (Figure 1). Some people said that horses sometimes refused to pass the monument at dusk and dawn. Others had seen flickering flames over the cairn in the darkness of the night. As usual with impressive burial monuments, myths about hidden treasures that could only be won by art and courage prospered. It was said that a man in full armour had been buried in

the monument, together with his horse and a large copper vessel full of gold. Other rumours associated the burial monument with hidden treasures from the civil wars in the 17th century (Goldhahn 2013a: 47–52).

Pärsson and Sahlberg were there to collect stones to build stone walls around their arable fields. In the evening, they encountered a stone built cist covered by two or three roof slabs. What they found inside it, we do not know with full certainty, but we know that they stayed until dawn. It was beyond all reason and sense. People in the neighbourhood wondered why and immediately wanted to know what Pärsson and Sahlberg had found. Denying did not help. The rumour went from mouth to mouth, and soon the local crown commander arrested them. They were suspected of having withheld half the value of the treasure from its rightful owners. According to the contemporary law about ancient monuments in Sweden, half the value of the treasure should be divided equally between the Royal Majesty and the landowner, the other half was allotted the finder, or in this case the finders. Because Bredarör was found on common land, half the value of the treasure belonged to the king in accordance with the law. When both of the men continued to deny the alleged crime, an Extraordinary Thing was called for at Albo District. The thing took place on Kivik between 23 and 25 August 1748 and resulted in the two farmers being put in prison. Just about a year later, they could return home as free men but only after they had given holy oaths of their innocence (Goldhahn 2013a: 51).

Carl von Linné's visit to Kivik

Just before Pärsson and Sahlberg were declared innocent from the alleged crime, Bredarör was visited by the elevated naturalist Carl von Linné (1707-1778), from now on Linnæus. It was Saturday, May 31, 1749. A week earlier, Linné had turned 42 years old (Figure 2). Before reaching Kivik on this sunny day, he strolled around the beach at Ravlunda, situated a few kilometres north of Kivik. The sea was howling. The shifting sands were rough and spoiled his shoes. Here Linnaeus found some pieces of amber which



FIGURE 2. A COLLAGE OF SOME OF THE PERSONS MENTIONED IN THIS ARTICLE. IN THE USUAL READING ORDER: CARL VON LINNÉ – LINNÆUS, NILS WESSMAN, NILS BROCMAN AND SVEN LAGERBRING. SOURCE: GOLDHAHN 2013A.

allowed him to reflect on “the annual recession of the water and the high level of the sea a few thousand years ago, both of which are contested so lividly by the establishment” (Linné 1975: 155, translated here). In the find of amber, Linnæus saw evidence of God’s purifying deluge (see also Levertin 1907: 41).

After collecting some herbs and flowers, Linnaeus came to Kivik, one of the most important fishing villages in Scania. After lunch, he visited Bredarör, or “Penninggraven” as Linnæus coined the monument. He measured the stone cist, noticing that it had two or three roof slabs, and stated that the cist was situated in the centre of a broad cairn (Linné 1975: 158), which also was the local name of the monument. Bredarör means “the broad cairn” in Swedish. In his diary, Linnæus noted that the monument had recently been disturbed, and that rumours said that Pärsson and Sahlberg found silver but that the evidence for it had failed (Goldhahn 2013a: 54).

The statement testifies how much attention the trial against Pärsson and Sahlberg was given. A strange circumstance in this context is that none of the accused and the people who attended the trial at Bredarör, or Linnæus for that matter, appeared to have noticed that the cist was decorated with engravings (Figure 1). The rock art remained unknown for several years.

Natural History – a Divine Science

Linnæus’ attitude to ancient remains was complicated. He noted them most dutifully during his many scientific journeys, sometimes with curiosity, but he did not consider conducting any examinations or studies (Näsman 2007). The reason is to be found in his Christian worldview (e.g. Blunt 2004). He was fulfilled by a humble gratitude of having been granted to follow in God’s footsteps, to be able to learn more about His great creation, and to study the wonder created by the Master’s hand.

Linnæus’ perception of cosmos was different from the Renaissance, which stated that the meaning of a starfish or thunderbolt was found in the similarity that they exhibit to other similar phenomenon (Svestad 1995; Schnapp 1996), something which Philippe Descola (2013: 201-231) has labelled *analogism*. Linnæus would instead let the stones speak for themselves. In his worlding, the nature of things revealed the greatness of God. Two similar flowers should not be mixed up: a flower with two stamens and a pistil was different to a flower with two stamens and two pistils. The unique nature of the flower should be determined to honour God’s wonderful creation. God created the earth, plants, animals and humans, but he left the classification for Linnæus. In the beginning, it was a holy mission, but in the long run this empirical endeavour led to a pronounced desire to explore the world on its own terms. This more empirical and rational approach to the world was one of the prerequisites for replacing the Bible’s creation story with a worldview built on natural science (Olsen & Svestad 1994; Svestad 1995; Trigger 2006), something that the same Descola (2013: 172–200) defined as *naturalism*.

Linnæus himself had no such ambitions (Blunt 2004). He “thinks biblically, reasons biblically, and writes biblically” (Levertin 1907: 38, translated here). In the amber on the beach at Ravlunda, Linnæus saw traces of God’s fatherly wrath in the form of a cleansing deluge. In the beauty of the flowers he found traces of the Master’s law, a law “forcing people to consider and admire even more of His work” (Linné 2005: 41, translated here). Linnæus therefore urged all people to “understand with great zeal what God’s purpose was when he created the propagation of the species and the protection of the individual” (Linné 2005: 53, translated here). Linnæus proclaimed that if mankind should live a good and righteous life, she would institute it according to the Master’s established law and live in harmony with nature (Linné 2005: passim).

For Linnæus, the science of natural history was a spiritual asylum. By naming and classifying the Master's wonders, Man came closer to God. Natural history was thus "a divine science" (Linné 2005: 57):

"It does not only show us the cause and reason why Man was created, but also the way to knowledge about the Creator's majesty, His almightiness, power, omniscience and mercy, without this knowledge Man cannot fully enjoy the benefits to which God has created her [...] Nature gives a taste of the serenity of Heaven" (Linné 2005: 59, translated here).

Based on this quote, we can see that the Bible was still the framework of science in the 18th century. It is clear that Linnæus thought that mankind should acquire more knowledge of the wonderful diversity of creation: "In order to correctly understand the excellence of God's devices, we should therefore gather more accurate observations" (Linné 2005: 63), he writes. Remains of sinful people did not interest him.

Enlightenment

Linnæus' thoughts on the nature of things are linked to an empirical worldview; what man can see and study with the eye, what can be objectively weighed and measured forms the basis for the knowledge of the world (Olsen & Svestad 1994; Svestad 1995; Thomas 2004). Anybody could see, count and classify a flower's stamen and pistil. The world was open for the wonder of humans and the wondering humans opened up to the world. Without a Linnæus we would never have had any ancient ages or an archaeology worth the name.

The scanty observations made by Linnæus at Bredarör should therefore be understood and judged on the basis of his Christian faith and worldview. The science of natural history, the divine science, and cultural history, the vanity of human beings, should not be mixed up. It would be wicked or even a blasphemy. Nevertheless, Linnæus' scientific endeavour embodies the break between sense and reason, which gave name to the 18th century as a cultural historical epoch – *the Enlightenment*. The aim of this movement was to demystify the world (Outram 2013; Ferrone 2015; see also Lindroth 1978; Östling 1992; Frängsmyr 2006). The Bible, the Cross and the Church were replaced by the printing press, cannons and compasses. According to Kant, the enlightenment sought to declare man's unlimited freedom to use her own understanding and reason in exploring the world. The goal was to replace myths and disbelief by truth and knowledge, prejudices by reason, oppression should be replaced by tolerance and ultimately religion should be replaced by science. Man's ability to think would advise and guide her out of the darkness of the Middle Ages.

"Ante-Odin Times"

The 18th century was a time of advancement. Through world-wide exploration, new worlds and cultures were discovered. Most of them were not mentioned in the Bible. With an expanding world, the curiosity about the nature of humankind was revealed, but also about the true nature of the world. Through empirical studies and with a reasoning mind as a guiding star, the Enlightenment was challenging the Church and the creation story of the Bible. The withdrawal of the sea, that Linnæus found proof of in the form of amber on the beach below Ravlunda, could soon be explained as a land uplift. Empirical measurements could easily be repeated, and the land uplift was soon explained by a gigantic ice sheet that pushed down the earth's crust during the last ice age. Once the ice was gone, the land rose again. The evidence for this was that the "drainage from the deluge" occurred at varied rates in different parts of northern Europe. All of this could be witness by people with their own eyes. And what was even better, these empirical studies could be repeated, time after time. The results were the same. The conclusion was given and the theory of a water drain and a deluge was replaced by a land elevation theory (Nordlund 2001; Ekman 2006; 2013).

The distinctive position of the Church and the historical truth of the Bible were challenged in other ways, inter alia through the discovery of new historical sources. The rediscovery of Tacitus' *Germania*, dated to around AD 98, in 1455 contributed, for example, to an increasing interest in ancient customs and practices in northern Europe (Baudou 2004; Randsborg 2015). The discovery of a variety of Icelandic tales came in the same way to help draw a Bible-free and, in more than one way, a more vivid picture of the Nordic countries' history before Christianity was introduced around AD 1000. Particularly important was Professor Arne Magnusson's testamentary donation of Icelandic Sagas and Eddas, a total of 1550 volumes, to Copenhagen University in 1756. At the same time, a large amount of money was donated to translate these works. It would take more than 20 years to complete this task, but the result was that the interest of the past increased within the learned layers of society (Goldhahn 2013a: 53–92).

Ancient times came alive and began to form ideals. The Norse Eddas and Sagas compiled by Sturluson and others gave clues to a lost indigenous creation story, but also shed some light on the oldest history and mythology of Scandinavian countries. It conveyed stories about legendary kings and heroes, about heathen gods and goddesses, but also about giants, elves, and dwarfs (Clunies Ross 1994). Special importance was given to Snorri's declaration that Odin immigrated to Scandinavia from Asia Minor and that the prevailing gods – the *Vanir* – were defeated and submerged by the *Æsir*. In the earliest times, as told by Snorri, there was a "Kumbl Age" (Swe. *Kumbelålder*) when the dead were buried in cairns. This epoch had been followed by an "Age of burning" (Swe. *Brännålder*) when the dead were cremated, which had since been replaced by a "Barrow Age" (Swe. *Högålder*) when the people were interred in barrows and mounds. After that, Christianity had been introduced and thereafter the written word unwound the history until today.

It did not take long before learned antiquarians realized that each of these epochs had left traces in the form of objects and monuments, traces that could still be found or studied in the landscape. Snorri's writings about the Scandinavian people even spoke of a time before the immigration of Odin, a time before history; it spoke of – "Ante-Odin Ages" (e.g. Münter 1803; Sjöborg 1797; 1815; 1830). The question of how these ages could be studied and investigated in the present without the written word was thus aroused, but far from resolved.

The idea of the existence of other worlds and times when other ideals govern mankind than those described in the Bible aroused both wonder and astonishment. With Linnæus as a bright guiding star, many of his disciples embarked on worldwide odysseys to detect and classify God's wonderful creation (Sörlin & Fagerstedt 2004; Ehrensvärd & Cormack 2010). Per Kalm (1716-1769) travelled to Russia, Ukraine and North America; Per Osbeck (1723-1805) went to China and Java; Daniel Solander (1733-1782) followed Captain Cook to the end of the world and back again; Anders Sparrman (1748-1820) went to Africa and there he performed one of the oldest documented excavations on this continent; Carl Petter Thunberg (1743-1828) travelled to Java, Ceylon and Japan, and so on. Many of Linnæus' disciples died during their demanding journeys.

When Kilian Stobæus (1690-1742), one of Linnæus' most influential teacher at Lund University, compared stone axes retrieved from the Pacific with similar axes found in Scania, he could not reach any other conclusion than understanding these "thunderbolts" or "Thor-twigs" as made by humans (Fehrman & Westling 1993; Stjernquist 2005). Who these people were, was not so easy to detect however, all that he could conclude was that they were not mentioned in the Bible nor in any other historical sources. But the axes were there and suddenly they demanded an explanation. Only humans themselves could answer these questions.

What we see here is some of the many seeds that led up to the formation of the archaeological field and a world described and defined by natural sciences – *naturalism*. When people were empowered by their

own reason as a guiding light, folklore and heresy could easily be identified and dismissed through logical thinking and arguments. Enthralling witches, whether they drowned, floated or fled, were soon declared as a wild erotic fantasy. The time of the infidels was ending.

Less adventurous disciples of Linnæus remained at home to conduct less adventurously exploration journeys in Sweden. Some of them even began to explore the traces of Snorri's Kumbi, Burning and Barrow Ages (Nordbladh 1997; 2006; Jensen 2002; Kaul 2010; Nicklasson 2011a; 2011b; 2012). Like the discovery of new remote continents and cultures, the traces in the landscape could provide clues to unknown worlds and epochs. Some of Linnæus' disciples came to visit Bredarör on Kivik.

Thesis – Nils Wessman finds a Roman triumphal

Nils Wessman (1712-1763) is usually celebrated as the one who discovered the enigmatic rock engravings on the cist slabs from Bredarör (Nordén 1942; Randsborg 1993). For all we know, this happened in October 1756, eight years after Pärsson and Sahlberg spent a night in the vault of Bredarör. Wessman was very pleased with his discovery. When he had his portrait painted six years later, in 1762, we encounter a stylish healthy man in his best years. Wessman is wearing a light blue jacket. In the background, we discern an unknown documentation of slab 7 from Bredarör, which according to Wessman depicts a Roman triumph. The message cannot be missed – here we have the discoverer of the famous rock art from Bredarör (Figure 2). In fact, the portrait depicts a marked man, and Wessman died soon afterwards at the age of 51.

The purpose of Wessman's visit to Scania and Kivik was to carry out an antiquarian topographical journey to the Danish counties that became Swedish in 1658. The goal was to complete Erik Dahlbergh's (1660-1703) unfinished large-scale *Suecia Antiqua et hodierna*, a nationalistic book project that aimed to glorify Sweden in the past as well as in the present. The principal sponsor was the Swedish state, Rikens Ständer. The estimated cost was 2000 daler, which was considered sufficient for a two-year long research trip (Schück 1936).

The assignment went to Wessman, who was then a translator and assessor at the Swedish Antiquity Archives in Stockholm, partly because he was Scanian by birth and partly because he had studied at Lund University. In addition, he had already produced an antiquarian description of Scania. The choice of Wessman for this assignment was controversial. He was known as a phlegmatic man who did not think much of work. He was known to hang out at bars and restaurants, tell ghost-stories from Scania and gossip. He enjoyed life, was keen to gamble and drink beer with good friends (Goldhahn 2013a: 62–70). On top of that “he was of medium height, used his own hair and was somewhat chubby” (Schück 1936: 442, translated here).

Pressure from prominent friends in the right places made an impact and Wessman was able to begin his antiquarian journey. Prior to departure, he had, at his own expense, hired the artist Gustaf Fredrich Feldt (1729-1787) who held an unpaid position at the Swedish army. The party left Stockholm on August 22, 1756, arriving in Kristianstad in northern Scania in early October. There, Wessman met the Commander of the Swea Order and Governor of Kristianstad County, Baron Christian Barnekow (1694-1762). By virtue of his office, Barnekow was previously familiar with Bredarör. He had probably attended the trial against Pärsson and Sahlberg in 1748. There is much to suggest that it was Barnekow, renowned for his dedicated care of ancient monuments, who had led the first restoration of Bredarör after the trial of 1748.

According to reliable historical sources, Barnekow sent a “rough” documentation of the engravings from Bredarör to colleagues at Lund University in 1752 or 1753 (Forssenius 1780; 1938, 13). This was before Wessman visited Kivik, which suggests that the engravings were already known by Barnekow, but this document has never been found. The knowledge of the rock art is also implicitly hinted by Wessman in his travel report that was printed in 1758 in the journal *Den Swenska Mercurius*. Here he states that

Barnekow “gave me information about a strange tomb in Albo District and Mjälby parish” (Wessman 1758, 1312–1313, translated here). Nevertheless, through Wessman’s printed report from 1758, the rock art from Bredarör became known to a wider audience.

On Feldt’s highly idealized copperplate engravings from this historical occasion, the landscape perspective is distorted (Figure 1). The cairn is enormous and obviously oversized. We see that the company travelled comfortably in a barouche pulled by six adorned horses. Their clothing is impeccable. Probably the persons seen in conversation on the cairn are Wessman and Barnekow. The governor stands to the left and Wessman, who was “of medium height, used his own hair and was somewhat chubby”, stands to the right. The monument seems quite intact. At the centre of the monument, by the stone cist, we see some men studying the newly found engravings. To the right in the picture we can see Äsperöd manor. Horses, sheep and pigs graze peacefully. Activities at sea were intensive. Several boats are hauling in fishing nets. The newly discovered rock art images are inserted in the right-hand corner of the image, where the assessor’s significant discovery is announced in Latin. Feldt also depicted himself in his drawing for future generations to enjoy. In the bottom centre of the picture we see him busy creating his drawing (Figure 1).

Feldt also conducted a documentation of the rock art during this visit to Kivik (Figure 3). The slabs in the stone cist seem to be of similar size, which is not the case. Nevertheless, the engraved images are quite easy to recognize. We see that slab 8 was already damaged in its upper left corner. Some of the depicted people wear hats and clothes, others are depicted naked. On slab 7, the horses are decorated and Feldt also depicts a frog (?) and a winged fabled animal (!). Slab 6 is depicted fairly straightforward while slab 5 reproduces a contemporary standard. Slab 4 is better documented, but both the ornamentation and horse motif on slab 3, which still stand out as very clear today, depict some indistinctive lines and waves. Slab 2 and 1 are schematically reproduced (Figure 3). With the guidance of the war-chariot depicted on slab 7, Wessman interpreted the engravings as a depiction of a Roman triumphal ceremony (Wessman 1758: 1312–1313).

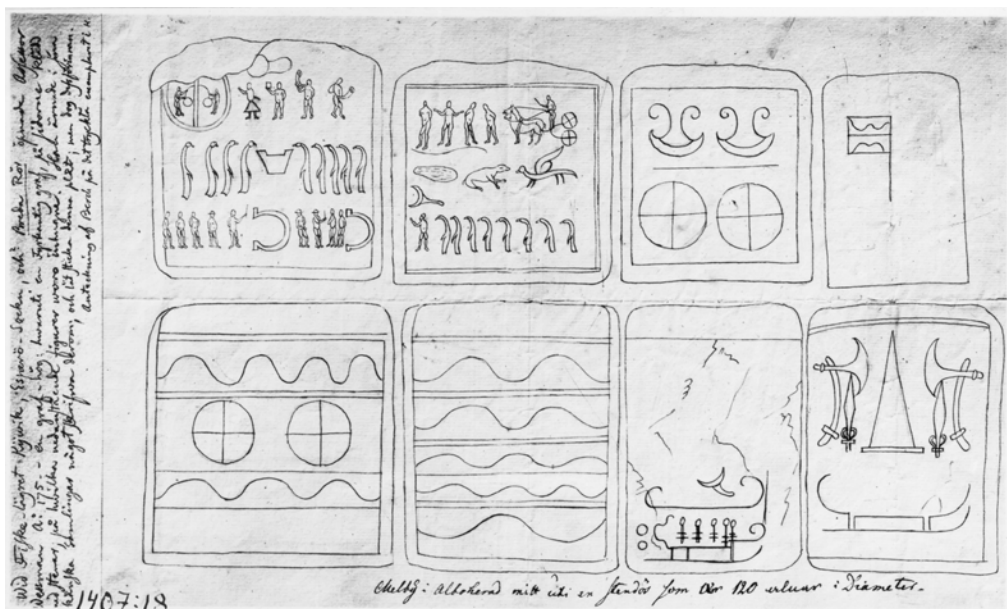


FIGURE 3. GUSTAF FREDRICH FELDT’S DOCUMENTATION OF THE ROCK ENGRAVINGS IN BREDARÖR FROM WESSMAN’S VISIT TO KIVIK 1756, NOW AT ATA IN STOCKHOLM.

On March 10, 1758, Wessman was back in Stockholm. He had exceeded his expenses and he was in debt. As on previous occasions he had a hard time delivering any credible account of his antiquarian journey. The case did not get better when his health deteriorated. His antiquarian report only comprised Figure 3.

Gustaf Fredrich Feldt's documentation of the rock engravings in Bredarör from Wessman's visit to Kivik 1756, now at ATA in Stockholm. only comprised seven pages, which prompted his contractor to request an in-depth statement of the actual outcome of the journey. Had the assets been appropriately spent for the benefit of the Swedish State? The phlegmatic Wessman was unable to fulfil his duties. He died five years later without publishing any more profound account of his remarkable findings.

Antithesis – Nils Brocman and Sigurd Jorsalafarare

The next antiquarian to visit Bredarör on Kivik, who we can follow through preserved documents, was Nils Reinhold Brocman (1731-1770). He visited Bredarör on September 13, 1764 (Schück 1936). Brocman was employed, in competition with Wessman, as an amanuensis at the Swedish Antiquity Archives in 1760 (Figure 2). He spent his short time here on earth studying subjects such as runic inscriptions, numismatics, the history of Swedish psalm books, and medieval seals and heraldry. He was particularly interested in the Icelandic Sagas (Schück 1936; Friedlaender 1970). In 1762, he published a Swedish edition of Ingvar Vidtfarnes Saga that raised great interest. With support of historical sources about this fatal Viking expedition he suggested that there were no runic-stones in Sweden that were older than the introduction of Christianity. Wessman, who with some right was displeased with the employment of Brocman at the Antiquity Archives, became furious and openly accused him of State treason!

According to his own statement, it was Wessman's description in *Den Swenska Mercurius* from 1758 that prompted Brocman to make a trip to Kivik (Schück 1936: 486–488). Brocman met Wessman and Feldt in Lund in the autumn of 1757. There he had been told about the remarkable monument and shown documents of the strange engraved hieroglyphs from Bredarör. Wessman had passed away. Before his journey, Brocman met with Feldt in Stockholm and from him he borrowed the documentation from Wessman's visit 1756. However, it is apparent from Brocman's own account that he left these documents in Stockholm, which he came to regret. Brocman was mostly occupied by the alleged Roman triumphal march, which Wessman said was depicted in Bredarör on slab 7. Could it be true? As a son of the

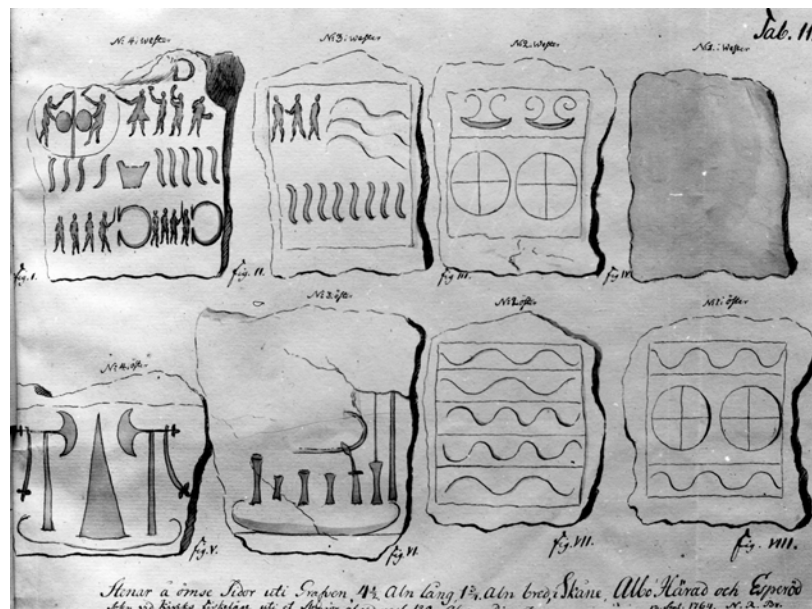


FIGURE 4. NILS BROCMAN'S DOCUMENTATION OF THE ENGRAVED SLABS IN BREDARÖR FROM HIS VISIT TO KIVIK IN 1764, NOW AT ATA IN STOCKHOLM.

Enlightenment, Brocman was sceptical. It is well known that there are no reliable historical sources that mention any such visit to Scania by the Romans (Randsborg 2015). Wessman's lofty interpretation was to be put to the test and Brocman conducted a thorough review of the engravings on slab 7. Where Wessman found a Roman triumph, the more articulated sceptic only found some diffuse waves or lines (Figure 4).

In order to contest Wessman's thesis, Brocman sought support from Sturluson who mentions the ravages of the Norwegian king Sigurd Jorslafar along the east coast of Scania during the first half of the 11th century. Special importance was given to slabs 1 and 2 with engraved boat motifs (Figure 4). Brocman also brought attention to some finds of "Norwegian axes" that were made in the vicinity according to local farmers, which looked similar to the depicted axes on slab 1. This is the first time we have indications for some form of comparative dating of rock art images in northern Europe. However, Brocman does not provide any documentation in support of this new dating methodology. These considerations made Brocman interpret Bredarör as the burial monument of some of king Sigurd Jorslafar's fallen men during his ravages along the Scanian coast. In support of his interpretation, Brocman again referred to the introduction of Christianity (Schück 1936: 486-488).

Of this, we should only state that Brocman wanted to keep his interpretation of Bredarör in line with established historical documents; this was accompanied by his reason rather than resolving speculations about visits of Romans that no one except Wessman had heard of. From this we learn that historical sources, such as the Icelandic Sagas, were the main line of justification for the Enlightenment attempts to approach the past (e.g. Sjöborg 1797, see Jensen 2002). Brocman's antithesis should thus be seen as a source-critical account against Wessman's Roman thesis, which attempted to circumvent the firm testimony of historical sources.

Synthesis – Monumentum Kivikensi

As we have seen above, two separate but related stories about Bredarör on Kivik unfolded as early as in the 1750s and 1760s. Wessman who sought long-distance and exotic explanations for the monument represents one of these stories. Brocman who tried to understand Bredarör from a more local and regional perspective represented another story. Even though both stories mainly were based on the written word, they can be said to represent each other's antipodes. These stories represent a common thread among different attempts that have been made over time to understand this mythical monument (Goldhahn 2013a). The exotic narrative can be said to provide an outlet for our pure imagination and wonders about the past (e.g. Nilsson 1862–1865; 1872; 1875; Randsborg 1993; Kristiansen & Larsson 2005). The more simple and unpretentious story seems more sensible but somewhat limited (e.g. Nordén 1942; Welinder 1974; Burenhult 1980; Malmer 1981; Skoglund 2005, 2016).

The dispute about how Bredarör should be understood was given new nutrition in 1780 through the influence of Sven Lagerbring (1707-1787). Lagerbring, a professor of history at Lund University, was a very well-known and influential person in his lifetime (Figure 2). He is perhaps most famous as the author of one of the first historical overviews of the history of Sweden in Swedish, *Svea Rikes Historia* which was published between 1769 and 1783. As a historian, Lagerbring followed the ideals of the Enlightenment. His work and deeds are considered to have laid the foundation for the source-critical research tradition in Swedish history writing (Wallette 2005; 2009a; 2009b). Many of his works were written in a remarkable archaic and high-flown style. His texts, however, are often spiced up with laconic and ironic understatements.

As a historian, Lagerbring was very interested and occupied with the early history of Scania. He published a series of dissertations and historical records on the subject under the title *Monumenta Scanensia*. In 1780, it was Bredarör's turn. He assigned the dissertation, which in reality was written by Lagerbring

himself with smaller additions and contributions by the student (see Fehrman & Westling 1993), to Anders Forssenius (1762-1805); the nephew of the famous bishop of Skara with the same name. Forssenius is described in contemporary sources as a student that was “witty and genius but also easy-minded and unstable” (Wilstadius 1938: 5, translated here). After his dissertation, he served as a lawyer and commander in the Jösse District in Värmland. He was dismissed shortly after he was appointment and was thereafter known as a cavalier and vagabond (Wilstadius 1938: 6). He died, sick and miserable, 43 years old at a home for the poor in Vänersborg.

The dissertation was written in Latin and entitled *Specimen Historicum de Monumento Kivikensi* (Forssenius 1780; 1938). The dissertation was presented under the subject of ancient history. At first glance, Forssenius’s dissertation clearly refers to Wessman’s theory that the engravings from Bredarör depict a Roman triumph (e.g. Nordén 1942; Randsborg 1993). Again, the engravings on slabs 7 and 8 were given most attention (Figure 5). Forssenius considered that a windswept disorientated Roman fleet landed on Kivik, after which “men as well as women rushed down from all directions to push back the strangers and unwelcome guests” (Forssenius 1938: 31, translated here). After a hard and vicious battle against the “Natives”, the Roman force went victorious from the battle. They captured both men and women. The Kivik monument was considered to commemorate a fallen mighty intruder and Roman ruler (Forssenius 1938: 31).



FIGURE 5. CARL GUSTAV GOTTFRIED HILFELING’S DOCUMENTATION OF THE ROCK ENGRAVINGS IN BREDARÖR FROM HIS VISIT TO KIVIK 1755, NOW IN HM THE QUEEN’S REFERENCE LIBRARY IN COPENHAGEN, H. M. DRONNINGENS HÅNDBIBLIOTEK.

“To let mute stones speak”

At first, Forssenius’s disputation can be seen as a return to Wessman’s exotic Roman interpretation, but it added something new. Forssenius claimed archaeological sources in support of his interpretation. At the start of his dissertation, Forssenius, or to be more precise Forssenius and Lagerbring, state that some researchers avoid studying the past because of lack of proper historical sources, others spend time speculating and creating stories and yarns nobody believes, some stranger than others (Forssenius 1938: 11). As an alternative, they suggested a “middle way”; they go on to paraphrase Linnæus when they argue that we ought “to let mute stones speak” (Forssenius 1938: 32, translated here).

What constituted such a “middle way”? In their dissertation, the authors state that the absence of runes in Bredarör suggests an early date. It excludes a time frame articulated through Icelandic Sagas. Instead the searchlight wandered off to classic sources such as Pliny the Elder’s *Natural History*. In book 37 chapter 11 (3) he states that amber is a product of the islands of the Northern Ocean (Forssenius 1938: 35). The role of amber was crucial for Forssenius and Lagerbring, and they sought to support their middle way by referring to the find of seven Roman coins at Ravlunda Lund, situated just north of Kivik. Since the prefix *rav-* means amber in Danish, the connection to Pliny the Elder’s amber islands becomes plausible. The thesis revitalised Wessman’s interpretation of Bredarör as a depiction of a Roman triumph. After substantial references to classical sources concerning these events, the thesis presents a novel comparative dating, resting on the resemblance between the iconography on Roman coins with chariot motifs, probably used in triumphal ceremonies, and the depicted war chariot on slab 7 from Bredarör (Figure 6). The thesis explicitly refers to three coins, one coin of Septimius Severus (145-211), who governed Rome between 193 and 211, and two coins that celebrate his mother Faustina (130-175/176). Through this bold and innovative methodology, Forssenius and Lagerbring argued that the age of Bredarör should be set to the second century AD (Forssenius 1938: 35), a time before historical sources were present in northern Europe.



FIGURE 6. ROMAN COINS FROM RAVLUNDA OF SEPTIMIUS SEVERUS (ABOVE) AND FAUSTINA (BELOW) CLAIMED IN FORSSENIUS AND LAGERBRING’S DISSERTATION TO SUPPORT A COMPARATIVE DATING OF BREDARÖR ON KIVIK TO THE SECOND CENTURY AD. SOURCE: WIKIPEDIA COMMONS.

According to my knowledge, this is one of the first sincere attempts to formulate a comparative methodology for setting objects and monuments in a time and place through studies without explicit support of written sources – “Ante-Odin times” (Figure 6). The dissertation formulates a new and golden middle way that points towards a new independent archaeological methodology to investigate the past, a methodology that enables mute stones to speak.

Forssenius and Lagerbring’s dissertation featured two new interesting documentations of Bredarör conducted by Carl Gustav Gottfried Hilffeling (1740-1823), a well-known antiquarian with extensive experience in documenting ancient monuments and finds (Nordbladh 1997). The latter visited Kivik on his trip to Scania in 1775, a journey that was initiated on behalf of the Danish antiquarian and historian Jacob Langebek (1710-1775). One of the documents show the engraved images (Figure 5), the other the

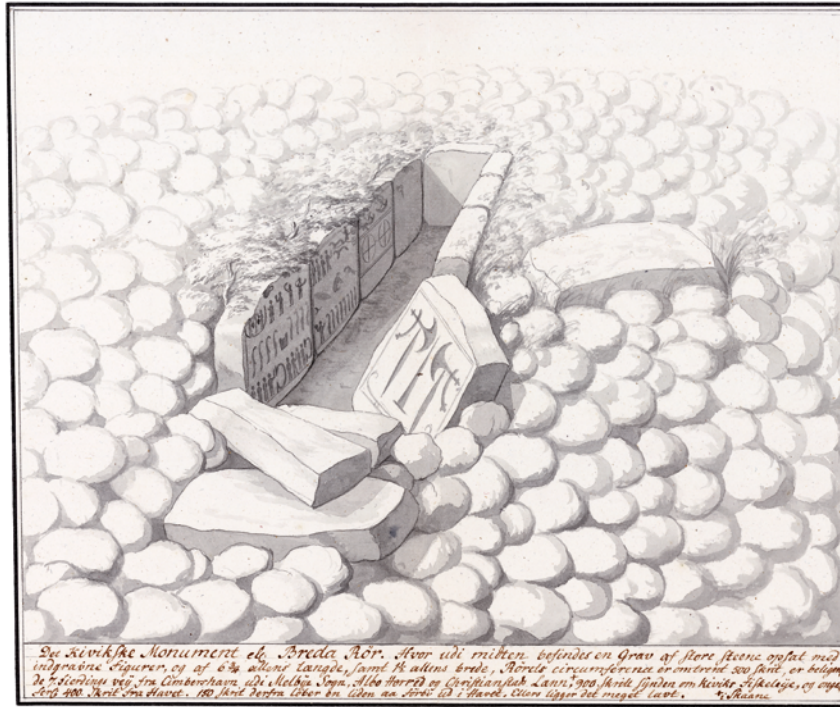


FIGURE 7. CARL GUSTAV GOTTFRIED HILFELING’S DOCUMENTATION OF THE ENGRAVED SLABS FROM BREDARÖR FROM HIS VISIT IN 1775, NOW IN HM THE QUEEN’S REFERENCE LIBRARY IN COPENHAGEN, H. M. DRONNINGENS HÅNDBIBLIOTEK.

decorated cist from South-Southeast (Figure 7). Most images are fairly accurately reproduced with the exception of slab 2, which Hilfeling seemed to have had difficulty in deciphering (Figure 5).

Both these documentations are well known and often discussed by the research community (e.g. Nordén 1942; Randsborg 1993), and are also reproduced in guide books about Bredarör and as postcards. This is partly grounded in the fact that this is the last documentation of slab 1 (Figures 5, 7), a slab that was removed from Bredarör during the 1790s (Goldhahn 2013a). Its fame is also based in the fact that most researchers have argued that the depicted axes on slab 1 are the images from the stone cist that are the easiest to date (e.g. Nordén 1942; Welinder 1974; Malmer 1981; Randsborg 1993; Kristiansen & Larsson 2005). The latter relationship is peculiar, not least since no trained archaeologist has ever examined these engravings (Goldhahn 2013a).

Another of Hilfeling’s documents from his trips to Kivik is less known, like the map he made of the area on his second antiquarian journey in Scania in 1777. Forssenius and Lagerbring probably commissioned the map in preparation for their dissertation. It depicts Albo District (Swe. *härad*) and its churches from an interesting bird’s eye-view facing Kivik from the sea (Figure 8). The shoreline runs across the map. To the left we find “Steens Hufvud” and “Lilla Sten”, two distinctive topographic features that are still used today by private and professional seafarers. On the previous peak, we see a megalith burial marked out as “Jette Stugan”, which can be translated as “the Giant’s cottage”. To the right of Lilla Sten we find Äsperöd mansion. In the middle of the map we see the fishing village Kivik, further to the right the picturesque “Hwite Mölle”, and to the far right “Ravlunda Lund” where Linnæus found his amber during his visit in 1749. In addition to these orientation points, Hilfeling has written down the names of all the vicars in Albo District, who were his informants. To the right we find the explanation for the signs he used making the map, such as places where old coins have been found, etc.

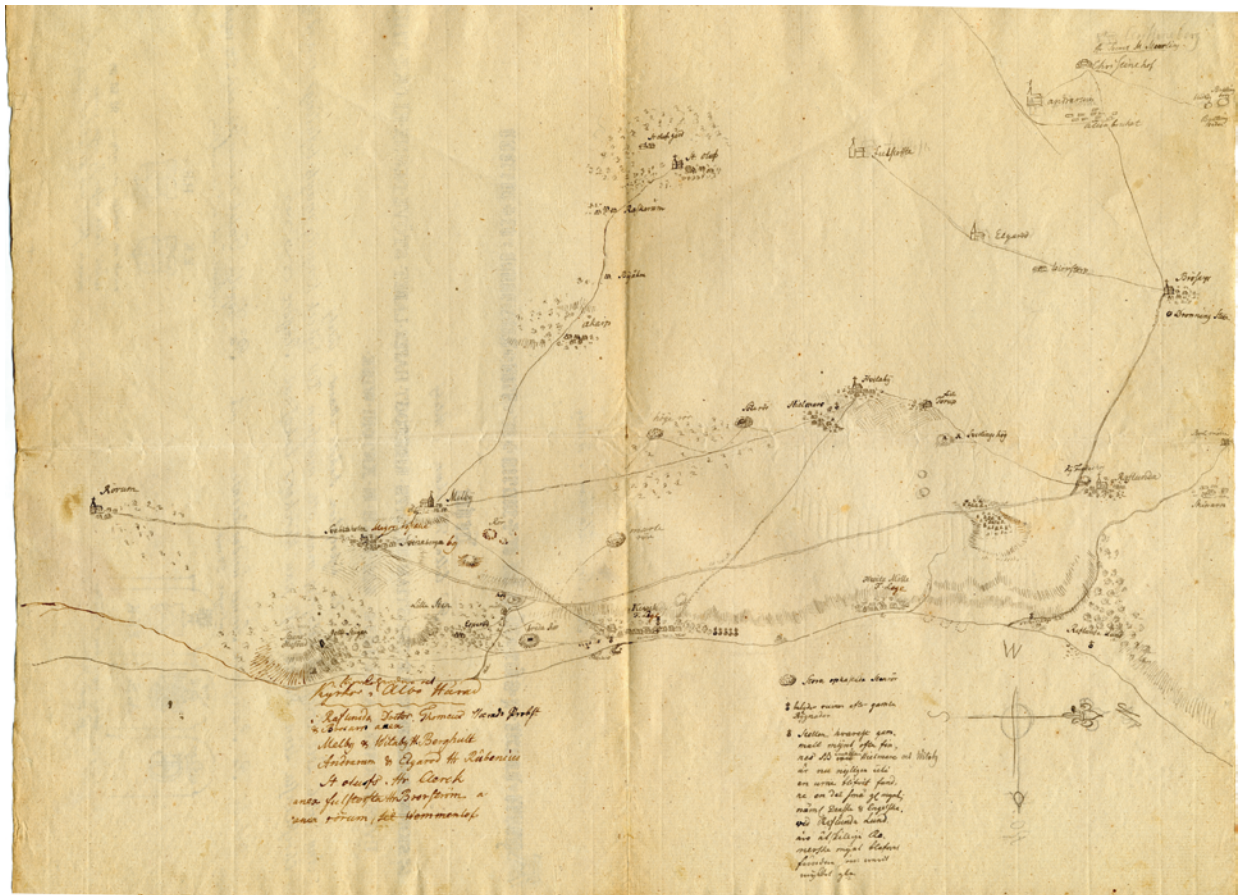


FIGURE 8. CARL GUSTAV GOTTFRIED HILFELING'S MAP OF ALBO FROM HIS VISIT TO KIVIK IN 1777, NOW IN COLLECTIO RÖNBECKIANA AT LUND UNIVERSITY LIBRARY.

Bredarör is marked out and situated just to the left of Kivik (Figure 8). The map also marks out and names a long row of prehistoric remains and monuments, some that have been lost and destroyed in modern times, such as Bronze Age cairns named “Marle rör”, “Höye rör” and “Söle rör”. Other cairns did not have any known name to Hilfelings informants but are marked out between Vitaby and Vitemölle. Here we also find a few Bronze Age barrows named after legendary kings, such as “K. Svartings hög”, “Kg Frode hög”, and “Dronning Steen”. The faint remains of a medieval fishing place are marked out between “Kivik” and “Hvite Mölle”. The same applies to a hoard of Viking Age coins that was found in 1775 between “Hielmare” and “Hvitabÿ”. It contained 127 German, Danish and English silver coins dated to the late Viking era, e.g. the first half of the 11th century AD (Galster 1939).

Of paramount importance for this context is that Hilfelings marked out the find spots for a series of Roman coins (Figure 8). At the bottom of the map to the right it is stated, among other things, that seven Roman coins were found at Ravlunda Lund. These are the same coins that are referred to in Forssenius and Lagerbring's dissertation from 1780. It can be argued, most likely with great certainty, that it was the latter finds that made Lagerbring order the map to be made by Hilfelings in 1777. This is strengthened through the active references to the map in the dissertation (Forssenius 1780; 1938). It was the indicated coins on the map that led Forssenius and Lagerbring to formulate their innovative comparative dating of Bredarör to the second century AD. Besides the comparative dating, we can thereby also add the active and novel use of distribution maps to their innovative methodological tool kit.

Discussions and conclusions

With Forssenius' dissertation *Specimen Historicum de Monumento Kivikensi* from 1780 and through Lagerbring's cultural capital, the fame of Bredarör began. It soon became one of northern Europe's most discussed and controversial ancient monuments, an epithet still valid today (Goldhahn 2013a). Forssenius and Lagerbring's dissertation presents two innovative methodologies. Later on in the 19th century, these became crucial in creating a demarcation line between archaeology and other related academic disciplines: comparative dating and distribution maps. These methodologies were put into active use in the suggested dating of Bredarör to the second century AD and to "Ante-Odin Times", that is, a time before historical sources can inform us about human beings' history and culture in northern Europe. Forssenius and Lagerbring supported their dating on three arguments. Their first argument rested on historical sources such as Pliny the Elder who refers to amber islands in the Germanic Sea. This argument can be said to function as a safeguard against people that would reject any accounts on the past without proper historical sources. Their second argument was a courageous and innovative comparative analysis and dating of the depicted wagon motif in Bredarör and similar depictions on Roman coins (Figures 5, 6). Their third argument was the distribution map of monuments and finds in Albo District, not least the seven Roman coins found at "Ravlunda Lund" (Figure 8). Maybe the prefix in the place name *Ravlunda* should be added as a fourth argument here, though *rav* means amber in Danish, but that is only implicitly stated in Forssenius and Lagerbring's dissertation.

Forssenius and Lagerbring's keen and bold attempt "to let mute stones speak" is almost unknown among researchers who have shown an interest in the history of archaeology. It is not mentioned in any of the numerous overviews aimed to explore and present thoughts on the formation of a modern archaeological science (Hildebrand 1937-1938; Klindt-Jensen 1975; Gräslund 1987; Jensen 1992; Svestad 1995; Jensen 2002; Baudou 2004; Stjernquist 2005; Rowley-Conwy 2006; 2007). Bronze Age and rock art scholars dealing with Bredarör on Kivik have furthermore misunderstood its purpose and goals, and, not least, the innovative methodology of the dissertation (see Nordén 1942; Randsborg 1993). The main reason for these misunderstandings is likely to be that the dissertation in question is rare, only a few copies exist, and that it is written in Latin, a language that few contemporary academics master. The fact that the Swedish translation of Forssenius and Lagerbring's dissertation produced by Wilstadius in 1938 is regarded as a collector's rarity, printed privately and in few copies, has not helped.

A contributing reason for the outlined relationship is that Hilfeling's documentations of the decorated cist and his distribution map over Albo District ended up in different collections. The Danish historian Langebek commissioned his well-known documentation of the rock art and of the missing slab 1 in 1775 (Figures 5, 7), while Lagerbring probably ordered the map in 1777 in preparation for the coming dissertation (Figure 8). The previous documents eventually ended up in HM The Queen's Reference Library in Copenhagen, H. M. Dronningens Håndbibliotek. Both are well known by the research community and incorporated in most publications about Bredarör. Hilfeling's map of Albo District from 1777, on the other hand, is totally unknown, and its importance for the history of archaeology has only been brought to our attention quite recently (Goldhahn 2013a). After the dissertation, it was kept by Lagerbring and after his death it was handed over to his heirs and was thereafter lost a few generations before it was included in *Collectio Rönbeckiana* at Lund University Library.

A contributing circumstance to this situation is that there was no successor to continue Forssenius and Lagerbring's attempt to let mute stones speak (Stjernquist 2005; Nicklasson 2012). Lagerbring carried on with his research about Swedish history while Forssenius ended up in Värmland as a cavalier and vagabond. He died young and under non-gratifying circumstances. The latter makes me suspect that it was Forssenius' "witty genius" that was the main promoter behind the innovative methodologies that were presented in *Specimen Historicum de Monumento Kivikensi*.

Forssenius and Lagerbring's dissertation formulates two important methodological principles for an archaeological science that aims "to let mute stones speak". The first was the comparative dating method, the other was the use of distribution maps. However, history teaches us that it was not enough to distinguish and establish an archaeological field distinctive from other related academic disciplines. More complementary methodologies were needed before it happened. Other researchers contributed insights into the importance of stratigraphical observations and analyses (Kaul 2010; Nicklasson 2011b), and the need of find combinations and style analyses (Thomsen 1836; Montelius 1885; 1986), all of which have been noted earlier in studies on the history of archaeology. It took almost 100 years after Forssenius and Lagerbring's dissertation before all of the above-mentioned methodologies were in place in the same toolbox and archaeology had been established as an academic field vis-à-vis other adjacent disciplines (Baudou 2004; 2012). To highlight singular geniuses as both the cause and effect in this intricate process does not make us wiser. It serves other purposes, national pride being one and the wish to mirror your better self in other enlightened beings another; but that is, as the saying goes, a completely different story.

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Chapter 4

The Chariot of The Sun and other sun horses of The Nordic Bronze Age – including some interesting anatomical details

Flemming Kaul

Abstract

The finest example of the Bronze Age sun horse, which pulled the sun over the heavens during the daytime and through the underworld during the night, is definitely the horse figure standing on the Chariot of the Sun from Trundholm Bog, West Zealand, Denmark. However, this ultimate sun-helper is not the only rendering of this divine creature. On bronzes such as razors, the sun horse is seen in many variants, from almost naturalistic horse figures to totally stylized S-shaped patterns. The sun horse figures, more or less stylized, seen on the bronze objects, do not give any direct clues as to the sex of horses – whether the sun horse should be determined as a male or a female, a stallion or a mare. However, when considering the sun horse figures on the rock carvings, most of which are found in the Tanum area, in Bohuslän, Sweden, in a few cases it is possible to determine the sex as male – a stallion – where the horse is phallic. In other cases, it is not possible to determine the sex. That goes for the finest of the sun horses, from Balken, close to Underslös Museum. The sun horse bronze figure from Trundholm Bog, The Chariot of the Sun, seems to be of female sex. Just underneath the root of the tail, the anus is clearly visible. Horse droppings emanating from here, may have had great importance during the Bronze Age, being mixed with the clay when making cire perdue moulds.

Dear Gerhard, friend and colleague

It is special honour and pleasure to celebrate your great anniversary as leader of Tanums Hällristningsmuseum, Underslös, with this article. Your achievements as leader of Tanums Hällristningsmuseum are most notable. Not only have you, by your eminent leadership of the museum, promoted the Tanum rock carvings to the public; from the general interest visitor to the devoted rock carving enthusiast; you have become part of the history of research, documentation and teaching of the rock carvings. Your work has not been limited to Bohuslän. You have been a prominent team member at a number of documentation and research projects, including Helgeland, North Norway, Scania, South Sweden, Bornholm, Denmark, and Valcamonica, Northern Italy (Milstreu 2005; Kaul 2012; Kaul & Rønne 2013; Kaul 2014).

I remember many interesting and happy hours, which we have spent together while documenting and discussing Bronze Age and Early Iron Age rock carvings: from Tro and Flatøy, Nordland, Norway (Figure 1; Figure 2), to Torri at Lago di Garda, Veneto, Italy (Fig 3; Fig 4) (Kaul 2011), with the Danish Baltic Sea island of Bornholm lying ‘in-between’ (Kaul 2005a). Furthermore, we have recently been working together to document recently discovered Bronze Age rock carvings on (just) portable stones, declared as national treasure trove (*danefø*) by The National Museum of Denmark (Kaul 2001).



FIGURE 1. GERHARD MILSTREU DOCUMENTING THE BRONZE AGE ROCK CARVINGS ON FLATØY, HELGELAND, NORDLAND, NORTH NORWAY. PHOTO: F. KAUL.

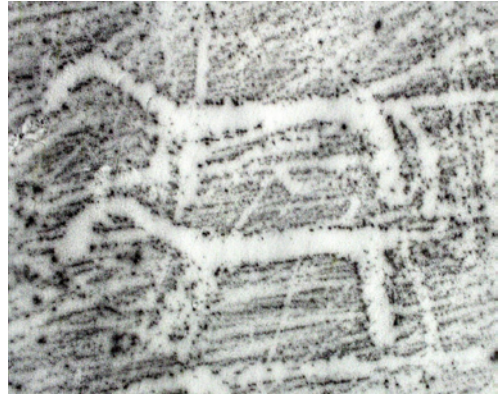


FIGURE 2. HORSE FIGURES WITH LONG NECKS, 1400-1100 BC, FLATØY, HELGELAND, NORWAY. RUBBING BY GERHARD MILSTREU.



FIGURE 3. GERHARD MILSTREU WORKING WITH ROCK CARVING DOCUMENTATION AT TORRI AT LAGO DI GARDA, VENETO, ITALY. PHOTO: F. KAUL.



FIGURE 4. ROCK CARVING OF HORSEMEN, C. 600 BC, PIETRA DEI CAVALIERI AT TORRI, VENETO, ITALY. RUBBING BY GERHARD MILSTREU.

The Chariot of The Sun – carrying the most celebrated sun horse

The divine role of the horse in Bronze Age mythology or cosmology is splendidly demonstrated by the Chariot of The Sun (Montelius Period II, c. 1400 BC), a highlight of Danish Bronze Age art and casting (Drescher 1962), where the sun horse draws the sun mounted on a wheeled vehicle (Figure 5). The Chariot of The Sun consists of three main parts. The first is the plastic horse figure. The second is the solar disc decorated with concentric circles and complicated spiral patterns. The third is the chassis with six four-

spoked wheels, on which both the solar disk and the horse figure are placed. As Sophus Müller already noted in the original publication in 1903, it is important to distinguish between the horse and the solar disk on the one hand, and the chassis with its wheels on the other. The horse and the solar disc illustrate the belief that the sun was pulled by a divine horse on its eternal journey, but the carriage was not itself part of this notion. Instead, the sun and the horse were placed on wheels in order to demonstrate (or control) the movement of the sun during Bronze Age rituals. On the rim of the sun disc can be seen the remains of a fragile eyelet, and a corresponding eyelet is found under the horse's neck. A string must have passed through the loops to link the disc with the horse (Müller 1903: 110; Kaul 1998 b: 32). Thus, naming the object 'The Chariot of the Sun' is somewhat misleading. This term was introduced in Germany during the 1930's when *Sonnenwagen* was used to describe the object (Sprockhoff 1936: 2; Kaul 2010: 527). In the primary publication, Müller did not employ the Danish equivalent (*Solvognen*), but instead referred to it as the "Sun image from Trundholm" (*Solbilledet fra Trundholm*). Furthermore, Müller argued that what was represented by the sun image from Trundholm was the mighty, though non-personified sun, and that sun worship of the Bronze Age was not related to a personified deity (Müller 1903: 114-115; Kaul 2010: 524).

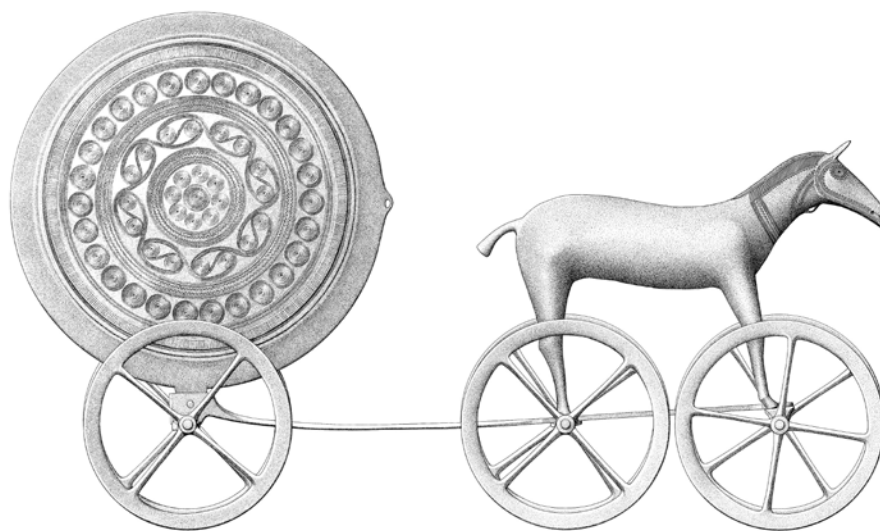


FIGURE 5. THE CHARIOT OF THE SUN, TRUNDHOLM BOG, NORTHWEST ZEALAND, DENMARK, C. 1400 BC. THE HORSE IS PULLING THE SHINING, GOLDEN DAY-SIDE OF THE SUN TOWARDS RIGHT. AFTER ANER & KERSTEN 1976.

The two sides of the sun-disk are not completely identical. Some differences in the layout of the spiral decoration can be observed. Most importantly, however, one side is covered with thin gold foil, and on the same side a row of short radial grooves can be seen running along the edge of the gold covering. The other side is not covered with gold, and there are no radial grooves. In other words there is no marked halo. When looking at the golden and radiant side of the solar disk we notice that the horse is facing to the right, moving from left to the right together with the sun in terms of the position of the viewer. This is the observable direction of the travel of the sun as seen from the northern hemisphere, when the spectator faces the sun. When we turn the sun-image round so that we can see the darker, non-golden side of the solar disk without halo, then, if the viewing position is maintained, the horse is facing left and moving from right to left. These directions are not a matter of maps or geographical positions, but purely of left and right related to a static viewing body. Thus, it can be demonstrated that the sun horse represented on the Chariot of the Sun, could work both during the day and during the night (Kaul 1998 b; Kaul 2018). Since it is the sun horse, which is the focus of this article, the complex system of other sun-helpers seen on Late Bronze Age bronzes, such as the fish and the snake, will not be treated here.

Sun horses on bronzes

On Late Bronze Age bronzes, such as the razors, the sun horse is represented in different versions, ranging from relatively naturalistic renderings, to highly stylized S-shaped sun horses (Sprockhoff 1954; Kaul 1998 b). In both versions, the sun horse, or a row of stylized sun horses, are related to a ship, often in front of its prow. This is seen on the finest of the ‘naturalistic’ sun horses, from Neder Hvolris, Northern Central Jutland, Denmark (Figure 6), where the horse pulls the sun by means of a string. It is seemingly dragging the sun away from the ship, the sun-ship. A razor from Tranemosen, North Jutland, which in 2017 was acquired as treasure trove (*danefø*) provides a fine example of the stylized sun horses (Kaul & Nielsen 2017). In front of the prow of the ship, a row of S-shaped figures is seen. In order to emphasize that these figures are actually to be understood as horses, the Bronze Age artist has in this case provided each S-figure with an (extra) horse head (Figure 7).



FIGURE 6. THE SUN HORSE IS PULLING THE SUN AWAY FROM THE SUN-SHIP. RAZOR, NEDER HVOLRIS, NORTH JUTLAND, DENMARK. CA. 900 BC. PHOTO: F. KAUL.



FIGURE 7. A ROW OF STYLIZED SUN HORSES ON A RAZOR FROM TRANEMOSEN, NORTH JUTLAND, DENMARK, 900-700 BC. PHOTO JOHN LEE, THE NATIONAL MUSEUM OF DENMARK.

Is it possible to determine the sex of the sun horse?

The, more or less, stylized sun horse figures, as seen on the bronze objects, do not give any direct clues as to the sex of horses – whether the sun horse should be determined as a male or a female, a stallion or a mare. However, when considering the sun horse figures on the rock carvings, most from the Tanum area in Bohuslän, Sweden, only in a few cases is it possible to determine the sex as male – a stallion – when the horse is phallic. In other cases, it is not possible to determine the sex. That goes for the finest of the sun horses, from Balken, close to the Underslös Museum (Figure 8). A large cup mark, representing the sun, is connected with the head of a horse by a string. Thus, like the sun horse on the razor from Neder Hvolris, the horse pulls the sun by means of a string.



FIGURE 8. THE SUN HORSE FROM BALKEN, LATE BRONZE AGE, THAT HAS BECOME EMBLEM OF TANUM HÄLLRISTNINGSMUSEUM, UNDERSLÖS. PHOTO: ELLEN MEIJER, TANUM HÄLLRISTNINGSMUSEUM, UNDERSLÖS.

The sun horse from Lilla Arendal is in shape and appearance closely related to the sun horse from Balken. Once again, a horse with a slightly S-shaped body pulls the sun, represented by a large cup mark, by means of a string connected to its head (Figure 9). The Lilla Arendal horse provides an excellent example of a phallic horse pulling the sun, with the divine sun horse definitively being a stallion in this case. The large cup-mark, representing the sun, is surrounded by four figures of four connected short lines. Similar figures are known surrounding other sun images, though without a sun horse, as, for instance, on Aspeberget and Fossum. They have been interpreted as being stylized human figures, *adorants*, praising the sun (Almgren 1927: 90-91; Milstreu 1978: 16-17; Milstreu 1986: 36). However, other interpretations should be considered as well. These figures around the sun could look like flying birds (Coles 2005: 58-60), or they could be a special kind of sun rays. If one tries to find something which might contain these three different understandings of the motif (human-like figure, bird, sun-rays), then the souls of the dead, or the spirits of the ancestors might be a solution (Kaul 2004: 232). Since the sun horse from Lilla Arendal should be understood as a mythological creature, the figures around the sun could similarly be understood as something belonging to the mythological world: The souls of the ancestors, partly in the shape of birds, partly as sun rays, possibly connecting the sun with the earthly world.



FIGURE 9. THE SUN HORSE FROM LILLA ARENDAL, T-450, LATE BRONZE AGE. PHOTO: ELLEN MEIJER, TANUM HÄLLRISTNINGSMUSEUM, UNDERSLÖS

The sun horse from Kalleby seems to be a stallion, but due to severe weathering of the rock surface, this determination is not absolutely clear (Figure 10). Once again, a horse pulls the sun by means of a string connected to the back of its head. It is important to note that, in this case, the sun is represented by a wheel-cross. Thus, the very sun could be depicted as a wheel-cross. The sun itself and the symbol related to the movement of the sun thus merge together. The sun horse from Kalleby is placed over a ship, not standing in the ship. In some cases, the sun horse from Kalleby (Tanum 417) has erroneously been determined as a sun-stag. Due to the meticulous documentation work by G. Milstreu, it has become evident that we are facing a true sun horse – the ‘antler of the stag’ is actually formed by the strokes representing the crew of a ship just over the head and back of the horse (Glob 1969: 173; Milstreu 1978: 14; Kaul 1998 a: 14-15).

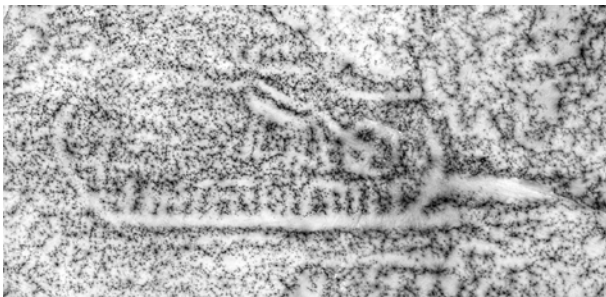


FIGURE 10. THE SUN HORSE FROM KALLEBY, T-418, WITH ITS WHEEL-CROSS SUN, LATE BRONZE AGE. RUBBING: TANUMS HÄLLRISTNINGSMUSEUM, UNDERSLÖS.

At Varlös, there are two sun horses, both stallions. Here, I shall only mention the best-preserved horse figure, not damaged by weathering (Figure 11). The sun horse is seemingly pulling the sun, represented by a larger cup mark, connected to its tail. However, there is a line running parallel with the tail, which could be a rendering of an independent pulling string fastened at the hindquarters of the horse (Kaul 1998 a: 13-14).

A sun horse from Bro, undoubtedly a stallion, pulls the sun by its tail, the sun represented by a cup-mark (Figure 12). The horse is characterized by a very high, straight neck, held vertical. These features indicate a date to an advanced phase of the Late Bronze Age, though an early Pre-Roman Iron Age date should not be excluded (Kaul 1998a: 16-17; Kaul 2004: 306-310).



FIGURE 11. ONE OF THE SUN HORSES FROM VARLÖS, T-269, LATE BRONZE AGE. RUBBING: TANUMS HÄLLRISTNINGSMUSEUM, UNDERSLÖS.



FIGURE 12. THE SUN HORSE FROM BRO, T-192, LATE BRONZE AGE, C. 600 BC. RUBBING: TANUMS HÄLLRISTNINGSMUSEUM, UNDERSLÖS.

A plastic Early Bronze Age bronze horse figure (c. 1400 BC) from Tågaborg, Helsingborg, Scania, Sweden is phallic, though not pronounced (Montelius 1917: no. 980), thus also belonging to the male category. This horse may be considered as a sun horse.

Among the sun horses and other horse figures, it is in many cases not possible to determine the sex, since there are no male characteristics to observe. Whether those horses, such as the sun horse from Balken (Figure 8), should be considered as a female horse by this negative evidence is an open question. However, some horse figures may give us a hint as to the mythological existence female sun horses. A sun horse from Kalleby is standing in a ship. The sun is represented by a cup-mark pulled by its tail. A cup mark creates a semicircular widening of the belly of the sun horse (Figure 13). Would this cup-mark indicate that the horse is pregnant, thus a female? (Kaul 1998a: 15-16).

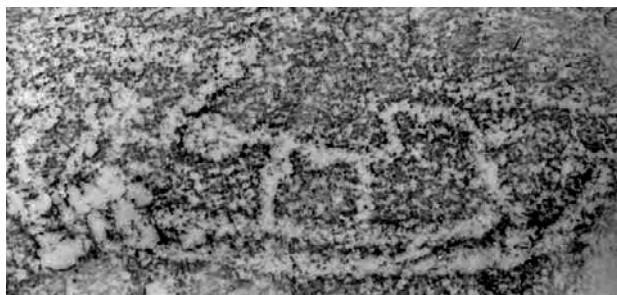


FIGURE 13. A SUN HORSE FROM KALLEBY, T-422, PERHAPS A PREGNANT SUN HORSE. RUBBING: TANUMS HÄLLRISTNINGSMUSEUM, UNDERSLÖS.

Among the horse figures on the bronzes, such as the razors, there are other hints indicating a female nature of the sun horse. On a Late Bronze Age razor from Kelseby, on the island of Bornholm, a row of stylized and interconnected sun horses are related to snake-figures. Beneath these horses can be seen four snakes. The head of the two large snakes are in direct contact with the bellies of two of the horses. What we see here, might be thought to be snakes biting horses. However, it is probably something completely different, namely snakes that are suckling milk from sun horses. If we venture to interpret this picture along these lines, it can give us further interesting information about the role of the sun horse and the snake in Bronze Age mythology. We have seemingly become involved in a narrative of a myth, which tells of the birth and growth of the snake/snakes, the snakes getting strength by suckling milk from female sun horses (Kaul 1998b: 224-229; Kaul 2005b: 107-108).

An odd motif, which is seen on a rock carving from Gråbrekk, North Trøndelag, Norway, is hardly possible to interpret. A strange horse figure (?) with an oversize head has, in its belly, a snake figure (Grønnesby 1998: 40-42; Kaul 2004: 327-328). If the snake and the horse figure are to be considered as parts of one deliberately executed coherent motif, this motif could be understood as a pregnant horse, perhaps just giving birth to a snake – in that case a mythological motif, since horses are not normally giving birth to, or carrying, snakes.

The sun horse on the Chariot of the Sun

In the mythological universe related to the eternal voyage of the sun, there seems to be more than one sun horse in action. A day-sun horse had its finest hour at midday, but other iconographic horse figures on the bronzes, indicate that the sun horse or sun horses had a function during the night, perhaps at midnight, the underworld-positioned equivalent to the sun horse at work at midday (Kaul, 1998 b; Kaul 2004; Kaul 2018). When assuming that the sun horse had a male aspect as well as a female aspect (see above), there are two logical alternatives, which in the illogical nature of religious beliefs may be seen as one single coherent solution. There could be two (or more) sun horses: one male, one female, or, the very same sun horse could change sex during the daily and nightly cycle. In a mystical way, however, the two different sun horses, could be manifestations of the very same sun horse.

When considering the possibilities for both male and female sun horses, the fine horse figure of the Chariot of the Sun is of crucial importance. Our immediate observation is that the sex of the horse is not clearly determinable, as no phallic features are recognizable (as is the case with the Tågaborg horse figures, Scania, South Sweden, which is contemporary with the Trundholm horse figure (Montelius 1917)). There is something, which could be the labia, but matters are not that clear. The sun horse from Trundholm may be a mare. If that is the case, the sun-horse, or sun-horses, could manifest itself/themselves both as stallion and mare (see above).

When looking carefully at the ears of the Trundholm sun horse, it is clear that they are raised and they point forward. In addition, the concavities of the ears are trained forward. For those acquainted with horses, or horse breeding, this ear position signifies a horse in a friendly mood, though attentive. If the ears did point backwards, then we would have been facing a horse being in quite another mood, angry, aggressive or afraid. Thus, the sun horse from Trundholm is seemingly on friendly terms with humans/priests/priestesses. It is not possible among those sun horses mentioned above to distinguish a particular ear position. However, when considering the most stylized sun horses on the bronzes (see Figure 7) as well as the handles with a horse's head on the Late Bronze Age gold cups, it is the friendly ear position that is seemingly exaggerated.

A hitherto unrecognized anus, and what comes out of it

When closely studying ‘the personal parts’ of the sun horse from Trundholm, one bodily feature, just underneath the root of the tail, namely the anus, or in common terms, the asshole, is clearly recognizable (Figure 14). The anus, at its correctly anatomical position, is seen as a clear-cut shallow circular depression, with a diameter at around 2.5 mm (Figure 15). In the primary publication of the sun image and the sun horse from Trundholm (the Chariot of the Sun), this important anatomical feature is not mentioned (Müller 1903). When writing about the casting process of the horse figure of the “Chariot of the Sun” from Trundholm, H. Dreschler mentions that the small cavities of the eyes and the anus of the horse figure were cut out of the wax model: “*Augen und der After wurden aus dem Wachs Herausgeschnitten*” (Drescher 1962: 44). This is referring to the “lost wax casting method” – *cire perdue* – where a sculpture or object was shaped in wax as a part of the working process, every feature being created in a wax model before the casting proper. Consequently, I must admit, that this particular anus has not been totally disregarded in the proceedings of archaeological research, which the headline may suggest.



FIGURE 14. THE SUN HORSE ON THE CHARIOT OF THE SUN, TRUNDHOLM BOG, NORTHWEST ZEALAND, DENMARK, SEEN FROM BEHIND. JUST BENEATH THE TAIL, WHICH WAS REMOVED FOR CONSERVATION PURPOSES, THE LITTLE ANUS IS CLEARLY VISIBLE. PHOTO: F. KAUL.



FIGURE 15. CLOSE-UP OF THE ANUS, JUST BENEATH THE ROOT OF THE TAIL OF THE HORSE FIGURE ON THE CHARIOT OF THE SUN, TRUNDHOLM BOG, NORTHWEST ZEALAND, DENMARK. DIAMETER OF ANUS: C. 2.5 MM. PHOTO: F. KAUL.

However, the anus of the Trundholm horse figure has never as such been treated or discussed in the scholarly literature. Even though, for instance, the head of the horse is somewhat stylized, it must be admitted that a certain realism has been attempted by the artist, and that there is a meaning behind it. This realism includes the other end of the horse as well.

Here, we need to pose the question: Why was it important for the artist and the religious specialists behind to include the anus in the sculpture of the sun horse? The sun horse was a divine creature – and we must assume that the physical horse at that time in some way was regarded as a sacred animal – probably as an earthly, fleshly manifestation of the sun or the cosmological principles related to the sun. Thus, what came out of an earthly horse was something sacred, probably more sacred than what came out of other animals,

considering the paramount divine qualities of the (sun)-horse. Apart from the presumed sanctity itself, the excellent fertilizing qualities of horse droppings may have been appreciated by the Bronze Age farmer. In that case, the idealized effect was enhanced by the sun's (and the sun horse's) relation to fertility and growth.

However, I would like to add another important role of horse droppings, here related to Bronze Age craftsmanship, namely the lost wax casting method, *cire perdue*. When at excavation or studying pottery and burnt clay objects in the museum collections, it is often possible just by visible examination to distinguish between 'normal' pottery sherds and remains of clay moulds for *cire perdue*, even when dealing with minute fragments. The mould fragments are characterized by a porosity of the burnt clay, the material being full of tiny bubbles, whereas 'normal' pottery is much more solid. This porosity is due to the tempering of the clay by plant material, such as grass or leaves, which evaporated when the mould was burnt. The use of organic elements as tempering has been described and explained as follows: „Durch die Einwirkung des Feuers verglühten die Organischen Zuschläge im Lehm, wodurch dieser porig wurde, was später beim Guss für die Aufnahme von Luft und Gasen vorteilhaft war und vielleicht auch einer Entstehung von Rissen entgegen wirkte.“ (Drescher 1962: 44); and, „Durch die Zugabe organischen Materials kann erreicht werden, dass sich bei Brennen feine Hohlräume in der Keramik bilden, die sie gasdurchlässig machen.“ (Jantzen 2008: 96). In other words, when the liquid bronze at high temperature was poured into the mould, the airy bubbles could make room for the expansion of the air; the mould would not split, and the liquid bronze would run into the mould without hindrances from the air escaping the mould.

When considering the sophistication of Nordic Bronze Age bronze casting (Rønne & Bredsdorff 2011; Wrobel Nørgaard 2015), the tempering could barely consist of only organic material. Some medium carrying this material was seemingly needed. In many societies all over the world, working with *cire perdue* casting, animal excrement, such as cow dung, is mixed with the clay, the remaining not fully digested plant elements of the dung in this way being nicely mixed within the clay (personal communication, Helle Helsner, h2 studio, Ireland).

Far removed in time from the Bronze Age, a medieval written source may give us another hint. In the work by the German Benedictine monk Theophilus, *De Diversis Artibus*, written shortly after AD 1100, complex *cire perdue* casting is treated. We are here informed that the clay should be tempered or mixed with dung.

The qualities of different sorts of dung for *cire perdue* mould material has been tested by experimental archeology. Helle Helsner, while working with the Irish bronze casting group Umha Aois, has successfully used horse droppings mixed into the clay when making replicas of Bronze Age objects. Her recipe for a mould is 1 unit red clay already tempered with a fine grit to 1 unit horse droppings. In some cases, more grit is added. Helle Helsner prefers to do the kneading work a couple of weeks ahead, so that the horse dropping material ferment or mature becoming well merged with the clay. At times, when delicate ornament details are to be transferred from the wax to the clay, a finer and smoother clay, though still with horse dropping material, is applied as the first on the wax model. In order to test the possible qualities of tempering the clay by plant material only, grass and husks was used. It turns out that when using plant material only, the mould becomes more coarse and fragile than when using horse droppings (personal communication, Helle Helsner, h2 studio, Ireland).

It can be concluded that the addition of horse droppings to the clay makes the mould stronger, more heat resistant, and more stable at burning and casting. The porous character of the mould makes it easier for the hot air to escape the mould when casting, also making it possible to reduce the number of air canals.

If horse droppings as mould material were appreciated in the Nordic Bronze Age, then we must reconsider the significance of the horse, widening our concepts of the uses and roles of the horse. Apart from being a sacred animal, the helper or conveyer of the sun in the trans-empirical facies of Bronze Age religion – and an animal used for prestigious chariot riding in the earthly world of rituals – the horse became the maker of an essential substance related to Bronze Age craftsmanship.

Without the horse and its end product, it may have been unfeasible to produce objects like the (finest) spiral decorated belt plates. Without the horse and its droppings it might have been impossible to create the Trundholm plastic horse figure in wax – with its anus from which the droppings came – making it possible to create the casting of the Trundholm horse figure... and so forth...

Furthermore, the casting work should not be seen as something solely practical, but as a ritual process, of course involving special knowledge and skill (Goldhahn 2007). In a mystical way, the artisan was a master of transformations of materials and shapes, with references to mythology and divine powers.

Seen in a chronological perspective, the introduction of the domestic horse in the Nordic Bronze Age culture around 1500 BC (Kveiborg 2017) could be seen as a prerequisite for the development of such highly skilled casting techniques. With the knowledge of the handling of horses and of horse breeding, introduced from areas far to the South, perhaps the knowledge of advanced *cire perdue* technology was also introduced and re-formed in a Nordic context, partly by means of what came out of the anus of the horse. Perhaps the advance of horse breeding was accompanied by the advance of improved skills in *cire perdue* casting.

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Chapter 5

The winged triad in Bronze Age symbolism: birds and their feet

Kristian Kristiansen

Gerhard's lifetime contribution to rock art studies is monumental. Through international summer schools about principles of documentation, monographs (Milstreu and Prøhl 2009), and his journal *Adoranten*, he has educated generations of rock art scholars from around the world. He also took part in documentation projects in Denmark and Val Camonica, and became a central person in the early years of the Swedish Rock Art Archive (www.shfa.se). I shall therefore in this contribution discuss a group of rock art symbols and compare them to the wider world of the Bronze Age, especially Mycenaean bird symbolism, followed by the central European Urnfield water birds. However, I choose to consider a specific symbolic representation: the triple fork or bird's toes, which, however, start as a bird symbol arising from the sun. Later it is transformed and can appear as hands of rock art figures, having perhaps a dual meaning linked to both life and death.

The birth of the gods: the winged triad and their symbolism

In Tanum we find on several rock art panels a recurring motif: a massive sun disc from which bird like figures are attached and in several cases they are on their way out. We know it must be a sun disc from a carving with the sun horse drawing the sun from which the birds are leaving (Figure 1a-c). Sometimes as in Figure 1a twin figures are holding the sun disc before the birds are leaving. On several representations the birds occur as triples. Similar representations are also known elsewhere, and on metalwork we find it on the famous Wismar horn. Thus, we can date this solar/bird representation to the early Nordic Bronze Age, Period II-III (1500-1100 BC). This chronology is important to establish before finding suitable comparisons. On Figure 1a this motif is found alongside three other mythological 'divine' birth scenes from the same period: in the upper part to the left we see the birth of the Divine Twins, represented by two foals and a grown mare, on a ship, and to the right just below the solar/bird scene we actually see the pregnant mare. A train of bulls shows the central role of the bull, both as a symbol of the sky god, and as the most prestigious animal among Indo-European speaking societies.

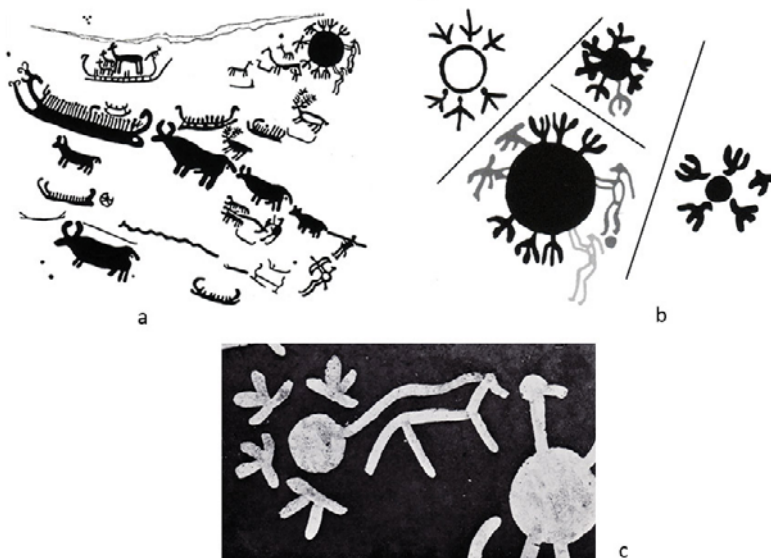


FIGURE 1A-C. ROCK ART MOTIFS WITH SUNS AND EMERGING BIRDS (FROM FREDELL 2003)

We can now ask what does this solar/bird motif mean, and do we know of any parallels?

In some elaborate golden bird ornaments from famous Aigina treasure (Fitton 2009) of late Minoan/ Mycenaean culture we do find birds, often three, on their way out from what could be a sun disc (Figure 1a-b). We cannot say what type of birds or their meaning. From written sources we know there existed a Minoan dove goddess, without name. In Mesopotamia Istar and Astarte had bird feet, triple toed. But she had owls at her side. Some would see the birds on one of the ornaments of the Aigina treasure as owls. What we witness here is a constellation of triple birds flying out from what looks like a sun disc, as in the Nordic rock art. We also see two dancing figures, probably humans in the centre, with their backs to each other, above which two opposing dogs/horses are placed. These figures bear some resemblance to a similar motif on rock art from the early Bronze Age (Figure 1c). To unravel some of the mystery surrounding the motif of the triple birds let us look briefly into Indo-European mythology.

Three was a magical number in Indo-European mythology, and birds, especially water birds, were associated with renewal of life (Greene 1997). The crane was sacred to early Celts, who left behind many votive images of the bird. Manannan Mac Lir, the Irish god of the sea, who had a magical bag made from the skin of a crane who was his lover magically transformed. The underworld god Midir owned three cranes to guard his home, and to see three cranes is an omen of death. The crane was also an emblem of envy, and Irish legend has many stories of women transformed into cranes by rivals. In Irish mythology Clodna, an Otherworld Queen of Munster, also possesses three magical birds, whose song can restore the health of the wounded. Besides her residence in Munster she, like Rhiannon, is said to inhabit a magical isle where adventurers live in an Otherworld paradise, freed from the passage of time. Ravens were also magical and linked to the gods: *'Otherworld deities Lugh and Midir are both accompanied by pairs of magical ravens. (This symbolism is echoed in Norse mythology, where the raven is the messenger of the father-god Odin) Images of three interlinked ravens are emblems of the triple goddesses of sovereignty, particularly the Morrigan'* (from Symbol Dictionary.Net: Celtic Animal Symbols: Birds). Likewise swans were linked to the sun goddess.



FIGURE 2A-C: GOLDEN ORNAMENTS FROM THE AIGINA TREASURE, SHOWING SUN BIRDS/OWLS, SUN DISCS, AND IN THE CENTRE TWO FIGURES WITH THE BACKS TO EACH OTHER, ABOVE WHICH STANDS TWO DOGS OR HORSES, ALL SURROUNDED BY A HUGE SNAKE. FOR COMPARISON: THE ROCK ART SCENE THAT CLOSELY RESEMBLES THE TWO HUMAN FIGURES.

If we next consider archaeological evidence we find that three birds or swans/water birds are linked to the sun, and the drawing of the chariot of the sun, as exemplified on the Duplje sun chariot (Kristiansen and Larsson 2005: Figure 139). Swans are prominent carriers of the sun boat during the Late Bronze Age, they replace the horse head on Nordic razors, and they carry the sun on a boat on Urnfield metalwork (Kaul 2018). We must therefore assume a shared understanding of the sun god being carried by three swans from Greece to Scandinavia during most of the Bronze Age, starting during the early Nordic Bronze Age, but unfolding especially during the Urnfield Culture after 1300 BC (Bilic 2016). The bird triad emerging from the sun is thus the divine helpers, who carry the sun and the sun chariot during the later Bronze Age. Indo-European speaking peoples shared a cosmological world view of three realms, the upper realm/heaven, the middle realm/earth and the underworld. The underworld would often be linked to the sea (Shaw 2012), which corresponds to the journey of the sun through these three realms (Kaul 2018). Perhaps we should see the triple birds and their symbolism in triple feet as relating to the three realms, and perhaps the underworld.

The three fingered figure, or three-fork, which could both symbolize a bird as well as their three fingered feet are often found on raised human hands on rock art, perhaps to praise the sun, but also as the tail of the sun horse (Figure 3). Thus bird symbolism and bird feet symbolism merged during the Bronze Age. The symbolism of divine birds carrying the sun whether on a boat or a chariot/wagon (Becker 2018: Figure 3.20), could be employed as a three fork/finger symbolism of bird feet in other contexts, as part of the transformation of gods to birds. Bird masks were frequently worn by rock art human figures, symbolizing their connection with the divine and likewise we should see the replacement of hands with three fingered bird feet as another aspect of such transformative powers. Birds could travel between this world and the otherworld, as well as between the realms, whether underworld, middle world or heaven/sky (Kristiansen 2013: Figure 10.2). This opens up for yet another or additional interpretation of the triad of birds, linked to death and the souls of the dead.



FIGURE 3: THE THREE FORKED SYMBOL, ON THE TAIL OF A SUN HORSE, AND ON THE LIFTED ARM OF A NAKED (?) HUMAN FIGURE, STANDING NEXT TO A NAKED FIGURE WITH RAISED AXE, THREATENING A FULLY CLOTHED PERSON (WOMAN?) PRESENTING SOMETHING. FROM AN EARLY BRONZE AGE BURIAL FROM SAXONY

Sunbirds as death demons?

The sun stands for both fertility and death: fertility when it rises, and death when it disappears into the underworld, from where it has to be rescued to rise in the morning. Therefore the sun figures prominently in burial symbolism.

The most critical transformation was that from death to the afterlife. Therefore, Bronze Age burial rituals across western Eurasia mobilize all of the major gods: the first step of the construction of the barrow was a circular stone ring, sometimes with spokes to symbolize the sun wheel, and later the barrow itself was added as a symbol of the rising sun. But first the burial itself was placed in the centre of the stone ring. An oak tree was commonly used for the coffin, symbolizing the tree of life, and the dead and his/her belongings were always wrapped in the fresh hide of an animal (ox or cow) sacrificed to the sky god. In this way, the tree of life, the sky god and the Sun god supported the journey to the afterlife. The dead would thus enter the eternal cycle of the sun into the afterlife. Later in the Bronze Age, a ship often took over the transport function, represented by numerous stone ship settings around the Baltic.

However, when you lose your life in battle, or in places without the possibility of a proper burial, it is crucial that your soul can be brought back to the afterworld. This function was taken care of by winged vultures/birds, who could also act as death demons, a feature known all over Europe and the Mediterranean from the beginning of the Iron Age in textual and iconographic evidence (Egeler 2009). Egeler, in his analysis of the birds and winged creatures that bring the dead bodies back into the afterworld/heaven, perhaps the sun, demonstrate their shared functions throughout Europe, even if they were given different names (Valkyries in Norse mythology, Bodb, in Irish mythology, Vanth in Etruscan mythology, Sirens in Greek mythology). It suggests their origin in a shared Bronze Age cosmology, brought about by traveling warrior elites. The humans with bird masks and sometimes a raised arm with the tri-fork, perhaps symbolize this female demon, and the birds emerging from the sun in Scandinavia and Greece during the middle of the 2nd millennium BC are perhaps not only forerunners for the swans that carry the sun, but could also represent the birds that leave the sun to find the dead souls and bring them back.

Concluding reflections

It has not been possible to reach safe conclusions as to the nature and role of the emerging sun-birds in Nordic early Bronze Age rock art, although some propositions could be made. However, the bird motif emerging out from a centre, perhaps the sun, had parallels in the famous Aigina treasure probably from the same period as the rock art. They could be said to represent a northern and southern version of a shared Bronze Age cosmology where birds, and among them sun birds, played a prominent role. In central Europe, bird motifs were instead portrayed in pottery during this period (Sofaer 2018). It was only by the later Bronze Age that the water bird motif became universally adopted in bronze metalworks throughout Europe.

However, the symbolic role of various types of birds in Indo-European mythology is evident, and the triad of birds were well known in Celtic mythology. It could also be demonstrated that the symbolic representation of birds as three-forks was adopted more universally and employed on human hands as well as in animals. Once again demonstrating the symbolic sophistication of Bronze Age cosmologies.

Kristian Kristiansen

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Chapter 6

Gerhard and the rock carvings of Bornholm

Finn Ole Sonne Nielsen

Gerhard and I met for the first time on 9 May 1995 at The National Museum of Denmark, Copenhagen, on the occasion that we were both recipients of travel grants from the Erik Westerby Fund. We talked about the great potential there was on Bornholm to work with rock carvings, as well as a new find of an extremely unusual rock art panel on sandstone, at Sorthat Strand. Three years passed by before Gerhard, together with Flemming Kaul, came to Bornholm to document the panel at Sorthat Odde (Figure 1). This visit marked the beginning of yearly visits, often together with Flemming, who, in 1999, started the project *Skibe på sten* (Translation: Ships on Stone), under the Marine Archaeological Research



FIGURE 1. SORTHAT STRAND. THE ROCK CARVINGS WERE FOUND IN 1994 BY THE LOCAL 'ROCK ART NERD' ('HELLERISTNINGSNØRD') MOGENS JENSEN. THE ROCK SURFACE IS OF EARTHFAST YELLOW/BROWN HASLE SANDSTONE, CIRCA 190 MILLION YEARS OLD. ON THE ROCK SURFACE, 26 GROVES/LINES, FEW LARGE AND MANY SMALL CUP-MARKS. TO THE RIGHT OF THE IMAGE, A WHEEL CROSS WITH CUP-MARKS, A HORSE FIGURE, A HOOK-SHAPED FIGURE, TWO CIRCULAR AND TWO BIRD-FOOT-LIKE FIGURES. THE PANEL WAS ORIGINALLY LARGER: A LARGE FRAGMENT WITH CUP-MARKS AND REMAINS OF CIRCLES ARE FOUND SEPARATED FROM THE MAIN SURFACE. IF THE CARVINGS HAD NOT BEEN COVERED BY SAND DUNES, WIND AND WEATHER WOULD HAVE REMOVED THE CARVINGS. THE ROCK CARVINGS HAVE, AT ONE TIME, BEEN AT THE SHORELINE, 3.3M OVER THE CURRENT MEAN HIGH WATER MARK. THE SEA MAY ALSO BE THE REASON WHY THE CONTEMPORARY GROUND SURFACE BELOW THE STONE IS NOT PRESERVED. THE SEA LIES 25M FROM THE STONE TODAY. INVESTIGATED WITH FINANCIAL SUPPORT FROM THE RIGSANTIKVARENS ARKÆOLOGISKE SEKRETARIAT. PHOTO: GERHARD MILSTREU, 6 JUNE 1998.

Centre, in Roskilde. In 2000, Bornholms Museum received, through an award from the State Council for Museums, the possibility to employ Gerhard, together with local 'helleristningsmand' Mogens Jensen, to register and document over 200 panels (Figure 2). Gerhard had, from Tanum, experience with large EU projects and in 2002 succeeded in getting Bornholm included in the large, EU funded, international rock art project Rock Art in Northern Europe (RANE), that was, overall, directed from Gothenburg. Over a 3 year period, Gerhard was project leader for the Danish component, together with departments of Prehistory, Conservation and Marine Archaeological Research (NMF) at The National Museum. On Bornholm, the project was carried out with Bornholms Museum and Bornholms Regionskommune; as well as the local collaboration partners of: Natur Bornholm, Destination Bornholm and De Bornholmske Amøtørarkæologer (abbrev. DBA; translation: The Association of Amateur Archaeologists on Bornholm).



FIGURE 2. GERHARD AND FLEMMING PRESENT A FROTTAGE OF THE SPECIAL WHEEL-CROSS FROM THE MADSEBAKKE-PANEL TO THE QUEEN AND THE PRINCE CONSORT. PHOTO: NIELS-HOLGER LARSEN, 31 MAY 2001

The project, that finished at the end of June 2006, placed serious focus on the rock carvings of Bornholm. P.V.Glob, in his book *Helleristninger i Danmark* (1969) only mentions 124 localities, but this created a renewed interest concerning rock carvings. In 1993, in connection with a new exhibition of Prehistory at Bornholms Museum, the total had risen slightly to 220, of which: 52 had disappeared, usually dynamited, and 6 were in the grounds of Bornholms Museum. Of the many panels, only 39 were protected by court order (editors note: *tinglyst fredning*). Martin Stoltze and Mogens Jensen were especially active and responsible for finding many of the 171 new sites that were registered up to 1998. At the project's close, the total was more than 400 localities; most bowl shaped depressions, cup-marks, but also 22 panels with figurative art, including 125 ships.

The RANE project took, as its starting point, the preservation of rock carvings, namely that due to weathering and acid rain, the panels are in the process of disappearing. It was therefore crucial to register and document all the rock art panels on Bornholm and evaluate their condition. Moreover, Gerhard was the driving force behind the fact that an improved focus was placed on dissemination, marketing, information and access to a range of selected rock art panels (Figures 3-13).

Helleristninger



Ved Altersten, Fandens Kglebane i Nexø og i Aakirkeby, Maresø, Bavneshøj, Offersten og St. Almegård findes også informationstavler. Helleristningssten ved Bornholms Museum og Brændegård er offentligt tilgængelige. Se også www.bornholmsmuseer.dk/ranebornholm/hellerist2.htm

FIGURE 3. SCANDINAVIA AND DENMARK'S SOUTHERNMOST CONCENTRATION OF ROCK CARVINGS ARE FOUND ON BORNHOLM. AT LEAST 600 PANELS WITH CUP-MARKS AND, AT THE TOP OF THE ISLAND, A REGULAR CONCENTRATION OF FIGURATIVE ROCK ART, WITH AT LEAST 175 SHIPS. IT IS UNSURPRISING, SINCE MOST OF THE ISLAND CONSISTS OF GRANITE AND SANDSTONE, THAT EACH YEAR NEW CARVINGS ARE FOUND BOTH IN THE CULTIVATED AND FOSSILIZED CULTURAL LANDSCAPES. EVEN THOUGH AGRICULTURE AND THE STONE INDUSTRY HAVE REMOVED HUNDRED OF PANELS, IT IS STILL POSSIBLE TO SEE PATTERNS IN THE PLACEMENT OF ROCK CARVINGS IN THE BRONZE AGE LANDSCAPE (DATED TO 1000-500 BC.). FROM NIELSEN (2006), FORTIDSMINDER PÅ BORNHOLM, PUBLISHED BY THE DEPARTMENT FOR NATURE & THE ENVIRONMENT, BORNHOLMS REGIONSKOMMUNE.



FIGURE 4. GUIDE TO THE ROCK CARVINGS, PRODUCED BY GERHARD MILSTREU IN COLLABORATION WITH HANNE STRØBY, DESTINATION BORNHOLM, 2004.



FIGURE 5. GUIDE TO ROCK CARVINGS PRODUCED BY MARTIN STOLTZE, AS PART OF THE RANE PROJECT, 2004.



FIGURE 6. EXCERPT FROM LILLE MADSEBAKKE: BORNHOLMS, AND DANMARK'S, LARGEST ROCK ART PANEL. LILLE & STORE MADSEBAKKE WERE THE STAR TURN IN THE EXHIBITION "ROCK CARVINGS: BORNHOLMS SACRED IMAGES", INSTALLED IN COLLABORATION WITH VISUAL ARTIST, MARTIN STOLTZE



FIGURE 7. MARKETING. THE RANE PROJECT'S BORNHOLMSKE LOGO INCORPORATED IN THE QUESTIONNAIRE THAT GERHARD MANGED TO GET PRODUCED IN COLLABORATION WITH DESTINATION BORNHOLM.



FIGURE 8. BORNHOLMS ANDELSMEJERI FOR YEARS ALSO PURSUED THE CAMPAIGN TO PROMOTE THE ISLAND'S ROCK CARVINGS. PHOTO: BORNHOLMS TIDENDE.



FIGURE 9. ARTIST SUNNY ASE-MOTA WAS ALSO INSPIRED BY THE ROCK CARVINGS, AND FOR YEARS ONE COULD SEE HIS ROCK CARVING BUS ON THE REGIONAL ROUTES. PHOTO: FON, 14 JUNE 2011.



FIGURE 10. IN CONNECTION WITH THE QUEEN'S VISIT TO MADSEBAKKE, 25 MAY 2005, GERHARD ENTERTAINS THE ASSEMBLED COMPANY. THE FORMER CHAIRMAN OF BORNHOLMS MUSEUMSFORENING, LAWYER CHRISTIAN DOHN, HOLDS THE BOOK ON ROCK CARVINGS THAT WAS PUBLISHED TO MARK THE END OF THE RANE PROJECT. THE POPULAR, SCIENTIFIC, BOOK "HELLERISTNINGER. BILLEDER FRA BORNHOLMS BRONZEALDER" WAS PUBLISHED IN COLLABORATION WITH SKALK'S PRESS: WORMIANUM AND ITS EDITOR, CHRISTIAN ADAMSEN. PHOTO: NIELS-HOLGER LARSEN.



FIGURE 11. PAINTING WITH CHALK POWER SUSPENDED IN WATER OF THE 'WARSHIP' AT KNÆGTEN, 24 APRIL 2003. PHOTO: FLEMMING KAUL.



FIGURE 12. DOCUMENTATION OF THE EDELØKKE PANEL UNDER THE WATCHFUL EYE OF A HEREFORD BULL. PHOTO: JØRN PETER LÆRKESEN, 18 NOVEMBER 2004.



FIGURE 13. TAKING DIGITAL PHOTOS OF THE SHIPS WITH CHALK POWDER SUSPENDED IN WATER. THE SHIPS STAND ON A PROMINENT OUTCROP WITH A FINE VIEW TO ERTHOLMENE AND OUT OVER THE BALTIC. IT WAS GERHARD HIMSELF WHO NOTICED THE CARVINGS. PHOTO: JØRN PETER LÆRKESEN, 18 NOVEMBER 2004.

Bornholms Museum chose to place emphasis on locating undiscovered carvings and gain knowledge about which stones and rock surfaces were selected above other seemingly equally suitable examples. The project 'Rock Carvings In Their Archaeological Context' led to a collaboration between The National Museum and The Association of Amateur Archaeologists on Bornholm. In 2003, as part of the RANE, project, a number of small trial trenches were dug. Based on these initial findings, Bornholms Museum received an award of 900,000 DKK from The State Humanities Research Council, the senior scientific grant giving body in Denmark (now *Den Frie Forskningsråd*). Here, a more thorough investigation was carried out of Denmark's largest rock art panel, Madsebakke, and four smaller research excavations: Lille Strandbygård, in Nylars, Fandens Keglebane, South of Nexø and Vasagård, in Åker, together with a ship shaped burial cairn, at Egeby also in Åker (see www.bornholmsmuseer.dk/ranebornholm/SHF.htm). The investigations were carried out in close collaborations between landowners, The Department for Nature and Environment, Bornholms Regionskommune and the Office of Prehistoric Monuments at the Danish Agency for Culture. The excavations were for the most part carried out by personnel connection to The National Museum, led by Flemming Kaul, in collaboration with Bornholms Museum.

The RANE project finished at Bornholms Museum with the exhibition “*Helleristninger Bornholms Hellige Billeder*” (“*Rock Carvings: Bornholms Sacred Images*”)(Refer also: www.bornholmsmuseer.dk/ranebornholm/Hellerist2.htm), together with the publication of a revised guide to the prehistoric monuments of Bornholm “*Fortidsminder på Bornholm*”, produced by Bornholms Regionskommune in collaboration with Bornholms Museum.

Also after the RANE project, applications concerning rock art have succeed with several awards from The Queen Margrete II’s Archaeological Fund and the 15 June Fund, in order to continue the work concerning the excavations around rock art panels.

As a strand within The Danish Agency for Culture’s project “Denmark’s Prehistory in the Landscape”, in 2012, in collaboration with Naturstyrelsen Bornholm’s (translation: The Danish Nature Agency, Bornholm), signs and information boards were installed as part of an improved presentation of the Bronze Age landscape around Madsebakke and Hammersholm. Realdania have subsequently funded, in 2016, three distinctive, architect designed, round viewing benches on Hammersholm.



FIGURE 14. GERHARD WITH THE BRUSH, PAINT POT WITH WATER SOLUBLE CHALK BY SOME NEWLY DISCOVERED CUP-MARKS SPOTTED IN THE BEAMS OF THE CAR HEADLIGHTS AND THE LIGHT OF THE MOON ON HAMMERSHOLM. THE AREA IS POPULARLY CALLED “THE TOP OF BORNHOLM”. OVER 70 PANELS ARE REPORTED WITH CARVINGS. AS WITH MANY OTHER PLACES ON THE ISLAND, THERE HAS BEEN EXTENSIVE QUARRYING, THAT BEGAN ONWARDS FROM THE 1880’S, DESTROYING MANY ROCK ART PANELS. THE AREA WAS PROTECTED IN 1906 AND PURCHASED BY THE STATE IN 1969. PHOTO FOTO: 16 MAY 2011.



FIGURE 15. GERHARD IN THE PROCESS OF PAINTING WITH PERMANENT PAINT ON HAMMERSHOLM 34. THE PANEL WAS FOUND IN MAY 2005 BY MARTIN STOLTZE & ANN-LOUISE SVENSSON. PHOTO: FON 10 JUNE 2011.

The greatest result came on 19 May 2009, when the Danish Society for Nature Conservation were successful in placing a protection order, effective from 8 September 2011, over the central area, around Madsebakke. The Danish Nature Agency have, in connection with the protection order, purchased 25 hectares of the 41 hectare protected area and merged it with the area of Hammersholm, that has been in their ownership since 1969. The protected area around Madsebakke is thus connected to the many panels that are known on Hammersholm. At a reception held on 14 March 2012, 8 hectares were transferred to Foreningen Bornholm, thanks to support from the Sparekassen Bornholms Fond. An additional 8 hectares remain in private ownership, including Store Madsebakke and the area of springs, Sødekilde.

Gerhard's inspiration, initiative and never resting focus on the work with the rock carvings of Bornholm has caused it to become one of the museum's main focus areas. Post 2005, there have been fewer visits, but when new figurative art must be documented the expert comes to the island (Figure 14-15). The work continues into the present. In 2013, an apprentice of Gerhard, the English archaeologist James Dodd, came to the island (Figure 16). Since 2017, James has been attached to Aarhus University as a PhD student, with delivery of the dissertation, in 2021, taking the carvings of Bornholm as one of its starting points.



FIGURE 16. "THE SORCERER'S APPRENTICE". SJÆLEGÅRD 3, IN OLSKER, WITH INDICATIONS OF ONE VISIBLE SHIP AND SEVERAL POSSIBLE FIGURES CHALKED DURING THE PREVIOUS NIGHT. FROM LEFT: MARTIN STOLTZE, ANDREAS KIHL MIKKELSEN, LEANNA WIGBOLDUS AND JAMES DODD, WITH THE BROOM. PHOTO: FON, 12 JULY 2013.

Finn Ole Sonne Nielsen. Chief Archaeologist, Bornholms Museum

Translation: J. Dodd

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Chapter 7

Rock Art and Burial Landscapes – Danish Rock Art in Burial Mounds

Louise Felding

Abstract

This article investigates Bronze Age burials with rock art in present day Denmark. Rock art found in burial mounds is not uncommon, but only 36 examples from secure individual grave contexts are known (2009 data). No clear signs of ritual paraphernalia are found in the graves but sadly the preservation is bad. The deceased are considered to be of high social status, with special knowledge regarding the meaning of the rock art.

Keywords: *rock art, burials, Bronze Age, Denmark*

Dedication

It is a pleasure to be writing in this volume dedicated to Gerhard Milstreu. Gerhard is, with his lifetime dedication to rock art, a true inspiration. He showed me the wonders of rock art in Tanum during my first years of university. Ever since, the fascination of Rock Art has stayed with me and the Bronze Age has been the focus of my research.

Introduction

Danish rock art belongs to the Nordic Bronze Age culture, with the same range of iconographic depictions and figures (see fig. 1). Bronze Age rock art is however, more frequent and elaborate in Sweden and Norway due to an abundance of bedrock panels in these geological regions. Because of the lack of bedrock in most regions of Denmark, other rock sources such as erratic glacial boulders, earlier megalithic tombs and smaller rocks were used. Rock art in Denmark is therefore often incorporated into many different contexts, such as individual burials and burial mounds (see fig. 2).

Danish rock art outside the island of Bornholm is often overlooked in the Scandinavian rock art discourse due to its geological context and relatively low numbers of figurative motifs. However, a closer look at this material reveals interesting aspects of Bronze Age society and show that even here rock art was an important part of the socio-religious life of the contemporary society (Felding 2015).

Across all of Denmark, cup-marks are the most common motif. Of the figurative motifs, the anthropomorphic figures, wheel-crosses, and geometric figures are dominant. On Bornholm, the ship is paramount, as in the rest of Scandinavia (Glob 1969; Kaul, Stoltze & Nielsen 2005).

In Southern Scandinavia, thousands of bedrock panels with figurative rock art allow us to see a glimpse of the ritual sphere of Bronze Age society. This is a unique insight into a society from a time without writing.



FIGURE 1. MOST COMMON MOTIFS IN DANISH ROCK ART

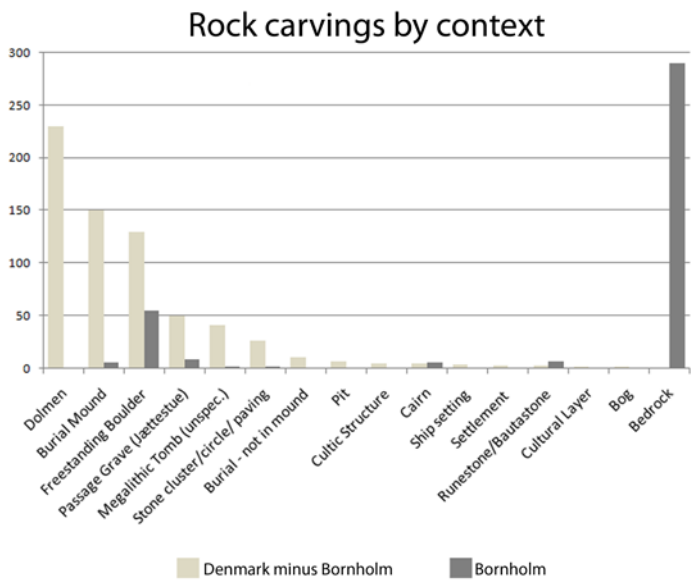


FIGURE 2. DANISH ROCK CARVING CONTEXTS. GRAPH BASED ON 657 IN-SITU ROCK CARVINGS FROM THE AREA OUTSIDE BORNHOLM (HEREOF 84 FIGURATIVE – OTHERWISE CUP-MARKS) AND 370 IN-SITU ROCK CARVINGS FROM BORNHOLM (HEREOF 76 FIGURATIVE). DATA COLLECTED 2009. GRAPH BY AUTHOR.

This paper seeks to investigate rock art used in burial contexts in burial mounds in Denmark (see fig. 3). In the following, there will be a focus on the Danish area excluding Bornholm. It aims to investigate some of the burials and tries to understand why they were chosen to include rock art as part of their burial rite.

Burial mounds

During the early Bronze Age, especially Montelius' Period II (c. 1500 – 1300 BC), thousands of burial mounds were built in Denmark (Holst 2012). It is assumed that they form a large part of all the known burial mounds in Denmark registered in the national heritage database 'Fund og Fortidsminder' (www.kulturarv.dk - see map – fig. 4 and 4a). However, not many of these mounds have been excavated and the numbers of mounds dated to the Bronze Age must be seen as an estimate. The number of known burial mounds with rock art is a small fraction of these (see fig. 5), and the burial practice with rock art is therefore regarded as reserved for selected mounds and individuals.



FIGURE 3. ROCK ART FOUND IN BURIAL MOUNDS. THE MAP SHOWS ROCK ART ON KERBSTONES (TRIANGLES), ROCK ART ON COFFIN SLABS (DOTS) AND ROCK ART ON UNSPECIFIED 'GRAVE STONES' (CROSSES). ROCK ART FROM MOUNDS WITH NO SECURE CONTEXT WITHIN THE MOUNDS NOT SHOWN (2009 DATA). MAP BY AUTHOR.



FIGURE 4. REGISTERED BURIAL MOUNDS FROM ALL PERIODS IN THE DANISH NATIONAL DATABASE 'FUND OG FORTIDSMINDER' (DATA@SLKS). MAP BY AUTHOR.



FIGURE 4A. REGISTERED BURIAL MOUNDS FROM THE BRONZE AGE IN THE DANISH NATIONAL DATABASE 'FUND OG FORTIDSMINDER' (DATA@SLKS). MAP BY AUTHOR.



FIGURE 5. VIEWSHEDS SHOWING BURIAL MOUNDS WITH ROCK ART. GREEN AREAS SHOW VISIBILITY AND INTERVISIBILITY BETWEEN THE MOUNDS. (2009 DATA). MAP BY AUTHOR.

Looking at Danish rock art within burial mounds, we see that the majority is found in mounds dating to the Neolithic and Bronze Age, and it is clear that cup-marks are far greater in number than stones with figurative art, which are limited, thus corresponding to the general picture of Danish rock art. Looking at the figurative motifs, however, a few tendencies become apparent: the hand motif is linked with individual graves; and circles and wheel-cross motifs are often found related to the larger context of the burial mounds, such as on the kerb stones (Glob 1969; Kaul 1985).

Within the mounds the rock art appears in several contexts:

- Loose stones from the mounds (no secure context within mound).
- Stones from individual graves (coffin slabs and stone packings).
- Kerb stones.
- Pocket sized rock art stones or '*lommeskålsten*'

Burial mounds were a dominant feature of the Southern Scandinavian Bronze Age landscapes and they played an important ritual, practical and social function of the Early Bronze Age society. Traditionally, the mounds are seen as an expression for the commemoration of ancestors and as territorial markers placed along strategic passageways in the landscape (Barrett 1990; Bradley 2002; Johansen, Laursen, and Holst 2004; Müller 1904; Thrane 1998). Later research, however, has emphasized the social context of the mounds, as well as the time-depth of the monumental landscapes they inhabit (Bourgeois 2013; Bradley 1998; Fokkens and Arnoldussen 2008; Holst and Rasmussen 2012; Tilley 1994).

Burial mound landscapes

Topographically burial mounds are placed high in the landscape with good visibility to the surrounding landscape. Several of the mounds are situated with inter-visibility between each other, which supports the idea of mounds as markers for routes of travel and movement (Johansen et al. 2004:38; Müller 1904; Thrane 1998:274). In Jutland, along the ridge that divides the sandy soils to the West and North from the clayey moraine to East, we clearly see linear arrangements of burial mounds that suggest routes and networks through the landscape (see fig. 5).

An interesting aspect of the high visibility of the mounds in the open landscape is the juxtaposition of the hidden rock carvings on the coffins inside the closed landscape of the mound. Clearly, symbolic meaning is imbued in the rock art: at times it is meant to be seen, whereas on open bedrock panels and kerbstones around mounds, as well as other times, it is meant to be concealed, as, for example, in the case of grave slabs concealed by mounds (Kaul 2004:140–60). The rock carvings placed in a 'closed landscape' setting in graves are less frequent in Scandinavia but nevertheless known throughout the region (Goldhahn 1999; Randsborg 1993; Syvertsen 2002:151ff; Widholm 1999).

In the Danish material from burial mounds, the majority of rock art is found on kerb stones and on stones with no secure contexts within the mound. Individual graves with rock art are known from 35 sites (see fig. 3 and Appendix).

In the following section, we will investigate these burials and try to understand who these individuals were and why they, out of thousands of burials from the period, were chosen to have rock art as part of their burial rite.

Rock art burials – examples from Denmark

Looking at the 35 sites with 36 individual burials associated with rock art, it becomes sadly clear that not many of the graves are well preserved, and in many instances only the stone coffins or bedding remain to bear witness of the burial. Some interesting observations are, however, possible (see fig. 6 and 6a).

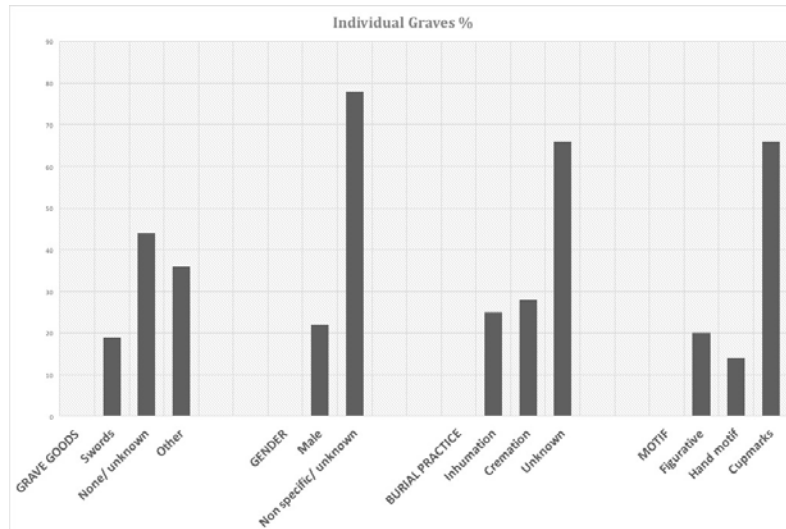


FIGURE 6. INDIVIDUAL GRAVES WITH ROCK ART. CATEGORIES SHOW PERCENTAGES OF GRAVES. GRAPH BASED ON 36 GRAVES FROM 35 SITES– SEE APPENDIX. (2009 DATA). GRAPH BY AUTHOR.

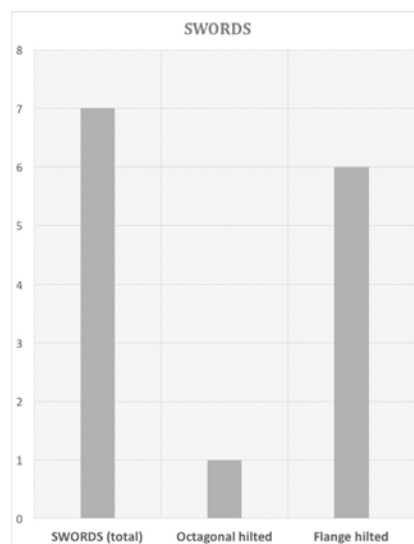


FIGURE 6A. SWORD TYPES IN GRAVES. TABLE BASED ON 7 GRAVES WITH SWORDS (2009 DATA). GRAPH BY AUTHOR.

Rock Art Motifs

Of interest is the higher use of figurative motifs compared to the otherwise generally low frequency of figurative motifs in Denmark. Cup-marks are also present on most of the figurative grave slabs, except for the hand motif, that stand alone. This is an important statement and the hand motif plays a special role in connection with death and burials, perhaps marking the threshold between the dead and the living with the hand as a marker of a divine force (Kaul 2004:108).

Burial practice

The burial practice shows almost equal distributions of inhumation and cremation burials. This part of the burial custom has therefore been of little importance for people buried with rock art and is more likely to reflect the *longue durée* of the use of rock art in burials. During the Bronze Age, we see a shift from inhumation burials in the Early Bronze Age towards cremation burials in the Late Bronze Age. Burials with rock art are most frequently found in burials from the Early Bronze Age and the following transitional periods to the Late Bronze Age.

Gender

It has for this purpose only been possible to ascribe social gender based on artefacts. Several graves have been robbed (some already in prehistory) and therefore found empty. Other conditions such as preservation and burial practice (i.e. cremation) could be explanations for the 'empty graves' which is not likely to represent prehistoric conditions or traditions.

The socially gendered graves show that 22% were males, based on the presence of a sword or a razor in the grave (fig. 6). The swords found in the graves were, all but one, of the type 'flange-hilted' swords or 'rod-tang' swords (DE: *griffangel*). Only one octagonal hilted sword was found in the individual burials with rock art (grave: 131213-41 Ørum/ Højvängen). The vast majority of the graves (78%) are indeterminable, with either none or non-gender-specific grave goods.

Age

All the burials are assumed to be of adults, based on the artefact assemblages or the size of the graves. However, empty, smaller cremation graves could also be the burials of children, but the archaeological material only allows for speculation on this.

The dead and buried

Two burials stand out in the analysed material and will be described briefly.

Grave: 131213-41 Ørum/ Højvängen is located Central Jutland. The burial was an undisturbed central burial orientated E-W. On the western extent of the grave, two rocks split from the same stone were erected. On one of these stones, two or three cup-marks were found. Only faint signs of a wooden plank coffin remained. Along the north side of the grave, several pieces of a poorly preserved octagonal hilted sword were found. The point of the sword faced East, indicating that the deceased was buried with his head towards West. Over the burial, a mound with a diameter of ca .17-18 m. was built. Excavations revealed signs of an earlier ship setting on the place where the mound was erected (source: *fund og fortidsminder* - www.kulturarv.dk). The grave is the only burial with rock art that is found with an octagonal hilted sword.

Grave: 110506-147 Lødderupvang is located on Mors, NW Jutland. The excavation of a burial mound revealed a stone coffin containing cremated human remains, two flange hilted swords and a razor. A stone with cup-marks formed part of the grave. The grave is most likely to have contained two male individuals and is the only double burial in the analysed material (source: *fund og fortidsminder* - www.kulturarv.dk).

So, who were these individuals buried with rock art? Kristian Kristiansen has argued how social identities are constructed by (selectively) using material culture to define different social roles. Based on sword types and their distribution, he categorises two different male social identities: The Religious Chiefs and The Warrior Chiefs within the Early Bronze Age Society (Kristiansen 2011; Kristiansen and Larsson 2005:237–43). The Religious Chiefs were equipped with full hilted Octagonal swords, often with minor

signs of wear and use, and the Warrior Chiefs buried with flange-hilted swords, often with sign of heavy re-sharpening, which Kristiansen interprets as signs of combat. As mentioned above, only one full-hilted sword was found in the graves with rock art, and if one follows Kristiansen's line of argument this could indicate that the buried individuals were not Religious Chiefs or perhaps even ritual specialists. Looking at the Danish rock art material, a select few individuals were buried with sacred signs and motifs. Yet, might they not have been ritual specialists themselves? There were no other grave goods showing any indication of the presence of ritual specialists such as leather bags with amulets, as known from (amongst others) the Hvidegård and Maglehøj burials (Boye 1889; Herbst 1848).

The vast majority of the graves identified with swords were all of the flange-hilted type. According to Kristiansen, this would indicate that the individuals were high-standing chieftains ('Warrior Chiefs'). Perhaps these graves with rock art could be the markers of heroic deeds based on warfare, travel and trade undertaken by the deceased during their life time?

However, turning Kristiansen's argument on its head, it is possible that these individuals were indeed deeply connected to the ritual spheres of life and therefore buried with the sacred signs. The sword type could perhaps turn out to be less significant in this matter, and maybe the octagonal full hilted swords are not the only marker of a 'Religious Chief'. In fact, it is highly likely that the past societies were greatly nuanced and the realities of ritual and everyday practice were mixed and integral to everyday life. It is possible to argue that one individual could possess several social identities and roles, and should not in death be locked to an expression of only one. It is important for our understanding of the past to stress the importance of lateral as well as vertical relationships within prehistoric societies (Levy 1995:41).

The rock art on the gravestones must have been assigned specifically to certain individuals of the societal elite. This practice would link them directly to the sacred world of the religious symbols, and perhaps ease the transition to the next world. The social elite would, even in death, show that they possessed knowledge, power and access to the ritual and religious aspects of Bronze Age life, thus enforcing their claim to power.

Rock art and graves in the Nordic Bronze Age

Rock carvings in graves are a well-known phenomenon in Denmark and in the Danish area there is a strong link between rock art and graves as the majority of rock art is found associated with graves, either in burial mounds or the re-use and appropriation of earlier megalithic tombs.

Additionally, in Sweden and Norway impressive graves with rock art are known such as the Kivik, Hjortekrog og Sagaholm burials in Sweden (Goldhahn 1999; Randsborg 1993; Widholm 1999), and several cairns with rock art in Norway (Kaul 2004:149–60; Syvertsen 2002:151).

The Kivik burial is a good example of rock carvings in a closed landscape setting on coffin slabs that is directed towards the deceased, but placed within a cairn that takes a prominent place in the open landscape communicating directly with the surroundings and the living community (Randsborg 1993:136).

In the Sagaholm burial, we see depictions of fertility and death cult which shows that the rock carvings were not locked to specific categories but instead closely linked (Widholm 1998). In a society based on a cyclical thought these two world views are not seen as opposites but are rather prerequisites for each other (Kaliff 1997:112).

There is however, a distinction between use of rock art in graves and that in other contexts. Flemming Kaul ascribes different social values and meanings between the rock carvings that appear with the coffins, and are thus directly related to the individual burials, and the rock art that is part of the mound construction,

such as the kerb stones. The rock art placed within the individual burial has been made for the deceased on that one occasion of the burial, whereas rock art on kerb stones would have been exposed to the public view, which could have taken place at repeated rituals conducted at the site (Kaul 2004:140), perhaps as part of rituals that were performed at each burial that over time took place in the mound.

Excavations at the Skelhøj burial mound, in Southern Jutland, revealed information concerning the many building phases involved in barrow construction. It was shown that the final stage in the barrow building was the building of a platform situated between the foot of the mound and within the kerbstones. The kerbstones thus marked the final extent of the mound and formed a barrier to the platform or stage where ritual practices would have taken place (Holst and Rasmussen 2015:125–26).

Rock carvings in graves seem to be associated with rituals that secured the crossing over from the realm of the living to the dead. At such times of change, rites of passage are essential to secure the world order. At funerals, the family-lineage was kept alive by repetition of the ancestral heritage and myths. New ancestors were made and thus the ancestral landscape renewed. Burials and burial mounds with rock carvings thus became ‘places’ in the landscape where these values were recognized and upheld (Hygen and Bengtsson 1999:55–61).

Rock carvings in graves are seen as an expression of communication, and in the case of rock carvings within individual burials, this communication is silenced to the living audience by covering up of the imagery, so it speaks only to the dead. They communicate directly with the deceased and the symbolic value of the rock art demands that they are covered.

The rock art in the open landscape (for example kerbstones) came alive through rituals performed by ritual specialists for a larger audience, such as the Bronze Age community. The rituals performed by the burial mounds would secure the cosmological order at the time of the passing of the dead and thereby secure the survival of the community.

Rock art is the essence of expressions of ideological and cosmological character. The sun and its journey across the sky are key elements of Bronze Age religion. Aspects of fertility- and death cult are a natural part of the belief system in the Bronze Age and are thus portrayed in the iconography of the period, including rock art.

The rock motifs represent a recognizable world order for the Bronze Age people, and the imagery is anchored in both the sacred as well as the profane parts of life. It is impossible to completely separate the two spheres as they are interwoven in our daily practices. In fact, daily rituals are part of our everyday life and can thus be regarded as highly practical (Brück 1999; Cooney 1994:33). This interwoven relationship of sacred and profane practices must also be reflected in the use of rock art. Despite the very ritual and religious nature of the rock art, there must have been a highly practical way of regarding the rituals surrounding them.

The rock carving locales served as meeting places where socio-religious rituals took place and secured the order and power balance in the community. Several rock art sites have a proven place continuity, which is a meaningful aspect when securing your right to rule. By linking your family to the ancestral landscape and early traditions it was possible to people of higher social standing to demonstrate their right to the land and resources (Bradley 2002). By appropriating earlier megalithic tombs and imposing sacred symbols on the capstones and kerbstones they were claimed into this world, thus linking the past with the present.

The fact that meeting places were rooted in earlier traditions show that places held significant meaning over a long time and that they were actively used in the social strategies of Bronze Age society. If the local elite and ritual specialist were able to show a link to the symbols on the rocks and interpret their meaning, it was a way to legitimize their claim to power. Thus the rock carving locales became an arena for the meeting between time, tradition and the divine (Hygen and Bengtsson 1999:61).

Conclusion

It has been demonstrated that only a select few individuals are found buried with rock art. These individuals must have held a special status in their contemporary society and the strong connection between death, burial and rock art has been important for the understanding of the passing to the afterlife in the Bronze Age.

The rock carvings held great meaning to society as they reflect religious expressions and beliefs. Faith is difficult to quantify, but it is clear that Bronze Age people had faith, and that rock carvings, as well as the general iconography from the period, were an important part of this belief system.

Authors note: This paper is based on previously unpublished reflections from the author's master's thesis undertaken at Copenhagen University in 2009.

The use of the terms Danish and Denmark are in reference to the political geographical boundaries we today know as Denmark and does not reflect Bronze Age geographical landscapes.

Louise Felding, mag.art., VejleMuseum/ AU

Appendix

Data table: Individual graves with rock art (2009 data).

STED NR	SB NR	PARISH	PLACENAME
010511	47a	Ølsted	Lille Havelse
011113	10	Vejby	Gadehoej
020303	11	Gladsakse	Stenggaard
020306	3	Bispebjerg	Bispebjerg Moelle
020310	23	Søllerød	Rævebakke
020410	24	Roskilde	Skvatbrinke
030110	326	Årby	Årby
030401	114	Asnæs	Troldhoej
030412	52	Vig	Jyderup Skov (Afd. 181)
030604	51	Føllenslev	Egemarke
040315	13	Slots Bjergby	Galgebakken
100606	18	Horne	Horne Kirkegaard
110113	131	Villerslev	Vibberstoft
110506	147	Lødderup	Lødderupvang
110612	86	Vestervig	Villerup
120402	54	Astrup	Lykkehøjhus
120407	5	Rold	Truehoejgaard
120407	41	Rold	Hoffmandshøjgård
120412	59	Vebbstrup	Nibhoeje
120506	29	Hasseris	Stenildshøj
120517	40	Aarestrup	Ordestrup
120810	9	Ravnkilde	Nysumhoej
130202	24	Fur	Debel
130202	25	Fur	Manhoej
130210	55	Vile	Vile
131213	41	Ørum	Ørum/ højvängen
140205	36	Hoed	Glatved
140206	18	Homå	Digrshoej
141013	87	Nørager/ Fjellerup	Borgen
160111	17	Sporup	Sporuplund
160513	72	Yding	Yding
160605	158	Nørre Snede	Hundshoved
170501	9a	Gauerslund	Gauerslund
190204	59	Hunderup	Lille Sejstrup Vang
220203	46	Løjt	Dyrehave

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Chapter 8

A sea beyond Europe to the north and west

Johan Ling & John Koch

Keynote passage

“About the far west of Europe I have no definite information, for I cannot accept the story of a river called by non-Greek peoples the Eridanus, which flows into the northern sea, where amber is supposed to come from; nor do I know anything of the existence of islands called the Tin Islands [Kassiterides], whence we get our tin.... [I]n spite of my efforts to do so, I have never found anyone who could give me first-hand information of the existence of a sea beyond Europe to the north and west. Yet it cannot be disputed that tin and amber do come to us from what one might call the ends of the earth. It is clear that it is the northern parts of Europe which are richest in gold, but how it is procured is another mystery In any case it does seem to be true that the countries which lie on the circumference of the inhabited world produce the things which we believe to be most rare and beautiful.”

(Herodotus III, 115–116)

Introduction

This article is dedicated to Dr Gerhard Milstreu, Director of the Scandinavian Society of Prehistoric Art. Dr Milstreu has devoted most of his working life to Scandinavian rock art, achieving major advances, to the benefit of research and heritage management, as well as serving the public interest, for over 40 years. Since 1972 he has directed the rock art museum in Underslös Tanum and overseen its maintenance. Leading several international and national projects documenting rock art with systematic techniques, he was a driving force in securing Tanum’s status as a World Heritage site. Milstreu has also been the main editor of the well-known international rock art journal *Adoranten*, with readers in more than 26 countries. Milstreu has built an international collaboration between Tanum, Sweden, and Valcamonica, Italy, in several fruitful activities. In 2000 he was awarded an honorary doctorate by the Faculty of Arts at the University of Gothenburg. However, what should probably be counted as his foremost contribution to the study of Scandinavian Rock Art is the work seminar held at the museum in Tanum; this has focussed on documentation and interpretation of rock art. The work seminar has been a major success for over 40 years and has attracted students as well as prominent international researchers from Europe and beyond. The success of the seminar is due to Milstreu’s deep knowledge of the subject, his collaborative approach and positive attitude – his true *savoir-vivre* – and perhaps owing, most of all, to Milstreu’s skills as a highly educational, open, and inspiring communicator. Working with Gerhard over the years has been a true privilege, and I hope he will continue to inspire future research on rock art.

Gerhard has also been very open to new empirical and theoretical aspects of rock art, not least those who try to contextualize and connect rock art to a larger European or global picture. In this article we propose a new theoretical framework to investigate Scandinavian Bronze Age rock art in the light of trade and mobility in Atlantic Europe in the Late Bronze Age. This framework is multidisciplinary, combining the core data fields of metal, rock art, and ancient languages. Our proposal takes its impetus from recent

discoveries, which have revealed a production-distribution-consumption system for metal, between 1400/1300 and 900 BC, in which Iberia was the producer and the Atlantic North was the consumer. In this article we develop a testable hypothesis, to be used to model and explain the rise and fall of this network, by exploring research questions. What was the volume of this trade? When and why did it begin and end? Where were the commercial exchange points linked to copper mines in Iberia (subsequent mining having obliterated the ancient mines themselves)? Was this exchange mostly long-distance or staged with trans-shipment hubs (in e.g. Galicia, Brittany, Ireland, Britain)? How were societies in Atlantic Europe and metal production organized for this international market? Who were the primary agents in the system? Does the geographical distribution of finds of Baltic amber in the ore bearing regions in SW Iberia (Murillo-Barroso, M. & M. Martín-Torres 2012; Odriozola et al. 2017) confirm a system of copper-for-amber exchange? What was the role of rock art—as both cause and effect—in the formation of warrior-led maritime trading systems? And how might this have been reflected in the form of both shared iconography and a common linguistic vocabulary? In doing so, we combine two methodological strategies: high-resolution comparisons of martial motifs in rock art and a detailed linguistic analysis of ancient martial vocabulary shared by Celtic and Germanic as a possible witness to this network. In particular, we aim to investigate much more fully parallels thus far recognized in Scandinavian rock art to that of Europe's Atlantic Façade, the British Isles, Galicia, north Portugal, and especially the metal-rich south-western Iberian Peninsula. A first step will be to identify the sources of shared motifs, as Bronze Age artefacts e.g. shields, swords, wheeled vehicles, jewellery and representations of them in other media.

A key component of our approach is the recognition that this was also a time of declining mutual intelligibility between Indo-European branches, Proto-Celtic and Proto-Germanic in our study region. It has long been known that prehistoric languages reconstructed by philologists—such as Proto-Indo-European, Proto-Celtic, Proto-Germanic, etc.—must belong to the same times and places studied by prehistoric archaeology. But to determine where and when these protolanguages coincided with archaeological cultures has proved a formidable challenge. But there has been a breakthrough in the past few years thanks to the archaeogenetic revolution. Genome-wide sequencing of ancient DNA now reveals massive gene flow during the 3rd millennium BC from the Pontic-Caspian steppe region of present-day Ukraine and South Russia into central, northern, and western Europe. This data has been cogently argued as strongly supporting the principal outlines of the 'Steppe' or 'Kurgan' hypothesis of the origin and dispersal of Indo-European languages (Allentoft et al. 2015; Haak et al. 2015; Anthony & Brown 2017). In other words, it now appears that Scandinavia and Atlantic Europe were 'Indo-Europeanized' in the age of Corded Ware and the Beaker Phenomenon, the Neolithic–Bronze Age Transition. A thousand years later, when Iberian copper was traded to Scandinavia, we are beyond the age of the undifferentiated Proto-Indo-European of the migrations from the steppe homeland and into the age of the widely extended Indo-European branches. By the Late Bronze Age, mutual intelligibility and any recollection of common identity and origins was declining between the branches. What was the impact of rising linguistic differences on long-distance exchange? Was it only an impediment or did it stimulate the rise of mobile specialists moving rare, high-value raw materials (copper, amber, and gold) between separating linguistic worlds?

Background

Cultural connectivity and movement along the Atlantic Façade can be traced back to the spread of the Megalith phenomenon about 4000 BC (Cunliffe 2001; 2010; Schulz Paulsson 2017). A renewed process of interaction along the Atlantic Façade starts about 2600/2500 BC with the expansion of the Bell Beaker Complex north -and eastwards, out of Iberia (Harrison & Heyd 2007; Van der Linden 2007). The demand for wealth such as copper and amber can be seen among the drivers behind this movement. For instance, Beaker groups initiate the first mining of copper in Ireland at Ross Island c. 2400 BC (O'Brien 2004) and soon after in Wales (Timberlake 2016). Secondly, Beaker groups, spreading from a formative area on the Tagus estuary in central Portugal, held a decisive advantage in maritime transport technologies.

This factor facilitated their rapid expansion, as shown by the distribution of Beaker Complex finds across western Europe (Fitzpatrick 2013). By the Early Bronze Age this advanced technology is reflected by finds of plank-built boats in Britain, as early as c. 2000 BC (Van de Noort 2011). Based on the distribution of settlements, Beaker groups were probably the first Europeans to use boats for major trade.

Between 2000-1300 BC there is continued evidence of interaction along the Atlantic Façade (Brandherm 2007), but also of a partial lull or hiatus in some parts and 'post-Beaker' regional fragmentation; the connections are less pronounced than in the preceding phase. From 2000–1700 BC, copper then bronze halberds are widely distributed (Horn 2014), and depictions of halberds on rock occur from south Portugal to southern Scandinavia. Moreover, the fact that Scandinavia is the area outside the British Isles with the most numerous finds of typical British and Irish Early Bronze Age copper-alloy axes indicates that well established maritime trade routes were maintained between these remote regions.

The picture changes about 1600 BC, at which point Scandinavia is getting copper from Wales: several swords from Denmark were made with copper consistent with the Great Orme mine (Melheim et al., in press). Towards the beginning of the Late Bronze Age, a renewed cycle of economic activity starts in Atlantic Europe, visible in the increased exchange of metals, coinciding with a renewed ideological commitment in rock art (Almagro Basch 1966; Koch 2013a; Vandkilde 2013; Ling et. al 2014; Ling & Uhnér 2015). The rise of advanced seafaring and long-distance exchange along the Atlantic Façade are essential components of this post-Beaker re-integration of western Europe (Earle et al. 2015).

The recent discovery of Iberian copper in British and Scandinavian bronze artefacts dating from 1400–900 BC (Ling et al. 2013; 2014; Melheim et al. 2018) is a startlingly unexpected result, challenging earlier thinking about Bronze Age networks. The discovery leads to new questions or hypotheses about the social basis of production, transport technology, exchange, consumption, and interrelationships of the regional economies and social systems. In this context it should be stressed that two early scholars argued for a connection between Iberia and Scandinavia, Arthur Nordén on basis of rock art and metal (1925) and later one of most prominent scholar in archeology Gordon Childe, based on metalwork typology (1939).

A theory relating Bronze Age warriors to long-distance trade

Many scholars argue that warfare and warriors became an institutionalized semi-professional activity during the Bronze Age (Harrison 2004; Kristiansen & Larsson 2006; Vandkilde et al. 2006; Kristiansen 2017). Thus, warfare and warriorhood became pan-European phenomena in the Bronze Age, from the Aegean in the east to Iberia in the west and Scandinavia in the north. However, it is important to stress that warfare and warriorhood were articulated on different scales and magnitudes due to different societal structures (centralized or decentralized societies) and different levels of social stratification (Kristiansen 2007). Even so, 'classic' professional weapons, such as swords, armour, and chariots, used for fighting, not hunting and not doubling as tools, are introduced to most regions of Europe for the first time in the Bronze Age.

The shift from the Neolithic to the Bronze Age was a profound structural transformation based on a changing political economy (Kristiansen & Earle 2015). Large-scale trade in metals and other forms of wealth across Europe developed in the Bronze Age. In simple terms, the BA witnessed an emergence of social stratification based on elite control over long-distance trade (Earle 2002). Fundamental to this transformation was the investment in long-distance trade and advantages of maritime interaction and exchange. These created, in turn: the comparative advantage for maritime chiefdoms based on specialized boat building and knowledge, strategic locations for controlling trade, and warriors to protect shipping (Ling & Rowlands 2013). As both cause an effect, Bronze Age violence can be related to these societies' investments in long-distance trade of metals, and both were also linked to rising social complexity and

inequality (Earle et al. 2015). There are, interestingly, no war-related figurative rock from the Neolithic era in Scandinavia (4300–1700 BC) or Iberia (5500–3000 BC). In the light of widespread violence during the Bronze Age, it is not surprising to find rock art illustrating diverse scenes of conflict and fighting, ranging from ritualistic to more realistic. These characteristics are pronounced in both Scandinavian and Iberian Bronze Age rock art, whilst the former displays scenes in action and the latter are more static and abstract. It is important to stress that this war-related figurative rock art appears and vanishes with the Bronze Age.

This hypothesis takes on more depth due to the archaeogenetics revolution. Breakthrough studies now make two propositions concerning the linguistic prehistory of western Eurasia highly probable (Allentoft et al. 2015; Haak et al. 2015). 1) In most areas, the First Farmers of the Neolithic period did not speak Indo-European. 2) During the 3rd millennium BC, mass migrations originating in the Pontic–Caspian steppe (present-day Ukraine and south Russia) introduced an evolved form of Proto-Indo-European to extensive regions — from the Siberian Altai in the east, to Ireland and Britain in the west (Anthony & Ringe 2015; Cassidy et al. 2016; Olalde et al. 2018). Confirming earlier arguments for a ‘steppe hypothesis’ based on culture and language, there is now little doubt that this mass migration marks the expansion of speakers of Proto-Indo-European. Strontium and oxygen isotope data from human bone add evidence of the mobility of individuals (Fitzpatrick 2013; McKinley et al. 2013). Previously, alternative chronologies remained possible: that Proto-Indo-European had already spread widely and formed branches in the Neolithic *or* had first reached western Europe, still undifferentiated, in the Late Bronze Age.

At the present moment in intellectual history, the great question posed by genome-wide sequencing of aDNA is how to map languages onto populations and archaeological cultures for the period between the mass migration from the steppe and the earliest attested Indo-European languages. Bronze Age Europe can no longer be treated as mute prehistory. Rather, it occupies a post-Proto-Indo-European interval, between the expansion of a mature Proto-Indo-European from the Pontic-Caspian Steppe in the 3rd millennium BC and the appearance of diverse written Indo-European languages.

A less dramatic but important archaeogenetic finding is that northern and western Europe have undergone no subsequent turnover of population so great after 2000 BC. So it is probable that, during this post-Proto-Indo-European interval, Germanic evolved *in situ* in northern Europe and Celtic in the west. The visible division at the Rhine between Nordic and Atlantic Bronze Age metal cultures probably also marks separating Germanic and Celtic linguistic spheres. Similarly, the gap in Atlantic metalwork around the Bay of Biscay, Pyrenees, and Mediterranean Spain (cf. Milcent 2012) corresponds to the non-Indo-European Aquitanian/Palaeo-Basque and Iberian languages.

Distance, value, and language in Bronze Age Europe

The keynote passage at the head of this article was written by Herodotus, the Father of History, between 450 and 430 BC. Thus, the Atlantic is “a sea beyond Europe to the north and west”. In these parts on “the world’s circumference” lay the mysterious sources of “the things which we believe to be most rare and beautiful”, namely amber, tin, and gold. Herodotus discredits information attributed to non-Greek languages about amber’s source. Easily recognized in this passage are economic and aesthetic values going back a thousand years to a Bronze Age world system embracing western Eurasia and North Africa (A. Sherratt 1993; S. Sherratt 2009). This system arose through widespread demand for wealth items, most essentially standardized tin-bronze, gold, and amber (Pare 2000; Vandkilde 2013; Kristiansen & Suchowska-Ducke 2015). Distance is an obvious factor in the value system. The triad of exotica at its apex came from “the ends of the earth”.

Our approach emphasizes that it was not merely spatial distance that made goods exotic and valuable, but linguistic and conceptual distance. Herodotus's conceptual map is disk shaped with the Aegean at its centre, and the most rare and beautiful raw materials issuing from the Ocean Stream encompassing the world's semi-mythical outer edge. As *Hellenes*, Herodotus and his readers occupy a world whose limits are those of the Greek language. Coming from non-Greek languages, information about the sources of amber, tin, and gold cannot be fully understood or believed. The resulting mystification of the margins of the known world enhanced the value of these commodities.

Our theoretical model adapts Lévi-Strauss's duality 'the raw and the cooked' (*Le Cru et le Cuit*) (1964). Raw and unworked metals and amber moved across linguistic barriers and became 'cooked' in a recognizable regional style by speakers of a particular language, and then used as artefacts within the monoglot linguistic culture of that region. A highly mobile minority of polyglot traders, warriors, etc., moved these raw materials across vast regions. Their shared cultural codes, with implications for a *lingua franca*, are evident in rock art in Scandinavia and Iberia.

Two paradigms compete in Bronze Age studies: one stresses elite-controlled, long-distance exchange within a World System (e.g. Kristiansen & Earle 2015); the second stresses regional land-based down-the-line trade (e.g. Harding 2000; 2013; Kienlin, 2012). One approach or the other will be valid for particular European areas and assemblages. Choosing the correct model requires systematic data collection (Earle et al. 2015). An integrating system of exchange emerged in the Bronze Age Europe and created the comparative advantage of one region over another for raw materials, such as copper, amber, tin, and gold. The European regions benefited in moving from self-sufficiency to specialization (Ling & Rowlands 2013). A new complex pattern of flows of raw materials and finished forms emerged in the Bronze Age, to be understood in terms of the values, ideology, economy, and cosmology of that age. Amber, gold, and bronze — raw materials then regarded as most precious — were shades of luminous yellow (Maran 2004; 2016). In the ideological and cosmological associations of colours, these suited solar symbolism, as so often suggested by the finished forms given them. They were thus tied into a wider constellation of sun symbols manifested by numerous monuments, artefacts, and images in the Bronze Age (Kaul 2013). Semantic and early poetic connections in the Celtic languages suggest that these associations extended to honey and mead, e.g. Welsh *mêl* 'honey', *melyn* 'yellow', and the high hero's reward of *medd o eur* 'mead from gold' (cf. Enright 1996).

About 2000–1700/1600 BC distinct regional metal cultures arose in Atlantic Europe. In earlier work, metal cultures have been understood on the basis of material and forms of artefacts, without considering language. Following recent breakthroughs with aDNA, the separation of languages and the rise of distinct regional metal cultures during the Bronze Age can be understood as parallel processes, interacting with each other in forming identities across western Eurasia.

Thus, the key to our theoretical framework is recognizing the interplay between material culture and language in order to understand what shaped then transformed the distinct metal cultures, their boundaries, and the interaction between them. In the period 1300–900 BC (continuing another century outside Iberia), two major metal cultures faced the Atlantic: the so-called Atlantic Bronze Age, which embraced western Iberia, parts of France, Belgium, Ireland, and Britain, and the Nordic Bronze Age, stretching from Scandinavia in the north to the Netherlands in the south (Kristiansen 1998). The Rhine formed a border between them. The Atlantic Bronze Age itself was discontinuous: there was little or no metalwork of Atlantic type around the Bay of Biscay, from the Gironde to western Cantabria (Milcent 2012). The linguistic map of pre-Roman Europe presents a closely similar pattern: Celtic languages from west of the lower Rhine to Atlantic Iberia, Germanic east from the Rhine, and non-Indo-European languages

around the Bay of Biscay and Pyrenees (Koch et al. 2007; Koch 2016). Pioneering provenance studies of metals and amber now show that raw material, such as copper and tin, transgressed these cultural borders (Murillo-Barroso, M. & M. Martín-Torres 2012; Ling et al. 2014; Odriozola et al. 2017). Moving across linguistic barriers, raw materials were ‘cooked’ into recognizable regional styles by artisans working inside the diverse monolingual regions.

For two reasons, we propose that the Indo-European branches in our study region are closely coterminous with the major typological regions of Bronze Age metalwork: 1) the complexities and subtleties of evolving casting styles and techniques could be transmitted effectively only between masters and apprentices, artisans and patrons, who could communicate with native or near-native competence through a shared language; 2) the geographical boundaries of metalwork typologies of Atlantic Europe correspond closely to the territories of pre-Roman languages. Thus, east of the Rhine, metalwork types are shared between central Europe and Scandinavia, lands where Ancient Germanic languages later appear. While lands with ‘Atlantic’ type metalwork (Britain, Ireland, Atlantic France, and the western Iberian Peninsula) have Ancient Celtic languages in the Iron Age. A marked gap in Atlantic metalwork around the Bay of Biscay and western Pyrenees (Milcent 2012) corresponds to the lands of non-Indo-European Aquitanian/Palaeo-Basque; nor did Atlantic forms penetrate Mediterranean Spain, the historical home of the non-Indo-European Iberian language (Koch 2016).

Moreover, several researchers have recently argued for a Bronze Age world system (S. Sherratt 2003; Vandkilde 2016). Nonetheless, there remains a conspicuous gap in this model: Iberian evidence has tended to be de-emphasized or ignored.

Recent research suggests that Ireland like Scandinavia had to import most of its copper and tin in the period 1300–900 BC (O’Brien & O’Driscoll 2017). This coincided with a significant decline of insular copper mining, due to the depletion of surface oxidized mineralization and a technological barrier to the extraction of copper-iron sulphide ores. There are indications of growing reliance on imported metal supplies after 1400 BC, details of which have yet to be clarified by scientific analysis of Irish metalwork. The organization of this complex overseas trade required a strong political context, provided by the emerging chiefdom structures of the Middle to Late Bronze Age. Hillforts, as the central places of these Irish chiefdoms, were important nodes of production, consumption and redistribution in a prestige-goods economy where access to bronze, and exotic materials used to make sumptuary goods, was limited by social convention. The use of this material culture was political, whether as bronze weapons central to warrior identity, or as prestige objects used in social transactions and ritual deposition essential for the maintenance of chiefdoms (O’Brien & O’Driscoll 2017). Hillforts were probably multi-functional: a military response to seaborne raids, competitive prestige, and control of wealth, answering immediate challenges posed by increasingly advanced vessels travelling greater distances with increasingly valuable cargoes and well-armed crews.

Ireland may have been a pivotal intermediary for the movement of metal and other goods between Iberia and Scandinavia. This included the supply of bronze from sources in Spain and Portugal, as well as the strong demand that emerged for Baltic amber in Ireland in this period (Eogan 1995). The wider context of these exchanges has long been presented as the ‘Atlantic Bronze Age’, a zone of trade and other cultural interaction between western Iberia and the British Isles c. 1300–900 BC. Those sea-borne connections are most evident through stylistic influences on metalwork, with many similar ornament and weapon traditions across the Atlantic seaboard, as well as common elements of feasting ritual, hoard deposition, funerary practice, and hillfort construction.

Especially concrete evidence of interaction between groups from the British Isles, Iberia, and Scandinavia comes from Cliff's End on the Isle of Thanet, at Britain's south-eastern extremity (McKinley et al. 2013). Cliff's End has been interpreted as an important Late Bronze Age and Early Iron Age trading centre, evidenced by finds, such as bun ingots and Baltic amber. The site's most dramatic finds are strontium and oxygen isotope data on human bone. Besides several local people from Kent, some analysed individuals show signatures consistent with Scandinavian geology, while others point to the west Mediterranean (McKinley et al. 2013). An important milestone of intensification of north–south links in metallurgy at this time was the generalization of standardized tin-bronze, to the exclusion of other copper alloys, in SW Iberia by 1300 BC, an innovation that began in the British Isles 2300/2000 BC (Needham 1996; Pare 2000). Although tin bronze occurs in southern Iberia as early as 1700 BC, artefacts made from arsenic copper remained the norm throughout the Iberian Middle Bronze Age.

Rock art as evidence of long-distance exchange

Only recently, chemical and isotopic sourcing has revealed copper from the Iberian Peninsula in the Atlantic North and Baltic amber in metal-rich SW Iberia, both at the period 1400/1300–900 BC, the Late Bronze Age (Ling et al 2014; Ling & Uhner 2015; Melheim et al 2018; Figure 2, *this volume*). It is at precisely this time that new close dating and detailed study of Iberian 'warrior' stelae and Scandinavian rock art come to show an extensive repertory of shared motifs—swords, shields, spears, horned warriors, chariots, mirrors, bows and arrows—mostly represented following similar unnaturalistic artistic conventions. We will discuss this more in detail below. This evidence leads to the basic hypothesis that when the production-distribution-consumption system arose, its primary agents were seafaring specialists, whose shared warrior ideology is reflected in the rock art. Their cultural influence was especially strong in the Scandinavian and Iberian terminus regions of this Atlantic network.

Two early scholars argued for the idea of long distance exchange between Scandinavia and Iberia; the rock art scholar Artur Nordén and Gordon Childe. Nordén argued broadly for similarities between the Iberian and Scandinavian rock art and favoured a model of long-distance exchange reflected in cultural connections supported the find of typically Galician palstave from Lake Tåkern, Sweden (Nordén 1925). This type of axe, a double-looped palstave, dates to 1250–900 BC (Monteagudo 1977, Pl. 86, 87 & 100) became known to Gordon Childe, who wrote the curator of Gothenburg Museum to ask of the find's circumstances (Ling & Uhner 2015). Childe recognized the Tåkern palstave as the northernmost example of a type occurring also in Southern England, Western France, and Sardinia, and he published a short paper on this in *The Antiquaries Journal* (1939), where Childe also produced a map that envisioned the Atlantic trade system

Further evidence for these Atlantic links include two Herzprung shields from Fröslunda, western Sweden, made of copper from the Ossa-Morena massif in Extremadura. These 'U-notched' Fröslunda shields are dated to c. 1100–800 BC (Uckelmann 2012). 46 stelae with depictions of LBA Herzprung shields are depicted in Extremaduran rock art (Harrison 2004, 124). Most of these are of the slightly earlier V-notched type, but there are at least two representations of U-notched shields (cf. Uckelmann 2012, 129, fig. 15b). The U-notched derives from the V-notched. The combined distribution of the two types is clearly Atlantic, from Iberia, via the British Isles, then to Scandinavia, where only U-notched shields occur (Uckelmann 2012, 50–62, 127–137, pl. 160).

There are figural categories of special interest when comparing Extremaduran with Scandinavian rock art of about 1200–800 BC (Figure 1). Bi-horned warriors are a prominent shared theme, one of several parallels between Iberian and Scandinavian warrior depictions. Their horns show formal similarities, as well as similar gestures and weapons. In general, the same categories of weapons, shields, daggers, bows and arrows, spears, and swords figure in both corpora, but often different regional types. Another

distinction is that the figures of the Iberian stelae tend to appear immobile, whereas the Scandinavian series convey action. Similarities between depictions of bihorned warriors in Extremaduran rock art, Nuragic Late Bronze Age figurines and stone statues from Sardinia and the horned bronze figurines from Grevensvænge in Denmark should be seen against this background (Harrison 2004; Coles 2005; Vandkilde 2013). Even though these horned anthropomorphic representations were produced in far removed regions, they belong to the same 1300–900 BC time frame and bear witness of long range interaction and constitute a vivid representation of pan European warrior symbolism, that could be connected with the expansion of the Urnfield culture (Harrison 2004: 60; Vandkilde 2013).

Images of chariots (Figure 1) from the two regions also show detailed similarities (Harrison 2004; Ling & Uhner 2015). Two-wheeled vehicles were widely used during the Bronze Age in the Near East and Eastern Mediterranean, and it is clear that they were employed in Iberia and southern Scandinavia in the LBA, and other parts of temperate Europe (Koch 2013a). Noting strong similarities between war-chariot depictions in Scandinavia and Iberia, Harrison (2004) and Koch (2013a) argue for some sort of direct contact. The stereotypic views of chariot frames, draught poles, and sometimes yokes and reins from above, whilst the wheels and draught horses are represented turned out 90°, is best explained as a shared tradition of visual art, rather than a disembodied transmission of heroic concepts. Images of mirrors occur in the rock art of both regions, with 42 in Iberia as the largest group in Europe (Harrison 2004, 151). Shown in masculine martial contexts, they can be understood as an expression of the warrior ideal, including male physical beauty (cf. Treherne 1995). In our view, similar mirror depictions occur in at least three sites in Bohuslän, western Sweden (Kville 216:1, Tossene 46:1 and Fredsjö 427:4; Ling & Uhner 2015). Albeit in fewer numbers, these mirror representations are as in Iberia found in close association with martial motifs such as warriors, bi-horned figures and war canoes, and they are undoubtedly a local articulation of pan European warrior symbolism.



FIGURE 1. COMPILATION OF IBERIAN AND SCANDINAVIAN ROCK ART IMAGES FROM THE BRONZE AGE. (AFTER KOCH & LING 2018)

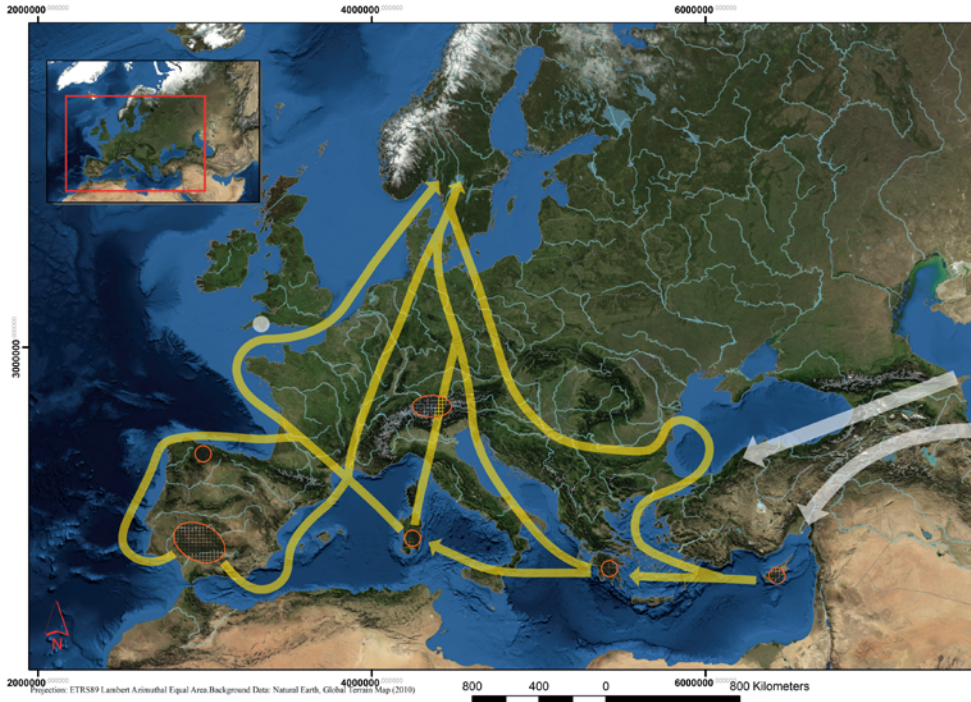


FIGURE 2. METAL ROUTES FOR THE SUPPLY OF COPPER AND TIN TO SCANDINAVIA DURING THE BRONZE AGE.

COPPER BEARING REGIONS ARE MARKED IN BLACK, WHILE THE TIN BEARING REGION IN CORNWALL AND A POSSIBLE INFLUX OF TIN FROM THE EAST ARE MARKED WITH SILVER. AFTER LING AND UHNÉR 2015



FIGURE 3. IBERIAN AND SCANDINAVIAN MIRROR DEPICTIONS. AFTER LING AND UHNÉR 2015. LEFT: IBERIAN STELAE (AFTER HARRISON 2004: FIGURE 7.18). RIGHT, CLOCKWISE FROM TOP LEFT: TOSSENE 427:4 (AFTER BENGTTSSON 2009), KVILLE 211 (AFTER FRED SJÖ 1981), TOSSENE 46:1 (AFTER BENGTTSSON 2009), KVILLE 211 (AFTER FRED SJÖ 1981), KVILLE 212 (AFTER FRED SJÖ 1981).

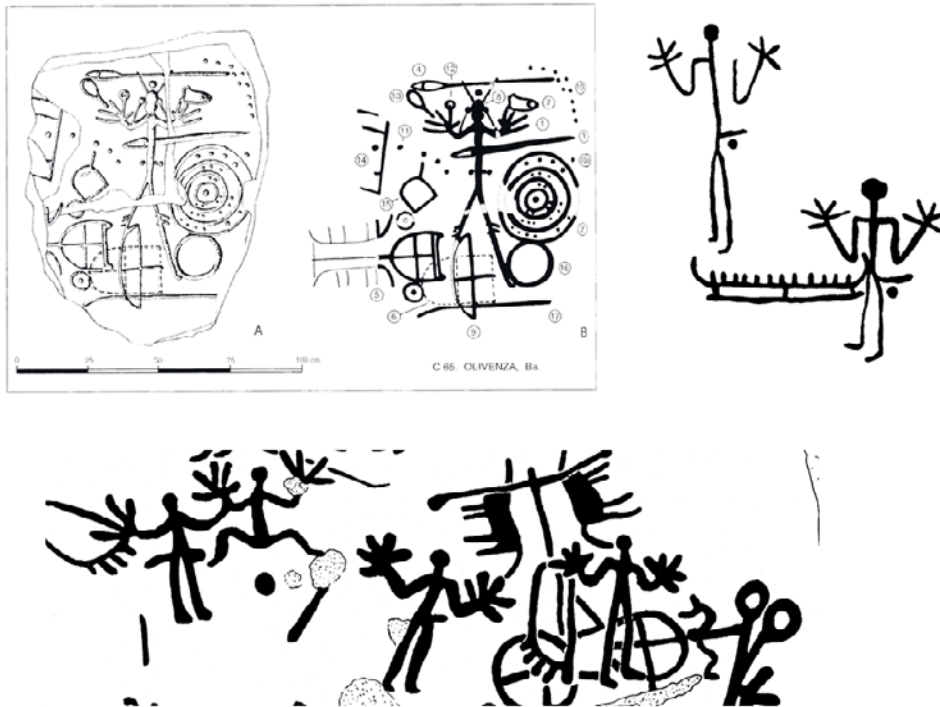


FIGURE 4. GESTURES IN FIGURATIVE ROCK ART, ADORANTS FROM SWEDEN AND IBERIA AFTER LING AND UHNÉR 2015. TOP LEFT: IBERIAN STELAE C 65 FROM OLIVENZA (AFTER HARRISON 2004). TOP RIGHT AND BOTTOM: SCANDINAVIAN FIGURES FROM ASKUM 68:2 AND 70:1 (AFTER BENGTTSSON 2002).

Conclusion

In this article we have tried to argue for that there existed strong links between Iberia and Scandinavia in the Bronze Age and that rock art and metal can be seen as evidence for this interaction. We have also argued for that there remains a conspicuous gap in the models that exclude Iberia in a Bronze Age world system. In short, our view is that there could not have been a European world system in the Bronze Age excluding Iberia and that the understanding of European prehistory can be advanced through a fuller appreciation of this fact. Recent advances in Mediterranean and Iberian archaeology show substantial contacts between Atlantic Iberia and the Mycenaeans, Cypriots, and Phoenicians (Mederos 1996; Blázquez 2011), long before the full-blown Phoenician colonies and ‘Orientalization’ of the Iberian Early Iron Age. This leaves a totally unexplored question to be confronted in our research: did two linear sea routes overlap in Late Bronze Age Iberia or did these become an integrated triangular network — Scandinavia–Iberia–Aegean/Levant? In this context it becomes relevant to re-examine the old idea of a connection between the British Isles and the eastern Mediterranean, going back to the shaft grave period of Mycenae (1600–1450 BC), the so called ‘Wessex connection’ (Harding 1984; 1990; Maran 2016), driven by the demand for tin and amber from the ‘sea beyond Europe to the north and west’, possibly in response to the exhaustion or interruption of earlier Afghan sources of tin combined with rising demand for Baltic amber. Perspectives to be pursued in our future research include the roles of Scandinavia and Iberia as terminus zones in an integrated Atlantic sea route 1300–900 BC, and the dual role of the Iberian Peninsula in the Late Bronze Age as an extraordinarily metal-rich country and the sole maritime junction of the Atlantic and Mediterranean networks.

In order to advance these issues we intend to apply the following methods:

- 1) Laser scanning and image based modelling of rock art in the Iberian Peninsula and Scandinavia, making it possible to map the sharing and spread of specific details of ideologies, cosmologies, iconographic conventions, and artistic techniques for the period c. 1300–c. 900 BC.
- 2) Isotopic and geochemical sourcing: to analyse extensive corpora of metal objects in Atlantic Europe as well as Iberian ores.
- 3) aDNA and isotopic results for human remains will be used to assess degrees of change in populations from later prehistory to early historic times: stable genetic geography will support preliminary indications of regional linguistic continuity
- 4) Use these new data to investigate a novel multidisciplinary hypothesis that understands the rise and fall of Bronze Age economic activity and social complexity as closely linked to the diversification of Proto-Indo-European into separate languages.

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Chapter 9

The Wild Boar in Scandinavian Rock Art

Peter Skoglund

Abstract

This paper discusses the rather scanty evidences of boar images in south Scandinavian rock art, and relates them to some general notions concerning wild boar hunting and the role of the boar in the European Bronze Age. Panels where representations of boars appear are discussed in detail. Based on these observations, it is argued that south Scandinavian rock art displaying boars should be viewed within the wider European context, where the wild boar was a prominent animal, frequently occurring in contexts underlining the ideals of male hunters: like bravery, risk-taking, and heroism.

Key-words: Bronze Age, rock art, Scandinavia, wild boar, wild boar hunt

Introduction

In South Scandinavian rock art, as well on contemporary decorated metalwork, various kinds of animals occur, for example, horses, bulls, pigs, deer, elks, fish, and birds. Some of these, like the horse, the deer and the bull, are discussed in detail by various researchers (Kaul 1998; Fredell 2010; Ling & Rowlands 2015), while others have not been considered to the same extent.

The boar is an example of the latter situation, which is seemingly a reflection of a poor data sample. The boar is not on decorated metalwork and it is only rarely represented in rock art. Rock art panels displaying boars are absent from major parts of Southern Scandinavia. Only few examples are known from Western Sweden, Norway and Denmark, while the only two concentrations of such images in Sweden occur close to Norrköping and Enköping, in Eastern Sweden.

The scope of this paper is to discuss the rather scanty evidences of boar images in South Scandinavian rock art, and to relate them to some general notions on wild boar hunting and the role of the boar in the European Bronze Age.

A prerequisite for this paper is a visit to Norrköping and Enköping in the summer of 2017, which I carried out together with several colleagues, including Gerhard Milstreu's longtime colleague and friend, Ellen Meijer. As part of a larger research project, Ellen made some new laser scanning of boar images, which serve as the empirical foundation for this paper. Discussions among the project group during the fieldwork included various aspects of wild boar images.

In underlining the important links between documentation, interpretation and publication, I am fortunate to have Gerhard Milstreu's achievement as an inspiring example. Throughout his career, Gerhard has linked ambitious documentation programs with relaxed and inspiring conversations in-between colleagues at *Tanums Hällristningsmuseum*, as well as public outreach, through exhibitions and publications. In combining all these efforts into a great success, Gerhard has set a stimulating example for all of us.

Wild boar hunting

The wild boar is native to much of Eurasia and parts of northern Africa. The boars are social animals living in female dominated groups, since the males leave the group around the age of one year. Wild boar differ widely in size. In today's Europe, males average 75–80cm in shoulder height, while females are slightly smaller. In the Mesolithic, the same numbers were 95-97cm, indicating better environmental conditions compared with today (Magnell 2005: 60).

Wild boar hunting goes far back in time. For the Mesolithic population, meat from wild boar was a regular part of the diet (Magnell 2005). However, from the Neolithic and onwards, remains of wild boars are rarely found in domestic settings, testifying to its marginal role as a food resource in these agricultural societies (Aldhouse-Green 1992).

However, we know from written sources and iconography that wild boar hunting did take place among the cultures of ancient Europe. For example, the Greeks, the Celts and the Romans practiced wild boar hunting. In these societies, boar hunting was part of a social activity associated to values like male identity, heroism and warriorhood. These associations arise from the circumstances that wild boar hunting (especially with a Bronze Age technology) was a dangerous activity, which potentially could cause the death of the hunter (Aldhouse-Green 1992).

Historically, wild boar hunting has often been associated to the use of spears and dogs. In his book, *On hunting*, the Greek writer *Xenophon* (c. 430-354 BC) gives a detailed account on this kind of hunt (1925: Chapter 10). According to him, wild boars were hunted with the help of dogs, nets, javelins, and spears. The dogs tracked the animals and when their lair was identified, nets were hung in the trees and the bushes. The dogs approached the boar in order to drive them into the nets. Then the men threw javelins and stones at the boar. If the boar was still alive, the most experienced man in the group approached the boar and thrust his spear into the body.

In addition, Xenophon underlines the importance of hunting in pairs, two and two, since if the boar attacked the hunter and knocked him down, he must lay down close to the ground. In this position, the boar is unable to lift the man's body due to the upward curve of the tusks. Now, his fellow hunter must distract the boar, and turn the animal's attention away from the person on the ground.

From Xenophon's account, we learn that several people operated together, using a broad range of equipment to hunt wild boar, including: hunting dogs, nets, javelins, spears and stones. Moreover, Xenophon underlines the dangerous aspects of the hunt and the risk of the participants being killed by the wild boar.

Wild boars and warrior identity

As testified by Xenophon's account, the wild boar is a tough, aggressive and stubborn animal, which have developed associations with ideas such as maleness, braveness and warriorhood (Hedeager 2011: 89-90). The association between wild boars and bravery is found in both written sources and material culture across Europe.

The wild boar occurs in Greek mythology, where heroes frequently fight wild boar. For example, *Odysseus* fought a wild boar in his youth and the injuries sustained left a scar on his body, serving as a permanent reminder. His wet-nurse, *Eurycleia*, was able to identify him from this scar on his arrival home to Ithaca. Odysseus acquired the scar when he fought and defeated a wild boar on his own, without the help of fellow comrades. In addition, he wore a wild boar tusk helmet, which further underlined his association to wild boar symbolism (Levaniouk 2011: Chapter 10). Such helmets were constructed using slivers of boar tusks, which were attached to a leather base and arranged in rows (Mödlinger 2013).

Wild boars occur quite frequently in Celtic iconography as figurines and statues, and as decoration on helmets. For example, helmets ornamented with wild boar crests are depicted on the Gundestrup cauldron (Aldhouse-Green 1992: 46-52).

Similar kinds of iconography are also found on the Late Iron Age helmets from Vendel and Valsgärde, outside Uppsala, in Sweden, dating to AD 550-800, some of which have wild boar images displayed on the helmet (Andersson 2015: 57). Helmets having three-dimension boar figures on its crown are also known in the British material, and these kinds of helmets are mentioned several times in the Beowulf saga, where they for example are referred to as '*swin ofer helme*' (Donoghue 2002: line 1286; Webster 2002: 218). The association between warriors and these kinds of helmets is a very strong one and the boar image is actually used to represent the warrior himself (Webster 2002: 218).

All the these examples, taken from various parts of Europe and representing different periods, all share in common an association between wild boars and warriors.

Wild boar hunting in Scandinavian rock art

In Scandinavia, wild boars appear mainly in a rather restricted number along the mainland of Eastern Sweden, close to the towns of Norrköping and Enköping. While the panels in Enköping depict peaceful encounters between human and boars, in Norrköping, there are examples of actual hunting scenes.

These hunting scenes appear at the largest rock art site at Norrköping namely Himmelstalund, which holds several panels with numerous images representing ships, axes, humans and various animals like bears, elks, horses and boars; just to mention some of the motifs (Nordén 1925; Hauptman 2002; Tilley 2008; Ljunge 2015; Nilsson 2017). The majority of the images at Himmelstalund were probably made in Montelius' Period II and III (Nilsson 2017). It is likely that the wild boar images are from the same period.

The hunting scenes displaying boars are three in number and appear on two different panels.

The first hunting scene, and the most famous one, is an oversized boar confronting two humans with raised spears surrounded by two dogs (Figure 1). This scene depicts the moment of confrontation just before the hunters are about to thrust their spears in the boar. The function of the two dogs is to help the men to keep the boar in place, hindering escape. On top of the oversized boar are another four smaller animals with humpbacks indicating they too are representations of boars.

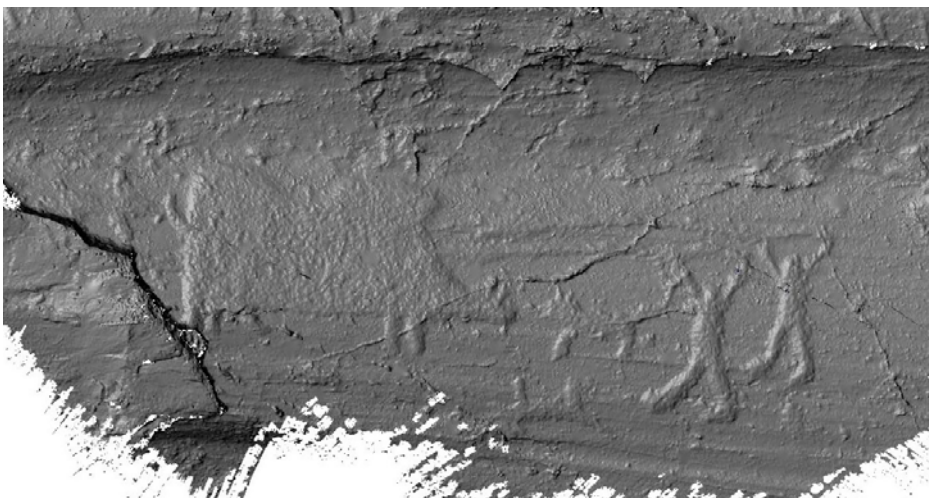


FIGURE 1. LASER SCAN OF OVERSIZED BOAR CONFRONTED BY TWO PEOPLE WITH SPEAR IN HAND. HIMMELSTALUND, ÖSTRA ENEBY PARISH. NORRKÖPING. LASER SCANNING BY ELLEN MEIJER, SHFA.

The second hunting scene, is found on another panel and is situated in a wide, furrow running across the rock surface. It is part of a composition including groups of boars, ships, swords, humans and horses (Figure 2). This hunting scene consists of about 20 boars and one human image. The boars are of different sizes, indicating a typical group of boars including both elder female boars and young piglets.

The human person is bending slightly forward holding a stick, that, due to its broader and pointed edge, should be interpreted as representing a spear. The spear is held in an attack position, pointing down and towards the back of a larger boar that is standing in front of the human. This way of using a spear in close-contact situations seem to be in accordance with results from use-wear analysis on contemporary metal spears (Horn 2017).

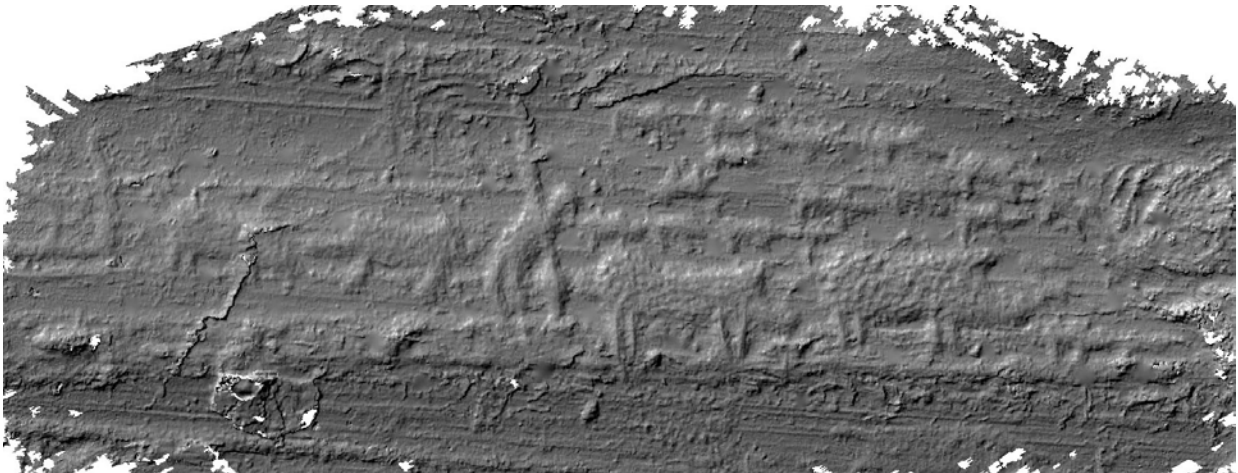


FIGURE 2. LASER SCAN OF A GROUP OF BOARS AND A HUMAN HOLDING A SPEAR. HIMMELSTALUND, ÖSTRA ENEBY PARISH. NORRKÖPING. LASER SCANNING BY ELLEN MEIJER, SHFA.

The third possible hunting scene is located on the same panel a short distance away from the first one (Figure 3). The scene consists of at least ten boars and three humans. The boars are of different sizes indicating a group of boars of various ages. The human image to the right is of particular interest, since there is a curving line running from the upper part of the body and ending at the back of the boar. At the end of the line, it gets slightly thicker, indicating the line may represent a spear. If so, the person is holding a spear above the head and thrusting it into the back of a wild boar.

It should be noted though that thrusting a spear into the back of a boar is not a realistic representation of a hunt, since the hunter would aim to hit the lungs or the heart, which are placed slightly below the shoulders. This observation, together with the curved shape of the possible spear, makes it doubtful whether we are actually dealing with a hunting scene. Possibly, the spear is a later addition, which would help to explain its position and outline.

Altogether, these three compositions give some insights into wild boar hunting in Southern Scandinavia during the Bronze Age.

The boars are realistically displayed, sometimes having a humpback and having the head close to the ground. They appear in herds of various sizes and ages. The wild boar hunt is accurate in the depiction of spears and the use of dogs as essential aid during the hunt. The dogs had two important tasks to fulfil; to track the boar and to keep the boar in place, in order that it could not escape from the hunter (Magnell 2005: 65).

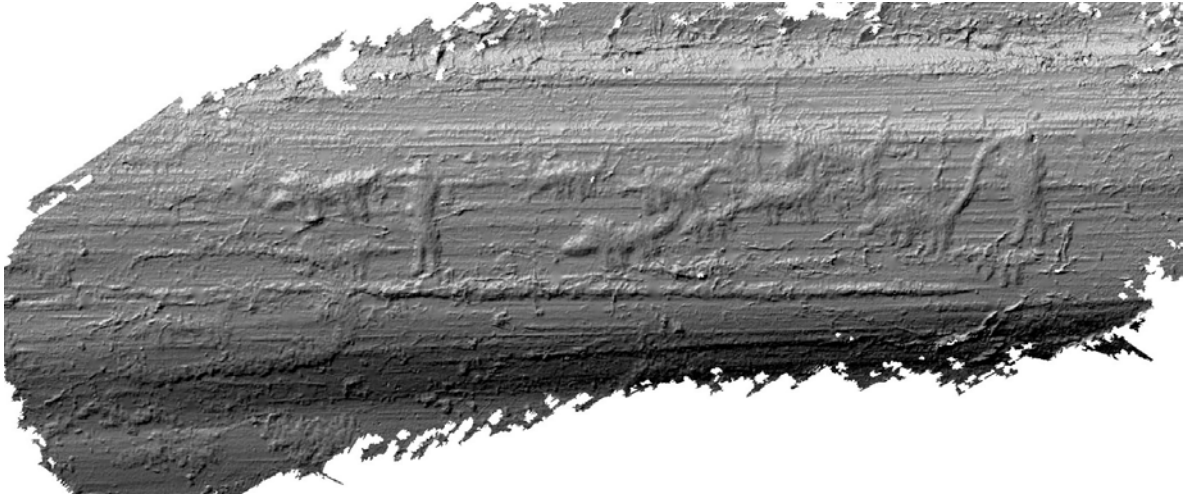


FIGURE 3. LASER SCAN OF A GROUP OF BOARS AND THREE HUMANS, ONE OF WHOM IS HOLDING WHAT MIGHT BE A SPEAR. HIMMELSTALUND, ÖSTRA ENEBY PARISH. NORRKÖPING. LASER SCANNING BY ELLEN MEIJER, SHFA.

However, when it comes to the human-boar encounter, focus is not on realism but on underlining the dangerous aspect of this interaction. In reality, due to the danger of approaching a wild boar alone, group operations were, almost certainly, the most common; but on the panels people are approaching the wild boar individually or operating two and two. In all three sceneries, it is the moment just before the spear tip meets the bore that is represented. This is a very precarious moment requiring a lot of braveness and courage. A successful wild boar hunt, would define a person as having the characteristics required for not only becoming a successful hunter, but also a great warrior (Levaniouk 2011).

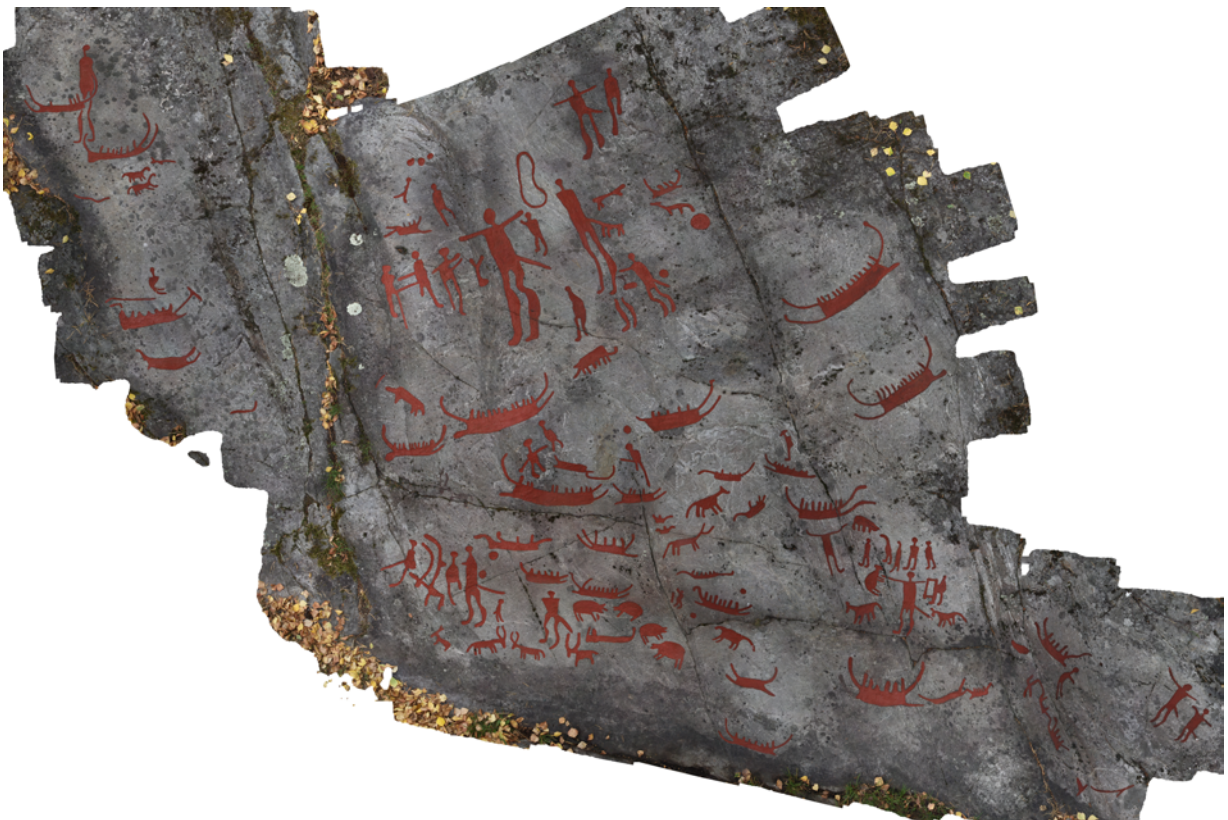


FIGURE 4. PANEL AT BOGLÖSA 94, RICKEBY, BOGLÖSA PARISH, ENKÖPING. SFM BY ELLEN MEIJER, SHFA.

In conclusion, the boar images at Norrköping seem to demonstrate the importance of wild boar hunting as a means to achieve glory and fame, as well as underlying values of heroism and male identity.

Boar images that are not part of hunting scenes

Outside Enköping, also in Eastern Sweden, boars appear in peaceful encounters with humans, indicating that the boar also played other roles in society. In Enköping, a number of boar images appear at Boglösa, 94, Boglösa 131 and Boglösa 160 (Kjellén & Hyenstrand 1977; Coles 2000; Ling 2013)

At Boglösa 94, outside Enköping, representations of boars are found together with a larger group of humans, numerous ships, bulls and a footprint (Figure 4). Based primarily on the shape of the ship images, a plausible dating for a majority of the images on this panel can be suggested within Montelius' Period II-III (cf. Ling 2013). There are at least eight boars on this panel; they are interwoven with humans, many of whom have swords attached to their bodies. The swords enable us to identify some of these humans as warriors. In this context, the boars are likely to function as a more general sign of warriorhood.

As mentioned above, boars are absent, or very rare, in the western part of Scandinavia, something that is also true for Northern Bohuslän, which is otherwise exceptionally rich in rock art (Bertilsson 1987).

The only images of boars in Bohuslän that are known to the author are found at the Fossum panel (Kaul 1998; Melheim 2013; Ling & Bertilsson 2016). The panel includes a large number of human images, several ships, approximately 15 animals, two pairs of footprints and some complex circular designs (Figure 5). Four, or possibly five, of the animals are boars. The boars are positioned two and two, opposing each other. The two sets of boars are placed on top of each other. Another possible boar appears a bit to the right of this group of four boars.



FIGURE 5. FOSSUM, TANUM PARISH, BOHUSLÄN. SHFA BILD-ID 32. PHOTO: GERHARD MILSTREU, TANUMS HÄLLRISTNINGSMUSEUM, UNDERSLÖS.

Recently, a new analysis of the panel indicate a dating of a majority of the human images and associated features to Montelius' Period II-III, while the ships on the panel were added in Montelius' Period IV-V (Ling & Bertilsson 2016). The panel distinguishes itself by being a very clear example of depictions of warriors involved in combat and hunting. Several of the men are holding so called Skogstorp axes in their hands. These are ritual axes, and very few are known from the archaeological record (Montelius 1917). The Skogstorp axes, together with the depicted sceneries, relate the Fossum panel to an aristocratic warrior and hunter context.

The Fossum panel gives a very clear depiction of various aspects linked to a warrior ethos, since combats and hunting are represented in a very detailed way. Interestingly, the only boars in Northern Bohuslän

appear in this context, further strengthening the relationship between a warrior identity and the wild boar. Similar intertwined relationships between warriorhood and hunting are not restricted to Scandinavian rock art, but are found in various cultures (cf. Collins 2014: 629; Reid 2005: 207-207).

Finally, the sites at Boglösa 131 and Boglösa 160, outside Enköping, should be mentioned. Here, the situation is somewhat different from the above-mentioned examples. On these two sites, representations of boars appear in rather high numbers, together with humans that are not wearing swords or having other kinds of attributes, which would justify an interpretation of them being warriors. The display of boars on these panels testify that boars can appear in various contexts, also in situations lacking associations with warriors or hunting.

Concluding remarks

Images of boars are quite rare in the rock art of south Scandinavia. They are concentrated around Norrköping and Enköping, in Eastern Sweden, though minor examples occur outside this area, most prominently at the Fossum panel in Northern Bohuslän, Western Sweden. The wild boar themselves cannot be dated, but there are several examples of boars appearing together with ships or objects that can be dated to Montelius' Period II and III, indicating that a majority of these images were made in the period 1500-1100 BC. The boars appear in three different kinds of contexts. They are part of hunting scenes: where one or two humans are hunting boars with the help of spears (Himmelstalund), they occur in a warrior contexts (Boglösa 94, Fossum), and, finally, they appear together with humans that cannot be attributed as warriors (Boglösa 131 and Boglösa 160).

In the first case, the images depict the moment just before the hunter is thrusting the spear into the boar. This is a very dangerous moment requiring a lot of braveness and courage. These scenes seem to refer to values like male bravery and heroism.

In the second case, boars appear in relation to warriors. Probably, the dangerous wild boar in these contexts represented ideas linked to a male hunter and warrior ethos.

In the third case where boars appear in 'peaceful' encounters with humans, the function of the boars on these panels is open to question. However, given the widespread significance of the wild boar in the Bronze Age of Europe, it seems likely these images too are representations of wild boars, rather than domesticated pigs.

In conclusion, depictions of boars in South Scandinavian rock art should be viewed within their wider European context, where the wild boar was a prominent animal, frequently occurring in contexts underlining the ideals of male hunters, like: bravery, risk-taking, and heroism.

Acknowledgement

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Chapter 10

Women on the move in the Nordic Bronze Age: a case study based on rock art and costume

Sophie Bergerbrant and Anna Wessman

Keywords: Östergötland, Sweden, clothing, migration, mobility, gender, petroglyph

Introduction

Traditionally the Bronze Age has been seen as a man's world, with travelling chiefs (e.g. Kristiansen 2017; Kristiansen and Larsson 2005), active bronze smiths (Goldhahn 2007) and men acquiring bronze via long distances contacts (Ling and Uhnér 2014). A structure based on alliances and gift exchange prevailed (e.g. Kristiansen 1998:85-98; Rowlands 1980). In these interpretations, women have been viewed as 'the supreme gift' (Lévi-Strauss 1969:65), with an otherwise limited role in Bronze Age society, not as actors in their own right (see Bergerbrant 2007: chapter 7 for further discussion).

Despite this role as a supreme gift, females are virtually absent from rock art research. One might have assumed that rock art representations could be associated with dowries or depict processions of people going to important events such as the sealing of alliances, e.g. weddings. Instead, rock art research has focused on ships, warriors and travellers (Kristiansen and Larsson 2005; Ling 2008; Winter 2001), all of which have been assumed to be associated with males. There are a few noteworthy studies (e.g. Bengtsson 1999; Goldhahn and Fuglestedt 2012; Horn 2017; Mandt 1987) that focus on possible female representations in rock art. Based on a study of rock art in North America by Heys-Gilpin (2004: 29-36), Horn (2017: 240) has suggested that there are certain anatomically-related features that can be used to locate females in Scandinavian rock art, e.g. images that depict birthing, specific body shapes such as hips and waists, female breasts, genitalia, pregnancy and sexual intercourse. Surprisingly, clothing and costume were not included among these criteria for identifying gender in rock art. Later in the article, Horn (2017: 247) also argued that female figures are connected to a limited range of things, mainly ships and clothing. In this study we will use individual pieces of clothing and costume in an attempt to gender individuals in a particular scene from rock art, Östra Eneby 27:1.

In the archaeological record, strontium research on the Egtved and the Skrydstrup burials (Frei *et al.* 2015; 2017) has recently shown that there were a variety of possibilities within female movement patterns. In the case of Skrydstrup, it is evident that there has been one long-distance journey in the woman's life (Frei *et al.* 2017), and for the other, Egtved, multiple journeys can be seen (Frei *et al.* 2015). A picture is unfolding that includes complex travel patterns for both males and females, as can be seen in a number of other Bronze Age European studies as well (e.g. Bergerbrant *et al.* 2017; Knipper *et al.* 2017; Sjögren *et al.* 2016; Wahl and Price 2013; cf. Oletze *et al.* 2012). Some researchers have even argued that "[t]he results also attest to female mobility as a driving force for regional and supraregional communication and exchange at the dawn of the European metal ages" (Knipper *et al.* 2017: 1).

With this background in mind, the aim of this article is to examine whether females — and female travellers in particular — can be seen in Scandinavian rock art. The rock art panel Östra Eneby 27:1 Leonardsberg, Östergötland, provides a case study, and interpreting the costumes worn by the human

representations forms an important part of the interpretation. This kind of analysis is possible through a new approach taken by the authors, first we employed the Structure for Motion (SfM) method to document the scene. This way of documenting rock art has recently become an established method within rock art research (Bertilsson 2015; Bertilsson *et al.* 2014, 2017; Meijer 2015) and involves 3D technology based on overlapping digital photography (Bertilsson *et al.* 2017:293). This documentation was the foundation for the interpretation. In a late stage we got access to a scanning with optical laser (OLS) of the scene made by Ellen Meijer using a Handyscan 700. This is a different way to make a 3D model of rock art (Bertilsson *et al.* 2017; Horn *et al.* 2018). The new approach enables new interpretations and perspectives thanks to the higher resolution and accuracy of detail it provides.

Rock art in the Norrköping area

Norrköping is one of the most famous areas for rock art in Sweden, and with approximately 200 figurative rock art panels it is also one of the largest. The rock art in this area has been known since the eighteenth century (Ljunge 2015:18) and has played a key role in Scandinavian rock art research, not least in terms of dating. Bror Emil Hildebrand (1869) compared the swords depicted in the Norrköping area (Ekenberg) to real bronze swords and thereby confirmed that the Nordic Bronze Age rock art tradition should be dated to the Bronze Age. The rock art is mainly located in the western parts of Norrköping, but is also found to the south, west and north of the city. Most of the rock art is situated near the river Motala ström, which cuts through the modern town. Motala ström is also a passage to lakes and bodies of water that connect the Baltic Sea to the great lake of Vättern in central Sweden. This communicative location in the landscape is typical for Nordic Bronze Age rock art areas, and is often discussed as an indicator of the close connection between rock art and movement, travels and trade (Helskog 1999; Kjellén and Hyenstrand 1977; Ling 2008, 2013; Ling and Uhnér 2014; Nimura 2016).

The largest rock art panel, Östra Eneby 1, is situated in the Himmelstalund area, and contains approximately 1800 motifs (Ljunge 2015:195). Other large and well-known panels are found at Ekenberg and Leonardsberg. Rock art was made here throughout the Bronze Age, although the early periods are strongly represented (Nilsson 2017:65). After cup marks, the ship is the most common motif in the Norrköping area (Hauptman Wahlgren 2002:65; Ljunge 2015; Nilsson 2017), which underlines the relationship between rock art and travel. Animals form the second most common motif, followed by foot soles, indeterminable symbols, humans, circles, weapons and wagons (Hauptman Wahlgren 2002: 69-87). In addition, there is also a group of other motifs that do not fit into any of these categories, which for example include frame figures, cloaks and tree figures (Hauptman Wahlgren 2002: 69-87). Some motifs in this area relate to the real material world of the Nordic Bronze Age, i.e. they depict bronze objects that are also represented in archaeology (Hauptman Wahlgren 2002:80-81). This can be seen both in the choice of subject matter and in the details of the artefacts. This is especially true concerning the swords (Hildebrand 1869), which are depicted with such precision that one can assume that the carver has seen and handled these items. They are often depicted in their actual size and with details that are closely connected to features that are also found on preserved bronze items. These sword details were the foundation for Hildebrand's (1869) chronological work that dates the majority of Nordic Bronze Age rock art to the Bronze Age. Thus, the carver must have been familiar with many of the bronze artefacts from the contemporary world. Curiously, this cannot be seen in the archaeological record of this region, as the bronze finds from this area are rather modest (Baudou 1960; Oldeberg 1974). Despite this, the rock art panels in the Norrköping area include c. 55 sword depictions (Hauptman Wahlgren 2002:80), while only 13 bronze swords dating to the Bronze Age from all of Östergötland are found in the catalogues of Oldeberg (1974) and Baodou (1960). These comprise 12 swords from the Early Bronze Age (Oldeberg 1974) and only one sword from the Late Bronze Age (Baudou 1960).

Case study: Leonardsberg, Östra Eneby 27:1

Östra Eneby 27 is situated just outside Norrköping in close connection to where the river Motala ström connects to the lake Glan (see Figure 1). This panel consists of 118 rock art features: 36 ships; 7 animals; 2 foot soles; 20 human figures; 3 circles; and 50 geometrical forms and cupmarks (Wessman in prep.). Based on the ship-types (see Ling 2008) it seems that the majority of motifs on this panel were made during Montelius Periods II-III (1500-1100 BC). The motifs analysed here include seven human figures, likely standing in a ship (Figure 2). The motif has been interpreted as a procession by Coles (2003). However, the SfM showed clear indications of a ship in the right side of the frame. The lower portion of the left side was not imaged as comprehensively as it could have been, as the discovery of the ship was a surprise. However, the OSL confirmed the presence of a ship. It is placed in the north-western part of the panel and is between other motifs, mainly ships, animals and other human figures. In the following, five of the seven human figures in this scene will be analysed in terms of age, gender and costume.



FIGURE 1. ÖSTRA ENEBY 27:1 IS PLOTTED ON BOTH THE LARGE AND THE SMALL MAP. THE LARGE MAP SHOWS ITS PLACEMENT IN SWEDEN AND THE SMALL MAP SHOWS ITS LOCATION IN THE LOCAL SETTING.

There are seven complete Early Bronze Age costumes preserved in some of the famous Danish oak-log coffin burials, and these burials provide important clues, by analogy, for interpreting the figures portrayed in Östra Eneby 27. The burials include three females (Borum Eshøj grave C, Egtved and Skrydstrup) and four males (Borum Eshøj Grave A, Borum Eshøj grave B, Muldbjerg and Trindhøj grave A) (Broholm and Hald 1940). There are two different female costumes (see Figure 3), both incorporating a blouse, but one with a long-skirt and the other paired with a corded skirt (Broholm and Hald 1940; Bergerbrant 2007: 54-60). For the men, there are two basic costumes, which include a cloak and a kilt or a wrap-around (Broholm and Hald 1940; Bergerbrant 2007: 50-54; see Figure 4 and 5). There is a possibility of another type of costume as seen in the large textile fragments found in the Nybøl burial, though that is based only on traces, due to the fact that only one of the textiles was completely preserved in that oak-log coffin (Bergerbrant *et al.* 2013). Actual preserved and complete pieces of clothing are only known from Jutland, whereas there are examples of elements of the male costume depicted in rock art in other areas. The latter can mainly be seen in the cloaks that are depicted in several different rock art panels from Uppland to Scania (Almgren 1960:31-37; Coles 2000: 69-74; Goldhahn 2005: 78-79; Hauptman Wahlgren 2002:86-87). There are also some examples that may show a wrap-around dress, i.e. Boglösa 131: Boglösa 138 (Almgren 1960: 32-35), although these have also been interpreted as oxide ingots (Ling and Stos-Gale 2015). However, as Almgren (1960: 33-36) has pointed out, the measurements of both the mantels and the wrap-around match the preserved pieces of costume in the oak-log coffins.

Among the seven figures (see Figure 2), there are two children that are both depicted on the left side of the picture. The first child can only be seen faintly in the SfM and the OSL image (Figure 2), and is not placed on the same level as the other figures. The second child wears either a corded skirt or a kilt, but is not detailed enough to see the upper body or the head, thus it is not possible to know whether a blouse was worn; therefore, the child cannot be gendered. A corded skirt was found in at least one child grave, Trindhøj grave C (Fossøy and Bergerbrant 2013; Bergerbrant 2014: 84). The child in the Trindhøj grave C has no preserved bones, but based on the coffin size and the size of the artefacts the individual has been estimated to have been no more than seven years old, and possibly as young as four (Bergerbrant 2014: 84). The size of child two in relation to the adults indicates that this was also a fairly young child, who would have been somewhere in the age range between four and seven. Children occur only rarely in rock art (Goldhahn and Fuglestedt 2012), and in the burial record children are seldom found in mounds (Bergerbrant 2007: chapter 6); however, children are more commonly found in gallery graves and flat graves dating to the Bronze Age (Bergerbrant *et al.* 2017). To have two children depicted in a scene of seven people makes this representation special.

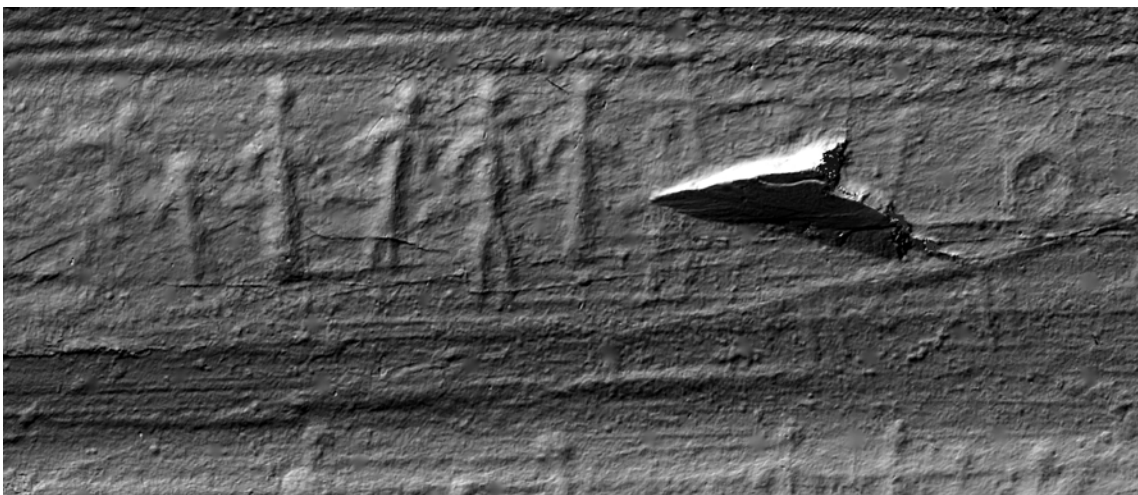


FIGURE 2. OSL IMAGE OF THE SCENE IN QUESTION FROM ÖSTRA ENEBY 27:1 © SHFA, E. MEIJER 2017



FIGURE 3. A FEMALE WEARING A CORDED SKIRT AND ANOTHER WITH A LONG SKIRT. ILLUSTRATION: RICHARD POTTER (FROM BERGERBRANT 2014).



FIGURE 4. MALE DRESSED IN A KILT, BORUM ESHØJ GRAVE B, RECONSTRUCTION BY SIGYIN STENQVIST, ©BERGERBRANT & STENQVIST 2007. FROM BERGERBRANT 2007: 51.

Based on costume, figures three and six are probably female. Both appear to be wearing a long skirt secured from their waist/hip and covering their feet, with an overhang of textile on the hip/bottom as is seen in the Skrydstrup burial (Broholm and Hald 1940; Bergerbrant 2007: 55-54; Figure 3). It is more difficult to discern the pieces of clothing on the upper body, although the upper arm to the elbow area seems considerably thicker than the lower arm, indicating that the women wore blouses. Figure three seems to have an elaborate coiffure, like both the women wearing long skirts in the Skrydstrup and Borum Eshøj burials (Broholm and Hald 1940). This seems likely for figure six as well, though that is more difficult to confirm due to the quality of the rock art. Both women appear to be adults, though adulthood in the Bronze Age seems to begin around age 14-15 (Neugebauer-Maresch and Neugebauer 1988: 30, Simoniet 1996: 353), so all we can say is that they are most likely over 14-15 years old.

Figure seven is partly damaged and heavily worn, but seems to be slightly shorter than the other adult figures, so perhaps this individual was an adolescent. The figure wears a piece of clothing that ends above the knee and seems to have fairly short hair that can be seen on both sides of the head. One could possibly compare her with the Egtved burial (see Thomsen 1929). One of the few pieces of evidence we have about the corded skirts is that they seem to be short and end above the knee, as seen in the Egtved and Gindrup examples (Bergerbrant *et al.* 2012; Fossøy and Bergerbrant 2013). Hypothetically, this figure could be another female, but it may alternatively be a male wearing a short kilt or wrap-around. The gender of the figure could not be determined with any kind of certainty.

Figures four and five are probably both male based on the clothing. Each seems to be wearing a wrap-around, a piece of clothing that covers the body from about upper chest to the knees, just like the men in Muldbjerg and Trindhøj grave A (Broholm and Hald 1940). The men are not wearing cloaks, as both arms can be seen, and they appear to have short hair.

Based on the size of the figures and their clothing, the panel appears to portray two children and one adolescent, none of which could be positively gendered based on the clothing due to the preservation of the rock art, though it is possible that two wore corded skirts. Four of the individuals were adults, two women and two men.

Thus, it seems that these figures represent different genders and age groups. Through the detailed carving of proportions and parts of costume adorning these figures each has been given an identity. Their likely placement is on a ship, though the ship is not carved as deeply as the human figures. If not passengers on a ship, the group is at least situated in close proximity to 35 depicted ships, situated in a communicative landscape (see Figure 1).

To conclude the discussion relating to this scene, it seems likely that it portrays a group of people who were on the move. The people are dressed as was typical in Bronze Age Denmark and Scania, as confirmed through archaeology (Bender Jørgensen 1986; Bergerbrant 2007, 2014; Broholm and Hald 1940), showing that this fashion was known in detail, and was probably worn by some people in the area around Norrköping. The rock art scene shows us that people travelled in larger groups rather than individually or in pairs (cf. Berntsson 2005:198-199). It also demonstrates that men, women and children all participated in different journeys. Rock art has often been connected to the ritual sphere (Goldhahn 1999; Kaliff 2007; Kaul 2004; Kristiansen and Larsson 2005; Larsson 1999; Skoglund *et al.* 2017; Thedén 2004), so is this depiction a mythological scene or would it have been regarded as an accurate portrayal of a Bronze Age reality? In order to better understand this we need to examine other kinds of evidence for female travel in the archaeological record.

Migration, movement and travel

Migration, movement and travel have often been taken for granted in archaeology, and few researchers have proposed theoretical strategies for the study of interaction (see Kristiansen and Larsson 2005: chapter 1 for further discussion). It has been pointed out that migration contains a number of processes: cultural, economic, mental and social. Migration is two processes at the same time: emigration and immigration (Alsmark *et al.* 2007: 7-8). Migration, whether small or large-scale, therefore has an effect on not just one society but two. Despite the fact that migration has become a buzz word in archaeology lately, especially concerning aDNA (e.g. Allentoft *et al.* 2015; Cassidy *et al.* 2016; Haak *et al.* 2015), very little has been done in Western Europe in terms of theory (e.g. Anthony 1990, 2007; Chapman and Hamerow 1997; Cassel 2008).

There are a number of different ways to define migration (Chapman and Hamerow 1997: 1). Tilly (1978: 50) argues that there are two different types of movements of people. The type of movement that occurs is dependent on the distance and the break with the area of origin. The most common type of movement is mobility that consists of a move that “involve[s] too little distance and/or too little break with the place of origin to count as migration at all” (Tilly 1978:50). The other type of movement of people/individuals is migration. Based on Tilly (1978), Anthony (1997) discusses five different types of migration: Local migration, Circular migration, Chain migration, Career migration and Coerced migration (for a short definition of these concepts see below).



FIGURE 5. MALE WEARING WRAP-AROUND, TRINDHØJ BURIAL, RECONSTRUCTION BY SIGYNN STENQVIST, ©BERGERBRANT & STENQVIST 2007. FROM BERGERBRANT 2007: 52.

In general, mobility comprises the shorter movements, the ones we undertake every day, or shorter trips. These are movements of individuals that do not place them out of their social contexts for an extended period of time (Tilly 1978: 50).

According to Tilly, local migration “shifts an individual or household within a geographically contiguous market” (Tilly 1978: 51). The break with one’s place of origin is likely to be small. This type of migration is probably the most common type migration (Anthony 1997: 26). In archaeology this might be visible in the movement of a household, setting up a new household for a new generation.

Circular migration “takes a social unit to a destination through a set of arrangements which returns it to the origin after a well-defined interval” (Tilly 1978: 52). This includes movements relating to seasonal work, such as moving area to work with harvest (Tilly 1978: 52). Anthony (1997: 26) adds mercenary soldiers and points out that this is migration with the intention of return. If the migration completes its circle this could be difficult to catch archaeologically, unless we are as lucky as in the Egtved case (Frei *et al.* 2015) to have material that can show short term movement.

Chain migration involves the movement of socially-related people from one area to another (Tilly 1978: 53-54). This is a kind of informed mobility. Frequently, this is characterised by the movement of one category of people, often individuals within a specific occupation. An example of this, as noted by Tilly (1978: 53-54), is the movement of Spanish women from Spain to Rome to work as courtesans. Anthony (1997: 26) adds that this movement category has a specific aim, and intervening areas are left untouched, and so this can often be regarded as the so-called leap-frog type of migration. This type of migration can have implications on the genetics of populations, as he argues it is often kin-structured (Anthony 1997: 26). The Lüneburg foreign women found in Scandinavia can probably be seen as the result of this type of migration (Bergerbrant 2007: 119-123).

Career migration involves “persons or households making more or less definitive moves in response to opportunities to change position within or among large structures: organized traders, firms, government, mercantile networks, armies, and the like” (Tilly 1978: 54). Tilly (1978: 54) argues that this type of migration is not based on social bonds at the emigrant’s area of origin, but is based on the larger structure. Anthony adds that this would include any prehistoric specialist in a hierarchical profession, such as soldiers and artisans (Anthony 1997: 27). In some cases, this category of migration is probably archaeologically visible, for example in Roman burials.

Coerced migration is a term defined by Anthony (1997: 27), although Tilly (1978: 57-63) mentions that some of the great flows of migration were due to force. Anthony argues that this includes “displaced persons, refugees, slaves, and social pariahs [who] migrate not because they choose to, but because they are forced from their home ranges or regions” (Anthony 1997: 27). He also observes that people do not move randomly, even in distress (Anthony 1997: 27).

Tilly (1978:50) argues that the different types of migration have different gender patterns, where circular migration in particular has a tendency to concern just one of the sexes, while local and career migration does not show any major sex selection. The gender concerned depends on which occupation is involved, whereas in chain migration the sex-selection often changes over time (Tilly 1978:50). This can be an important clue when we discuss prehistoric migration. Are we talking about single sex migration or migration of both sexes? Tilly continues that a high proportion of individual migration before the twentieth century AD consisted of transfer of labour among households. Further on he writes that the marriage and the termination of marriage were probably “the most significant demographic spurs to migration” (Tilly 1978, 66).

Many of these patterns of movements are archaeologically visible, though some are more difficult to discern than others. The different categories of migration undoubtedly produce different material traces. In the discussion below the scene from Östra Eneby 27:1 will be discussed from a migration perspective with a special focus on possible female migration.

Women and travel in the archaeological record

Until recently, as pointed out in the introduction, migration, journeys and travel have been associated with the male sphere. The high precision analyses of Egtved (Frei et al. 2015) and Skrydstrup (Frei et al. 2017) with a number of strontium isotope analyses on teeth (Bergerbrant *et al.* 2017; Knipper *et al.* 2017; Sjögren *et al.* 2016) have shown that women have taken journeys and migrated, and that travel and journeying were therefore not an exclusively male activity in the Bronze Age. Below both archaeological and strontium isotope data for females who have journeyed, migrated and/or travelled will be discussed.

Traditionally we have seen the movement of women through the so-called foreign women (women buried with costume that are from a different area than the one in which they were buried). Jockenhövel (1991) argues that the women in the Middle Bronze Age (1600-1300 BC) in present-day Germany have a mobility pattern where a woman generally moved between 50-100 km, even though there are also a few cases of women who moved more than 200 km. However, there are just a few cases of so-called foreign women; viewed from the archaeological material, most of the Bronze Age women moved only within the local or regional group (Bergerbrant 2007: 119-121; Jockenhövel 1991). In southern Scandinavia the so-called foreign women from Period II (1500- 100 BC) and Period III (1300-1100 BC) are buried in the costume belonging to the Lüneburg culture group (Bergerbrant 2007: 119-121). It is possible that the Late Bronze Age had a different pattern, as a female with Nordic Bronze Age objects has been recovered in Switzerland. These objects have been interpreted as possibly having arrived in Switzerland as bridal equipment (Thrane 1975: 225-228). In other words, there may have been a change in the migration patterns or in the kin patterns, and the Lüneburg women buried in Scandinavia are probably part of an informed, chain migration. This migration is likely to have been related to kin structure and a long history of contacts. We have very little evidence of foreign women in the Late Bronze Age, or for that matter of migration at all. Only a few studies have been conducted on the Scandinavian material (Bergfjord *et al.* 2012; Harvig *et al.* 2014), although as the research project *Tales of Bronze Age Women* (Nationalmuseum) involves both Early and Late Bronze Age material, there is some promise for a future understanding of this change.

Strontium isotope analyses have given us a new angle from which to study the movement of people (see e.g. Montgomery 2010 for details about possibilities and limitations of strontium isotope analysis). Strontium isotope analysis from many parts of Bronze Age Europe has shown that a person could be buried in a geological area outside the one in which he/she was born (Knipper *et al.* 2017; Sjögren *et al.* 2016; Wahl and Price 2013), and that this happened more frequently than previously thought. Few studies have been conducted on Nordic Bronze Age material to date (Bergerbrant *et al.* 2017). However, the high precision studies of Egtved (Frei *et al.* 2015) and Skrydstrup (Frei *et al.* 2017) reveal that these two women were nonlocals and that their travel patterns differed widely. This has forced us to reconsider our previous interpretations and to explore the idea that women travelled for a variety of reasons. A study including 28 individuals in Scania dating to the Early Bronze Age did not detect any movement among the children, although it revealed that 31% of the adults, both men and women, were buried in an area that was different from the one where they grew up (Bergerbrant *et al.* 2017).

Here, contrasting this with earlier interpretations of movement of men and women in the Bronze Age, we will highlight just one example. Rowlands (1980) argues for Late European Bronze Age based on early Greek texts in which men who had not achieved the absolute top level of society married the daughters/sisters of top level men in order to enhance their own status. Men who were ranked at the highest level either married their daughters/sisters to men of the same status in other areas, or to men in the same area who were of lower status than their own. He then uses this model to interpret alliances and kinship in the Late Central European Bronze Age. Following this, the so-called foreign women must have been the wives of chiefs, and most likely the daughters or sisters of foreign chiefs. This type of marriage pattern must also be viewed as a gender-informed migration pattern.

Were these women used passively, as pawns in male power strategies, or are there other ways to view these women who clearly travelled at one or more times in their lives, including those in the scene from Östra Eneby (Bergerbrant 2007; Bergerbrant *et al.* 2017; Frei *et al.* 2015; Frei *et al.* 2017; Knipper *et al.* 2017)? Sørensen has pointed out that the supposed foreign women carry the complete costume from their area of origin. According to her, this should mean that it is the mature woman rather than young woman who moved between the different regions (pers. comm. Marie Louise Stig Sørensen 2007-03-13). However, the Lüneburg woman buried in Flintbek, Schleswig-Holstein was buried in the complete Lüneburg costume and is aged to just 15 years old (Bergerbrant 2007: 116-117; Zich 1992 A & B), indicating that the picture is more complex. It has been shown in ethnographic studies that in many societies females gain an increased mobility after reaching the menopause. This is related to the fact that a woman's sexuality no longer results in children, and therefore the woman cannot disgrace the family, as well as to practical considerations, i.e. the lessening of limitations due to the menstruation cycle. Some anthropological cases show that some women have been able to go on pilgrimages, start trading and travel to distant family after the menopause (Brown 1982). The anthropological examples also include societies that are matriarchal, i.e. where the men move into the woman's home (Sanday 2003), hence the young women would not move to the family of their partner.

The scene in Östra Eneby 27:1 provides an illustration showing that all groups of Bronze Age individuals — children, women and men — probably travelled. The reason for the different ages and gender groups' migration could vary; for the children it could be a short trip to visit family, i.e. mobility within the social group (Tilly 1978: 50), a longer trip made as a group but with the intention to return, i.e. a circular migration (Tilly 1978: 52), or it could be in order to become an apprentice and learn a new skill, a career migration (Tilly 1978: 54). The same could be said for both the men and women, and based on a rock art scene it is difficult to impossible to say anything about the intention behind prehistoric movement shown in the scene. We do not know if the scene depicts a ship from South Scandinavia with long distance guests coming to Östergötland, or if it tells the story of local people setting out on a journey/migration to an unknown destination. Based on the archaeological record in combination with strontium isotope analysis it seems that women in Northern Europe during the Bronze Age might undertake many types of migration, from the small mobility (Tilly 1978: 50) that is not visible in the archaeological record, to chain migration (Tilly 1978: 52) as seen in the foreign women from Lüneburg, to circular migration (Tilly 1978: 53) as evident in one of the Egtved woman's journeys (Frei *et al.* 2015), or career migration (Tilly 1978: 54).

The fact that the artefacts depicted on rock art in the Norrköping area are characteristic of the period, but cannot be found in the local archaeological record in combination with the scene at Östra Eneby 27:1 supports the idea that both objects and people moved. Thus, it is most likely that many people, both men and women, did not stay in the same area throughout their whole lifespan. Rock art is fixed in the original context, in contrast to a migration in which people move from one place to another. A rock art scene shows one moment in time, or if re-cut (Milstreu 2017) depicts the remains of an important occasion that might change its meaning through history. Taken together, the archaeological record and the strontium analyses suggest that the rock art scene at Östra Eneby 27:1 depicts a real-life occurrence of people moving in the

Bronze Age rather than a mythological one, though over time and with possible re-cutting it could have turned into a mythological journey. Furthermore, this close connection to the material reality provides some interesting possibilities for obtaining insights into the part of the Bronze Age society that remains hidden behind the rock art.

Conclusion

It has been shown through both the archaeological record and rock art that females in the Nordic Bronze Age moved and travelled. This paper has also shown that it is probable that the costumes known from Denmark were used as far north as Östergötland, or at least were known to the people in that area. The fact that we can use dress to see females in the Nordic Bronze Age rock art allows for new possibilities in our interpretations. It not only gives us new openings for analysing gender-relations in both rock art and in Bronze Age societies from a larger perspective, but the costumes depicted make it possible to connect the rock art to yet another material sphere: textile. This is relevant, not only due to the social aspects of textile and costume, but also in relation to chronology. The costumes depicted in rock art provide an opportunity to date the rock art from yet another perspective. Interestingly, the dating of the costumes depicted at Östra Eneby 27:1 is in accord with the dating of the ships in the same panel.

The scene analysed in Östra Eneby 27:1 and recent strontium isotope analyses demonstrate that all age categories and genders travelled, not just men. In a way that is different but complementary to the handful of high precision cases provided by the Danish oak-log coffins, this rock art scene, and possibly many others, can be used to discuss how people travelled in the Bronze Age. This study also demonstrates the importance of combining multiple sources of evidence when discussing migration as relevant to both men and women in the Bronze Age.

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Chapter 11

Fleshing out the Stickman: A Hypothesis about the Long-Legged Anthropomorphs in Scandinavian Rock Art

Lisa-Elen Meyering

This contribution concerns itself with the engravings of anthropomorphs, especially those that are heavily distorted possessing unusually long legs. Scandinavian rock art anthropomorphs are still an under-appreciated source of information about the ways that Bronze Age (BA) inhabitants thought about themselves. Aside from enlightening studies regarding their gender and the equipment that these anthropomorphs carried, what is of equal importance is what the carvers might have thought of themselves and their surroundings. This information is harder to acquire, compared to the seemingly more easily obtainable data on denotations of gender and weaponry. To study rock art representations of humans is to study the direct translations of the identities of the carvers and their surrounding worlds, which can thus be regarded as the ‘local’ people’s perception of themselves and the people amongst them. However, the, often realistic, human-like depictions are sparingly discussed. Their tendency to also possess enlarged calf muscles has been noted by Yates (1993: 35) but only as a “possible marker of a particular kind of male body” amongst other symbols, such as an erect phallus, presence of weapons and horned helmets. Ling (2008) identifies a pattern in the distribution of enlarged humans, which tend to be located on higher ground. Yet, it is intriguing that the dimensions of the body (often with a short upper body and long legs), although mentioned (Coles, 2005; Ling, 2008), is not explored any further. This omission will be tackled here.

This piece offers a hypothesis combining the use of the human body with the celestial body of the sun: a source of orientation, warmth and light that all prehistoric societies were heavily dependent on. Bohuslän has a great abundance of rock art boats and anthropomorphic beings that perform different tasks such as spear-throwing, animal fighting and cart-ploughing on the rocks, yet the few occurrences of near-to-life-sized anthropomorphs, such as the shoemaker at Backa, Brastad or “Odin” at Litsleby, Tanum can be counted much faster. Logistically, in order for BA rock carvers to create life-like versions of human beings, members of their own community could have stood as models, whilst their carvers incised or pecked out their form (be it naturalistic or stylized) on their chosen rocks. Alternatively, as is proposed here, BA carvers could have used the sun (or even the moon) to create an alternative representation of themselves on rock in order to transform these into artistic expressions of identity.

If one bears in mind the evidence postulating the increase in individuality throughout the course of the Bronze Age, matters such as self-identity, agency and belonging will have been of great importance to their inhabitants. Accordingly, being able to observe oneself and grasping one’s own identity will have stirred eagerness to learn more about one’s own body and appearances. Now, if we start imagining how early inhabitants of Scandinavia will have been able to see themselves, a modern day mirror will of course fall out of question, leaving us to look for alternative natural sources such as reflective surfaces and other ways of reflecting one’s own image for self-viewing purposes. Possibilities, such as *Narcissus style*, reflections in water, as seen in Ovid’s *Metamorphoses (Book III: 339-358)*, or viewing oneself in polished bronze or other shiny objects come to mind.

Another plausible way would be a sun-to-body-to-shadow type observation on the abundantly available rock outcrops scattered around the lands. Human shadows on rocks will have been easily created and made apparent to their owners during expeditions roaming their lands, or even during the act of carving rock art imagery on rock surfaces themselves. Prehistoric societies will have relied heavily on the celestial bodies as signifiers of certain periods of the day and year – a calendric system highly important and efficient for pursuits such as agriculture and other cultic and festive activities (Kaul 1998; Coimbra 2008). It therefore seems entirely plausible that our ancestors will have made use of the sun (and possibly even the moon), its reflections and its ability to create shadows to function as their own personal ‘mirrors’.

During the author’s own expeditions roaming the rock art landscapes of Bohuslän¹, the herewith presented idea came to light, or rather, in its present context, to “darkness”. It was during visiting the site of Asperberget, within Tanum’s World Heritage Area, a site of both steep and almost horizontally sloped panels, that the evening sun cast shadows of site visitors back onto its rocky slopes. It was remarkable how the shadows of humans became more visible and more and more distorted as the sun kept on sloping down the horizon. The following images exemplify this observed phenomenon by the means of photographs capturing the experimental trials during fieldwork (c.f. Fig. 1-3).



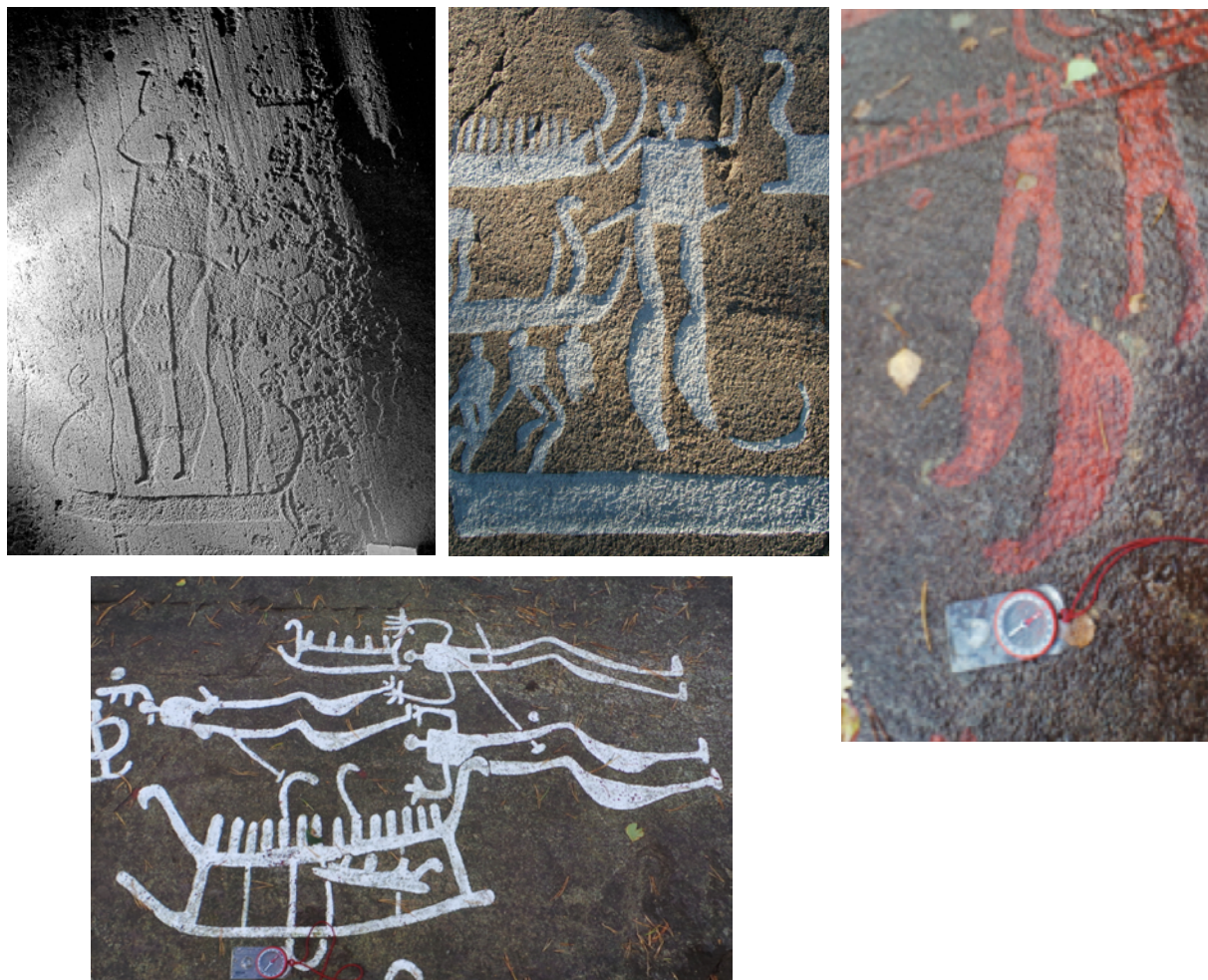
FIGURES 1-3. MODELLING THE SUN-SHADOW HYPOTHESIS (PHOTO: AUTHOR, 2014)

The prominent features of the shadows comprised of disproportionately small upper bodies, elongated legs and pronounced calf muscles. Despite the fact that John Coles’ Book *Shadows of a Northern Past* inherently incorporates hints towards the importance of shadows within his title, this simple observation has been missed out/overlooked in both his book and in other rock art research. Johan Ling refers to the

¹ Thanks to the help and guidance of Jake Newport, Ellen Meijer and Dr. Phil. h.c. Gerhard Milstreu

reflection of the sun only in terms of its reflection off the sea, hence creating a “special aesthetic effect” on the rock art panels (Ling 2008: 157). Coles addresses a case study at Bro Utmark where viewers would stand at the bottom of the sloping panel and view it looking upwards, whilst the westerly rays of the sunset “would illuminate the symbols” of various depictions (Coles 2005). Yet, the illumination of people to create a shadow of their own beings on the rocks have not been mentioned until now.

If one applies this observation to the construction of the actual rock art anthropomorphs, a striking resemblance can be detected:



FIGURES 4 – 7. ENLARGED ANTHROPOMORPHS WITH PRONOUNCED CALF MUSCLES AND LONGER LEGS THAN UPPER BODY. (IMAGES: SHFA.SE).

The human shadows mirror the oversized, enlarged and distorted anthropomorphic figures on rocks. The idealised figures on board boats as well as stand-alone enlarged anthropomorphs possess emphasized calf-muscles, generally long legs, a longer-than normal lower body and a shorter-than usual torso. Linea Sundström’s (2004) account widens this observation. Whilst researching Indian Rock Art in the Black Hills Country, she encountered an interesting phenomenon:

“Other designs were engraved so lightly that they entirely disappeared from view in direct sunlight. Since there *was* nothing but direct sunlight that summer, we found these only when our own shadows happened to fall across the rock and the petroglyphs popped into view” (2004: viii).

Through this account, the utilization of the shadow both to create one's own features but also to highlight already existing features becomes apparent. In fact, the almost tree-less seascapes and landscapes during the Scandinavian BA will have left little possibility to create any shadow-like features, other than that of one's own body (Ling, 2008). The shadows that the BA people will have seen would have been the two-dimensional silhouette of themselves, in other words the reverse projection of the object blocking the light. If such a method of viewing oneself was used during the Bronze Age, some of the more disproportionately sized anthropomorphs on the panels can be better understood. Ideologically and practically, it could be that the engravers had observed themselves and their silhouettes on the stones prior to their work and thus worked from memory, or carvings were made at dusk with people modelling for the length of the proportion.

Historic accounts highlight the use of shadows in relation to art. These examples are included as an evaluative reflection of the use of modern replication of the long-standing human fascination with shadows. With the words *omnes umbra hominis lineis circumducta* Pliny the Elder pinpoints the origins of the art of painting: "*it originated in tracing lines round the human shadow*" (XXXV: 5). It seems like an allegory of a durable image (the projection) and a fleeting illusion (the shadow). This account by Pliny has therefore left a lasting impression within the art world itself. *The Shadow Dance* by Samuel Van Hoogstraten (1675) exhibits a striking resemblance to depictions found on BA rocks (fig. 8).



FIGURE 8. THE SHADOW DANCE BY VAN HOOGST RATEN (1675) AFTER STOICHITA (1997)

The shadow hypothesis would hence explain why the legs are abnormally long. Additional awareness is given to the so-called principle of paratactic coherence (Davis 1985). BA inhabitants will have observed features of the people surrounding them and, in the absence of mirrors, will have additionally gained knowledge of their own bodies through tactile experiences. The fact that their appearance on rocks was distorted in such an unusual way, mismatching with their tactile knowledge of themselves and their visual observations of their peers, will have undoubtedly astonished them.

It is hard to imagine what exactly the Bronze Age mind, being critical observers of natural phenomena, would have grasped from their two-dimensional copies of themselves. It is therefore essential to strip away potentially biased word-views of the present day and instead open ourselves to wider possibilities by collating various interpretations of the meaning of shadows. Stoichita gives insight into different

ways of shadow perception, ranging from an “image without substance, intangible, immaterial” to an encircled shadow as an externalisation of one’s being (1997: 20). Beate George (1970) in her book *Zu den Altägyptischen Vorstellungen vom Schatten als Seele* enlightens the reader with the fact that it was the shadow (khaibit) through which Egyptians first pictured their soul (ka). Birch’s paper (1885: 393) *On the Shade or Shadow of the Dead* links shadows to “spiritual existences as gods, spirits and souls.” It could even be that by viewing a full-bodied reflection of themselves a kind of second persona was created, which they had to manifest in the eternity of the rock.

Yet, if the shadow hypothesis holds true, why is it that not all anthropomorphs are carved in a similar manner? Why are there still differences in height variations amongst rock art beings? Why are there variations in size-depictions at specific sites? Most plausible seems Van de Noort’s (2006) argument of differentiation between ranks with increasing awareness of individuality during the Late Bronze Age - a sort of hierarchy and an emphasis on leaders of the boat and ceremonial undertakings. For this, the enlarged lur blowers from the Tanum 248 panel, in Kalleby, ought to be examined more closely. Figure 9 depicts the chronology of which carvings were supposedly pecked at what times (same colours = same carving period). The red markings were pecked earliest, followed by the green, the black and then the blue. Such variations can be determined by study of the superimposition of the motifs, differential pecking styles and by ‘dating’ of certain stylistic aspects to earlier or later periods. There are four horned lur blowers detectable. The biggest one, at the top, is placed into a boat next to another highly enlarged figure later on. The superimposition of certain elements makes changes in the social importance of the society at the time visible. What can be seen is: a high degree of anonymity amongst the *red* crew strokes in the earliest phase, leading to at least five clearly distinguished *green* anthropomorphs, with exceptionally long legs, followed by the *black* long-legged and horned lur blowers, and ending with the largest superimposed anthropomorph in *blue*.



FIGURE 9. KALLEBY 248 WITH IMAGES PECKED AT DIFFERENT TIMES SHOWN BY THE MEANS OF THE DIFFERENT COLOUR CODES (IMAGE: UNDERSLÖS MUSEUM COLLECTION, GRAPHIC EDITING: JURRI JURRIANSE)

Whilst this interpretation of social hierarchy seems likely in view of the Kalleby panel, there is no direct method as of yet to date individual anthropomorphs other than papers on weapons that closely associate with weapon depictions on the rocks, chronological observations in depiction styles and by association with datable boats – a method of interpretation that bears inherent biases and uncertainties of chronological sequencing connected to individual styles and carving techniques. The sun-shadow hypothesis adopts an at least partial phenomenological approach. It should be noted that this hypothesis does not fall into the pitfalls which phenomenology usually results in, namely inability to produce a sound methodology and impossibility to re-examine and repeat the results by people later on. The observations made at Asperberget are, in the right sun conditions, relatively easy to be replicated, verified and even expanded. It is noteworthy that the sun never gets directly overhead at locations of high latitudes (applicable to the northern latitudes and the arctic circle, where the sun is consistently lower in the sky). Thus, for the purposes of Scandinavian rock art research, unlike at equatorial regions, human shadows will be more consistently visible when the weather conditions are good. For future testing of this hypothesis, studies that include a careful consideration of factors such as angle of elevation of rocks, sloping direction and position of carving and carver will become important. If the sun shadow hypothesis holds true, the time of day, as well as the location of the real “counter-human” at the point of carving could be deduced. The research on sun-shadows achieves (or has potential to achieve in the future) the middle ground in phenomenology between a subjective experience and a need for methodology and data resulting from these observations.

Overall, what has been proposed here is that Bronze Age carvers might have used the power of celestial bodies, such as the sun, to create artistic representations of themselves. Without the luxury of a modern-day mirror, the sun (or perhaps even the moon) would have been a welcome means to view oneself in full length. Perhaps the Bronze Age carvers wanted to reflect what they saw in such distortions on the rocks as an eternal engraving, as a manifestation of their existence. Maybe their shadow was an extension of themselves, a second being perhaps? Maybe just a means of making a personal mark, with their personal distorted lengths noting that they themselves had been there before. As discussed above, shadows in ancient Egypt often mirror the existence of a soul, so are these depictions of distorted beings emblematic of souls or higher spirits? What about the rest of the rock art anthropomorphs? Were those beings that do not embrace the typical shadow-like distortions therefore without such spirits and connections? Whatever their individual reasons for displaying their anthropomorphs in such a way, the magnitude and detailed individuality of each super-sized and long-legged anthropomorphic carving will undoubtedly never fail to fascinate viewers of the panels associated with them.

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Chapter 12

The cunning of the fox - a case of zoomorphism in Scandinavian rock art

Christian Horn

Introduction

Recent investigations of Bronze Age rock art in Scandinavia have demonstrated a surprising amount of transformations that individual motifs have been subjected to (cf. Horn et al. 2018). Gerhard Milstreu, the honouree of this volume himself observed subtle transformations to update ship prows during the Late Bronze Age (Milstreu 2017). The new aspect, ‘transformation’, is fascinating and warrants further and deeper investigation to understand the broader social implications of this practice. A new discovery on the famous Vitlycke panel in Tanum (RAÄ Tanum 1:1) seems appropriate to attempt to advance the interpretation of the transformation of rock art. It is also an excellent case to celebrate Gerhard Milstreu’s work on and dedication to the rock art in Scandinavia.

Method and site

In recent years, photogrammetry has been established as the standard documentation method in Tanum and other areas in the world with rock art heritage (Díaz-Guardamino Uribe and Wheatley 2013; Horn et al. 2018; Meijer 2015). In the field, images are taken with a 60–70% overlap, avoiding different zooms (Reu et al. 2013), as part of the Structure from Motion method. The images are processed in Agisoft Photoscan® to calculate a 3D model of rock art. The geometry of the scene is created using a combination of: various algorithms, to calculate camera positions; dense Multi-View Stereo, and Poisson surface construction to calculate a dense point cloud; and eventually a 3D mesh model (Cobaz and Jagersand, 2003; Micheletti et al., 2015; Sevara and Goldhahn, 2011).

The surface representation of the resulting mesh model allows the scene to be lit up from different angles, which enables observation of the surface structure, including depth differences, through the cast shadows. The results of photogrammetry can be output in various formats that are currently used to improve the visualization of rock art.

Across the road from Vitlycke museum is the famous Vitlycke rock art panel (RAÄ Tanum 1:1). This panel has - depending on the interpretation of the carvings - among other motifs, ca. 90 anthropomorphic figures. The couple on top of the panel is undoubtedly the most famous (Fari 2003; Skogstrand 2008; Yates 1993). Among the more inconspicuous images is a scene with two fighters engaged in a battle with spears. This scene is painted in with red colour much like the rest of the panel for the presumed benefit of visitors (Fig. 1). The photos for photogrammetry were taken with a Canon 7D dSLR. In total 31 photos were taken of the scene on three different height levels.

Painted version and 3D model

In the following, I will describe how the painted version presents the figures and compare this to the result of the photogrammetric documentation. The larger of the two warriors (Figure 1) grabs the sword’s sheath with the left arm. The right arm holds a spear high above the head. The sword sheath of this figure



FIGURE 1: SPEAR FIGHTING SCENE ON THE VITLYCKE PANEL (RÄÄ TANUM 1:1). THE RED PAINT IS MODERN AND SUPPOSED TO AID VISITORS.

possesses a triangular chape with an extended feature. Figure 1 possesses exaggerated calves, two horns, and a phallus. On the upper body a cup-mark seems to be placed right next to the body in the arc formed by one of the arms. The smaller warrior (Figure 2) has both arms on the spear and carries a sword sheath without indication of a chape. The figure is shown with a phallus and exaggerated calves like figure 1, but horns are missing on the head. The phallus, especially, is enlarged in comparison to the body size (Fig. 1).

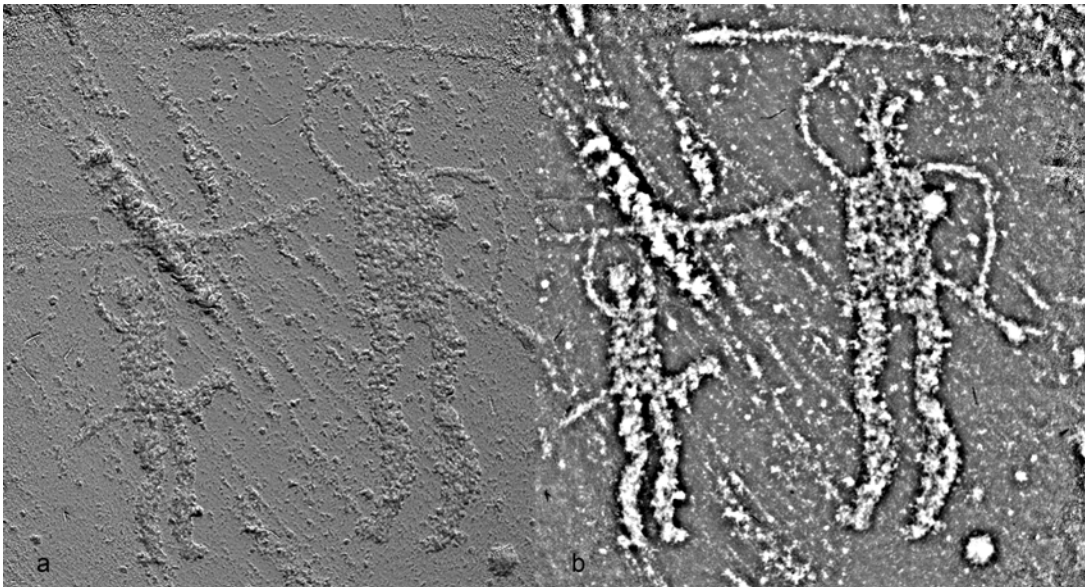


FIGURE 2: SNAPSHOT OF THE 3D MODEL OF THE SPEAR FIGHT SCENE (A) AND A VISUALIZATION BASED ON THE POINT CLOUD PRODUCED WITH PHOTOGRAMMETRY (B) BOTH BY THE AUTHOR.

A close examination of the 3D model demonstrates that the painted version of the two warriors is misleading in several aspects (Fig. 2). For example, figure 1 has not just simple horns. There are 3-4 more lines engraved on the head that could indicate a distinctive hair style. This seems to be closer to an older interpretation of the figure made in the 1950's (Fig. 3). On the neck is a subtle widening that could indicate

a neck ring. Below that the cup mark cuts into the body and is not just beside it. The painted phallus of figure 1 mistakenly seems to extend along a natural striation. If this figure has indeed a phallus, it is shorter than the paint indicates.

An examination of figure 2 indicates that the quite substantial phallus painted onto the warrior is even more misleading than any of the smaller details hitherto mentioned. In the area where the phallus is indicated, the warrior intersects, in fact, with an animal petroglyph. The placement is very precise (Fig. 2). The animal's back is exactly at the height of the belt-line of the anthropomorphic figure. Three of the legs



FIGURE 3: PHOTO OF THE PAINTED VERSION OF THE SPEAR FIGHT SCENE IN 1951. PHOTO BY CLAES CLAESSON. PROVIDED BY SVENSKT HÅLLRISTNINGSFORSKNINGSARKIV.

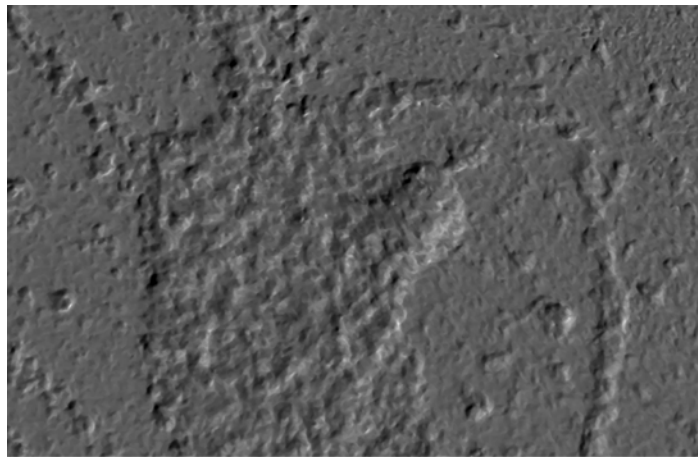
visible are placed inside the legs of the warrior. Only the front limb is outside. The backside of the animal, before it transitions into the tail, shares its boundary with the backside of the anthropomorphic warrior. The tail is like the front outside the anthropomorphic petroglyph.

This placement means that the anthropomorphic petroglyph uses some of the animal's features to represent attributes of the warrior. The tail is straight and angled downward, and is, thus, similar to a sword sheath. The head, neck, and frontal part of the animal's body replaces the phallus that many warrior images possess. The front limb could arguably indicate the testicles, that are also frequently found on more 'naturalistic' phallus representations (see Fig. 6).

Sequence and chronology

The scene has few indications of sequences, and the chances for a chronological dating of the figures of this sequence are slim at best. The upper body of Figure 1 cuts through the border cup-mark (Fig. 2). The carving technique of the warrior's body affects the left side of the cup-mark, which means that an engraver carved on the depression of the cup mark (Fig. 4). The surface structure of the cup mark is smoother, indicating that it was ground or polished into the rock rather than pecked like figure 1. All this makes it likely that this cup-mark, and perhaps a second one below the warrior, were applied before the warrior was engraved.

The situation with figure 2 and the animal is more complex. The animal and the warrior were both engraved fully articulated, i.e. the animal's body is engraved even where it intersects with the warrior's body and vice versa. This could suggest that both were made by individual carvers in two separate engraving events. Unfortunately, even with the highly precise 3D data, it is difficult to make a decision which figure was carved first. The outline of the animal is visible in the warrior's body, which could indicate a younger age for the animal (Fig. 4). However, the border of the front of the human body is also visible within the



a

b



FIGURE 4: CLOSE UP SNAPSHOTS OF THE CUP-MARK ON FIGURE 1 (A) AND THE ANIMAL SUPERIMPOSED BY FIGURE 2 (B) TAKEN FROM THE 3D MODEL. BOTH BY THE AUTHOR.

animal. This line seems to cut the animal more severely than vice versa, and it appears to have led to some micro-chipping in the front part of the animal's body. Therefore, the interpretation that the animal is older seems tentatively to be more likely. This may suggest that a younger warrior image was placed over an older animal carving.

In the scene are two sword sheaths and two spearheads that are potentially datable. The sword sheath on figure 2 is painted as a simple line. In the 3D model, there is a feature observable that could be a simple square chape. However, the connection is not quite clear, and it is off-centre. Thus, it seems more likely to be a damage in the rocky surface, rather than an intentionally carved feature (Fig. 2). The sword sheath of figure 1 was first painted in as a circle, and now seems to be two-pronged. In the 3D model, the more recent painting interpretation can be confirmed. However, there is a small extension between the two prongs that is shorter than the prongs themselves. Pare (1991: 7: Fig. 7) identified similar chapes in burials dating to the beginning of the Hallstatt phase C (Pare, 2004: 539–542). This phase is parallel to the early phase of Period V of the Nordic Bronze Age (Fig. 5).

The spearheads are also ambiguous and need a much more detailed study than is possible in these pages. The spear of figure 1 could be a sharply defined type Hulterstad (Fig. 5) that would date the spear to Period III (Jacob-Friesen 1967: 164). In this context, it is noteworthy that the hands of both warriors cut into the

respective spear shaft. This leaves the possibility open that the spears were carved individually in older times and the humans were applied later, as could be the case at Finntorp and Litsleby (Horn and Potter 2017; Bertilsson 2015).

Assuming that figure 1 and the sword sheath were engraved at the same time means that figure 1 dates to the early Period V. There are many dissimilarities between figure 1 and 2. However, they share the style of their arms and overall composition. That does not mean both figures have to date to the same time, but it indicates that they were engraved during the same period. In turn, this means that the combination of the animal and figure 2 first came into being at a developed stage of the Late Bronze Age.

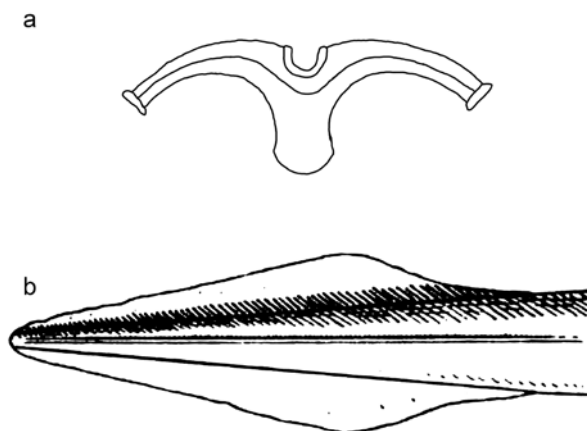


FIGURE 5: POTENTIAL COMPARISONS FOR THE CHAPE (A) AND THE SPEAR (B) ON FIGURE 1 (AFTER (A) PARE, 1991: FIG. 7 AND (B) JACOB FRIESEN 1967: PL. 81,8; REDRAWN BY THE AUTHOR).

The animal

The animal is of a generic, four-legged type that occurs very frequently in Scandinavian rock art that could, however, represent a variety of different animals. There are potentially ears and a snout indicated, albeit very weakly carved (Fig. 4). The legs are too short to depict an animal from the family Equidae or Cervidae. The later would also be in opposition to the long tail. The potentially pointy ears, the legs that are relatively short in comparison to the body size, and the long tail are perhaps most similar to animals from the family *Canidae*. The overall proportions could be most indicative of a fox (Hildebrand 1952). Among the European taxa, foxes have, on average, longer tails and shorter legs compared to their body size than other *Canidae* like dogs (apart from modern breeds) or wolves (Hildebrand 1952; Sillero-Zubiri 2004).

Boats, swords, and phalli

This constellation that the animal replaces the phallus and the sword of a warrior by being placed at hip height of the figure has, to the best of my knowledge, not been published. However, a similar phenomenon has been observed in the morphing of things, especially boats into body parts, which I will discuss in the following section.

There is a continuum of different ways in which boats replace body parts. This phenomenon includes the use of prows as arms or legs, arms and legs shaped like prows to imitate simple boats, boats used for feet, sometimes anthropomorphic figures are hidden in compositions of several boats and cup-marks, and finally there are boats with hands and legs. A special case of this is the placement of boats around hip height. Horn (in print) argued that this placement is deliberately equating boats, swords, and phalli with each other (Fig. 6) which may need further elaboration.



FIGURE 6: EXAMPLES FOR PRAGMAMORPHISM FROM (A) SÄM, TOSSENE RAA 97:1; (B): SÖDRA TORP, KVILLE RAÄ 204:1; (C): GISSLEGÄRDE, BOTTNA RAÄ 74:1; (D): ÖVRE TUN, SVENNEBY RAÄ 17:1; (E): ASPEBERGET, TANUM 25:1

In Scandinavia exist more than 4000 anthropomorphic figures (Nimura 2015). In a sample of 4096 anthropomorphic images, swords are the second most frequent group of associated objects (1210) after boats. Most of these were sheathed, hanging behind the warriors. Sometimes, the line that indicates the sword sheath seems to be prolonged in front of the body (Fig.3a–b). This could be the hilt extending at crotch level, which would be its position if the sword was carried on a belt around the hips. However, these “hilts” are in several cases depicted with glans, testicles, and/or an upward curve (Fig. 6). All of which is consistent with the depiction of male genitalia in rock art. The notion that sword hilt and phallus are equated is supported by the occurrence of similar depiction in intercourse scenes (Fari 2003).

From this follows that the images depict a deliberate ambiguity of object and body part, and this includes in several cases boats. On canoes, a longer line, for example the keel line, extends in front and behind human beings at the hips (Fig. 6). This is the typical placement for the combination discussed in the previous section: hilt/phallus and sheath. It is possible to argue that the boats stand metaphorically for the sheath and the hilt/phallus. It is possible to identify at least 157 cases in which canoes and human bodies form such hybrid figures. This is too frequent, and the placement of objects and anatomical parts is too precise, to be discarded as coincidence. Rather this morphing should be regarded as deliberate act by the carver equivocating boat, sword sheath, and phallus (Horn, in print).

Anthropomorphism?

Superimposing an animal with a spear fighter in Vitlycke deliberately morphs the animal into the sword sheath and hilt/phallus constellation. The metaphorical transformation of living beings and things has been discussed by Johan Ling and Mike Rowlands (2015). They observed that elements of bulls become integrated into the boats in the form of in-turned prows and on the heads of anthropomorphic figures. Based on this, they argued that the bull, warrior, and boat shared a common feature, like a soul or a spirit. This is grounded in anthropomorphising, metal-trade, and taking in cultic elements from the outside, i.e. a southwest Iberian bull-warrior-ship cult.

Morphing warriors and boats carries the symbolism of mobility and warfare. This supports the notion of metal acquisition from culturally different regions that may change local belief systems expressed in rock art. However, the fact that boats from the Scandinavian tradition and warriors were morphed makes the local base much stronger. It suggests that there may be an internal logic to the morphing, other than “taking the outside[r] in” (Ling and Rowlands 2015). This does not deny outside influences, it adds to these observations to deepen our understanding of the complexities involved in making rock art.

An objection, however, has to be raised that such scenes, including the spear fight in Vitlycke, are anthropomorphising. Boats, swords, animals, and animal features were morphed into the human body, but are not or only rarely in themselves equipped with parts of the human body. To the contrary, in the case of swords and boats, objects replaced human body parts – a practice that makes both the objects and the human anatomy inherently ambiguous. I maintain that this is a different semantic category to anthropomorphism, and one which expresses a different set of ideas.

Pragmamorphism

Borrowing a term introduced by the physicist and economist Emanuel Derman, Horn conceptualized the phenomenon of morphing boats, swords, and phalli as *pragmamorphism* (Derman 2011a, 2011b, 2012; Horn, in print). The term itself is derived from the Greek word *pragma*, meaning ‘material object’, and *morphē*, meaning ‘shape’. The concept does not posit that objects like ships and swords are imbued with human qualities such as soul or spirit, although of course this cannot be excluded.

Derman defines pragmamorphism as “*attributing to humans the properties of inanimate things*” (Derman 2011a). This concept emerges in today’s speech. We may, for example, say about someone that they have “a heart of gold” or that their brain “works like a computer”. This is not meant literally, but we imbue body parts with the characteristic of objects thought of as surpassing human abilities. These characteristic, e.g. the purity of gold or calculation speed of computers, are experienced but this experience can also culturally be transmitted. In the same vein, during the Bronze Age people experienced the characteristics of boats and swords (Ling and Cornell 2010; Horn 2014). Special qualities, such as the momentum of boats or the deadliness of swords, may have been used to imbue humans and body parts with them. This may have been visualized on the rocks, and thus, reinforced social expectations about which qualities a warrior should possess (cf. Horn, in print).

Zoomorphism

Where do these observations leave us with the warrior-animal superimposition at Vitlycke, or other animal features like the bull horns? Perhaps, we have discovered another aspect of the ‘morphism’ tendencies in Scandinavian rock art. However, its conceptualization may have to be changed slightly. It may be advisable to use the ancient Greek term for animal. ζῷον (*zōon*) can denote a wild animal, but also in a secondary meaning any animal. Conceptualizing the phenomenon this way does not claim that animals, objects, and humans were either seen as separated in the past, nor does it claim that they were inherently identical. It only aids modern understanding. Zoomorphism is better known than pragmamorphism and defined as: attributing to humans and other entities the properties of animals.

This is again known from modern speech maybe even more so than with objects. Examples are plentiful, e.g. someone is a “workhorse” if they work very hard or someone may be called a “dog” if they follow orders (and abuse) without questioning. God is imbued with animal characteristics in the Old Testament: “*Because you are my help, I sing in the shadow of your wings.*” (Psalm 63: 7).

In the light of the Vitlycke petroglyph it is perhaps possible to assume that attributes of warriors were zoomorphised during the Bronze Age. In case of the bull features on warriors and boats, the observed and

attributed characteristic may have been power, as Ling and Rowlands (2015) argue. In the case of the boats with horns, it could also have been the capacity to carry high payloads. This would support the notion of a link of the rock art to metal acquisition through raiding and trading (Ling and Rowlands 2013).

If the animal at Vitlycke is indeed a fox, it is more difficult to interpret what the phallus and the sword of the warrior may have been imbued with. In the modern view foxes can stand for cunning, but also sexual attractiveness; hence, the English informal use of the adjective “foxy”. However, such notions change over time. During the Renaissance and the Middle Ages, the fox could stand for an individual high status but not as high as, for example, the lion (Salisbury 1994: 131). However, foxes were also associated with “wiliness” but also the devil (Russell 1992: 67). In Chinese myth, the fox with the seven tails is an evil genius combining attributes (Cirlot and Sage 2015: 284). The fox is linked to “the trickster” among the indigenous people of North and South America.

This is perhaps linked to their natural behaviour. Foxes forage individually rather than hunt in packs like wolves (Carroll 1981; Wright 1994). Being a solitary carnivore may explain the association with cunning, perhaps evil cunning. Being able only to rely on themselves, foxes are perceived to be in need of tricks, deception, and persuasion¹ to defeat their opponents in nature and in myths (Handoo 1994: 36).

In sum, it seems that most often foxes are linked to attributes of cunning with various additional connotations. It is, of course, impossible to decide which attributes people in the Bronze Age may have emphasized. However, if it was linked to the natural behaviour of foxes, then “cunning” could be a characteristic that is at least possible. That means that the adversarial scene in Vitlycke could have depicted a cunning hero, a treacherous villain, or even a deceitful former ally. Such figurations could be parts of socially constructed narratives (cf. Lincoln 1999).

Conclusion

With the evidence presented above, it is possible to argue for the presence of several forms of “morphism” in Scandinavian rock art: zoomorphism, pragmamorphism, and, perhaps less, anthropomorphism. It is also evidence of the re-engagement of rock art by later generations transforming the rocks in a dialogue with the past (Bertilsson 2015; Fahlander 2017; Horn and Potter 2017; Milstreu 2017). Here, I have attempted to interpret an example of a case study why this re-engagement may have happened.

Zoo- and pragmamorphism may have been practiced imbuing bodily features with object and animal attributes perceived as superior to human capabilities. In the discussed cases, these are mostly phalli in combination with swords. If we assume that the phallus-sword combination signifies warriors in Bronze Age rock art (Nordbladh 1989) then the spear-fighting warrior at Vitlycke could represent a cunning warrior overcoming a more powerful enemy, if that is what the size difference between figure 1 and 2 indicates. It is, of course, very difficult and problematic to reconstruct acts of speech with any confidence for Bronze Age Scandinavia (But see Koch 2013). However, if we assume that the images on the rocks were associated with myths or (spoken) language in general (Melheim 2013), then the wider phenomenon of zoo- and pragmamorphism in rock art could indicate that figures of speech existed: attributing to humans the properties of animals and objects.

Acknowledgments

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¹ This link to persuasion may be the source of the sexual connotation of the fox in modern western societies.

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Chapter 13

The duel in place: morphological, structural and spatial variability of a basic scene among Valcamonica Iron Age rock art

Alberto Marretta

Introduction

This article deals with a specific kind of scene in Valcamonica rock art: the pair of fighting warriors facing each other in a perfectly symmetrical composition.¹ It is one of the most recurrent combinations of single images marking the Iron Age period, a phase of Valcamonica prehistory when other scenes (hunting, ploughing, etc.), which might or might not have had an actual narrative purpose, appear alongside a wealth of symbols (shovels, footprints, house/buildings, etc.) and other isolated figures. Despite the incidence and variability of the fighting warrior figures, there are still very few studies on the subject (Zanetta 2012; 2007) due primarily to a lack of data from many crucial Valcamonica rock art sites. The opportunity here to reconsider the topic derives from the recent integral documentation of several carved rocks on the western side of the Central Valcamonica as part of a project led by the author and coordinated by Soprintendenza Archeologia, Belle Arti e Paesaggio for the provinces of Bergamo and Brescia. The project aims at a full recording of the rock art present inside the Archaeological Park of Seradina-Bedolina, whose more than 200 hundred carved rocks compose one of the most important area of the UNESCO site n. 94 “Rock drawings of Valcamonica” (Fig. 1). So far, the project has studied many single panels in the Bedolina area and has entirely documented the Seradina II sub-area (60 rocks composed by around 110 carved panels), the Ronco Felappi sector of Seradina I (14 rocks) and, most importantly, the big Seradina I R. 12. With its 1700 figures, this rock is one of the most significant and richest carved rocks in the whole Valcamonica (Marretta in press; 2016).

Duels are peculiarly abundant on these rocks and appear in many stylistic variations throughout the whole Iron Age, so that we can fairly consider them as one of the most enduring ideas of the period. In the present study, we limit ourselves to the analysis of duels comprised of humans with linear bodies² and limbs, one of the most common scenes in the areas studied (Fig. 2). In the following paragraphs, we will discuss some new points of view in relation to these images, which have never been analysed on their own in a systematic way, trying to move beyond the simple and fairly acceptable chronological assessment of a diffusion limited to the Early Iron Age, i.e. the IX-VII century BC (De Marinis and Fossati 2012; Fossati 1991), in favour of other overlooked aspects. The main focus will be on morphological variations, on spatial consideration through GIS analysis according to micro- (single rock surface) and macro-scale (entire clusters of rock art areas, on opposing sides of the valley) and, finally, on the relationship with decorative tradition from material culture of the period. Our reference and starting point for the discussion

1 I express here my sincere thanks to James Dodd and to Ellen Meijer for inviting me to present a paper in this volume and for the patience they have endured during the editorial process. My ultimate thanks go to Gerhard Milstreu, not only a superb scholar in the field of rock art but a lasting friend whenever trust and unconditioned support were key factor to keep on with a life in archaeology. His astounding contribution to rock art research in Scandinavia, his constant hospitality towards articles and researchers from Valcamonica and, finally, his magnetic capacity of attracting people in truly collaborative projects will remain forever as a lesson in the way men and women should work together for an effective progress of scientific knowledge. I am finally grateful to Sarah Whitaker for the revision of the English text and for the precious comments.

2 Rectangular or trapezoidal bodies applies to this group of figures as well. The distinctive elements here are the exclusive use of lines for representing arms and legs, which result in schematic and somehow “rigid” human figures. For the sake of simplicity, we will refer to this category as “linear” or “schematic”.

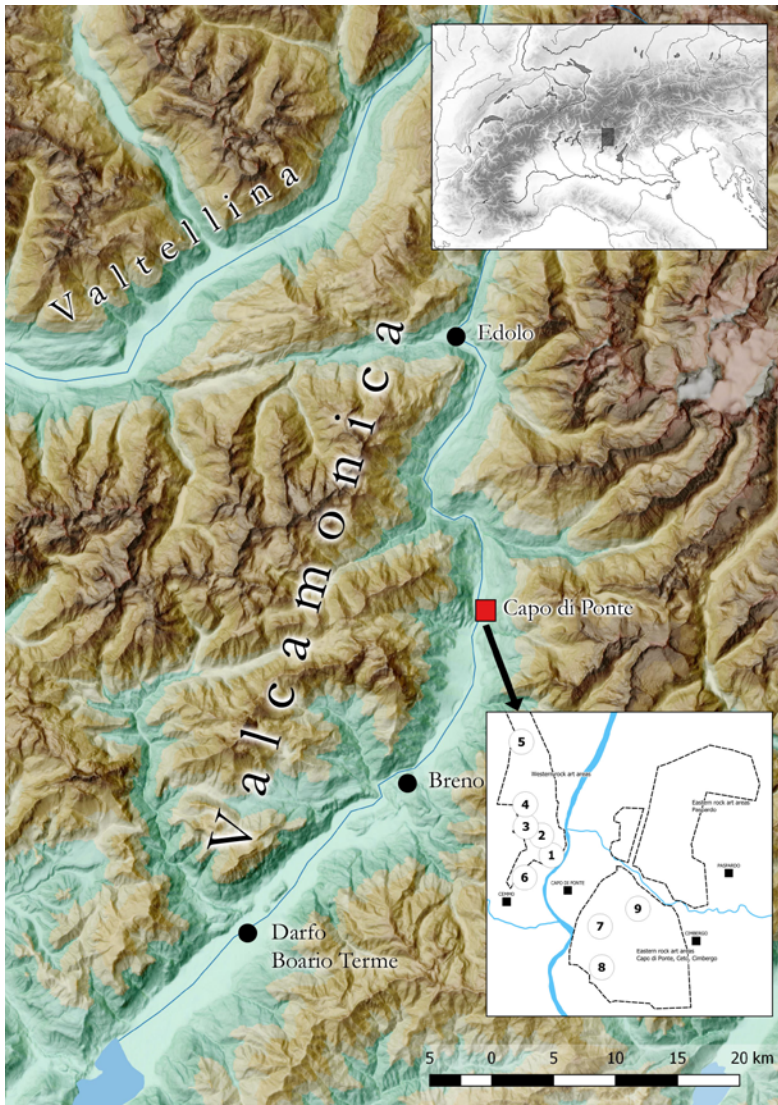


FIGURE 1. MAP OF VALCAMONICA, CENTRAL ITALIAN ALPS. THE RED SQUARE SHOWS THE LOCATION OF THE MAIN ROCK ART SITES DISCUSSED IN THE TEXT. WESTERN ROCK ART AREAS: 1. SERADINA, 2. BEDOLINA, 3. DOS MIRICHÌ, 4. REDONDO, 5. PIÀ D'ORT, 6. CEMMO BOULDERS. EASTERN ROCK ART AREAS: 7. NAQUANE, 8. FOPPE DI NADRO, 9. CAMPANINE DI CIMBERGO.



FIGURE 2. SERADINA II R. 1. TYPICAL DUEL SCENE WITH SYMMETRIC WARRIORS RENDERED IN LINEAR STYLE AND ARMED WITH SHORT SWORD AND SMALL ROUND SHIELD.

will constantly be Seradina I R. 12, a rock which works as a sort of iconographic centre for the entire western side of the Capo di Ponte district and whose first full analysis and description is in press.

The couple of warriors in combat: some updated numbers from Seradina

As said, duels are quite common in Valcamonica rock art and for this reason appear with humans rendered in many different ways and with variable weapons. The most basic and most recurrent duel scenes though are composed of two opponents portrayed with linear structures and facing each other in a symmetrical posture which requires that one arm be turned behind the body and then across it until it reaches the frontal part of the figure (Fig. 3). They fight with a very simple, sketchy armament composed by a single segment marking the sword and an inconspicuous tiny round “button” at the end of the other arm denoting a small metal or leather shield. These weapons are quite ubiquitous in linear duellists and mark a significant difference with the standing warriors found here and there on the rocks and whose arms are spread horizontally holding long spears, large shields and, quite often, high-crested helmets. It is not unusual to find linear duels in very small, almost miniaturistic size, in such a way that they cannot be spotted on the rock without getting very close to the surface.



FIGURE 3. SERADINA II R. 1. EXAMPLES OF DUELLING WARRIORS WITH SWORDS AND SMALL ROUND SHIELDS IN SLIGHTLY DIFFERENT POSITIONS. THE FIGHTING COUPLES ARE OFTEN FLANKED BY WARRIORS PORTRAYED IN THE SAME WAY BUT NOT FACING EACH OTHER.

It has been argued that linear humans involved in duels like the ones considered in the present paper are consistently depicted with a helmet, well-known as a very precious prestige marker since it first appeared in the Bronze Age (Fig. 4), and a phallus (Fossati 1991: 13). Based on the updated data presented here we can fairly say that these attributes, far from being a frequent feature, are actually very rare both in the several cases documented on R. 12 and in the rest of the Seradina area. On R. 12, for example, the only two duels displaying warriors with helmets have humans with non-linear structures of the body and a very different armament – i.e. concave shield and, in one case, even spears instead of swords – than the one usually observed in linear duellists. This fact is especially striking when we consider that R. 12, with its 38 occurrences, is the surface that bears the greatest concentration of warriors with helmets in the entire Valcamonica (Fig. 5). The same can be said for the sex representation: exhibiting the phallus is generally a very rare feature on R. 12. It occurs only in 5.5% of the anthropomorphic figures – and notably never with linear duellists – and in 3.6% of the animals.

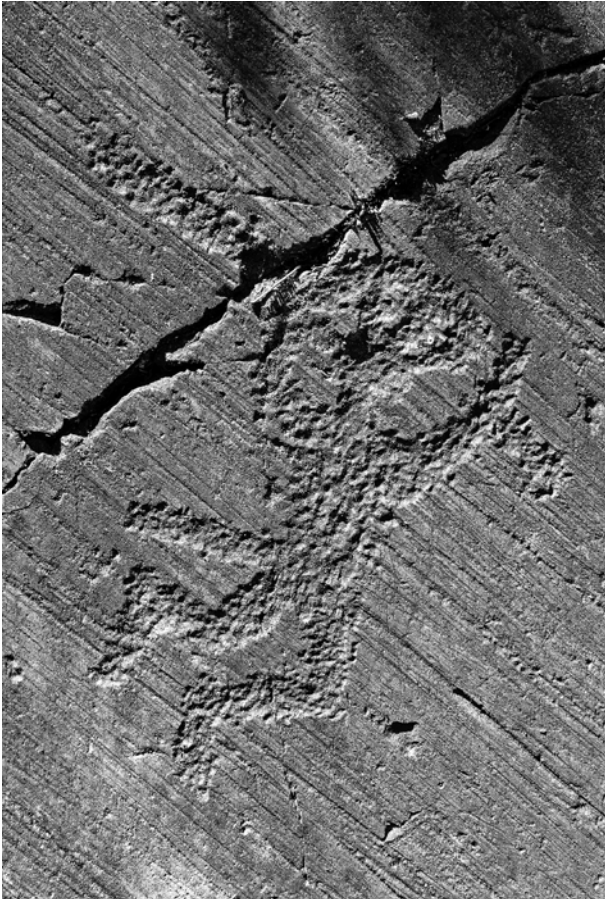


FIGURE 4. SERADINA I R. 10. ISOLATED "JUMPING/DANCING" WARRIOR IN ASSAULT. HE WEARS A PRESTIGIOUS CRESTED HELMET IN SIDE VIEW AND SHOWS THE SWORD SHEATH HANGING AT THE HIP.



FIGURE 5. SERADINA I R. 12. SERIES OF BIG STANDING ARMED HUMANS WITH OPEN ARMS HOLDING SPEARS AND BIG SHIELDS. THEY OFTEN WEAR HELMET WITH HIGH CENTRAL RIDGE SEEN IN FRONT VIEW.

As a matter of fact, the pair of almost identical human figures fighting each other in strictly formalized postures stands out as one of the main themes of Seradina I R. 12 (Fig. 6). This kind of basic scene occurs 62 times on the entire surface, with a predominance of the linear duellists armed with short swords and small round shields (36 pairs).³ R. 12 actually contains the highest number of duelling warriors in the entire Valcamonica and thus constitutes an interesting new foundation for analysis and interpretation. If we compare R.12 to the area of Campanine di Cimbergo,⁴ on the opposite side of the valley, the extraordinary concentration of duels on R.12 becomes clear. A recent study at Campanine di Cimbergo (Zanetta 2009) found only 51 duels among the 6700 prehistoric images known there, 1500 of which consist of human figures. This means that R. 12 alone has more duels than the entire Campanine area, which has over 100 carved rocks and more than 9000 figures.⁵

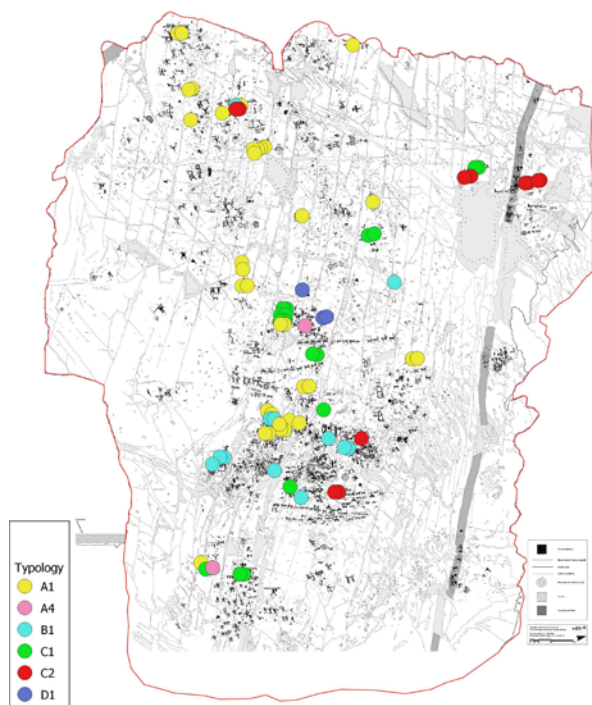


FIGURE 6. SERADINA I R. 12. DISTRIBUTION OF THE LINEAR DUELLIST WARRIOR ON THE SURFACE ACCORDING TO THE TYPOLOGICAL VARIATIONS DISPLAYED IN FIGURE 9 (BASED ON GIS BY THE AUTHOR).

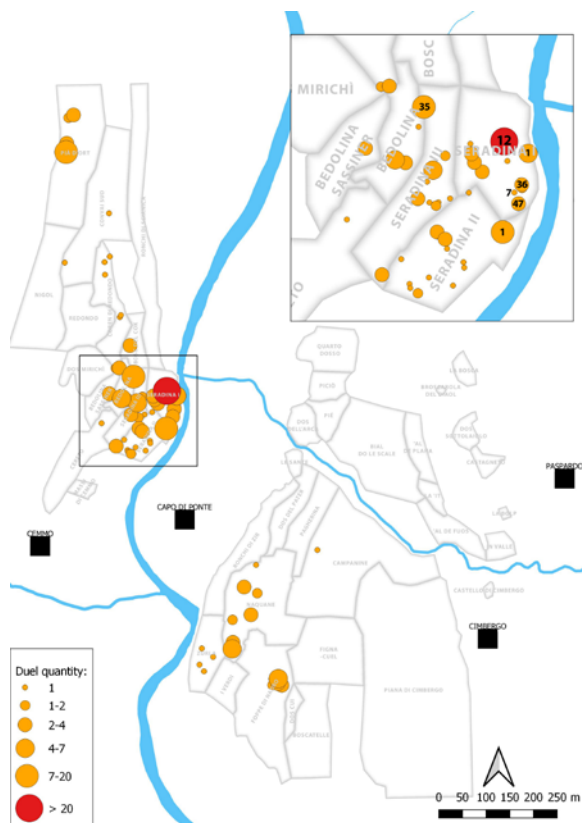


FIGURE 7. MAP SHOWING THE FREQUENCY OF THE SCHEMATIC DUELS ON THE ROCK ART OF THE CAPO DI PONTE DISTRICT, CENTRAL VALCAMONICA (BASED ON GIS BY THE AUTHOR). THE ZOOM-IN MAP ABOVE DETAILS THE SITUATION IN SERADINA AND BEDOLINA, WITH SOME OF THE ROCKS CITED IN THE TEXT.

3 Warriors with empty square bodies (sometimes with flexed legs), rectangular shields, swords or spears are quite rare on the surface, being also spatially confined to the western half of the rock. Furthermore, the latter are involved in only five duel scenes and scarcely contribute to the topic of interest here. The same can be said for the duels involving “naturalistic” warriors, which on R. 12 are quite sporadic and for this reason do not convey enough new data for an extensive analysis.

4 Although closer and more pertinent, it is not possible to make a comparison with the area of Pià d’Ort, because at the time of the full edition of the rock art present here the duel scenes – or any other scenes, in fact – were unfortunately not counted (Sansoni and Galvaldo 1995).

5 The total given here includes also figures considered by the authors of historical period (XIV-XVI century AD), which in Campanine is abnormally over-represented.

In the sub-areas adjacent to Seradina I, the other large concentration of duelling couples is located on Seradina II R. 1, although it is worth mentioning that this kind of scene is quite common in all the western rock art sites of the central Valcamonica (Fig. 7). Seradina II R. 1 depicts 16 duel scenes, while in the whole Seradina II area, now fully recorded, there are in total 52 duels (Fig. 2). Once again, the comparison with Campanine can be illuminating. The data on the duels in the sub-area of Seradina II, which counts a total of just over 1600 figures, exceeds by one duel the one of Campanine as seen above (51 cases), although Campanine is an area containing a total number of prehistoric images five times larger than Seradina II. Also, considering this limited sampling among the many known rock art areas, it is clear that the duel is much more represented on the western sites of the Capo di Ponte district than on the eastern ones, while outside the central Valcamonica this *topos* is almost completely missing.⁶

Sometimes, just one duellist appears, or the pairs of duellists are not symmetrical but rather both face left or right. The former in particular comprise those warriors showing a structure identical to that of the symmetrical humans involved in a duel but not facing any opponent. This is actually a far from a rare scene and, just on R. 12, appears at least 37 times. The same happens again also on Seradina II R. 1, where the single duellist may show up both close to a duel (and often superimposed on one of the two warriors pertaining to the duel itself) or not in clear connection with any other image. Exemplary cases are to be found on Seradina I R. 29 (Fig. 8), a small surface on which two pairs of exquisitely executed duellists have been clearly surrounded by two more rough figures rendered in the same “duelling” manner, apparently to mark some sort of distinction between the two scenes.



FIGURE 8. SERADINA I R. 29. DUELS AND ARMED FIGURES IN THE SAME POSTURE SURROUNDING A PAIR OF COMBATANTS.

The guarding positions of the fighting man as a crystalized choreography

The duellists, especially those with one arm turned around the back of the body, show up in a precise set of variants that changes according to the positions assumed by their arms and weapons. The typology identified so far (Fig. 9) is deduced by the full variational spectrum present on Seradina I R. 12. The main variant in the fighting man posture is found in the way the arm holding the sword and the one brandishing the shield⁷ are rendered. The shield in the arm turning around and behind the body, i.e. the lower arm

⁶ Quite remarkable the situation at Luine, where, despite the existence of a series of images dated with certainty to the Iron Age, the theme of the duel seems almost absent (Anati 1982).

⁷ We always refer to small round shields, little more than hits deflectors, and short swords of indefinite type.

coming out in front of the body, appears to be the most common choice (column A) and is represented in the sub-variant A1 in as many as 47 cases out of 109 examined (43.1%).⁸ The shield is depicted at the tip of the arm that horizontally crosses the body, while the sword is produced with a line that branches off vertically at the end of the upper arm (A1). Deviations from this formula include the curvature of the sword (backwards or forwards, variants A2 and A3) or its horizontal representation (A4), as an indistinct extension of the arm, instead of the usual vertical one.

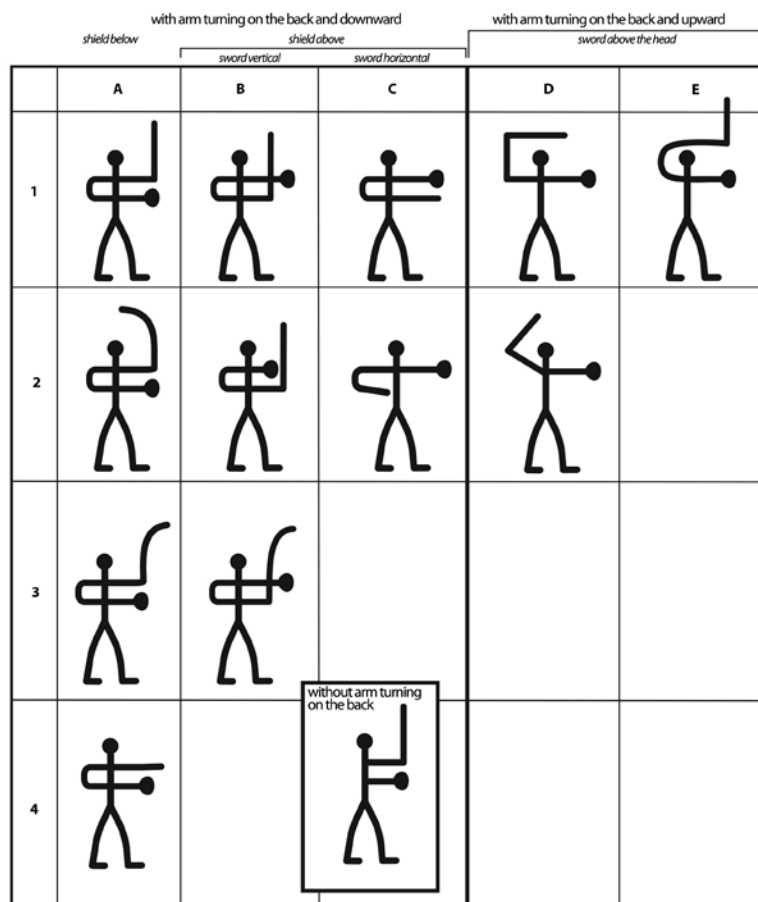


FIGURE 9. TYPOLOGY OF THE POSTURES (“GUARDING” POSITIONS) OF EVERY LINEAR DUELLIST (IN A DUEL SCENE OR NOT) IDENTIFIED ON SERADINA 1 R. 12 AND NEARBY ROCKS.

The shield in the upper arm has two clear sub-variants depending on the position of the sword, which is rendered either vertically (column B) or horizontally (column C). The vertical sword can cross the outstretched arm with the shield (B1) or pass in front of it without intercepting it (B2). In this latter case the sword can occasionally appear curved forward, even if only in very isolated cases. The B1 variant on R. 12 is present in 16 cases (14.7%). When the sword is horizontal (column C) we are facing a category of duellist that, especially for the C2 variant, i.e. the one with a sword that does not cross the body but stops at the hips without intercepting the body, probably has some sort of special meaning relative to the many seemingly undifferentiated duels. On R. 12 the duellist of this type are in fact often joined by the so-called “attendants”, a pattern seen also on Seradina I RR. 1, 7 and Seradina II R. 6.⁹ The C1 (23 cases = 21.1%) and the C2 variants (13 cases = 11.9%) together (36 cases) constitute the second most represented group on R 12 (33%).

⁸ The 109 duellists considered here are more than the total of actual duels present on R. 12 due to the fact, already highlighted, that the human in this posture often recurs without a counterpart.

⁹ See § 6.

How can we interpret this codified variability? Are these variations random or is it possible to discern a logic in their application to a theme so common in Valcamonica rock art? Obviously, any generalization presents the well-known risks deriving from the dangerously limited amount of data published in integral form. However, a brief comparison with some rocks on the western side, in which the theme of the schematic duellists occurs with a certain frequency, can offer a starting point for discussion. Let us consider, along with R. 12, Seradina I R. 1 and 47, two quite close surfaces, and the slightly more distant Seradina II R. 1, all according to the typology presented here (Fig. 10). It is not surprising, of course, that R. 12, notable for its anomalous extension and richness, constitutes a sort of sample for almost all the above-mentioned variants. However, it can be noted that certain solutions recur massively on some rocks while they are almost completely absent on others. This is the case, in particular, with the widespread A1 variant, missing only on Seradina I R. 1 where the C1 variant instead dominates. The latter on the other hand is not present on Seradina II R. 1, where A1 and B2 variants are most common. The unique Seradina I R. 47, a vertical surface characterized by 12 duellists, contains only the A1 variant.

	A1	A2	A3	A4	B1	B2	B3	C1	C2	D1	E1	Tot	Without turning arm	W i t h turning arm	Duels
Seradina I R. 12	47	0	1	6	16	0	0	23	13	3	0	109	9	100	36
Seradina I R. 1	0	2	0	0	0	0	0	11	2	2	0	17	0	17	8
Seradina I R. 47	10	0	0	0	0	0	0	0	0	0	0	10	0	10	5
Seradina II R. 1	17	0	0	0	16	0	3	0	0	0	0	36	1	35	16

FIGURE 10. TABLE SHOWING THE FREQUENCIES OF THE TYPOLOGICAL VARIATIONS OF THE DUELLIST FIGURE ON FOUR RICH CARVED SURFACES LOCATED IN SERADINA.

The location of the rock on the territory thus seems to be a decisive factor for the presence of a particular variant, suggesting that chronological causality, which so far has been considered as the main reason for “stylistic”¹⁰ changes (particularly in human figures), is unlikely. The morphological variability of the duellists in terms of body and limbs structure also does not advocate that the differences between the various types of duels are due to the time period in which they were carved.¹¹ If we observe, for example, Seradina I R. 1, we note in fact that the variant C1 is repeated both in the duellists in pure linear forms and in those with a rectangular body,¹² without the least change in the type of weapons – deemed usually as possible chronological markers – handled in the duels.

The precise combination of realistic attack and defence positions points to another possible and fascinating interpretation, i.e. that of a codified choreography enacted by warriors specifically trained with these highly specialized weapons. In this regard, it may be interesting to look at the technique of fencing with sword and buckle¹³ handed down from medieval sources (Fig. 11), a technique that must have ancient roots, maybe even connected to the origins and development of the sword and the shield itself. One document

10 We will consciously avoid here the term “style” due to, we think, its biased use as a synonym of chronological phase in Valcamonica rock art research. Some consideration on this important topic will appear in the upcoming book on Seradina I R. 12 (Marretta in press).

11 It’s worth remembering that in Valcamonica simple, linear, schematic forms tend to be interpreted as older than ones with more pronounced volumes, even when the lacking of other chronological helpers (like the comparison between handled weapons and actual material counterparts) should push for prudent caution. The body rendered as a rectangle is thus seen as an evolution of the body rendered as a line, resulting in a sequential chronology of Early Iron Age figures which frankly appear too much optimistic (Sansoni and Gavaldo 1995).

12 In traditional chronologies for Valcamonica rock art these slight variations in the morphology of the body are deemed infallibly as evidences of “styles” changing across centuries (Anati 1976, Sansoni and Gavaldo 1995, De Marinis and Fossati 2012, Fossati 1991). We disagree with this strict point of view and will avoid the term “style” throughout this paper, as a revision of its utility and scope for the analyses of rock art, at least in Valcamonica, is in preparation (Marretta c.s.).

13 This is the specific term of the small round shield in medieval tradition.

in particular, the London Tower Fechtbuch,¹⁴ dating to the late thirteenth century and considered one of the oldest fencing manuals in Europe (Forgeng 2003), shows with a series of illustrations the techniques of defence and counterattack meant to be applied when using these weapons. What is most thought-provoking, though, is that the wide range of possible offensive and defensive positions is actually reduced to slightly more than seven variants in the document,¹⁵ some of which are very similar to the positions of the linear duellists in the Valcamonica rock art presented here. We can, for example, cite the first *obsessio*, which is almost identical to our variants in column A and B, with vertical sword in front of the body and shield placed to defend the hand holding the sword, or the sixth guard position, with the shield pushed in front of the body and the sword held horizontally (over the head or at the hip) in order to hit the opponent by means of the tip.



FIGURE 11. COMBAT WITH SWORD AND BUCKLE TAKEN FROM THE TRAITÉ D'ESCRIME BY GIOVANNI ANTONIO LOVINO (1580).

So, without imagining Valcamonica rock art as an *ante litteram* combat manual carved on stone, we propose the possibility that the engraved duels considered here portray positions inspired in some way by a real combat, mainly on the grounds that the precise positioning of the sword and shield suggest exact technical knowledge of actual combat skills. The repetition, the simple geometric form, and the symmetry of the duellists designates on the other hand their crystallization in what becomes a figurative *topos*, a scheme that evokes the duel (and its symbolic correlation) without epitomizing it with extreme realistic accuracy, but rather with selected details useful for its disambiguation as “that specific kind of duel”. What is important for the ancient authors is evidently the representation of the duel, out of time and built on very precise and immediately recognizable compositional rules, rather than the imponderable description of an ephemeral fight among two living opponents. Images here are used as symbols, not just as photographs of everyday life. They may refer to ritual and strictly codified fights implemented in particular circumstances of the community life in order to reinforce, maybe with reinvocation of the myth, the social power of a ruling warrior elite.¹⁶ This interpretation is confidently shared among scholars dealing with all the best-known examples from material culture of the Ancient Iron Age of Italic and/or Central European areas (Bisenzio wagon, Hochdorf *kline*, etc.) where the duel is depicted.

14 Or Manuscript I.33, today at the Leeds Royal Armory (UK).

15 In the first two pages of the manuscript precisely seven attack positions (*custodiae*), which correspond to as many guard positions (*obsessiones*), are indicated. These are followed by a few other guards considered to be of special use.

16 Maybe even by that small segment of the male group claimed to be involved in “initiation rites”, as often stated by Angelo Fossati. See especially Fossati 1991.

The arm turned behind the body: some considerations and anomalies

A very limited group of linear duellists on R. 12 do not show the usual arm bending behind the body (Fig. 12e). In these cases, both arms are stretched frontally in the form of simple parallel lines ending in a small round shield and a simple sword, the latter normally held in a vertical position. The curved arm behind the body simply is not represented, even if the general posture and the armament appear exactly the same as in the figures where the curved arm is represented.¹⁷ In two cases, placed at considerable distance from each other, this choice has been simplified further by also eliminating the arm that holds the shield (Fig. 12f).

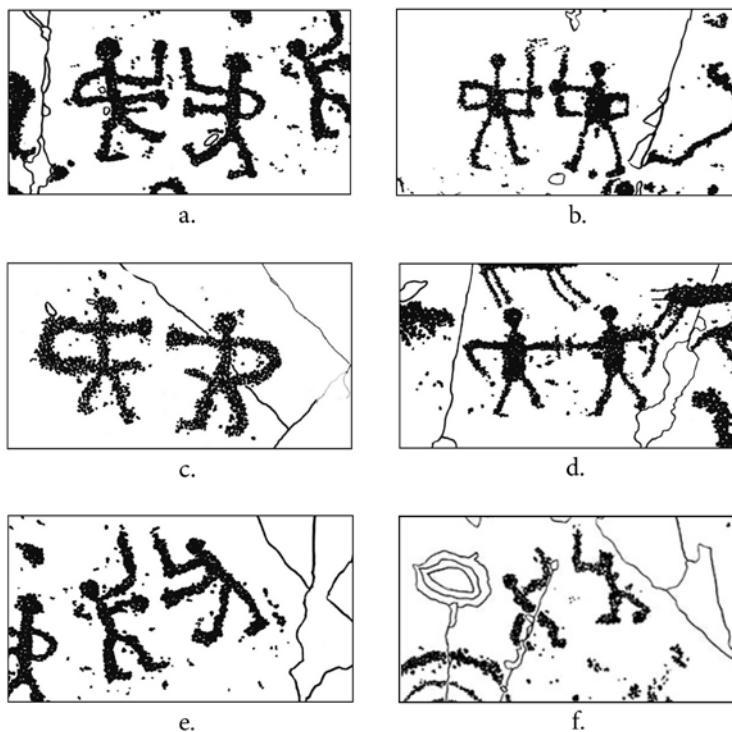


FIGURE 12. SERADINA I R. 12. EXAMPLES OF LINEAR DUELLISTS IDENTIFIABLE ON THE SURFACE.

Research on the western rock art areas of Capo di Ponte has revealed other surprising anomalies. The arm behind the body on some duellists is depicted “wrongly” or showing an unnatural, quite impossible lengthening. The best example of this apparent representational error is located on Seradina I R. 36 (Fig. 13), a small and half-hidden panel located a few metres South of Seradina I R. 12. In the space of a few square centimetres, three pairs of symmetrical duellists were carved, with the usual single accompanying figure placed horizontally above the others. In four cases, the duellists have the portion of the arm behind the body turned upward instead of rotating downward. As a result, the arm ends bizarrely behind the head. However, the other half of the same arm comes out “regularly” at the belly and ends in front of the body with a small round shield.

¹⁷ See the following paragraph for observations on the peculiar spatial distribution of this characteristic in relation to the two sides of the Central Valcamonica.



FIGURE 13. SERADINA I R. 36. SMALL PORTION OF ROCK WITH DUELS SHOWING BIZARRE AND SOMEHOW WRONG WAYS OF DEPICTING THE ARM TURNING ON THE BACK OF THE BODY.



FIGURE 14. SERADINA III R. 35. FIGHTING COUPLES WITH ABNORMAL ELONGATION OF THE TURNING ARM, WHICH HERE GOES ABOVE THE HEAD INSTEAD OF ROTATING BELOW AND ACROSS THE BODY.

It seems unlikely that this is a simple mistake, considering that it recurs identically in two out of three pairs of otherwise technically well executed duellists. In addition, the ancient carver had several “regular” duellist to refer to on nearby rocks, including Seradina I RR. 6, 7, 47, and could have easily referred to them even just for simple imitation. Considering that even in Seradina I R. 19, in isolated form, and especially in Seradina II R. 1, where the duels with the arm turned behind the body are plentiful, the same recurring errors appear nonetheless, it is reasonable to infer that this is a willingly chosen variant, as odd as it may seem. Along the same lines is the occasional recurrence, always among warriors involved in duels, of other impossible positions or abnormal physical characteristics, such as the disproportionate length of one of the arms observable on some rocks, like for example Seradina III R. 35 (Fig. 14). In conclusion, and without claiming anything about these eccentric forms in an otherwise obsessive and precise scheme, it is important to note this willingness to represent the duel in several different – although well-codified – variations, some of which do not always adhere to reality.

Spatial patterns across the western and the eastern rock art areas of central Valcamonica

The morphological dynamism between linear duels is also a remarkable feature when placed in relation to the western or the eastern side of the central Valcamonica. Bearing in mind the usual warning concerning the scarcity of published data,¹⁸ we can see that the most macroscopic difference between the two sides of the valley consists in the linear duels of the eastern side. The eastern side of the valley has a lower frequency of duellists as well as very few examples of duellists with their arms turned behind their bodies, whereas in Seradina and all over the western side, this feature is ubiquitous.¹⁹

¹⁸ Excluding Campanine di Cimbergo (Sansoni and Gavaldo 2009), there are currently no further eastern areas available. For the sake of completeness, it is right to cite Sluga 1969, the now dated brief pamphlet concerning the rock art at Dos dell’Arca, and Gavaldo 2007, the cursory edition of the rock art in the small I Verdi area (Nadro di Ceto) published in the pre-proceedings of the Symposium 2007. The data presented in this paragraph are the result of the author’s observations and represent a very provisional sampling compared to what would be deducible from complete documentation.

¹⁹ Noteworthy is the almost complete absence of this formula among the rock art of Sellero (only one case in Carpena R. 4), although the armed figures represent well over the 66.4% of the total number of humans recorded in this area and the duels are a

As summarized in Fig. 15, in the eastern areas of Foppe di Nadro, I Verdi, Zurla, Naquane and Campanine, there are 66 documented cases of linear duels on 13 rocks. When considering the presence or absence of the arm turned behind the body, the proportion is definitely to the disadvantage of the latter, which appears only in the 24% of the total cases. An example is Naquane R. 34, which presents eight armed men in duels and a single duellist (Ernyey 1996), all of them without the turned arm, but, according to the sword and shield position, adherents to the A1 typology. This trend is instead significantly reversed for the areas of the western side sampled here, which instead show an overwhelming prevalence of the latter type (92% of the total cases).

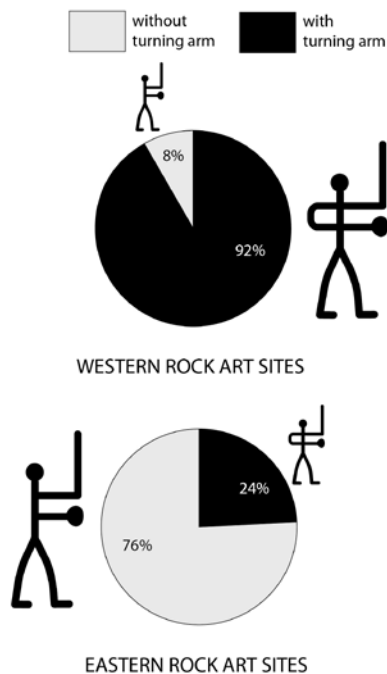


FIGURE 15. GRAPHS DISPLAYING THE DISTRIBUTION OF THE DUELLISTS WITH AND WITHOUT THE “TURNING ARM” ACCORDING TO WESTERN/EASTERN AREAS IN THE CAPO DI PONTE DISTRICT.



FIGURE 16. SERADINA III R. 35. DUELLISTS WITH AND WITHOUT THE “TURNING ARM” WITHIN THE SAME DUEL SCENE.

That this variability should be imputed again to pure chronological factors is unsatisfactory, not only because, morphologically, this category of figures appears very standardised,²⁰ but above all because in Seradina III R. 35, within the same duel scene, one of the duellist shows this feature and the other does not (Fig. 16). It is therefore clear that this figurative choice suggests both a certain representational freedom, as indeed the duellists with seemingly wrong solutions seem to demonstrate, and a strong spatial connotation. The repetition of the same variants on nearby rocks may indeed have triggered imitation processes on a territorial basis and therefore may have induced local “fashions” that could have been perpetuated from generation to generation. In other words, we have here another proof that it is more the spatial location than the chronological position that helps explain the shape variability in some specific categories of human figures.

predictably frequent theme (Sansoni 1987: 106, tab. II/1).

²⁰ The only element that varies is the body, which can change from a linear to a rectangular/trapezoidal structure.

The rare “attendants” behind the duellists: witnesses to special duels?

At Seradina I R. 12, very few duels are accompanied by standing warriors behind each single duellist. The duels involve humans wielding the sword in a different position than the classic tip shot where the sword overlaps the body of the human handling it. In these cases, the sword is instead completely behind the body, with no contact between the blade and the torso of the human figure (C2 variant). These duels stand out from the rest of the duellers, since they are often found at the centre of particularly rich panels, usually in combination with a set of other scenes (ploughing, sex, hunting) typical of this surface (Marretta 2016). They are also the only ones accompanied by “attendants”,²¹ a feature that appears in identical form at the nearby Seradina I R. 7. These attendants are single armed warriors standing at the back of each duellist and having a significantly different armament - large shields and spears - in a formal position reminiscent of the required “second” in the duel code of historical times.

On R. 12 one of these rare duels with attendants has duellists wearing “feathered” headdress, here made with a very fine pecking that has almost completely vanished and was only recently identified (Fig. 17-18). This headgear made with parallel lines falling behind the shoulders, almost absent in western sites, is known in the eastern areas from Naquane RR. 35, 44 and from the famous boxers of Foppe di Nadro R. 6 (Fig. 19). A strict comparison can be drawn with the three pairs of duellists depicted on the back of the bronze *kline* found in the princely tomb of Eberdingen-Hochdorf (Baden-Württemberg, Germany), dated between 540 and 520 BC (Biel 1985). The artefact is considered the work of artisans from northern Italy, probably the Golasecca area (Verger 2003). Rock art panels, specific graphic forms on bronze vessels (De Marinis 1988; Marretta 2007; 2015), and elements of material culture (De Marinis 1992) suggest that the Golasecca area was in contact with Valcamonica.

The most famous case of this peculiar enlarged duel scene is located in the small but very rich panel visible in the North-Western corner of R. 12 (Fig. 17). A second pair of duellists almost identical in style and size is located a few centimetres to the right of these and is not associated with the attendants. Above the scene is depicted an archer hunting a large deer with a “solar” antler, while underneath are three representations of single dogs chasing chamois. It should be emphasized that, apart from R. 12, the only other representations of attendants in Valcamonica can be seen on Seradina I R. 1, a surface about 30 m East from R. 12, on Seradina I R. 7 (Fig. 20) and on Seradina II R. 6. The theme therefore exists only in a small portion of the western side of the central Valcamonica and did not achieve a widespread diffusion.

At Seradina I R. 1, the duellists with attendants are located near a scene of a dog chasing a deer. The whole scene is very reminiscent of many cases on R. 12, while all around there are many other simple duels and some standing figures characterized by vertical spears, large shields and helmets with high central ridges. The graphical uniformity of these figures with what is shown on R. 12 suggests that both rocks could have been visited by the same people and, perhaps, be part of a single huge surface emerging in its entirety in prehistoric times. At Seradina I R. 7 the pair of duellists with attendants is almost identical to the small North-Western panel of R. 12. A couple is in fact flanked by two humans armed with round shields and spears pointing downwards, while a second pair stands without attendants amidst several warriors with shields and spears. Noteworthy are again the sometimes linear and sometimes rectangular/trapezoidal bodies, the variation of the shields of the attendants - in this case small and round instead of large and concave as on R. 12 - and the repetition of the duel with attendants alongside the simple duel that once again appears on R. 12.

²¹ See also Fossati 1991: 15, fig. 7, who defines these figures as “arbitrators or instructors” (“arbitri o istruttori” in Italian). Here we use the term “attendants”, less susceptible to interpretative implications.



FIGURE 17. SERADINA I R. 12. DUELS WITH "ATTENDANTS" SURROUNDED BY HUNTING SCENES.



FIGURE 18. SERADINA I R. 12. ALONG SOME UNFINISHED DUELS, ONE FIGHTING COUPLES EXHIBITS SPECIAL "FEATHERED" HEADDRESS AS A MARKER OF DISTINCTION.



FIGURE 19. FOPPE DI NADRO R. 6. THE FAMOUS BOXERS WITH FEATHERED HEADDRESS SIMILAR TO THE ONES VISIBLE ON THE BACK OF THE HOCHDORF KLINE.

When comparing figurative traditions of the same period, the most useful comparison is to the standing figures constantly depicted behind boxers in *situla* art,²² even if in this iconographic milieu neither the boxers nor the latter are ever depicted with weapons as they are in the Valcamonica rock art. Similarly, the so-called “referees” who sometimes appear behind boxers or wrestlers in Etruria (Thuillier 1985; Sannibale 2012) and in Greek vascular painting²³ are equipped with sticks or other ceremonial objects and never with actual weapons. This fact reinforces the idea of a peculiar declination in rock art of ideologies which are largely shared among different people of northern Italy and the Alps during the Early Iron Age, but that are differently rendered according to indigenous contamination or the specific function that each support (stone, metal, etc.) plays when used to convey it in graphic form.

The fighting couple: reality and representation of the duelling warriors

The competition between two figures, armed or not, is remarkably common in Italian and Alpine protohistory (Pause 1992), as testified by the frequency with which it appears in various decorative repertoires ranging from small bronze plastic,²⁴ decoration on metal foil,²⁵ wood,²⁶ pottery²⁷ or stone,²⁸ up to the more recent marble of the famous Corsini throne (Ducati 1917).

First of all, a distinction must be drawn between pairs of humans involved in boxing fights, that is unarmed and engaged in sporting competitions, and pairs occupied in armed duels. Pairs involved in armed duels appear with certainty outside Valcamonica only in the Bisenzio wagon (Torelli 1997), in the decoration of the exceptional Verucchio’s wood throne (Von Eles 2002; Verger 2011),²⁹ in the vessel from tomb B of Sesto Calende (De Marinis 2009) and on the *kline* of Hochdorf. The boxing fight has its model in the Greek athletic competitions, which in turn have clear antecedents both in Minoan and Middle Eastern materials. It is a form of ceremonial/symbolic combat between two individuals, because, among other more articulated arguments, the absence of weapons tends to subtract the loser from certain death, thus strongly diminishing the violence implied by this controlled deflagration of aggressive instincts. On the other hand, the armed duel has been repeatedly linked to the liminality of death and the mythological dimension,³⁰ which encodes the reactivation of a crucial episode of the past into possibly non-bloody forms, although the weapons will always keep the fighters on the border of actual death, as the later gladiatorial games will clearly demonstrate.

22 The pair of boxers, who differ from the Etruscan counterparts for the presence of the *halteres* and for the more frequent use of a helmet instead of a vase as prize for the winner, is a theme constantly depicted not only on the *situlae* but also on belt hooks (Magdalenska gora) and on votive plates (Este-Meggiano). The boxer with *halteres* is also recognizable in a small bronze plastic of the central-alpine area, for example at Landeck-Perjen (Austria).

23 See, for example, the Panathenaic black-figure amphora found in the so-called “Tomba del Guerriero” of Vulci, necropolis of the Osteria, about 510 BC.

24 This class includes both the rich decoration of the small ritual bronze wagon found in the tomb n. 2 of the Olmo Bello necropolis in Bisenzio and the bronze statuettes of boxers from Landeck (Tyrol, Austria). For the first see Menichetti 1994, Torelli 1997, Pacciarelli 2002 and especially Cupitò 2003.

25 There are many examples, especially on bronze decorations. Among these the most important are undoubtedly those pertinent to *situla* art, but this scheme recurs also in the Hallstatt and Golasecca bronze ornamentation, especially the Hochdorf *kline*, the decorated bronze vessels from the princely mounds of Kleinklein, and the *situlae* of the tombs A and B of Sesto Calende and, finally, the decoration on a golden fibula from Vulci. For a recent interpretation of the Hochdorf *kline*, see Verger 2006, Verger 2011. For Kleinklein and Sesto Calende see Tarpini 2003. For the Vulci fibula see Pacciarelli 2002.

26 Unique in terms of preservation of wooden artefacts is certainly the necropolis of Verucchio, in which stands the famous intricately carved throne from the Lippi tomb 89/1972. For the latter see Von Eles 2002.

27 The best examples come from Hallstatt materials from the Sopron burials.

28 Armed or unarmed fights between two individuals also appear on some Felsinean steles.

29 If the ideas expressed in Verger 2011, especially pp. 174-178, are correct.

30 See for example the interpretation of Pacciarelli for the decoration on the golden fibula from Vulci, perhaps related to the myth of the conflict among twins, for which the most obvious and famous reference is that of the foundation of the city of Rome (Pacciarelli 2002).

Regarding the armed duels topic, and on the basis of the note by Mario Torelli in relation to the anachronistic weapons wielded by the duellists of the Bisenzio wagon (Torelli 1997), Stephan Verger isolates some *duels étranges* in a series of findings that comprise also the throne of Verucchio, the situla A and B of Sesto Calende, a vase from Sopron, the *kline* of Hochdorf and, finally, the Felsinean stele of Vel Kaiknas (Fig. 21). Among these, the French scholar includes also a duel scene from Valcamonica rock art, where in fact the occasional appearance of unusual weapons could justify this connection.³¹ Michele Cupitò also commented on the ritual characters of these duels while discussing the *duel étrange* on the Bisenzio wagon. He mentions the duellists “tied” by a leg of Naquane R. 1 as a good example of special duels in Valcamonica rock art (Cupitò 2003: 97-98). It is interesting to note that on Seradina I R. 12 there exist two other duels that seem to imitate the same modality of extreme combat (Fig. 22). In short, Verger’s thesis reinforces the idea that such scenes, removed from the everyday dimension by means of the “strangeness” of the weapons, re-issue particular episodes linked to the acquisition and maintenance of local power. The fight between two warriors with anachronistic or unusual armament, according to Verger, is not necessarily connected to myths or funeral ceremonies but could be traced back, for example, to rituals of rank acquisition³² or, sometimes, to traditions pertaining to the opening and closing of the military year.

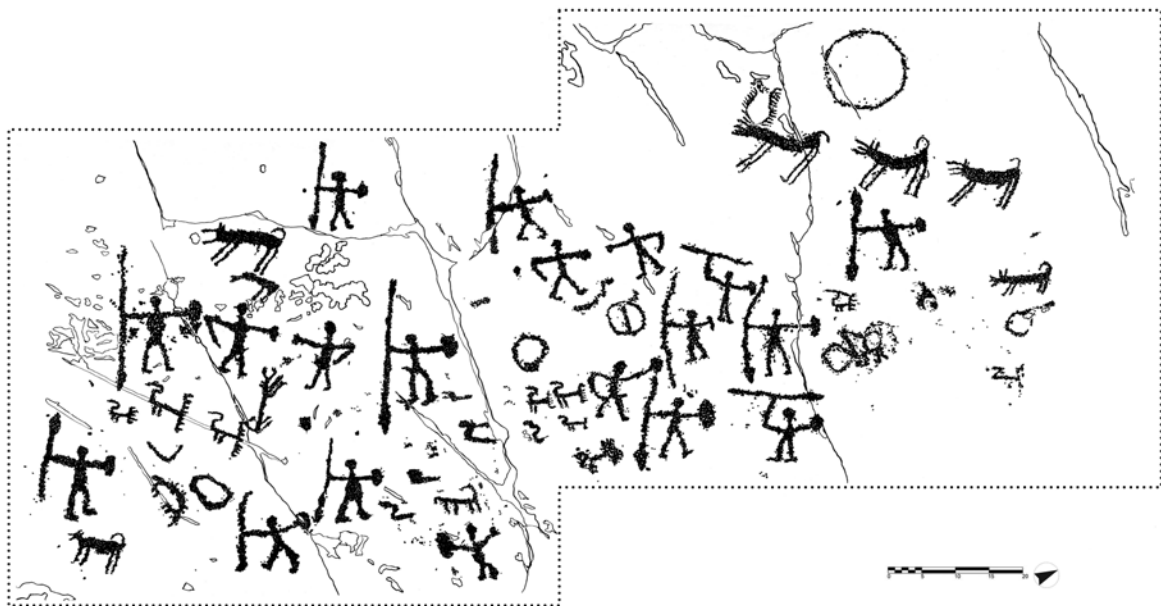


FIGURE 20. SERADINA I R. 7. DUELS WITH “ATTENDANTS” AMONG STANDING WARRIORS WITH LARGE SHIELDS AND SPEARS. THE ROCK BEARS ALSO OTHER SUBJECTS CONNECTED TO R. 12, LIKE THE DEER WITH “SOLAR” ANTLER CHASED BY DOGS OR THE CHARACTERISTIC SCHEMATIC BIRDS.

On object decoration the duels are often placed on imaginary “borders” or surrounded by unordinary objects that tend to reinforce this character of exceptionality also on the spatial side. This is seen, for example, in the Bisenzio wagon, where the ancient artisan placed the duel on the threshold of wilderness represented by animals and thus physically above the social *kosmos* epitomised below by the ploughing, hunting and *hieros gamos* actions. The liminality is constrained by distinctive elements, such as the vertical spears of the Corsini throne or the hieratic spectators/attendants on either side of the boxers/fighters depicted in

31 For example, the shields of the “astronauts” on Zurla R. 1 and Foppe di Nadro R. 24, identical in structure to those of the duellists of Hochdorf. For the former see Sansoni and Marretta 2002.

32 A duel in the manner of the *rex nemorensis*, considered by Verger as a plausible model also for the *princeps* of Hochdorf, albeit in the logic not of a single individual but of a triad (according to the French scholar the three duels depicted on the back of the famous bronze *kline* would allude to this story). The *kline* itself would not therefore be a simple couch or a funerary bed, but a sort of enlarged throne actually used and able to accommodate three people in a sitting position. For this last interpretation, see Verger 2006.

situla art or on the Verucchio's throne. In Valcamonica there are also examples of single duels completely surrounded by lines separating them from the other nearby figures. They can be interpreted as temporary enclosures of ceremonial nature within which the duel comes to life, a hypothesis already suggested in the past for two similar scenes carved respectively at Pià d'Ort RR. 39 and 36 (Sansoni and Gavaldo 1995). The research conducted so far in the Archaeological Park of Seradina-Bedolina has uncovered, in addition to the previous examples, other analogous occurrences at Seradina II R. 13 (Fig. 23b) and at Seradina I R. 26 (Fig. 23c). The same idea can also be seen on Seradina I R. 12, specifically in the long linear motif located in the left central sector which contains an enclosed area within which stands a duel surmounted by a single duellist without an opponent (Fig. 23a).

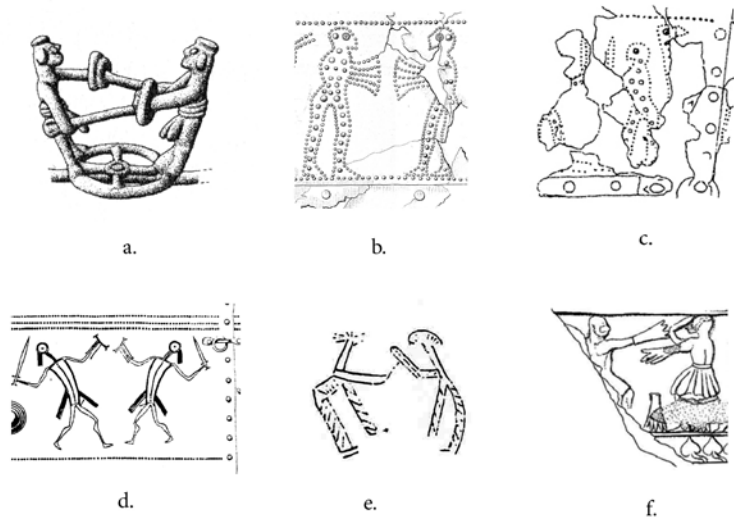


FIGURE 21. DUELS WITH UNUSUAL ARMAMENTS ON OBJECT DECORATION: A. BISENZIO WAGON (DETAIL), B. SITULA A OF SESTO CALENDE, C. SITULA B OF SESTO CALENDE, D. KLINE FROM HOCHDORF (GERMANY), E. SOPRON (HUNGARY), F. STELE OF VEL KAIKNAS (AFTER VERGER 2011).

The fact that armed duels and boxing couples appear within the same contexts³³ seems to imply that they are not interchangeable formulas, but that both convey precise meanings. In this respect, the observation of Giuseppe Sassatelli regarding the rare recurrence of athletic games, and in particular boxing couples, on the funeral monuments of Etruria Padana may perhaps be useful. Sassatelli, in a review of athletic games on the Felsinean steles conducted some twenty years ago, observes the limited use of the motif and points out that « [...] the number of Etruscan monuments in the Po Valley with depiction of athletic games, itself, it is further reduced, acquiring those characters of relative rarity that must be kept in mind in the overall evaluation of these representations. We are definitely far from recurrent and usual themes such as the journey of the deceased or the representation of demons, and we can fairly say that the exceptional nature of these depictions is in itself a proof of their considerable importance » (Sassatelli 1993: 66).



FIGURE 22. SERADINA I R. 12. DUELLISTS "LINKED" TO EACH OTHER IN ORDER TO EMPHASIZE THE RITUAL CHARACTER OF THE FIGHT.

33 A phenomenon that occurs both in Valcamonica (for example at Foppe di Nadro R. 6) and in Golasecca/Kleinklein, but not in situla art, where only the pair of boxers with *halteres* are depicted.

The boxing scenes in Central Valcamonica are quite rare, but at the same time they are spread across many rock art areas in a way that exclude a strict delimitation in space and probably time. Is it reasonable to conjecture that they, instead of the countless armed duels, have a special meaning which points to a type of confrontation carried out in honour of individuals of very high rank within the community? Of course, we are tempted to answer positively to this question, although it is not possible to say whether they replicate real funeral games or “festive” competitions, as has been sometimes suggested for the whole repertoire of scenes developed in situla art.³⁴ In this respect pre- and protohistoric archaeology of Valcamonica has yet to uncover crucial information related to the social, cultural and economic structure of the area. And this data is not simply complementary but truly mandatory for a better understanding of the entire rock art phenomenon, not least the duel scenes, which are inherently so rich in social implications.

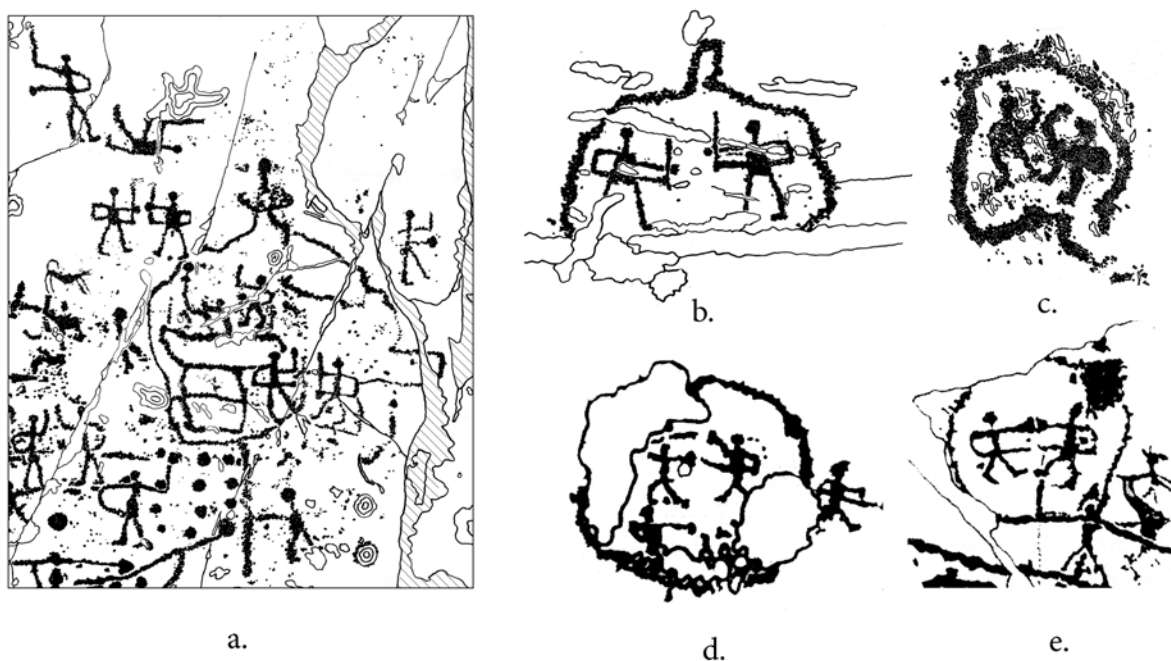


FIGURE 23. DUELS ENCLOSED WITHIN LINES: A. SERADINA I R. 12, B. SERADINA II R. 13, C. SERADINA I R. 26, D: PIÀ D’ORT R 39, E. PIÀ D’ORT R. 36 (D.-E. FROM SANSONI AND GAVALDO 1995).

Conclusions

We close our overview of the schematic duel topic by adding some remarks useful for contextualizing the data and the discussion exposed in the previous paragraphs. First of all, it is quite fair to say now that the space distribution is a key factor for understanding the variability of many Iron Age subjects in Valcamonica,³⁵ including the duel scene in linear form. There is now undeniable evidence that changes in certain features of this kind of scene, like the general position of the sword and shield or the insertion of the arm turning behind the body, are driven by the respective location on the territory, which works as a sort of attractor for the repetition of the same themes. Local fashions, even the incorrect/unrealistic rendition of the turning arm or a certain freedom of choice in the structure of this otherwise repetitive “duelling” human figure eternally on guard, seem the best explanation for the variation highlighted here, with more incisive structural deviations, like the missing arm turning back, showing up in areas located on opposite sides of the valley.

³⁴ For a review of the various situla art interpretations see Torbrügge 1992, Capuis 2001.

³⁵ An intuition that goes back to Umberto Sansoni in his works of the ‘90s, ideas recently expanded with even more convincing data (Sansoni 2016).

The rising importance of space in order to explain variabilities among figures goes hand in hand with a diminishing confidence in the chronological possibilities offered by rock art. This specific set of duelling humans has been dated to the early Iron Age based on their simple schematic form and on some fragile comparison with recognizable weapons known from the archaeological record (Fossati 1991). The dating remains valid primarily thanks to the ideological framework of the time, i.e. the early Iron Age of Central/Northern Italy and the Alps, where they fit quite well along other elements of aristocratic self-representation like hunting or ploughing, rather than to chronological markers identifiable inside the rock art itself. Superimpositions are in fact scarce and not meaningful, while weapons are still too schematic to be compared with real ones.

Furthermore, we see the rising importance of a step to be taken necessarily before risking the dangerous task of dating rock art. It's simply the assessment of a chronological feasibility, i.e. the possibility of weighing a reasonable chronological range for certain categories of figures. Simple, schematic and undetailed subjects bear in fact a very low dating confidence, with figures probably used over many generations and maybe centuries due to their straightforward recognizability. If a figure is more detailed and has obvious peculiarities linked to a stronger identity, then dating becomes not only easier but also more likely to be accurate because the more the figures are specific, the less likely they are to be drawn again as habits and beliefs change over generations. In this respect, although the duel is a product of a definite ideological framework widely shared among ruling elites of the Italian peninsula and the Alps during the Early Iron Age, it could well have survived through centuries in the crystalized forms we have seen so far. The representation on the rock probably derives from a real, though highly formalized and likely ritual/ceremonial combat needing specific skills and compulsory defensive/attacking positions caused by the use of sword and small shield. This fact reinforces the hypothesis of a repetitive motif used to embody a message in a basic, symbolic way.

The morphological analysis and the identification of repetitive patterns in structure and spatial locations of linear duels point to the fact that there remains much to be studied in Valcamonica in order to achieve a better understanding of the rock art phenomenon. Humans, especially, are not more meaningful from a theoretical point of view just because they handle this or that weapon or because they interact in this or that way with other images, but also because they act through their whole body, conveying complex significance in the raising of one hand or in the pointing downward of their spears. From now on recording and analysis techniques should include much more data than before and use GIS software to look at morphological or other attribute variation also in the crucial field of spatial analysis.

This investigation of linear duels proves once more that Valcamonica shared common ideas well rooted in the dominant class of different regions of Italy and the Alps during the Early Iron Age. Of course, when translated into images on unmovable rocks in the open air, these common subjects were drawn following specific indigenous rules and according to the multi-faceted motivations of rock art (Marretta 2015), with the duel scene being no exception to this process of translation. Of course, some issues arise here as we still do not know from archaeology which kind of social structure was behind the production of rock art. Since we do not want to speculate too much, we should limit ourselves to the assertion that certain themes, like the obsessively repeated duels, *imply* some sort of stratified society involving a ruling class of warriors. Maybe the differences in the armaments of the duellists and the by standing armed men even suggests a further distinction among the warriors, for example young warriors versus adults. At the same time, we also know that very different types of society sometimes shared the same ideological package. For example, situla art worked as a sort of lingua franca for local elites in order to distinguish themselves and connect to each other across different regions and through different people, from the urban societies of the Po plain to the tribal groups of the mountains (Capuis 2001). In this respect, while the word "aristocracy" could be easily the wrong term for the Valcamonica of the early Iron Age, we should point out that rock art is not a linear, coherent message handed out by a group of *illuminati* through the centuries,

but that it contains a wealth of heterogeneous signs stratified according to a logic possibly entirely alien to the contemporary researcher. On the one hand in fact rock art presents its comprehensible face through its constant cross-referencing with other external populations, while on the other hand, it opens up to us a universe of indigenous symbols, whose original meaning is likely lost forever, but still attracts the modern mind as an irresistible “heart of darkness”.

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Chapter 14

Symbolic Concordance: a transparent approach to archetype

Umberto Sansoni

*“The symbol reveals certain aspects of reality
-the deepest aspects-which defy any other
means of knowledge. Images, symbols and myths
are not irresponsible creations of the psyche;
they respond to a need and fulfil a function,
that of bringing to light the most hidden
modalities of being (...) Symbols never disappear
from the reality of the psyche. The aspect of them
may change, but their function remains the same;
one has only to look behind their latest masks.”*

MIRCEA ELIADE (*Images and Symbols*)

At an unspecified time – around 150 thousand years ago – in a place situated in the South-West of Africa, our first direct ancestor emerged. The modern *Sapiens*, already emphatically defined *Homo Sapiens Sapiens*, was a well-erected individual, with broad neotenic characters, with an abnormal brainpan and a relatively fragile bone and muscle constitution. This individual had the same basic genetic heritage as ours, our physical structure and our basic faculties and disposals. It expressed itself with the same linguistic disposition and the same vocal range as ours, undoubtedly had reasoning skills and feelings in which we can fully recognize ourselves: these are qualities that *Sapiens* had developed and transmitted to us, in an evolutionary process. The infinite striking variants of the following genetic and structural variation of the humanity are trifle, small adaptive adjustments that do not affect the radical substance of the primordial.

The Ancestor must have initially formed a small community in a relatively small territory¹; this event is followed by a gradual *spread* that continued until the departure from Africa, which happened around 60,000 years ago (or well before). For a long auroral period of time – easily, millennia – the *Sapiens* must have formed a community, with a language, a social organization, a vital strategy and a specific vision of the world, representing a kind of unitary *overture* to the kaleidoscopic subsequent expansion.

Therefore, we have to consider two basic factors that constitute the starting point of our considerations: the only genetic-morphological origin of our species (as a phylogenetic root), and the formative, environmental and social context (as the first phenotypic root).

¹ The most recent studies (Jones & Stewart 2016, Marean et al. 2007) are addressed to the coastal area of the oriental South Africa, particularly to the Pinnacle Point site, where emerged – around 150,000 years ago – a gatherer-fisher culture community. A slightly more archaic forms have been identified in Omi Kibish in Ethiopia (around 195 thousand years ago) and, surprisingly, in Jebel Irhoud in Morocco (around 300,000 years ago).

Thus, a unitary psychic structure is established, as the same patrimony of characters, dispositions, instincts and faculties; the same psychic geography that – similarly to what happens on the genetic and physiological level – marks the subsequent developments of the species. Within the same analogy, we must consider that the infinite progressive phenotypic differences are more evident if these are more present on the surface and less evident if situated deeper, with a tendential unity in the bearing nucleus.

In Jungian terms: from the extreme variety of the Self (the individual consciousness), to the extreme unity of the innermost layers of the collective unconscious; this conception goes beyond the generic *tous parents* and *tous différents*, because it reaffirms the basic psychic dispositions concerning the common program-code of the species, in harmony with that genetic uniformity traced below any mutative-adaptive differentiation. This uniformity is what pushes S. Olson (2003) to consider, the provocative, “evolutionary stasis”. Human phylogeny thus includes a ramification of addresses and strategic choices determined by the resultant of historical mutative-adaptive and communication processes, and the basic *inputs* of its “program codes”, indiscriminate and logic polarities are expressions of the same ontological reality. Archaeologically, we can distinguish the original effects of this polar dialectic and the stages of its execution, but with the risk of unbalance in interpretation, in one way or another: the historical debate between diffusionism and innatism develops, namely denying or affirming the existence of the second. Moreover, it develops into a long and complex affair, which – in typical historical-humanistic form – singles out the various disciplines mentioned in this article, as well as the ideological approach assumed by several schools of thought and individual researchers ² (that is sometimes dominant).

The Long Formative Phase

The incomplete archaeological data, at the beginning of the extra-African diaspora, presents us a negroid *Sapiens* with a modest lithic apparatus, hunter-gathering skills, master of the fire and of the most basic survival techniques. This *Sapiens* was gathered in small clan groups and (probably) was already equipped with sensitive linguistic variations; more likely, the *Sapiens* expressed different forms of art on perishable material and had a rich mythical and ritual heritage.

On this basis of this model– and in the time space of 40 thousand years – this species conquered every niche of our planet, showing extraordinary qualities of smart interdependence and adaptability to every situation - even the most extreme ones. At the time of the first paintings of the Chauvet Cave, those situated in South Africa and in the Australian continent – at least between 35 and 30 thousand years ago –,mankind had morphological characters and territorial habits which were very close to those of the later Paleolithic groups; many marginal communities had lost contact with others, starting an autonomous process of development.

The first distinct examples of art on non-perishable materials arrive at a time when the diaspora and ethnic structure were already almost complete in Eurasia and nearby Oceania. Culturally speaking, onward from this time - and during the whole subsequent Paleolithic - we are able to identify some similarities between the lithic industry and iconographic expressions. Even in large well-characterized continental groups, attention is turned towards the animal figure made in the phased defined by Anati as “the archaic hunters phase”. This is a very particular stage, expressed, in Europe, from the Atlantic coast to the Urals – as small plastic figures and paintings and engravings on the walls of caves and shelters. It is a specific kind of art with a wide distribution, made over a period of time of 25,000 years, with comparable characters – unique both in styles and subjects -, which include: the numerous steatopygic female silhouettes, handprints and abstract figures.

2 There is a good dissertation written by Brusa Zappellini on this topic in this publication.

This long auroral and capable of absolute masterpieces phase of *Sapiens* art, transmit to us characters of strength, naturalism and thematic simplicity, in what appears a sort of intimate agreement with the environment and the subjects represented, participating in an, almost symbiotic, emotionally charged, relationship. The art of the Palaeolithic, like that of the Mesolithic, is, in many respects, central to our investigation, since it has to explain the first and radical motions in the purest way. In a micro-psychoanalytic perspective, the basic psychic movements at the most immediate stage should be grasped here and should confirm the validity of the relevant clinical observations (See previous, illuminating works written by P. Bolmida (2004; 2010) and the contribution in the publication *ultra*). Within the Jungian perspective, the school of thought that this specific phase has neglected³, should be manifested the deepest dispositions of the collective unconscious and, therefore, the archetypal modules of this primitive sources should stand out better, showing matters in a more transparent way that led into subsequent developments.

It is an insidious research (and completely unfashionable considering the discouraged descriptive-sectorial trends of the modern archaeology), but the extraordinary discoveries of the last two decades: the parallel analysis of the details and, most of all, the progress of the interdisciplinary approach; has allowed us to synthesize important evaluations.

Hereafter, we give a list of the archetypal evidence in the European area, underlining – again – the great stylistic-thematic similarity in a vast area and in long term, that corresponds to an equal proximity of material culture, strategies and lifestyles of the great continental groups.

The common choice of caves and rock shelters, sites that were not inhabited so intensively in everyday life, which were probably considered as sacred places *par excellence*, in a possible symbolic relationship with the *uterus* and the female womb. This aspect, which is broadly consistent, is a first basic archetypal evidence that binds with some particular refined natural cave conformations, as well as with images of pubic triangles, like the probably pregnant “steatopygic Venus”, (Fig. 1-3) (Fig. 1-2) and other equally pregnant animal figures.



FIGURE 1. THE VENUS OF WILLENDORF, 23.000 B.C., VIENNA, NATURHISTORISCHES MUSEUM.



FIGURE 2. THE VENUS OF KOSTIENKI 7, 23.000-21.000 B.C., RUSSIA

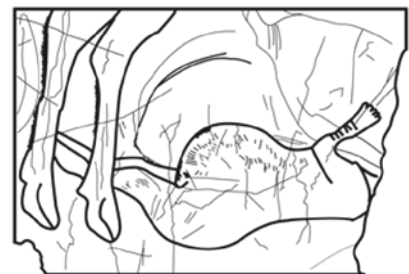


FIGURE 3. FRAGMENT OF REINDEER BONE WITH UNGULATE HIND LEGS AND A PREGNANT WOMAN, MAGDALENIAN, UPPER PALEOLITHIC, LAUGERIE BASSE, DORDOGNE, FRANCE (FROM ANATI 1995: 54; FIG. 50).

³ See the detailed analysis by Brusa Zappellini, in *ultra*.

The Palaeolithic focus seems to be exclusively based upon this stage of motherhood, or better said, the creative and reproductive faculty of nature caught in the germinal and incubative aspect: a feminine aspect in a cosmic vision, already defined as “Great Mother”. Puppies and children are largely excluded from the depictions, as well as – apparently – the sexual act, the birth and lactation (potentially only shown by the representation of large breasts), elements that only found in a great diffusion and prominence during the Neolithic period.

The common repetition of a few large experiential subjects: selected animal figures (in numbers that do not suggesting hunting) and female figures (generally steatopygic) with no facial features and little, or just hints of limbs; supplied with anthropological-zoomorphic equipment (Figure. 4-6) (Figure. 3-4), including handprints, pubic triangles, geometric forms and other rare shapes. Undoubtedly, these figures are projected, shared and strongly felt values, both rational and emotional, that go well beyond what they describe. From a phenomenological point of view, and generally among cultures, the animal image is compared to an epiphany: a bearer of forces, values and/or symbols and/or projection of entities. The cases are endless and very articulate: in our own collective imagery, we have several examples, such as the associations between Zeus-eagle, Zeus-bull, Athena-owl, Anubis-jackal, shaman-*eland*, deer or horse, Holy Spirit-dove.



FIGURE 4. ANTROPO-ZOOMORPHIC FIGURE IN THE LES TROIS FRÈRES CAVE, ARIÈGE, FRANCE (CCSP ARCHIVE).



FIGURE 5. ANTROPO-ZOOMORPHIC FIGURE IN THE LES TROIS FRÈRES CAVE, ARIÈGE, FRANCE (CCSP ARCHIVE).



FIGURE 6. HYBRID FIGURE IN THE LES TROIS FRÈRES CAVE, ARIÈGE, FRANCE (CCSP ARCHIVE).

Thus, with even greater force, within the cultures of advanced hunters – the closest to the Palaeolithic lifestyle – the vision of *animal medicine* or *animal totem* is known. Amongst Native Americans (of several and different cultures), these are the expressions and living symbols of the power, knowledge and healing; so, their meeting is perceived as a sacred sign. In Bushman, the mantis, the *eland* and the lion have very special roles in the shamanic healing vision. What these traditions shared with the Paleolithic ones, is certainly impossible to say. The same comparison can even be misleading, but I think they these are still close to the original perspective and, therefore, allow us to understand (at least) the breadth of the possibilities – if not (on a wide spectrum) to grasp at least the traces of the original archetypal motion of symbolic projection on the animal.

The anthropo-zoomorphic figure: the male figure is rarely expressed, sometimes with a naturalistic or “caricatural” face, other times in a central and praying position, sometimes with head, mask and/or animal limbs; among these there are the *Löwenmensch* of Hohlestein-Stadel (Fig. 7) (Fig. 5), the bird-headed *sorcier* of the well of Lascaux, the man-deer of the Volp (Fig. 4) (Fig. 6), the man-bull of Gabillou, the bison-men of the caves Chauvet and Trois-Frères, and other dancing figures a animal typical position. Amongst the feminine figures with a limpid face – over 100 cases – we have the beautiful head of Brassempouy, while, with some pieces of the face, there are three statues in Avdejevo and Kostenky (Fig. 2) (Fig. 7). Moreover, there is the figure engraved on the pebble of Tolentino, which has a sort of zoomorphic fawn head (if we exclude the doubts about the *lion man* interpretation). This series reiterates the link (ritual? or a mythic-symbolic one?) with those that are the most represented animals. In any case, it is animals that are absolutely dominant in the Paleolithic figurative imagery. The world that these images of mimesis make us understand, goes well beyond purely representative or pragmatic hunting magic and, indeed, probably represents fundamental symbolic values. In animals, characteristics can be recognized, peculiarities, powers and elements that, not only have a close relationship with the life of the Paleolithic composer, but homogenously represent its endogenous sphere, as interpreters of its psychic world and of the deeper reality. The anthropo-zoomorphic figure is therefore essentially masculine (as if the feminine already recognized in itself a sort of radicalism that does not need mediations or transfigurations): on the other hand, one wonders about how much the same simple human figures do not participate in the animal and how much animals do not represent man.

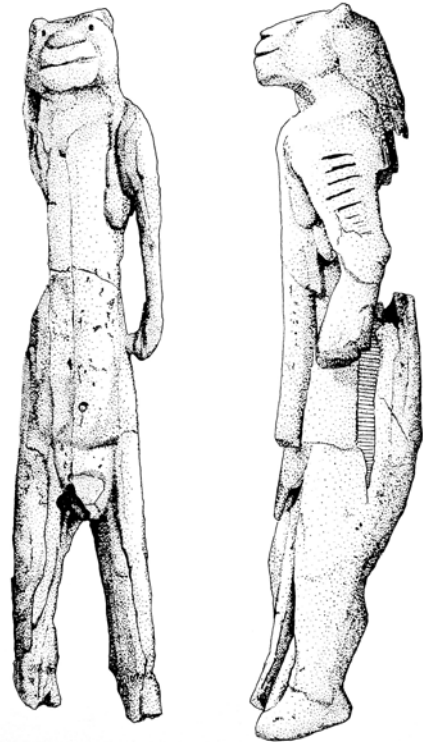


FIGURE 7. IVORY STATUETTE, HOHLEIN-STEIN-STADEL, BADE-WURTEMBERG, GERMANY (FROM ANATI 2003: 59; FIG. 11).

We know how vast and capillary the prehistoric and historical manifestations of this expressive choice are, and we know how – in many cases – it is a sort of clue (again) to a conception of an ecstatic-shamanic world. Without wishing to enter into the hornets’ nest of the shamanic *quaestio* in the Palaeolithic; in my opinion, it is convincing data, but I would like to remember that the animistic-shamanic practices are still considered among the most archaic (if not the most archaic) formulas of the manifestation of *homo religiosus*: that is demonstrated by their presence in a plurality of cultures within five continents – both archaic and evolved – to mark their persistence.

To these, the phosphenic (Clottes & Lewis-Williams 1998; Zappellini 2012) type expressions in caverns, or some of those that Anati (1988; 2015) defines as *psychodramas* in order to testify in favour of non-ordinary states of consciousness, must be added. Consequently, it could be said that we are dealing here with an expression of a shamanic form or connected to an animistic and/or ecstatic one. This construction appears so strong and rooted in the level of its support of the plant that, given the concomitant character of space-time universality and high emotional value, the supporting archetypes should be fully transparent.

In the Palaeolithic art, the endogenous datum of the program code should, therefore, be very close to the symbolic manifestation, at the root of what the mediating conscience elaborates in the experiential existence. This constant radicalism (in the span of an extraordinarily long period of time and with minimal changes) is a phenomenon that has deeply marked the soul of the subsequent evolution of the mankind: the direct descendants. In this context – but also in the traces remained in subsequent developments – the first and basic movements of symbolization must be sought.

From Neolithic to the Modern Age

The era of the “great beasts”, according to the adage of G. B. Vico, demarcates the end of the late Pleistocene, following the dramatic climatic changes that shook the balance of archaic hunters. In the subsequent ferment, the Epipaleolithic and Mesolithic cultures emerged, as part of an exceptional adaptive response, resulting in the Neolithic revolution and, hence, a progressive acceleration in every field of the human knowledge. Culturally, we are witnessing the passage from one Paleolithic strategy – with marginal regional differences – to the few, but more distinct, Mesolithic constellations. These subsequently lead to the first clearly identifiable Neolithic cultures, these in turn progressing toward ever clearer differentiation of cultural areas in the Metal Age: a process (at a macroscopic level) of regionalization and differentiation, which hastens as we come closer and closer to the thresholds of history.

But with equal speed, the lines of contact, exchange, mutual influence, also strengthen, so that, over time, common characters with a dialectic between adoption, re-elaboration, and the imposition of novelties persist in a less elementary forms of globalization. Therefore, each era has its distinctive characteristics in increasingly varied forms and with large gaps in regional development. Here lies the epigenetic radical and the basis of the diffusionism phenomenon. A phenomenon that can be easily analysed at the level of material culture and the socio-economic settings that underlie it, but still misunderstood as regards what is being determined by the movement, religious waves and their consequent or compatible ideologies. In many respects, these must have played a primary causal role – not reducible to the pragmatic Marxistic “superstructural” at all – and, at least in the regional filter of these great waves, we must trace the deeper movements, attentive to those lowest common denominators that represent the most valid clue. Rock art and portable art are once again considered an important tool for the investigation, precisely because of their completeness in their iconographic scheme and direct ideographic expression. They are almost unique throughout the prehistoric period (alongside with proof of cultic activity, particularly within the funerary record) and, therefore, primary in our understanding of the protohistoric phase, when the proof of myth and the ritual, together with the *Weltanschauung* of the people, increased.

The general structure of all this great expression – as far as we understand – is within the sacred. This sacred has to be understood in its irreducibility to any other factor (as in antiquity and in the ethnographic actuality – just as it was and is still intended⁴) and something all-pervading: origin, cause and explanation of reality, guarantor of balance and cycles, source of all healing, sense of the same existing and dying, a whole in immanent and occult dimension, populated by forces, divine entities, ancestors and spirits to which man must conform and find agreement and harmony, with the pain of the frightful breaking of every existential balance.

On these primary tracks, magnificently investigated by Eliade, humanity seems to have always moved, probably even before our appearance as *Sapiens*. Through the filter of these tracks, we must understand the deep motions and the sense of the archaic iconography. We must also understand it in the indissoluble intertwining (without solution of continuity) of the epigenetic-diffusionist and the ontogenic-archetypal perspective. The latte, which is more essential for us because its causality – can be grasped in the symbols

⁴ I would like to express full agreement with the assumptions of M. Eliade and her school, in particular with the texts published in 1952 and 1972. Very close this are the theses of Jung (1975; 1997) and Jung & Kerényi (1972).

and the mythical-symbolical modules/structures of broad response: this is a datum (especially if referred to a range of cultures that may not have had contacts or common ancestry) that would indicate the substantial indifference of the archetype in a spatio-temporal context, although superficially conditioned in its historical form. As an example, we can imagine that the handprints on Paleolithic walls – whether they are Australian, Amazonian or South African – is, fundamentally, a personal and individual sign, ritually impressed in a sacred place in order to testify an epiphany, a realizing contact – a sort of success – a reached devotional, initiating or *ex-voto* goal. The same input will bring an Athenian of the V sec to offer a small statue to a temple, a Christian to engrave a cross or leave his name initials, or an *ex-voto* small painting, a Mongolian Buddhist to hang a colored stripe on the most sacred tree, others to impress and repeat everywhere the imprint of a hand or a foot. These are all concrete and diversified modules and motivations, but the same casual in substance. At this psychological level, even if only partially verifiable, we can only suppose common fundamental traits of the human expression in that framework of “affine spaces” that “do not necessitate of original prefixed points, whose laws are independent to the choice of an objective reference system” (Bolmida 2011). We can better understand this, thanks to signs and images that have the same iconographic construction in five continents, throughout an entire era. This will also have a double value if it is about simple constructions – with a gestural basis and fundamental logic – because these seem to respond to a sort of symbolical alphabet, susceptible to some combinations, enable to compose complex syntactical scenes of equal space-time extension. This has a full correspondence with the linguistic assumption of the *logical form*, the Language Acquisition Device (LAD) as the expression of the smart language faculty, the innate universal principle of Chomsky (2000) thought, because manifestation of the same ontogenic radical: the symbolic and verbal language undoubtedly have an intimate connection, without continuity solutions, as we observe in the field of the genetic interaction (see the contributions of Bolmida and Luigi). In the words of Jung, we are in a sort of a systemic thought,

“in that common psychic state that transcends all the differences of culture and knowledge (...) made up of latent predispositions oriented towards identical reactions (...) that explains the homology, sometimes even the identity between the various mythical and symbolic motifs, as well as the possibility of human communication in general”.

What kind of symbols or symbolic modules do we identify within this deep radicality? Starting from the modules within Paleolithic ancestry, I will put all those listed above, with a particular focus on the cave. To this, I would add the related imagery concerning the figures of the uterus and pregnancy; as well as a focus on the antro-zoomorphic figures and animal projections, imprints, cups, dots and linear symbols and, with some reservation, on the rare expression of the anthropomorphic prayer. The latter is depicted in a visionary world, essentially a chthonic one, centered on the feminine faculty; it appears as an accessory: acting as a man, and probably with integrative valences, but appears to represent the most antique formula of one of the widespread universal symbols from the Neolithic. The precise dissertation of Bolmida (*ultra*) exempts me from discussion of the topic, but it nonetheless necessary to reminds the reader that the praying figures – and the specific version with the oversize hands (as as well as usually feet and genitals) – normally depicted in scenic modules, are the most different, distant and structurally comparable (Sansoni 2007; Bolmida 2010; Bolmida & Sansoni 2011). Very similar is the instance of the spiral signs, mazes or labyrinths (Fig. 10-14), those undulating or snake-like and knot-like to two or more linked elements and the circular ones in all their forms. These have an universal expression, with epigenetical meanings that vary according to the cultural contexts they originate from. Thus, whilst the symbols may form, essentially unique, niche formulations; varied symbols, covered, adapted, multiformed; these do not change their underlying significance.



FIGURE 8. SCENE WITH RHINOCEROS AND COMPLEX SPIRALS, OUED JERAT, ALGERIA (PH.: DIP. VALCAMONICA AND LOMBARDY, CCSP ARCHIVE).

An exemplary case is the “The Solomon knot”: the sign that unifies and joins two identical linear, closely spaced elements, with the proto-Neolithic intertwined bands (Indo-China, VII Century BC) and Neolithic (Balkans, V Century BC) snakes in the oldest, clearest case of a hourglass image transcending through time (Susa and Bactriana, III and II Century BC). This is also connected to the geometries of the following cases: (Aegean, 7th Century AD), the classics with a flattened ring and quadrangles from the Roman-Imperial, Barbarian and early-Christian ages, with the Early Medieval ogive; as well as ever more diversified forms of each following large area, from the Christian, Hebrew and Islamic cultures, right up until the twentieth century; to the pre- and post-Colombian *amerindo*; the Indian, the Central Asian and across the all of sub-Saharan African. (Sansoni 1998; Fratti et al. 2010).

The Salomon knot, usually accompanied by its “familiar” symbols – joints, binary symbols, crosses and swastikas –, offers clues (in every field) to convey a meaning of union, a harmonic agreement, integration, indissoluble link – always in a positive sense – between two polarities, fundamentally: Men and God, body and spirit, earthly and celestial reality feminine and masculine, with a great magic charge, that can be talismanic in an apotropaic sense or success.

So, the knot emblemizes (or seals a pact) in the plaque of Susa, is substitute/homologous of the cross in the early Christian and late barbarian era, is alongside the Menorah in the Jewish mosaics of the fourth century, is on the mosaic-orphismic carpets and in those of Byzantine “paradise”, it is emphasized and repeated endlessly in the mosaics of the late Roman Empire and, then, in those of Aquileia, Grado, Pomposa, Ravenna. In many other cases, the knot is alongside Venus in the matrimonial representations of the Roman, as well as of Shiva and Parvati in the Hindu cult, it is on the shoulder of the crusader knight who faces the diabolical Moro in the Vercelli mosaic of the 12th century. and in a 14th century miniature from Madrid, it is a tribute to the knight who kills the dragon in the 12th century Ganagobie mosaic. Giotto and a multitude of other masters paint it on the garments and on the halo of the Madonna with Child, of Christ and of Saints, to the point where we can see him, in the season, as a Marian symbol; in



FIGURE 10. DETAIL OF THE MOSAIC CARPET OF THE VILLA OF SAN ROCCHINO, 2ND CENTURY A.D., MUSEUM OF S. GIULIA, BRESCIA (PH.: DIP. VALCAMONICA AND LOMBARDY, CCSP ARCHIVE).



FIGURE 11. MONTESIEPI (SI), CISTERCIAN ABBEY OF SAN GALGANO, BASE OF A VAULT OF THE CHAPTER HALL, 13TH CENTURY (FROM SANSONI 1998: 223; TAV. VI).



FIGURE 12. MINIATURE FROM THE CODEX MISCELLANEUS, A MONASTIC WORK FROM ABRUZZO, 9TH CENTURY. KARLSRUHE, BADISCHE LANDESBIBLIOTEK, COD. AVG. CCXXIX, F. 61V (FROM SANSONI 1998: 157; RIL. 192)



FIGURE 13. GRAPHIC REWORKING OF AN ETHIOPIAN MINIATURE PORTRAYING KING SOLOMON, MS. 105, F. 127, A. D'ABBADIE COLLECTION, BIBLIOTHÈQUE NATIONALE OF PARIS (FROM SANSONI 1998: 174; RIL. 208).



FIGURE 14. RELIEF OF THE STAINED LID OF THE BAPTISMAL FONT, LATE 19TH CENTURY, CAEN, ABBAYE AUX DAMES, FRANCE (FROM SANSONI 1998: 164; RIL. 195).

Avignon it is on the dress of King Solomon, in Bourges on the book in the hands of Christ on the portal of St. Etienne – and also appears on other portals, on the capitals, on the crossroads of countless churches throughout the Catholic world (Fig. 10-14). Similar representations are also found: in the Ottoman and Coptic, in the upper Adriatic, in the funerary stones and portals of the Jewish synagogue; and in the rock art of Valcamonica, Garfagnana, Maloja, Lipici, in the Balkans, and Capelo, in Angola. In India, the knot is frequent, in a protective and devotional value, on the thresholds in Dipavali, the festival of lights and – specially made for us – in the New World, in the Hopi and Maya depictions (in some cases with value of “gold”) connected to the sun, in others as probable theocratic emblem. Finally, mention should be made of the thaumaturgical value in the Sicilian traditions and the Apennine center, as well as the last magnificent example in the baptismal covering of the Abbaye aux Dames of Caen (late 19th century) where DEUS emblemizes the center of connection of a Trinitarian composition with names of the PATER, FILIUS and SPIRITUS SCTS (Fig. 14).

This dense list gives only an idea of the purpose of the innumerable testimonies of the symbol, which owes its fortune to the coherent, multi-layered value of its significance as a simple iconographic form, together with its immediate logical reading. It is easy to see the unfolding – which I would term epigenetic – of the primary code, which I would say is genetic; the archetypal union of the opposition of the same reality. A sense, of course, which – with subtly different values – has been expressed in various other forms, abstract or figurative, concurrently, or in isolation, to the cultural groups of the node. Therefore, we have in Mesopotamia, during the III and II Millennium, pairs of fantastic animals with long intertwined necks, or snakes or anthropomorphs in an identical and specula position, or in a sexual act. In Judaism, there is the star of David (or seal of Solomon); in the Franciscan context the two joined hands (of the Christ and of the friar). In the cultures where the knot does not appear (as in Sino-Japanese painting, where it is scarcely depicted as the subject), we still find it very close to the Taijitu, the Taoist and Shintoist bipartite discs (hidari gomon) and various examples of winding animal figures.

The symbols of this entire semantic field are found in every human culture, in every epoch. We can assume that this simple, highly abstract, aspect (The Salomon knot, the David shield, Taijitu), where the religious-philosophical needs and the speculative semantics reference an all-embracing symbol, without apparent partition of merit, is an integrated concept that is complementary to all its parts. It's not a coincidence that these signs tend to link and develop in the same way everywhere: circularity, inscription in the circle, rotation, dynamism, up to the swallowed variant (for the Roman, Hindu, Shinto node), which contemplates a center at the junction of two orthogonal cross-shaped axes. These are, in turn, the clearest expression of the syntactic connection, which invariably links these signs to others: of a similar or lesser nature, of regional form and value, in the framework of interest of the various cultures. Such syntactic bonds, sometimes with signs of equal attention, are the real keystone, to penetrate the structures and modules of the symbolic language, which always appears intimately networked, in a holistic system – around one or a few central elements - where it carries out a synaptic process of connection, expansion, reference, integration and explication, under the constancy of an *ad unum* connection that does not contemplate deviancy or isolation. It is precisely these signs that best express this connection to *ad unum*, as well as specify its qualities: simple and profoundly broad, homologously multi-meaningful. These then, are the driving forces, that enable Man to become the light, the fire, the sun, the circle, the tree. Other kinds of signs include: “rails”, ternaries, four-sheet, the cross, the knot, the weave, the triangle, the wheel and the Taijitu; and in a different degree: the sword, the vase, the flower, the bird, the key animals, and an infinity of others in a graduated accord, like the “angelic rose” of Dante.

Keeping our discussion on the same symbol, the knot, we can say that it is emblematic among the many learned early medieval ensembles of: *plutei*, *cibori*, pillars, ambos and decorated pulpit slabs: where it appears in a frame of intertwining chessboards– that are themselves companions of the prevailing Solomonic knot. Crosses (often central, even in shape, and tied to the frame by interweaving), saplings,

palmettes, vine leaves, acanthus, ivy, clusters, flowers, spirals, vortices, pentacles, birds (species with the seed in the beak) and other clear knots (often Trinitarian pigtailed): are all elements with a high symbolic value and possess clear classical or biblical ancestry. All bear a close relationship with each other in order to compose a *summa*, a didactic and edenic picture, where there is no juxtaposition, but a symphony of symbolic angles in dialectical network on the same theme.

The archetypal motion is evident here: essentially, an *input* of extraordinary power, underlying the graphic manifestation; and its cause, a vital *quid*, domiciled in our psychic root, which manifests more as a revelation (from *re velum*, remove the veil), as intuitive datum of animistic instinctuality, which is the result of a logical deduction. In any case, I would like to filter out the modules of every single culture – when appropriate – ready to manifest, *motu proprio*, or, based upon the legacy of the previous one, or, in contact with another cultural sphere.

On this path, not in simple openness, but in systemic integration with the disciplines of the field, we can advance in anthropological research and also escape the descriptive-cataloguing *impasse*, better approaching the roots of our being, *Sapiens*.

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Chapter 15

Rock Carvings at Stuberg in Stjørdal, Trøndelag, Norway

Kalle Sognnes

Introduction

Both Scandinavian prehistoric rock art traditions are represented in the Trondheimsfjord area, Trøndelag, Mid Norway. Stone Age carvings and paintings are found along the fjord and at the coast, while Bronze Age carvings mostly are found at the east side of the fjord, primarily in two major concentrations; in Stjørdal and Steinkjer municipalities respectively. Bronze Age rock carvings are known also further north, at Vefsnfjord close to the Arctic Circle (Sognnes 1989; Kaul 2012), however, the area around Trondheimsfjorden represents the northernmost larger concentration of Scandinavian Bronze Age rock art.

Scholars started taking interest in this rock art in mid 19th Century and the study of these cultural remains was prioritised by Karl Rygh, curator at the museum of The Royal Norwegian Society of Sciences and Letters in Trondheim, who put it on his agenda in 1870, promising (Rygh 1871) monetary rewards to those who reported new discoveries. Rygh focused on the Bronze Age carving, subsequently publishing his work some decades later (Rygh 1908). Of special interest, is his discovery on the Røkke and Auran farms, on the Skatval promontory, in Stjørdal, of a large number of boat pictures belonging to a type that was unknown in southern Scandinavia.

Some Bronze Age sites around Trondheimsfjorden still remain to be documented. In particular, this holds true for the smaller panels in the area between the two major concentrations. Most work has concentrated on the many sites and panels in Stjørdal municipality (e.g. Grønnesby 1998; Marstrander and Sognnes 1999; Sognnes 2001), although, parts of the Steinkjer record have been published too (Gjessing 1936; Grønnesby 2006; Lindgaard 2007). I here present and discuss some panels found at Stuberg farm in Stjørdal in the 1990s (Sognnes 2001). One of these panels fits well into the general pattern of Scandinavian Bronze Age rock art, while the other deviates significantly from this.

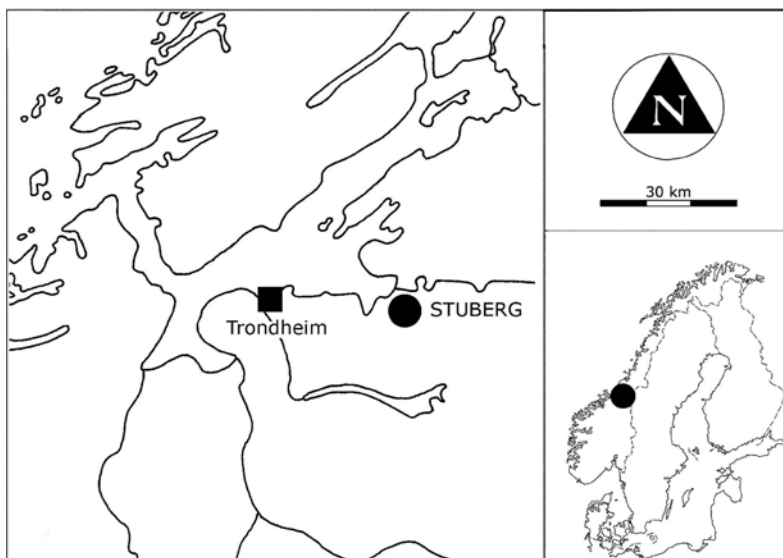


FIGURE 1: LOCATION OF THE STUBERG ROCK ART SITE.

Location

The Stuberg farmsteads in Lånke parish are located at the east side of Leksa River, in the lower Leksdal valley, near its confluence with the larger Stjørdal valley (Figure 1). The rock carvings were found on the distinct Stabben hillock, that reaches 110 m above sea level. From this hillock, there is a wide view over the lower parts of Leksdal and Stjørdal valleys. Half way down the valley, the distinct crescent-shaped Tønsåsen emerges from the river plain, at the foot of which Stone Age rock carvings are found, at Lånke farm (Sognnes 2017). Further northwest, the Skatval promontory with its many rock art panel reaches 80-100 above the sea. In the lower Leksdal valley, some small rock art sites are known from Gjeving, Hagen and Dyva farms, and in lower Stjørdal valley, larger sites with rock carvings are known at Ystines, Hegre, Bjørngård, and Leirfall (Marstrander and Sognnes 1999; Sognnes 2001).

At Stuberg, carvings are found on four panels, but only two of these (Stuberg I and IV) can be classified as prehistoric rock art. Together, these carvings represent most phases of the Bronze Age rock art tradition known from the region. One major phase, however, is missing; no pictures representing boats comparable the Early Iron Age Hjortspring boat so far has been found. Carvings rendering of this boat type are frequent elsewhere in Stjørdal and dominate many panels. It, therefore, would come as no surprise if a panel with carvings representing this phase too is found on this hillock some time in the future.

Geologically, the rocks forming Trondheimsfjorden basin was created during the Caledonian orogenesis; consisting of allochthonous rocks of Late Precambrian to Silurian origin, with several nappes being identified. The rocks in lower Stjørdal consist of greenstone and green slates (Wolff 1979). Parts of Stabben hillock consists of conglomerate. As part of an early conservation project, the petrology at of the rocks at Ystines and Leirfall were analysed; these rocks consist of greywacke with quartz, calcite, and muscovite as major minerals. At the surface calcite, in general, is diluted (Prestvik 1981). This seems to be the situation at Stuberg too (except for the conglomerate).

The Stuberg farmstead is located on a small terrace at the southern edge of the hillock. The panel, Stuberg IV, is easily reached from this terrace, being located at the southward sloping upper part of the hillock, while Stuberg I is found at the base of its vertical west side. Both panels are of interest due to the motifs present and the ways the carvings are executed.



FIGURE 2: STUBERG IV BEFORE INVESTIGATION. THE CARVINGS ARE FOUND ON THE TOP OF THE PANEL ALONG THE FENCE (PHOTO: K. SOGNNES 1997).

Stuberg IV

This panel, which was found in 1997, is located at near the top of the hillock, oriented North–South. At its western rim, the panel slopes steeply towards the terrace below and a fence following the ridge was erected as part of a cattle pen (figure 2). The carvings known at present are found on the upper, northern part of the panel that is about 8 m long and 2,5 m wide. Most carvings identified are similar to the carvings found in southern parts of Scandinavia, but the variety of motifs is lower.

Parts of the rock surface are strongly weathered and several patches with exfoliation can be identified. In one case, two levels of exfoliation are identified at the same spot. Most carvings therefore are incomplete. Around 60 individual carvings are identified, among which are around 25 boat pictures, 20 cup-marks, 10 footprints, and four anthropomorphs. At the top of the panel, is a swastika that was engraved during World War II, when German occupation forces constructed and used a military airfield at Værnes, which is in clear view from Stabben. Two different boat types appear to be represented among these carvings, most of which render the common boat type represented in the South Scandinavian Bronze Age rock art. We find, however, that some boat carvings have later been redesigned.

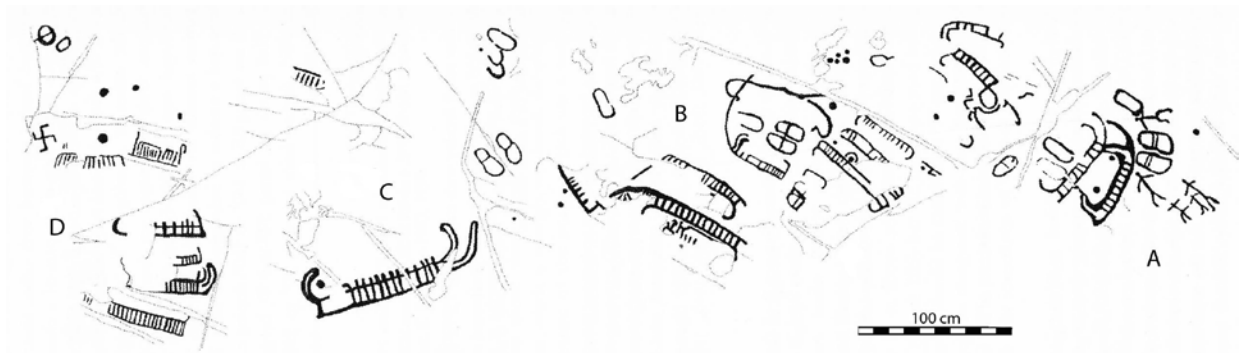


FIGURE 3: TRACING OF STUBERG IV CARVINGS (FROM SOGNNES 2001).

At the lower end of the panel (A on figure 3) is a group of five anthropomorphs, together with two boats and some footprints. The anthropomorphs, which have both arms and legs, were drawn with single lines. Two of the footprints, or rather ‘imprints’ of soles, form a pair. They both have two parallel lines crossing the soles that most likely represent a strap tying the shoes to the foot (Schia 1986). The two boat carvings render the same boat type, with a rectangular hull, from which the forward part of the keel line has been elongated into a distinct curved protrusion. Corresponding, shorter, curved protrusions extend from both ends of the gunwale line. However, the lower boat, at a later time, has been redesigned into a later style, today looking distinctly different from the upper one. The lines were made wider and at the same time the single-line upper prows were made double. The curved protrusion from the keel line, however, remained a single line. Similar, but not redesigned, boat carvings are found at other sites the area, for instance at Vikan (Sognnes 2001, 152)

Higher up is a cluster of boat carvings, most of which are today, unfortunately, incomplete (B). To a large extent these damages were caused by exfoliation, during which the upper half centimetre of the rock has spalled from the original surface. At least three of these carvings depict the same boat type as the ones mentioned above, but only one is complete. Together with the boats are found two pairs of footprints.

Further up (C) is a larger boat, around 130 cm long, of the same type, but this carving too has been subject to a later redesign, where the protrusions from the gunwale, and keel lines were redrawn as double lines. Boats with double-line (contoured) prows and elongations of the keel line are rare, but are known from several sites in Central and Western Norway, which seems to be the main area for these carvings (Bakka 1987, 25). Some examples are found in Alta, northernmost Norway too (Helskog 2012, 204) but these are drawn in a style different from those further South. Boat carvings with contoured protrusions from the keel and gunwale lines are believed to represent a late phase, perhaps the transition between the Bronze and Iron Ages (Bakka 1987, 25), which would be the date of the redesign phase for these pictures too. Following Kaul's (199, : 88) chronology for the carvings in southern Scandinavia, the original versions of these carvings likely were made during Bronze Age Period 3 (3300-3100 BP).

Boat carvings dominate the upper part of the panel too (D), where the swastika is located. Among these carvings we find remains of carvings rendering a different boat type. These carvings have rectangular hulls filled with vertical lines combined with long stem and stern lines. These lines are frequently vertical, but some have oblique stem or stern lines. These carvings lack the protrusions from keel and gunwale lines that are typical for Bronze Age boats. The stem and stern lines normally reach high above the gunwale. In general, the profile of the lines forming these carvings are narrower and shallower than what is the case for other boat types. Unfortunately, the Stuberg carvings in question are incomplete, but they share some of the characteristics of similar carvings found at other sites in the area. Carvings like these are found at a number of panels in Stjørdal municipality, mostly on the Skatval headland, where they are especially frequent at the farm of Røkke and Auran (Sognnes 2001). The exact number of these carvings is unknown. Several panels were identified and partly traced by Karl Rygh (1908) but have never been relocated. In a substantial number of cases, this may in part be due to dense vegetation cover.

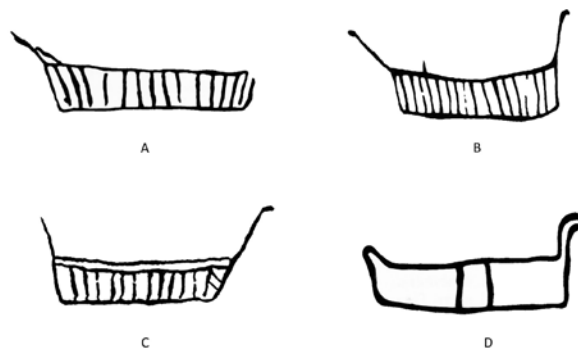


FIGURE 4: TRACINGS OF NEOLITHIC (?) BOAT CARVINGS FROM STJØRDAL (A-C) AND FROSTA (D) (PICTURES NOT TO SCALE).

Figure 4 shows a small sample of these carvings: A from Leirfall and B-C from Røkke. They represent a boat type different to Bronze Age boats. Most of these carvings are found within Central and Western Norway (Fett and Fett 1942; Mandt Larsen 1972; Sognnes 2001), Stjørdal apparently being the core area for this type. It is suggested that they depict an older boat type being used in the Neolithic – a period when boats together with marine animals also were engraved on rocks with northern tradition carvings at Trondheimsfjorden, in particular at Evenhus, in Frosta (Gjessing 1936), and Hammer, in Steinkjer (Bakka1988; Bakka and Gaustad 1974). Figure 4D shows one of the Evenhus carvings that demonstrate great similarity with the Skatval carvings. Stem and stern are low and contoured, but this may be due to style rather than construction. These two types of boat carvings may actually depict one and the same boat type. Studies of the Holocene land uplift around Trondheimsfjorden (Kjemperud 1981; Sveian and

Olsen 1984) show that the Evenhus panels did not emerge until the transition between the Neolithic and Bronze Age (c. 3700 BP), which means that the boat pictures presented in Figure 4 may be contemporary – perhaps representing two different social entities. An interesting observation is that some of these boat pictures, both at Evenhus and Røkke may be interpreted as symbolic depictions of aquatic birds (Sognnes 1991; 2017).



FIGURE 5: STUBERG I DURING INVESTIGATION. THE CARVINGS ARE FOUND AT THE LOWER PART OF THE PANEL (K. SOGNNES PHOTO 1992).

Stuberg I

This panel was the found in 1990 close to an old path at the base of the vertical western side of the Stabben hillock. The upper part of the cliff consists of conglomerate, while the lowest one and a half metres, where the carvings are located, consist of fine-grained sandstone (Figure 5). Boat carvings only are found at this panel (Sognnes 2017; Sognnes and Haug 1998). They are executed in a rather rough way. Some are unfinished, while others are partly destroyed by exfoliation. The most distinctive carvings are found in the left hand part of the panel. The basic form of these boats is known from several other sites in Stjørdal and elsewhere in Central and Western Norway. They lack the curved protrusions from keel and gunwale lines characteristic for Bronze Age boat carvings (Figure 6). They are so different from the suggested older boat types that we may question whether they actually are connected to the Bronze Age tradition (e.g. Kaul 1998, 109).



FIGURE 6: TRACINGS OF STUBERG I (FROM SOGNNES 2001).

For some carvings, the curved gunwale and keel lines appear to cross each other, forming forked protrusions in both ends of the hull. This, however, is not what appears to be the standard way of constructing these carvings, of which the three lowermost ones are fairly congruent with what we may call the standard procedure, seen in Figure 7, that shows what seem to be two different boat types drawn in different styles; with single line hulls (A and D), contoured hulls (B and E), and hulls with internal line patterns (C and F). The construction of the carvings represented at Stuberg I, are based on a curved line with forked protrusions in both ends – like 7D. The basic part of these carvings is actually the hull of another boat type; normally looking like a sausage (7B), but sometimes drawn with stem and stern like later Scandinavian rowing boats. The forked ends of the gunwale line may at symbolise the existence of a variety of boats that were built for special occasions.

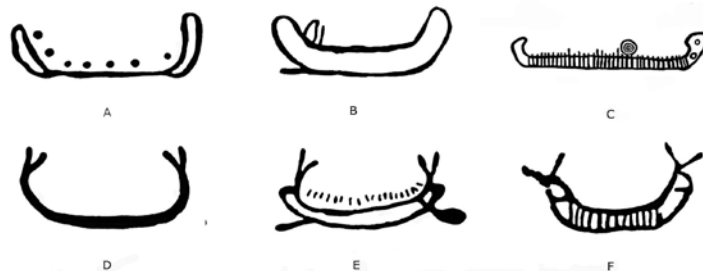


FIGURE 7: IRON AGE BOAT CARVINGS FROM BJØRNGÅRD (A, E), YSTINES (B), HEGRE (C), AND RØKKE (D, E) IN STJØRDAL (PICTURES NOT TO SCALE).

Of special interest here is a boat with mast and a crossbeam placed centrally on the gunwale. The mast appears to have been made in the same carving technique as the boat. Boats carrying sails are, however, not known from Norway until shortly before the Viking Period (Christensen 1989, 55), which means that this carving – perhaps the other carvings too – were made during Late Iron Age.

Longevity and continuity

No single site appears to contain all of the different boat types and styles known from this area, but in general more than one boat type are represented at the same site, frequently also on the same panels. As such, these boat types are connected to each other. We are here, however, facing a problem. The suggested older and younger types are not part of the Bronze Age tradition as this is known from southern parts of Scandinavia. The question of whether there was a connection between the Bronze Age and the later Iron Age rock carving has been raised (e.g. Kaul 1998, 108-109). For South Scandinavia the answer is no, but perhaps people further north had a different perspective on the world they lived in – and on the world their ancestors lived in.

Stuberg IV clearly represents the South Scandinavian Bronze Age rock art tradition, but apparently another tradition is represented too. At most larger sites in Stjørdal, we find carvings similar to the ones presented as figure 4A-C. This is most evident at Røkke (Sognnes 2001, 137-143) and Auran (Sognnes 2001, 147-150), in the case of the earlier boat carvings. The situation is not quite similar for the later carving at Stuberg I, but carvings similar to these too are found at several sites, especially at Bjørngård (Sognnes 2001, 176). Adding the Neolithic hunter-gatherer-fishers boat carvings at Trondheimsfjorden (figure 4D) to the carvings discussed here, we find that carvings may have been engraved on rocks in this region for a period of around 2.500 years – from 4.000 to 1.500 BP. Based on the boat carvings, we find that during this long time span, several different boat types frequented the waters along the western Norwegian coast, during periods with apparent marine contacts between southern and northern parts of Scandinavia.

Axes, daggers and other tools made in southern Scandinavia were brought to these northern regions already in the Early Neolithic (Østmo 2000; Aspren 2012) but during this period, it is likely that mariners from the South did not come this far North. If they did, their journeys did not initiate any making of rock carvings. Based on their distribution, these early carvings must have a local, northern origin. At this time, sea traffic towards the North must have been a stepwise process that was controlled by local groups. At the transition to Bronze Age, this system may have been taken over by chieftains from the South (Kristiansen 2001), who introduced new rock art motifs; a different boat type and a wider set of symbols that were engraved on rocks along the route to the North. This Bronze Age traffic – which the vast majority of the Stjørdal carvings are associated with – brought bronze weapons, tools and jewellery to the northernmost outskirts of Europe.

Yet another boat type was introduced during the pre-Roman Iron Age, which is a period represented by very few artefacts in the archaeological record. In Trøndelag, it is primarily characterised by radiometrically dated fireplaces (Farbregd 1972). Boat carvings typical for this period were, however, made at a large number of sites, both here in the North and in southern Scandinavia. Contacts between North and South were apparently maintained but we do not know what these boats were carrying. However, iron production started in the valleys around Trondheimsfjorden during this period (Stenvik 2005), and eventually this production became so large that iron was exported to the continent. Artefacts imported from the continent are also deposited in graves within this region (Stenvik 2005, 107ff).

According to the model presented here, rock carvings were made around Trondheimsfjorden before and after Bronze Age – both before and after this age. As stated above, the phase of the Hjortspring boat-like pictures probably represents a continuation of the Bronze Age tradition. The two other phases are apparently represented along the coast of Western and Central Norwegian only, and we may question whether there was any connection between these early and late regional traditions and the South Scandinavian tradition.

The model presented here is primarily based on supposed longevity of making rock carvings in communities around Trondheimsfjorden from the Neolithic through to the Roman Iron Age Period. The first and last phases are represented by relatively low numbers of boat carvings. We may therefore ask whether we are dealing with one continuous tradition or with three separate traditions. Kaul (1998, 109) raised this question for the later carvings that are present at Stuberg I. The answer to this question, however, depends on the meaning we give to the concept of continuity. Based on the number of carvings known, together with the suggested time during which carvings were made at the major sites, new carvings were made, on average, every fifth year (Sognnes 1990, 107). Many carvings, however, tend to be clustered, forming compositions, which means that the making of carvings was even more rare, for instance once per generation. At some sites, hundreds of years may have passed before new carvings were made or existing ones were redesigned. The making of rock carvings then may have been erratic rather than continuous.

The meaning of the carvings clearly changed during the long time span during which they were made. While boat pictures appear to have been made during all phases, other motifs did not have the same longevity. Horses, for instance appear primarily to belong to the Early Iron Age repertoire. The meaning behind the Bronze Age picture spectre may have been lost when this period came to its end although boat pictures were still made. What seems not to have been lost was the location of the pictures of the past. New images were made alongside the ancient ones, and old pictures were renewed – being redesigned into images of the new age.

Conclusions

This study is based on a small sample of rock carvings from the periphery of the area of the South Scandinavian rock art tradition. The variation of motifs differs from the situation further South, but the main motifs are the same, in particular the focus on carvings depicting boats. Some motifs appear to be specific to the rock carvings found in Central and Western Norway, but these motifs render boats too. Local traditions in making rock art appear to have started before the South Scandinavian rock art tradition came to dominate during Bronze Age. Sporadically, carvings were also made after this tradition came to an end.

Rock carvings belonging to several periods and traditions are found at the same sites, frequently on the same panels. This indicates some kind of continuity; rock art representing a symbolic link between past and present. The engraved panels apparently represent *landscapes of memory* (Bradley 2002, 33), where past times are linked to the present and the living tied to the dead. However, being engraved on rocks they would also have a role to play in the future, reminding new generations of the past, although it is impossible to exercise much influence over the memories of one's successors (Bradley 2002, 84). Boats were the main symbol, but this symbols changed following the development in boat building technology, that in turn led to new boat types as well as contact with the past, demonstrated by the redesigning old carvings.

The Stuberg carvings present some glimpses into this development only. They are typical for the rock art in Stjørdal in several ways, being located away from the sea, containing carvings from several different phases, being a site where past and present are connected. From the Stabben hilltop, the Skatval plateau, with its clusters of early boat images, is in clear view – visually linking the present with the past. Centuries later, a new kind of carvings was made on this hillock, this time with new and strange boat pictures. Again, we find that the new – the present – was related to the past.

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Chapter 16

“On the beaten track”: considerations on the rock art at Foss in the Gauldal Valley, Trøndelag County, Norway

Kjell André Brevik

“If writing solidifies or objectifies speech into a material medium, a text, which can be read and interpreted, an analogy can be drawn between a pedestrian speech act and its inscription or writing on the ground in the form of the path or track. Both are sedimented traces of activity, and both provide ways to be followed. A strong path is inscribed through a forest or across a tract of heathland through a multitude of pedestrian speech acts that keep it open; a strong text is also one that is kept open, read many times.” (Tilley 1994: 29-30).

Introduction

In the present paper, I will approach the rock art locality at Foss with a new perspective on the distribution of panels and the plausible link between footpaths and petroglyphs in this particular landscape. Combined with results from fresh field surveys on the Foss Plateau, mainly during 2017, the new ways of perceiving the concentration of rock art in this area pose, and bring to the fore, questions concerning landscape use, movement, communication and cosmology. Since the purpose of this contribution is to target the relation between ancient tracks and rock art, I will address these issues in a rather condensed, but hopefully clarifying manner. Literally, through a step-by-step approach from the level of landscape description and a brief history of research, to the account of three different scenarios and finally a short discussion. Thus, I intend to transport the reader closer to the prehistoric cultural landscape at Foss.

Topography and geology

The rural settlement at Foss is located on the eastern slopes of the Gaula River in Horg parish, which covers the southern part of the municipality of Melhus, in Trøndelag County. To the West, across the river, Foss faces the more densely populated village of Hovin. As a whole, the municipality covers the northern part of the Gauldal Valley, which is one of Norway’s longest valleys and stretches approximately 150 km. inland, with the headwaters of the Gaula River situated in the vicinity of the World Heritage site and township of Røros. The place name Foss corresponds to Norse *fors* or *foss*, meaning waterfall, with the Gaulfossen Waterfall representing the original source of the place name. Since it describes a natural landscape feature, it is believed that Foss belongs to the oldest segment of farm names in Horg parish. This is also supported by archaeological findings and sites in the farm’s surroundings (Marstrander & Sognnes 1999; Marstrander 1961).

The Gaulfossen Waterfall is located in a distinctive river gorge, about 900 meters long. On both sides of the river, the hillsides are comprised of several terraces, which are the remnants of old shorelines following the end of the last glacial period. The alluvial deposits contribute to the fertile and well-drained soil on the terraces, which probably made them suitable for agriculture in prehistoric times. Facing South and South-West, the gently sloping terrain at Foss is exceptionally well suited as a locale for an early agricultural settlement.

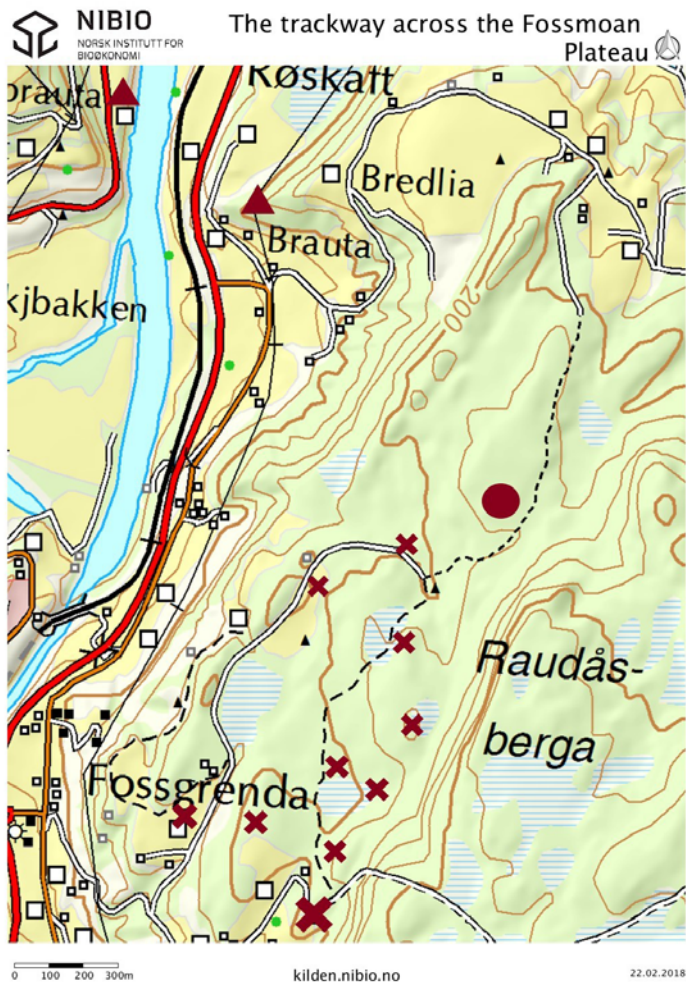


FIGURE 1. TRACKWAYS ACROSS THE FOSS PLATEAU. THE DOTTED AND WHITE LINES MARKS THE FOSSMOAN AND GRØBBVEGEN ROUTES RESPECTIVELY. TRIANGLES SHOWING THE FIND SPOTS AT SANDBRAUTA AND RØSKAFTBRAUTA, CIRCLE MARKING THE PREHISTORIC GRAVE FIELD AT GROVIN. CROSSES INDICATE ROCK ART LOCALITIES. SCALE: 1:10 000. SOURCE: KILDEN, NORWEGIAN INSTITUTE OF BIOECONOMY RESEARCH (NIBIO)

At Foss, it is possible to recognize at least six main terraces. The upper part of the Horg Parish Museum is located at the lowest level, called Sveplassen, at 125 m.a.s.l. The second one, the Hjartmoen Terrace, raises up to 160 m.a.s.l., followed by a much wider terrace at about 170-190 m.a.s.l., stretching from the Skogløkkjflotten Farm in the South to the cow pastures at Grøbbplassen in the North, even including the Skogmyra Bog. The fourth level, the Fossmoan Terrace, starts at about 200 m.a.s.l. and gradually ends at around 215 m.a.s.l., leading to the Oppistumoen Terrace, which creates an almost completely flat area at 220 m.a.s.l. In a south-easterly direction, the neighbouring Øvermoen Terrace, representing the sixth and highest level, reaches 239 m.a.s.l. and commands a spectacular view of the Foss Plateau, the Gauldal Valley and to the neighbouring Hølonda parish to the West. To the East, above the highest ground, the Raudåsberga Hills rise to a maximum of 332 m.a.s.l. The terrace and the hill are divided by a narrow, roughly North-South oriented passage called Karthølet, with a distinctive rock scree to the east and a moraine consisting of boulders marking the entrance to the prehistoric burial site at Grovin, located at the northernmost edge of the plateau.

Scattered across the Foss Plateau there are several small ridges seldom exceeding 215 m.a.s.l. Their orientation is slightly along the northwest and southeast axis, and, geologically speaking, they consist of conglomerate, with the Skogberget Rock Shelter by Grubba Farm as a well-known locality for “the Hovin group”. Except for the rock outcrops close to the farms Innlegget and Grønli, located on the southern

edge of the plateau, all the rock engravings in the Foss area are hewn on the soft surface of a greyish sandstone, named greywacke (in Norwegian: *gråvakke*). The many rock art panels are most often found on boulders and suitable rocks or slabs of which there is an abundance on the terraces, especially on the Øvermoen Terrace. The outer layer of this sandstone is easily worn down by natural deterioration, hence making the rock art at Foss extremely vulnerable to wear and tear. Several examples of different degrees of exfoliation on panels makes it reasonable to believe that the original number of rock art panels in this landscape once were even higher.

Archaeology and fieldwork

Due to a considerable local effort in mapping cultural heritage, Horg parish is renowned for its cluster of archaeological sites. The situation at Foss is exceptional, since this particular part of the Gauldal Valley has been the object of extensive archaeological field surveys and investigations for a period of at least 50 years.

The earliest record regarding the archaeology at Foss comes from 1861, when at least three metal artefacts were retrieved from a cist made up of slabs, uncovered just underneath the sod. This was most probably the remains of a burial dating to the Roman Iron Age or Migration Era (Marstrander 1961: 206).

In 1934, a burial mound was discovered at Grønli Farm, followed by an excavation carried out by magister Brage Irgens Larsen (1906-1995), a student of archaeology and museum curator Theodor Petersen's assistant. Irgens Larsen unearthed a stone cist containing the furniture of a high status burial dating to the Late Roman Iron Age (200-400 AD). With this exceptional finding, Foss suddenly became a highly esteemed archaeological locality in mid-Norway (Marstrander 1961).

In 1948, Sverre Marstrander (1910-1986) succeeded Theodor Petersen as curator at the museum of the Royal Norwegian Society of Sciences and Letters, now the Museum of Natural History and Archaeology (NTNU Vitenskapsmuseet) in Trondheim. Just two years later, in 1950, Marstrander received information regarding a sensational discovery at the farm Røskaftbrauta, in Horg parish, one of Foss' neighbouring farms to the North. During clearance work on the alluvial terrace right above the farm, a small stone with rock carvings, consisting of a ship and a few cup-marks showed up in what appeared to be a somewhat blurred burial context. The finding at Røskaftbrauta Farm is considered the first rock art discovery in the Gauldal Valley, but it would only take one year before Marstrander went back to the district. This time it was a young boy, Ola Storhaugen (1931-2015), who had searched systematically for rock carvings on the Storhaugmoen Terrace by Kvål in Melhus parish. The search resulted in the second discovery of farmers' rock art in the valley, this time on boulders (Marstrander 1951a & 1951b, Storhaugen 1976).

Later, Ola Storhaugen settled down in Horg parish and became a distinguished local historian. He is considered to be a central person in establishing the "heritage track" (Norwegian: *kulturstien*) which is an important and cherished part of the Parish Museum at Foss and, as we shall see in the following discussion, a crucial element in interpreting the distribution of rock art at the Foss Plateau. In 1967, Storhaugen even discovered a new rock art site consisting of two individual panels at the farm Lyngen, app. 3,5 km. north-east from the Foss farms (Sognnes 1991: 22; Storhaugen 1976). Sverre Marstrander most certainly valued the experienced finder and his efforts in the field.

Six years after the important discoveries at Røskafteveet and Storhaugmoen, the farmer Edvard Foss, observed what he believed to be carvings on a distinctive rock outcrop right on the edge of his field at the farm Innlegget. In 1956, a student in philology, Ingvar Horg, was collecting place names in the Foss area. After seeing the engravings, he forwarded information about the finding to Marstrander, who visited the site in 1957 and confirmed that the carvings (Foss I) in fact were of prehistoric origin. Since then several rock art panels have been discovered at Foss, both by chance and through systematic field surveys

conducted by archaeologists from NTNU Vitenskapsmuseet and the Sør-Trøndelag (now Trøndelag) County Authority. In the summer of 1967, Ola Storhaugen found a panel at Grønli Farm (Foss II) and during the archaeological field surveys in relation to the Economic Map in the early 1990s, the number of known panels at Foss had grown to ten (Foss I-X), including a piece of rock with cup-marks originating from a boulder which had been destroyed by a blast, owing to clearance work at Skogløkkjflotten Farm in the 1980s (Foss V). The investigations were led by Kalle Sognnes and Kristian Pettersen.

A great number of burial mounds and cairns spread across the Foss Plateau were also discovered through these wide-ranging surveys, complementing the general constellation of visible archaeological features in a topographically limited space like the terraces at Foss. The most extensive burial field is located at Grovin, app. 1,5 km. north-east from the cluster of farms at Foss. The locality covers at least thirteen perceptible burial cairns, making it one of the greatest prehistoric burial sites in the Gauldal Valley.

In recent years most of the archaeological fieldwork at Foss has been dedicated to the important task of documenting and preserving rock art, mainly at the two complex and figurative panels at Innlegget (Foss I & IX) and the carvings at Grønli (Foss II-III). On two occasions, “portable” rock art represented by slabs with boat images, have been rescued and brought to the parish museum (Foss XI) and to NTNU Vitenskapsmuseet (the loose find T26825) respectively. In both cases, we are possibly dealing with stones extracted from one or two damaged panel(s) at Foss.

The county authority has recently conducted surveys in fields on the valley floor in relation to the planned upgrading of the European route E6. This activity has uncovered traces of several agrarian settlements in the Foss area from the Bronze Age to the Middle Ages. At present, NTNU Vitenskapsmuseet is both planning and conducting excavations along the route through Horg parish, with the most notable results coming from the project at Sandbrauta Farm on the eastern side of the River Gaula, about 2.5 km. north from the farms at Foss. In the fall of 2017, the archaeologists at Sandbrauta discovered a burial site, probably dating to the Late Bronze Age and/or Pre-Roman Iron Age (BC 1100-0). A sandstone slab with a foot-sole image and a few cup-marks was found in relation to a distinct burial cairn at the site (see Henriksen, in prep., *Adoranten* 2019). One half of a mould made for casting bronze axes was also unearthed, contributing to a Late Bronze Age dating of the activities alongside the edge of the riverbank (Brandslet 2017).

While being a local resident in Horg since 2016, I have had the enjoyment of organising many walks along the heritage track at Foss with the aim of raising public awareness of the irreplaceable and intrinsic values pertaining to this cultural landscape, with its abundance in archaeological sites and historical places. During preparations to many of these local heritage walks, twenty-one new rock art panels have been discovered simply by identifying carvings on more or less exposed rock surfaces on boulders situated nearby the footpaths. For the moment, a total amount of 38 engraved panels is associated with Foss alone, which makes it the most extensive locality consisting of farmers’ rock art in the southern part of Trøndelag County.

Datings and interpretations

Since the principal aim of the present paper is to let the reader catch a few glimpses of the “domestication” and structuring of the prehistoric landscape at Foss, challenges concerning the dating of rock art and its chronological implications will not be thoroughly discussed. A few remarks regarding relative dating and earlier attempts at interpreting the rock art and its wider setting, is however of relevance to the proceeding discussion.

The excavation of the grave mound at Grønli Farm, conducted by Brage Irgens Larsen in 1934, indicated that Foss was a thriving and wealthy community already in the Roman Iron Age. The goods extracted from the “Chieftain’s grave” even included shards of a Roman glass vessel, showing that the inhabitants

at Foss had positioned themselves well in the local and regional hierarchy in this period. This general understanding of the Foss milieu was further strengthened by the rock art discoveries in the 1950s. At first, the only empirical data Sverre Marstrander had at hand was the objects from the grave mound, the site Foss I and the engraved stone found at Røskafsvæet (Røskaft I). He believed that several of the boat images at Foss I showed features that resembled the ship technology from around the birth of Christ, and that this indicated a significant link between the rock art and the dating that could be drawn from the equipment uncovered by Irgens Larsen. On this background, Marstrander maintained his view that the rock carvings at Foss belonged to a somewhat late tradition. At the same time, he assumed that the rock art findings at Storhaugmoen in Melhus parish and later on the discovery of a locality at Lyngen in Horg parish, indicated the existence of agrarian settlements on top of the alluvial terraces in the Gauldal Valley already in the Late Bronze Age and Pre-Roman Iron Age (Marstrander 1961: 207-208; Marstrander & Sognnes 1999: 120).

Marstrand's general view on history and archaeology at Foss is still accepted as a way of understanding at least one aspect of the locality, namely the late rock art tradition and its relation to an agrarian community and settlement (Sognnes 1991: 22-23). I have no knowledge of other dateable findings, for instance bronzes, in the vicinity that could challenge Marstrand's perception, but there seems to be some confusion among archaeologists whether the rock carvings in Horg dates back to the Bronze Age or to the Iron Age. Cup-marked boulders are widespread on the Foss Plateau and they are usually unsuitable for dating on their own terms. The few figurative panels depict horses, foot-soles and boats. Even the dating of these motifs are, necessarily, based on assumptions, however well founded they may be.

The preliminary results from the excavation at Sandbrauta, only 2,5 km. away from the central area at Foss, thus becomes very important in the overall view on both rock art dating and the use and organization of this particular landscape. Even if the engraved slab found near the burial cairn and the mould for casting bronze axes did not occur in a single context, the latter artefact is greatly valued because it "brings" the Bronze Age back into the archaeological discourse regarding the rock art at Røskafsvæet, Lyngen and Foss. Based on the sources at hand, it is likely that the rock art at Foss originated in the Late Bronze Age and that the tradition of making rock art continued well into the Pre-Roman Iron Age and, according to Marstrander, perhaps even later.

Paths and petroglyphs

There are many levels in rock art research; from the choice of rock, tools and techniques to contemporary conservation efforts, religion and cosmology. This is certainly the case for the locality at Foss as well. What follows here is a brief account of my own investigations at the Foss Plateau during the fall of 2016, the summer and fall of 2017 and the spring of 2018. Since the fieldwork was conducted relatively recently, none of the twenty-one panels that were discovered have been the object of a more adequate mapping. This work will be led by archaeologists from The County Authority and NTNU Vitenskapsmuseet in the course of 2018. However, the majority of individual panels are positioned on maps and sufficiently described and discussed in well-prepared preliminary reports (Brevik 2017a-d, Brevik 2018a-d). In the future, all the panels will probably be given names according to the main locality Foss and an identity number, but due to the circumstances, the temporary names will be used in the proceeding presentation. Still, it will be possible to find the different panels literally by following the trails that will be emphasized here. While the aim of this contribution is to demonstrate the probable link between paths and petroglyphs at Foss, less attention will be devoted to the images themselves.

The initial discovery of at least two boulders with rock carvings at the Grøbbplassen Meadow in the fall of 2016, followed by the finding of a cup-marked rock in the middle of the heritage track just beside the Skogløkkjflotten Farm in the summer of 2017, contributed to my growing awareness of the significant

collection of archaeological sites in the vicinity of Horg parish museum. With the coincidental discovery of a cup-marked boulder alongside the Grøbbvegen Road later that summer, I suddenly got the impression that there was a peculiar pattern in the way the rock art panels related to the modern road or logging track running south-west and north-east between the Foss farms to the South, and the Grovin area at the northernmost section of the plateau. While recording the panel at Småvollglennun and letting the idea ripen, I initiated my occasional investigations along the most prominent paths criss-crossing the terraces at Foss. It ought to be mentioned that the path-petroglyph linkage came to my mind before consulting the literature, and not the other way around.

One should always be cautious at being too certain about ones' assumptions before examining other probabilities, in this case the possibility of an arbitrary distribution of rock art panels at the Foss Plateau which would make the theory in discussion poorly attested. Some areas have a greater density of panels on boulders and rocks than within the rest of the landscape, and many of these are just as well suited for making carvings as the rocks with verified panels located near tracks. It should be noted that although some fields today are more sought after than others, due to fertilizing and modern day farming methods, in earlier times all the terraces at Foss were suitable for grazing by sheep and livestock. In the fall of 2017, a flock of heifers roamed freely in the northernmost and easterly part of the plateau. Therefore, one could expect the rock art to be spread all across the terraces in a more random manner. Still, this is not the case. At present, I have only managed to find petroglyphs on exposed rocks directly located beside tracks or on rocks visible from the tracks. Some boulders occupy all other qualities: a rock surface facing South or South-East, which is suitable for making carvings, at the same time located very close or right next to a prominent footpath.

Owing to the recent field observations, the pattern of rock art distribution at Foss has changed considerably. Nevertheless, the cluster of complex panels associated with the south-west facing locale thought to contain the most important prehistoric settlement, is still significant. In this sense, the recent discoveries represent an addition to the already existing archaeological knowledge and therefore add to the complexity of the locality as a whole.

To show the regular distribution of rock carvings in relation to three different, but intersecting routes across the Foss Plateau, it is suitable to arrange them into three partly overlapping "zones" with possible cosmological implications, which will be stressed in the closing discussion. All of the paths in question are, roughly speaking, oriented north-east and south-west, in alignment with the wider landscape, creating a communication line between the Fossgrenda settlement and the farms located near Horg to the north.

Concerning the problem of identifying and dating ancient roads and tracks, a viable method is to explore the historical and archaeological sources available. By recording shared, local knowledge and traditional views regarding the history of specific paths and combining this with focused field surveys and aerial photos from 1947 and 1956, it becomes possible to pursue the most probable routes of prehistoric movement through the landscape (Selnes 1995, Storhaugen 1993). At times, this develops into an almost phenomenological approach to the subject, keeping to the paths in an attentive mode.

The Grøbbvegen route

Beginning with the westernmost zone, the Grøbbvegen Road is a contemporary route with its starting point just by the Skogløkkjflotten Farm. The farm is situated on the slightly sloping brink of the alluvial terrace stretching from the Hjartmoen Terrace to the west and continuing all the way to the vicinity of the farm Grubba in the north. At present, the heritage track mentioned earlier, runs along the hillside on the edge of the arable land at Skogløkkjflotten and stays close to the line of hills, joining the Grøbbvegen

Road almost at the Skogmyra Bog. From here, the modern road continues in a north-westerly direction, until it suddenly bends to the east at Småvollglennun and joins the old trackway which carries on to the prehistoric burial site at Grovin and beyond.

In former times, both people and animals used to follow the track called Gilan, which connects the valley floor and the terrace through a small ravine. Nowadays the Gilan track almost resembles a sunken path, however overgrown with vegetation. *Gilan* literally means a fenced cattle track, and at Skogløkkjflotten it gradually becomes identical with the heritage trail.



FIGURE 2. A VIEW OF THE FOSS PLATEAU IN A WIDER LANDSCAPE SETTING, SEEN IN AN EASTERLY DIRECTION FROM THE TØMME TERRACE.

In 1985, a large boulder was cleared from the north-easterly field at Skogløkkjflotten by blasting. Afterwards, the landowner found a piece of rock with two remaining cup-marks, showing that the same boulder in fact had contained a rock art panel, probably dominated by cup-marks. The cup-marked fragment (T 20788 from Foss V) is currently deposited and displayed at the parish museum. In June 2017, I noticed a single cup-mark on top of a low and flat rock outcrop right in the middle of the heritage track at Skogløkkjflotten. The panel in question is fortunately still in situ, but the stone wall which separates the track from the cleared field show that this place was once covered with rocks, possibly even with engravings now lost. An aerial photo from 1956, indicates that the boulder would have been very distinctive and visible from the track only 30 m. away. From the panels at Skogløkkjflotten, the trail continues northwards along the westerly edge of the bog, where it has been replaced by the modern-day Grøbbvegen Road. By the farm Grubba, the road is placed on the easterly side of a ridge (212 m.a.s.l.) which has two burial cairns located on top of it. The cairns command a view in all directions. App. 120 m. to the east of the cairns at the ridge, lies a third possible burial cairn at the Grøbbplassen Meadow, flanked by at least two rock art panels consisting of grooves, possible “cut-marks” and the more common cup-marks (Brevik 2017d). In 1985, Kalle Sognnes investigated a find at the edge of the field Grøbbløkkja, only 90 m. north-west from the panels just mentioned. During the construction of the logging road, a boulder was moved a few meters to the west. On the flat top, Sognnes found several cup-marks, possible ring marks and even cut-marks. This is the panel known as Foss VI (Marstrander & Sognnes 1999: 58-59). At this particular spot along



FIGURE 3. CUP-MARK IN HERITAGE TRACK (THE PART CALLED GILAN) AT SKOGLØKKJFLOTTEN FARM.

the road, there is a striking link between rock art panels, burial cairns and the modernized horse track or footpath. An additional discovery in July 2017 contributed even more to this tendency. At a place called Småvollglennun, app. 250 m. northeast from Foss VI, a 90 cm. high “stone table” measuring 1 x 2 m., turned out to be yet another cup-marked boulder along the logging road. The panel is located right next to the road and consists of up to 30 cup-marks (Brevik 2017b). In April 2018, I noticed a raised flagstone at the northerly edge of the Grøbbløkkja Field, on the easterly side of the road and not more than 30 m. from Foss VI. Today, this stone is located amidst a collection of stones from modern day field clearance. Partly hidden behind a birch tree, this “camouflage” is probably the reason why the raised stone has not been recognized before. The stone in question is about 1,1 x 1,1 m. big, only 8 cm. thick and slightly convex. What I consider to be its front panel is curving towards south, and in the middle of its even surface three distinctive cup-marks are hewn. The possibility of a secondary context ought to be investigated, but there are several characteristics that could prove its authenticity as an archaeological monument, namely that it is firmly fixed in the ground with the cup-marks facing south and the fact that the top of the flagstone clearly has been shaped accordingly by intentional chopping. The last trait can be observed on the standing stone Jutulstenen at Skjeggstad Farm in Hølonda parish app. 6 km. to the West (Brevik 2016: 26-27). The setting of both seem to indicate a deliberate link between the standing stones and ancient tracks.

The pre-historic burial site at Grovin is situated nearly 280 m. to the East from the recent find at Småvollglennun, and even if the features of the old track is eliminated by the logging road, it is still possible to follow its course since the track continues from the saw mill at Saga and then enters the burial site. The burial site at Grovin was discovered in 1990 during the systematic field surveys at Foss and is comprised of at least 13 discernible cairns probably dating to the Late Bronze Age.

At about the same time as the burial site was acknowledged, the section of the old track between the saw mill and the archaeological locality was upgraded to fit the demands of modern forestry methods. During this work several boulders along the track were pushed out of their original place. One can argue that there is a strong possibility that engravings are to be found on some of these suitable rocks, but further fieldwork is required in this regard.

The Fossmoan route

The fourth level at the plateau is represented by the Fossmoan Terrace, starting at about 200 m.a.s.l. In the northernmost part of this terrace, at 215 m.a.s.l., a slope marks the edge of the Oppistumoen Terrace, which is the fifth one, at 220 m.a.s.l.



FIGURE 4. THE CROSSROADS AT FOSSMOAN- CAIRN (ARROWED) AND CARVINGS

In this part of the landscape, the heritage trail follows the route crossing the terrace along a North and northeasterly axis of movement, connecting the settled area in the South with the burial cairns at Grovin in the North and the track, which continues northwards to the farms at Horg.

Historically the route across the Fossmoan and Oppistumoen terraces has its starting point in the small valley between the farms Tømmeregga and Innlegget, both of which have an abundance of prehistoric engravings on boulders and rock outcrops, for instance Foss II-III and the complex panels at Foss I and IX. Especially at Tømmeregga Farm there is still a potential for additional discoveries in relation to the track. For nearly 200 m. along the route in question, there is seemingly no indications of neither rock art nor other archaeological features. Then, a small boulder with five cup-marks with additional rings appear at the confluence of the Fossmoan Route and the Flottaklevan Path, the latter continuing uphill to the East, creating a sunken path (Brevik 2018d).

Approximately 120 m. further north, after crossing the Grasmrybekken Brook, we arrive at the crossroads where the heritage trail and the Øvermostien Path converge. The latter path will be dealt with in the next section, but the discovery of at least one probable prehistoric burial cairn placed in the corner at the crossroads is of great significance for the recognition of ancient paths, and hence the link between these “inscriptions” in the landscape and rock carvings found along them (Brevik 2018a). There are two more cairns or mounds located on either side of the track along the route between the crossroads and the Oppistumoen Terrace, but the features are hardly distinguishable inside the dense Norway spruce plantations. In May 2018 three small panels consisting of cup-marks and two horse images were discovered at the crossroads in question. At least one of the cup-marked stones seem to be a part of the feature interpreted as a burial cairn.

Another 120 m. in a northeasterly direction from the cairn situated by the Øvermoen Path, rock carvings were discovered on a distinctive boulder with a panel almost resembling a stone tablet facing south. The panel consists of three boat images differing in style, a few foot-sole images and at least one cup-mark. The distance between the heritage track and the rock art panel is not more than 60 m. (Brevik 2018b).

By the picnic area at the Oppistumoen Terrace, about 300 m. in a northeasterly direction from the panel at Fossmoan, there is a second distinct boulder with rock carvings located right next to the track. Recognizable motifs on this south facing panel include boat images and cup-marks. A small path leads in a south-easterly direction from this locality to the northern part of the Øvermoen Terrace, where its final destination is a solitary, low boulder of greywacke. The surface of this rock is nearly white and thus highly distinguishable from its surroundings. With numerous cup-marks recorded on panels facing both North and South, and with unusual carvings even on the sharp-edged top of the boulder, there are no counterparts to this locality at Foss. The panel is located at the foot of the terrace's sloping edge, and it seems to be a deliberate link between the rock art and the meandering path leading to it from the Oppistumoen Terrace 130 m. away (Brevik 2018a, 2018c). In April 2018 an additional finding of a cup-marked stone just in the middle of the heritage track at Oppistumoen, seem to give further clues to the peculiar setting of some of the engraved rocks at the Foss Plateau.



FIGURE 5. A BOAT IMAGE WITH CUP-MARK AND POSSIBLE FOOT-SOLE IMAGE AT THE FOSSMOAN TERRACE.

The distance between the Oppistumoen rock art panel and the burial site at Grovin is app. 350 m., as the crow flies. The site is easily reached by foot partly along the heritage trail and the track that continues northwards. The Grøbbvegen and Fossmoan routes converge at the saw mill, just a short walk from the burial cairns at Grovin.

The Øvermostien Path

While the two converging routes just described share a similar alignment at the Foss Plateau, the Øvermostien Path will serve as a third and somewhat different example of the link between rock engravings and ancient paths.

To keep it short, we will pick up the thread at the crossroads by the Grasmyrbekken Brook, mentioned in the section covering the Fossmoan route. As already stated, this is where the heritage trail and the Øvermostien Path converge. As the former continues northwards, the latter gradually ascents in a north-

easterly direction towards the Øvermoen Terrace. The first rock art panel is located on a small boulder app. 100 m. from the crossroads, and it is dominated by an unmistakably hewn surface, probably “hiding” an image that is hard to identify. Not more than 30 m. away and closer to the terrace, a second rock art panel is located. While the neighbouring panel gives a rather “chaotic” impression, the carvings on this boulder can easily be identified as showing a well-known motif, namely the combination of a boat stem and a single cup-mark. Further down on the panel there is a circular “sun disc” and a horse image, clearly depicting a stallion.



FIGURE 6. THE ØVERMOSTIEN PATH- ENGRAVED BOULDER ARROWED



FIGURE 7. THE OPPISTUMOEN TERRACE- CUP-MARKS (LEFT) AND COMPLEX PANEL (RIGHT) ARROWED

Both panels are located on the northerly side of the footpath as well as right next to it, with the engravings facing south, hence relating directly to individuals walking on this narrow path to or from the uppermost terrace, or simply following the track through the passage at Karthølet situated between the Raudåsberga Hills and the terrace.



FIGURE 8. ON HORSEBACK AT THE ØVERMOEN TERRACE, 239 M.A.S.L.

Additional discoveries at the Øvermoen Terrace indicates that there is a close link between the path, the two recorded panels alongside it and possibly the cairn with engravings on small stones scattered around the monument.. Finally there are the seven individual panels recorded at the terrace, rising as much as 239 m.a.s.l., hence representing the highest level at the Foss Plateau. Except for the highly distinguishable panel at the northerly foot of the terrace, that can be reached via the Oppistumoen Terrace, the short investigations at the Øvermoen Terrace in the fall of 2017 and the spring of 2018 resulted in five cup-marked stones and one distinctive boulder split into at least four different panels dominated by horse images, some of them even depicted with riders. On a smaller stone nearby, two additional horse images were discovered.

The latter represents the fifth recorded example of horse images carved on boulders at Foss, and consequently the only examples in mid-Norway as a whole.

The findings at the terrace and along the path showing the way to this part of the landscape, demonstrates that this locale must have been of great importance to the inhabitants at Foss, presumably in Later Bronze Age and Pre-Roman Iron Age.

Discussion

Do the paths and routes connecting the rock art panels and burial cairns at the Foss Plateau give us an exceptional glimpse of a prehistoric landscape structure? An exploration of the probable link between routeways, petroglyphs and burial sites at these terraces, bear witness to an intricate web of paths and places in a topographically and geographically limited part of a greater valley landscape. It is of course possible that this is an isolated and local phenomenon and tradition in Horg parish, but the archaeological literature demonstrates that this has been a relevant issue in rock art research at least since the 1970s, however poorly attested and explored in the case of farmers' rock art in Norway (Bradley 2000: 69, 76-77, Bradley 1997: 81, Nash 2003: 54, Westlake 2005: 6).

As for Trøndelag County, Kalle Sognnes (2011) has analysed the importance of walking and perception in a phenomenological manner at the rock art site Leirfall in the municipality of Stjørdal, but the relation between Bronze Age settlements, principal routes or paths and rock carvings is rarely considered on a landscape level. In the Stjørdal Valley there is particularly one locality that could serve as an analogy to the situation at the Foss Plateau, more specifically the farm Berg or Berri, where several rock art panels and burial cairns are located along a very distinctive hollow-way marking the Bergskleiva Track. This is most certainly an ancient, principal route between the coast and the inner part of the valley (Sakshaug & Stuedal 2013).

Richard Bradley (1997: 81-82) explicitly points out the need to develop sufficient field methods to investigate possible links between routes and rock art, literally to start “tracing footsteps”, as George Nash puts it (2003: 58). Bradley’s general advice in light of this kind of research is to be aware of circular arguments and the subjective interpretations regarding the recognition of ancient trackways. He then continues with his personal approach to the problems involved in viewing rock carvings as related to axial lines of movement:

“Do they share a common axis along the apparent line of such paths? And are the carvings supposedly located on the course of such routes in fact visible from one another? In each case these questions form part of a wider agenda, for if rock art had provided a source of information, however specialised or difficult to understand, it must have been possible to find it in the first place.” (Bradley 1997: 82).

The three scenarios described in the previous section are all based on detailed investigation on ground, and I would strongly argue that they indicate a firm link between paths and petroglyphs at Foss, not least because my analysis also takes into account other archaeological features along the lines indicating ancient routes, mainly isolated cairns and the burial site at Grovin. In his seminal report on the hollow-way project in Vestfold County, the archaeologist Terje Gansum emphasises the importance of burial mounds or cairns in the interpretation and understanding of ancient routes and sunken paths:

“Grave monuments along the road provided reference points for the collective memory. They were erected along to the “veins” of society, keeping the memory alive, manifesting their importance and reiterating the stories. By placing graves along routeways, people probably regarded them as monuments of immortal values, safeguarding the ancestral honour. Even today these ideas are not that foreign to us, and they are occasionally voiced in the metaphors of poetic language.” (Gansum 2002: 34, my translation).

Chronologically speaking, the occasional clusters of rock carvings and cairns at Foss do not necessarily imply that they are all contemporaneous. As a whole, they manifest vital places of memory or “sources of information” created through successive stages over a long period of time. This makes it reasonable to believe that both cairns and carvings provide the kind of cultural reference points that Gansum accentuates, offering “chapters” in a narrative understood on foot or horseback (Løvschal 2013: 225-226, Tilley 1994: 30-31).

Instead of considering the ancient road, track or path simply as a profane route for transport, movement and communication through a landscape, we can view it as a route immersed in ritual and brimmed with religious connotations. While the authors previously quoted have explored this issue, Elisabeth Rudebeck (2002) makes it the point of departure in her approach to the ritual importance of prehistoric roads in Northern Europe and Scandinavia. Like Gansum, Rudebeck has a special focus on the relation between prehistoric graves and roads. With the aid of archaeological, anthropological and historical sources and analogies, she challenges the usual functionalistic interpretation of roads and argues that, at least since the

Late Neolithic, communication routes were immersed in symbolic meaning. This becomes particularly evident in the connection between crossroads, road forks and prehistoric burial sites in Scandinavia (Rudebeck 2002: 168-171). In the case of Denmark, Mette Løvschal (2013) has done a broader landscape analysis of possible mobility lines and the distribution of Late Bronze Age barrows in the Himmerland area. With the aid of a new and, I would say, captivating perspective on cognition as a holistic, bodily and grounded experience, she holds that “[t]he barrows served as collective material anchors and fixations of movement” (2013: 225). In many ways, Løvschal’s specialised study gives further weight to Rudebeck’s more general considerations on the topic.

With regard to both Rudebeck’s and Løvschal’s approaches to prehistoric roads and archaeological features, I find many striking similarities in the cultural landscape at Foss. All three scenarios or routes described in the previous sections relate to individual burial cairns located along the communication lines, while the two principal trackways, the Grøbbvegen and the Fossmoan routes, both seem to be “heading” towards the burial site at Grovin to the north. Here they overlap and therefore creates a kind of road fork, channelling all movement between the burial monuments, before entering the landscape near the Horg farms. In the case of the intersection between the Fossmoan route and the Øvermostien Path, there seems to be a correspondence with regard to the crossroads and the possible burial cairns placed right between the two routes. As both Gansum and Rudebeck points out, this certainly had symbolic significance in Late Bronze Age and Early Iron Age society.

The arguments proposed by Rudebeck and Løvschal becomes even more relevant to the situation at Foss when they suggest that there is a link between iconography and communication, with a special emphasis on Bronze Age rock art. In rock art research, spirals or ring symbols, the horse and boat images are all associated with movement, communication, transport and travelling. At the same time, there is reason to believe that these motifs expressed a particular religious worldview and that travelling in itself constituted an important component in Bronze Age cosmology, hereby indicating that movement probably played a central role in ideological conceptualisation and narrative compositions (Løvschal 2013: 225-226; Rudebeck 2002: 189-190). I find this perspective highly relevant to the rock art at Foss, where this particular imagery occur on rock outcrops and boulders. In this regard, we could probably add the few foot-sole images found along the Fossmoan route.

Among the rock carvings at the Foss Plateau the frequent boat images represent the most noticeable motif in terms of metaphorical and symbolic thinking. Located at an alluvial terrace, app. 200 m.a.s.l. and 22 km. inland from the Gaulosen Fjord, the shore connection is highly questionable. As Richard Bradley puts it: “It may be inappropriate to consider the ship carvings in terms of the everyday” (Bradley 2000: 138). Here is where Rudebeck’s arguments regarding Bronze Age iconography and travelling actually shed light on the different types of boat images along the tracks, indicating that these carved vessels once were laden with symbols both on a functional and on an imaginative level. The connection between death and travelling is a central motif in Rudebeck’s analysis, but she also highlights the link between death and liminal places, as well as graves as territorial boundaries and as monuments signalling status. This perspective is akin to Sognnes’ view concerning the structure of sacred landscapes in which the veneration or cult of the ancestors played an important part. He argues that the settlements and the burial monuments or sites of the Bronze Age in most cases were spatially separated, and that this indicates the importance of the whole body of the settled area, i.e. the landscape. By locating burial cairns at prominent features in the terrain, like hills and higher ground, these places were accentuated and thereby marked the right of the living to inhabit and use the land (Sognnes 2000: 98-99). While Sognnes highlights the coastal setting of burial cairns and their relation to farmers’ rock art, his considerations on the correspondence between carvings near the settlements and cairns separated from the sphere of the living, offers an applicable model to the situation at Foss as well. He proceeds:

“The intention behind the creation of rock carvings could indeed have been burials. Before or after moving the dead to their final resting places, the settlement could have been a locus for corresponding rituals. By making new carvings, one preserved the communication with the ancestors. Hence, the power and endurance of the carvings as a symbol of the link between past and present, between the living and the dead, was renewed. At the same time the right to cultivate the land was transferred to the next generation.” (Sognnes 2000: 105, my translation).

These ideas are very similar to the ones posited by Bradley (2000: 139), and this could be a way to understand at least one aspect of the rock art distribution at Foss and its relation to the two principal routes across the plateau. It is certainly tempting to consider the burial site at Grovin, together with the rock art panels and the more isolated cairns along the axial lines of movement, as an integral, material manifestation of “a landscape for the dead”. Again, this could imply some sort of cosmological model, and the carvings themselves could in fact indicate such a structuring of the landscape. Earlier in this paper, I mentioned the two possible grave slabs with carvings found near the Gaula River at the valley floor. The “portable” rock art can be interpreted as an expression of the importance of linking the rituals and monuments of the dead to the abundant rock art panels scattered across a sacred, ancestral landscape. Actually, the probable grave contexts at Sandbrauta and Røskafsvæet, points to a direct link between the ancestor cult and the creation of rock art in Horg Parish.

At the third alluvial terrace, app. 170-190 m.a.s.l., the rock art panels are clearly dominated by cup-marks. This coincides with the Grøbbvegen route and extends from the settled area in the South to the cup-marked boulder at Småvollglennun in the North, close to the burial site. A similar pattern can be observed at the fourth and fifth levels, the Fossmoan and Oppistumoen terraces respectively; the largest panels are characterised by their boat imagery. In this middle zone, the cup-marks are few and when they occur, they are frequently part of a ship motif. As for the Grøbbvegen route, one gets the feeling that there is a threshold in the northernmost part of the plateau, because no carvings have yet been discovered in the intermediate zone between the cairns at Grovin and the petroglyphs at Oppistumoen and Småvollglennun. However, a more thorough field investigation in this part of the area could bring substantial change to this pattern.

Four out of five boulders with horse images discovered at Foss are all located on higher ground at the Tømmereggåsen Hill, the Øvermoen Terrace and along the path leading to this locale. In all cases, the other panels located at the same landscape feature are predominantly cup-marked stones. Taken as a whole, this could indicate a subdivision of the landscape by height and by the existence of principal lines or tracks across the plateau, connecting the living and the dead (Bradley 2000: 139). Based on these general observations and assumptions, the wider setting of burial cairns and rock carvings on the Foss Plateau, seems to imply that the foundation of the prehistoric landscape structure in this particular part of the Gauldal Valley, originated in a specific cosmological outlook. The “strong paths” linking together settlements, rock art panels and burial cairns in this sacred landscape, probably served as essential “veins” of society in Late Bronze Age, Pre-Roman Iron Age and even in later periods.

Conclusion

Fourteen years ago, when I was first acquainted with the landscape, history and archaeology at Foss, I had no idea that the very act of following the heritage trail actually was a tangible way to comprehend the outline of a prehistoric cultural landscape. Later on, I discovered that surprisingly little research had been conducted on the local rock art tradition, and at the same time on what might be labelled the landscape archaeology in Horg parish. After finding this shortage in theoretical approaches to the rather “disordered” distribution of rock carvings at Foss, the recognition rapidly led to a personal calling, which on the other hand has brought about a more comprehensive knowledge and view of the whole body of archaeological features at the alluvial terraces that distinguishes this part of the Gauldal Valley.

The initial encounter of a plausible link between paths and petroglyphs became very influential to the way my own perception changed overnight. What I experienced as a new insight, paved the way to a more viable method in the investigation of the locality. By giving a summarising account of my own observations and interpretations on the ground, followed by a presentation of other related and inspirational studies in the field of ancient trackways, cognition and rock art, I hope that the present study will contribute to a growing interest in the farmers' rock art located in the Gauldal Valley. There is also a great potential for the Foss Plateau to serve as an analogy to other localities that seem to display comparable patterns.

All photos are taken by the author.

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Chapter 17

What we see is what we get - Seeing Sandhalsan with new «eyes»

Jan Magne Gjerde & Heidrun Stebergløkken

Abstract

The rock art at Sandhalsan, in Åfjord municipality, has been known since 1931 and has been an important subject for researchers through the years since discovery. Different methods for documentation, different light, different weather conditions and different researchers with different perception and experience, are all factors that have led to new discoveries through these years. Our paper can be seen as an addition to this, but we also wish to summarize the different documentation to show how our knowledge has evolved with the research and documentation of this interesting site.

Introduction

Late May in 2017, we were able to gather representations representing different levels of cultural resource management institutions at Fosen, in Trøndelag. This was a project financed by Riksantikvaren and was a collaboration between NTNU University Museum, The Arctic University of Norway and Trøndelag County Council. The aim was to investigate the potential and the application of new digital documentation methods at eight selected rock painting sites. Representations from Bjugn municipality and third sector organizations also participated in the fieldwork. A secondary aim was the dissemination and a photo exhibition at the participating local museum Bjugn Bygdatur, Mølnargården. In this paper we wish to focus on one of the sites, namely Sandhalsen at Åfjord municipality (see Figure 1. Map of rock art in Fennoscandia with Sandhalsen marked. Reworked from Gjerde (2010: figure 1). and Figure 2. Photo of the Sandhalsen cliff. Photo J.M. Gjerde). This site was discovered in 1931 and was documented by Theodor Petersen the same year. Since its discovery, this site has been an important subject for research. Several re-documentations have revealed new images and details. Our project marks the first time the rock art site has been documented in full scale using photogrammetry and decorrelation stretch (DStretch), an image enhancement technique. In this paper, we present some of the preliminary results of this project.

Background

The rock art at Sandhalsan is located at the northern side of Lake Stordalsvatnet in the municipality of Åfjord, on the Fosen Peninsula, North West of Trondheim. The site is actually two inter-connected rock-shelters that are registered as two different panels. The site is located approx. 35 m.a.s.l., which roughly gives a maximum shoreline dating of 5700 BP (Stebergløkken 2016). The surface of the lake is approx. 20 masl, which means that the lake was isolated from the sea around 4000 BP (Sognnes 2014: 45).

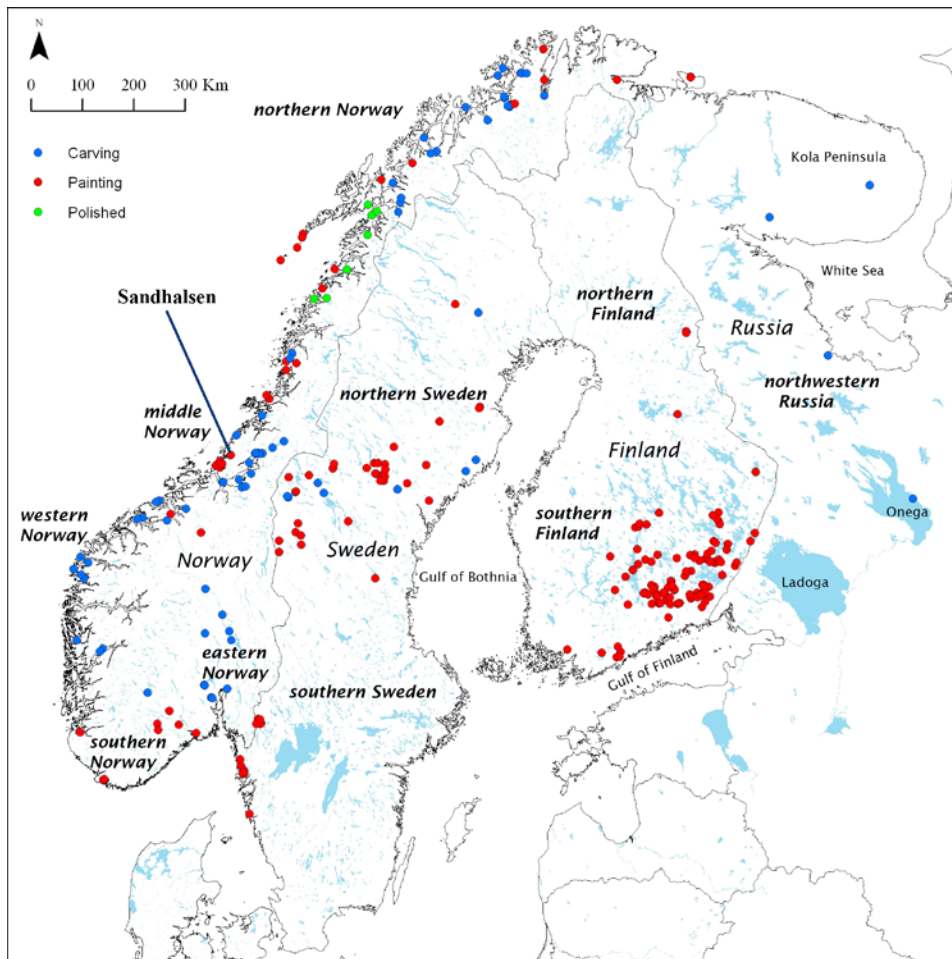


FIGURE 1. MAP OF ROCK ART IN FENNOSCANDIA WITH SANDHALSEN MARKED. REWORKED FROM GJERDE (2010: FIGURE 1).



FIGURE 2. PHOTO OF THE SANDHALSEN CLIFF. PHOTO J.M. GJERDE

Theodor Petersen documented Sandhalsan in 1931 with photos and tracings (see Figure 3. Tracing by Petersen (1931). (Gjessing 1936: Pl.LXXI)). He also conducted a minor excavation of the shelter floor and identified a 70 cm thick layer of cultural deposits. This consisted of charcoal, fire-cracked rocks and small traces of burnt bone material. However, no artefacts were found (Petersen 1932: 3).

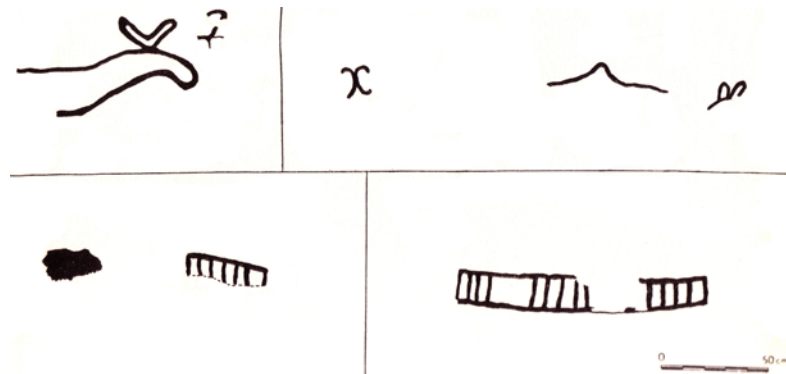


FIGURE 3. TRACING BY PETERSEN (1931). (GJESSING 1936: PL.LXXI)

All the figures above, except the frame/boat figure bottom right, are from Panel One. The last figure is from panel two, and has been interpreted as a frame figure or a boat representation.

Since, Petersen's discoveries, several researchers have visited the site, and new discoveries have been made. In 1993, Kalle Sognnes revisited the site where the main aim was to obtain radiocarbon dates. Samples were taken from the upper and the bottom cultural layer. The result from the upper layer was dated to AD 720-980 cal. (T-11131 - 1180±95 uncalibrated). The oldest sample from the bottom of the cultural layer was dated to BC 1680-1510 cal. (TUa-937 - 3315±75 uncalibrated) (Sognnes 1999:470). According to this, the oldest activity from this shelter is from Early Bronze Age (EBA), but we cannot be certain that this corresponds with the initial making and use-phase of the rock art. However, the radiocarbon dates tells us that this shelter may have been known to people in the area, who revisited this place for decades in prehistory.



FIGURE 4. SANDHALSAN, PANEL 1. PHOTO: H. STEBERGLØKKEN, NTNU UNIVERSITY MUSEUM.

During the excavation, Geir Grønnesby also made a new discovery at the rock art panel; a boat figure to the left of the painted elk. In the bow, a human figure can be seen holding a spear (Sognnes 1999:471, Myrholt 2007:52). However, these figures are not painted, but pecked. Similar boat figures are found throughout the material from Trøndelag, especially from Evenhus at Frosta and Hammer in Steinkjer (Gjessing 1936; Sognnes 1999; Steberggløkken 2016). The coexistence of both painted and pecked rock art is unique within central Norway, and there are not many examples of it across the whole of Norway. At Honnhammer, Tingvoll, in Møre og Romsdal County

we find another example of different techniques coexisting. B. E. Bendixen (1879:41) was the first to describe the paintings here, but he did not know that the paintings were prehistoric. Gustaf Hallström first recognized this in 1909, but it was not until 1994 that Kalle Sognnes traced his new discovery. Two to three boat figures superimpose the previously known painted cervids at Sandhalsen 1. The boats are made with a technique not known from any other site. The boats are not pecked, but chiselled or polished. The lines seem to have been made by using a sharp tool to scrape off the red paint of the cervids (Sognnes 1999:466-470). Looking at the tracing by Eva Lindgaard and Daniela Pawel in 2006 (see Figure 5. Tracing made by E. Lindgaard and D. Pawel, NTNU University Museum 2007 (Lindgaard 2009:45)), we can see three people inside the boat and another part of figure to the left of this (Lindgaard 2009:45).

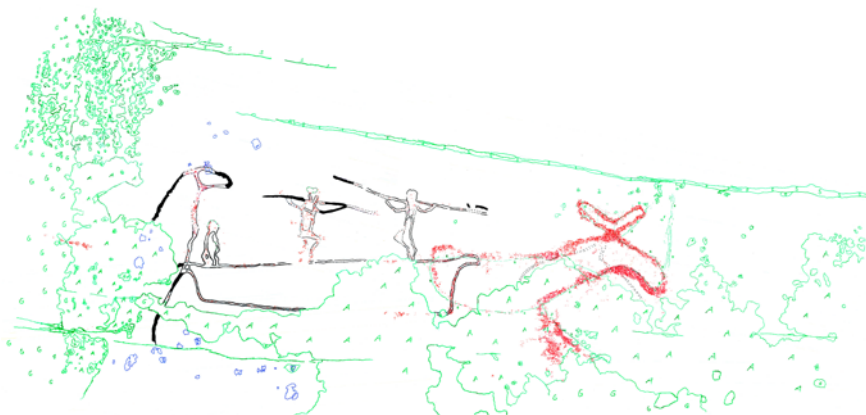


FIGURE 5. TRACING MADE BY E. LINDGAARD AND D. PAWEL, NTNU UNIVERSITY MUSEUM 2007 (LINDGAARD 2009:45)

Terje Norsted also documented the paintings at Sandhalsen in 2010. He describes new details of several of the figures, including the boat mentioned above. He saw traces of pigments at the front end of the boat, which could be one of the few observations in Norway of actual traces of pigment combined with pecked lines. He also observed pigments on the rock shelf above the famous boat and elk figure. He describes several tilted lines forming some sort of pattern (fish bone) with a diamond shape. However, because of the weather conditions, he was not able to photograph or trace the figure (Norsted 2010:21). Norsted did not make use of digital documentation methods. Thereby, he lacked methods to document his observations and, not least, to amplify the pigments.

Methodical approach – image enhancement technique

Weather conditions are a known challenge with traditional tracings, and the rock surface needs to be completely dry. However, the most negative aspect with traditional tracings is that you work on top of the paintings, which are often very fragile. Photography is the preferred method, but light and shadow can be problematic and direct sunlight can affect the visibility of the figures.

Combining photos with photogrammetry opens up the possibilities to make 3D models of the rock surface with the figures. Digital photogrammetry is a method of reproducing a scene or object in 3D, which in recent years has become one of the most used methods in general in archaeological documentation. The underlying principle is referred to as Structure From Motion (SfM), which is an Image Based Modelling technique (see Meijer & Dodd: *this volume*). Based on a series of two-dimensional images taken with a camera moving around a subject, it is possible to reconstruct the subject's three-dimensional geometry and camera's exact position while capturing the images. PhotoScan processing software, provided by Agisoft, is a powerful package that enables digital photogrammetry and three-dimensional reconstruction using SfM. The program has automated steps and requires a minimum of manual processing of the images. Since photogrammetry is based on photos, it is crucial to have images with good resolution as a basis for

the models. There are basically no restrictions on which camera you can use, but it is recommended to use a good camera with a good lens that takes sharp pictures (Harman 2008; Sauvage and Stebergløkken 2017: 18). Testing has shown that SfM has a low margin of errors. The average error of the digital observed value compared with measurement taken manually with a ruler, is only 0.95%. This means that very precise measurement can be taken from the digital models, and touching the rock surface can be avoided (Meijer 2015; Jalandoni; Domingo & Taçon 2018:609-611).

Colour enhancement to see rock paintings have been applied for decades to make rock art more visible (e.g. the use of Adobe Photoshop). In recent years, digital enhancement software has become more available. Several software programs have been applied as a digital tool to enhance the visibility of pigment on the rock surface. These have recently become an important tool in the rock art documenters toolbox. Decorrelation Dstretch (DStretch), an piece of image enhancement software, is specifically designed to manipulate colour pigments by emphasizing and contrasting colours. There has been a lot of exciting method testing of this software, both internationally, but also nationally (Harman 2008; Dodd 2013; Jalandoni, Domingo & Taçon 2018; Linge 2014; Sauvage & Lindgaard 2015; Sauvage & Stebergløkken 2017; Stebergløkken & Gjerde 2017). The method used on this project, involved taking photos in the field that were processed later on a PC. The new addition to DStretch in 2016, was the launch of an app for smartphones (iDStretch and AndroidDStretch), which allows instant image manipulation using your smartphone camera (Harman 2016: 236-238). This opens up new opportunities in fieldwork. By having such an app available on a phone, you can verify or debunk rock paintings standing in front of the rock art panels. The app is hence a useful field tool, which easily detects areas on the rock surface that require more investigation. Single colour filters are applied only with a touch of your smartphone including four filters for red pigments to switch between.

Preliminary results from the documentation

Panel One

Returning to Sandhalsen, we will now present some of the result from our project at Fosen. Returning to Sandhalsen, we will now present some of the result from our project at Fosen. Figure 6 shows the famous painted elk and pecked boat figure with two human figures holding spears. It also shows the exfoliation damage at the site that threatens the rock art. However, this damage is not a new problem. Parts of the boat are missing because of the exfoliation, but the elk's abdomen was painted after this damage occurred of the rock surface. This provides us with a relative chronology, which indicates that the pecked figures are older than the painted ones. At very least, this boat figure is older than the elk figure, but we cannot exclude that some of the other painted figures could be older than the pecked figures. shows the famous painted elk and pecked boat figure with two human figures holding spears. It also shows the exfoliation damage at the site that threatens the rock art. However, this damage is not a new problem. Parts of the boat are missing because of the exfoliation, but the elk's abdomen was painted after this damage occurred of the rock surface. This provides us with a relative chronology, which indicates that the pecked figures are older than the painted ones. At very least, this boat figure is older than the elk figure, but we cannot exclude that some of the other painted figures could be older than the pecked figures.

Using DStretch, you can clearly see the details of the elk figure, and you can also see a small figure beneath the elk's abdomen. This is interpreted as the backline and head of an elk calf. We can also see traces of pigments on the boat to the left of the elk, as previously noted (Norsted 2010: 6, Lindgaard 2009: 46).

To the right of the elk figure is a human figure (see Figure 7), which has been observed since Petersen's tracings in 1931, but not in such detail. It is also fainter than the elk figure, indicating that the figures were not made at the same time.

Norsted observed pigments on the rock shelf above the famous boat and elk figure; some sort of pattern (fish bone), with a diamond shape. Using DStretch on the same area, this pattern became very clear to us (see Figure 8, Figure 6. The famous painted elk, and the pecked boat figure to the left with two human figures holding spears. Traces of a pecked whale figure underneath the elk can be seen just above the exfoliation damage. The elk is superimposing both the boat and whale figure. Photo: H. Stebergløkken, NTNU University Museum and Figure 10. A close-up of the newly documented diamond figure using DStretch filter YRE. Photo: H. Stebergløkken, NTNU University Museum.).



FIGURE 6. THE FAMOUS PAINTED ELK, AND THE PECKED BOAT FIGURE TO THE LEFT WITH TWO HUMAN FIGURES HOLDING SPEARS. TRACES OF A PECKED WHALE FIGURE UNDERNEATH THE ELK CAN BE SEEN JUST ABOVE THE EXFOLIATION DAMAGE. THE ELK IS SUPERIMPOSING BOTH THE BOAT AND WHALE FIGURE. PHOTO: H. STEBERGLØKKEN, NTNU UNIVERSITY MUSEUM



FIGURE 7. HUMAN FIGURE TO THE RIGHT OF THE ELK, DSTRETCH FILTER CRGB. PHOTO: H. STEBERGLØKKEN, NTNU UNIVERSITY MUSEUM



FIGURE 8. THE ROCK SHELF ABOVE THE FAMOUS BOAT AND ELK FIGURE. PHOTO: J. M. GJERDE, UIT



FIGURE 9. A DIAMOND SHAPE VISIBLE USING DSTRETCH FILTER YRE. PHOTO: J. M. GJERDE, UIT.



FIGURE 10. A CLOSE-UP OF THE NEWLY DOCUMENTED DIAMOND FIGURE USING DSTRETCH FILTER YRE. PHOTO: H. STEBERGLØKKEN, NTNU UNIVERSITY MUSEUM.



FIGURE 11. A VERY FRAGMENTARY FIGURE (ORIGINAL PHOTO TO THE LEFT) SHOWS NEW DETAILS WITH DSTRETCH (FILTER YRE). PHOTO: H. STEBERGLØKKEN, NTNU UNIVERSITY MUSEUM.

To the right of the famous boat and elk figure (Figure 5. Tracing made by E. Lindgaard and D. Pawel, NTNU University Museum 2007 (Lindgaard 2009:45)), there have been observed some pigments that forms an “x-figure”, as shown in Petersen’s tracing (Figure 3. Tracing by Petersen (1931). (Gjessing 1936: Pl.LXXI)). Norsted also refer to this x-figure and describes them as short fragmentary transverse lines. Applying DStretch, more details are revealed. This can hardly be interpreted as a x-figure, and the image enhancement reveals two sets of “ovals” that are interpreted as two pairs of ears (see Figure 11. A very fragmentary figure (original photo to the left) shows new details with DStretch (filter YRE). Photo: H. Stebergløkken, NTNU University Museum.). Exfoliation has unfortunately damaged vast parts of the figure, but using this method provides us with more information to identify the figures and motifs, hence a better vantage point for the interpretation of rock art.



FIGURE 12. WHALE AND ELF FIGURE (ORIGINAL PHOTO TO THE LEFT AND DStretch YRE TO THE RIGHT). PHOTO: HEIDRUN STEBERGLØKKEN, NTNU UNIVERSITY MUSEUM.

Moving further to the right on the panel, the whale figure and the elk head are visible in the original photo (Figure 12. Whale and elf figure (original photo to the left and DStretch YRE to the right). Photo: Heidrun Stebergløkken, NTNU University Museum.). Applying the YRE filter in DStretch clarifies the image. To the right of the elk figure (Figure 13. A boat with a human figure? DStretch filter YRE. Photo: H. Stebergløkken, NTNU University Museum.), there are pigments also mentioned by Norsted. However, he could not interpret a specific figure. Using YRE filter, we can clearly see a human figure with elongated arms, which could indicate the human holding a spear. Beneath the human figure, a rectangular figure can be spotted, maybe with transverse line (division of bulkheads?). We find it plausible that this illustrates a human figure in a boat holding a spear. This image then mirrors the pecked boat and human figure to the left side of the panel.



FIGURE 13. A BOAT WITH A HUMAN FIGURE? DStretch FILTER YRE. PHOTO: H. STEBERGLØKKEN, NTNU UNIVERSITY MUSEUM.



FIGURE 14. ELK AND BOAT FIGURE. DSTRETCH FILTER YRE. PHOTO: H. STEBERGLØKKEN, NTNU UNIVERSITY MUSEUM.

Furthest to the right of Panel One, there is a rectangular figure previously interpreted as a frame figure or a boat. We find it plausible that this is a boat image, comparable with the pecked boat images in Trøndelag (Sognnes 2017; Stebergløkken 2016). An area with pigments to the left of the boat was documented by Petersen in 1931. Norsted rejected these pigments as natural iron precipitations (Norsted 2010:17). Using the YRE filter in DStretch, this colour stain appears to be an elk figure. You see a backline and ears of the elk's head facing the boat figure. The colour pigmentation matches the colour of the boat figure, and the elk and boat standing side by side is a recurring theme.

Panel Two

Prior to our fieldwork, only one figure was known at panel two: a boat figure. The boat is longer but similar to the one at panel one, seen in Figure 14. Elk and boat figure. DStretch filter YRE. Photo: H. Stebergløkken, NTNU University Museum.. There is some disagreement if it should be interpreted as a boat or a frame figure. The vertical lines can be interpreted as divisions of bulkheads. Another viable interpretation, is that these figures could represent guiding fences, as presented by Gjerde based upon comparison to similar figures at Evenhus (Trøndelag, Central Norway) see Figure 15. Guiding fence at Evenhus, middle Norway. Tracing after Gjessing (1936). Illustration after Gjerde (2010: Figure 309). and Sporanes (Telemark, Eastern Norway) (Gjerde 2010: 433-435). More elaborate guiding fences or reindeer corrals with similar traits are found in the rock art of Alta, Northern Norway (Gjerde 2010: 276).



FIGURE 15. GUIDING FENCE AT EVENHUS, MIDDLE NORWAY. TRACING AFTER GJESSING (1936). ILLUSTRATION AFTER GJERDE (2010: FIGURE 309).

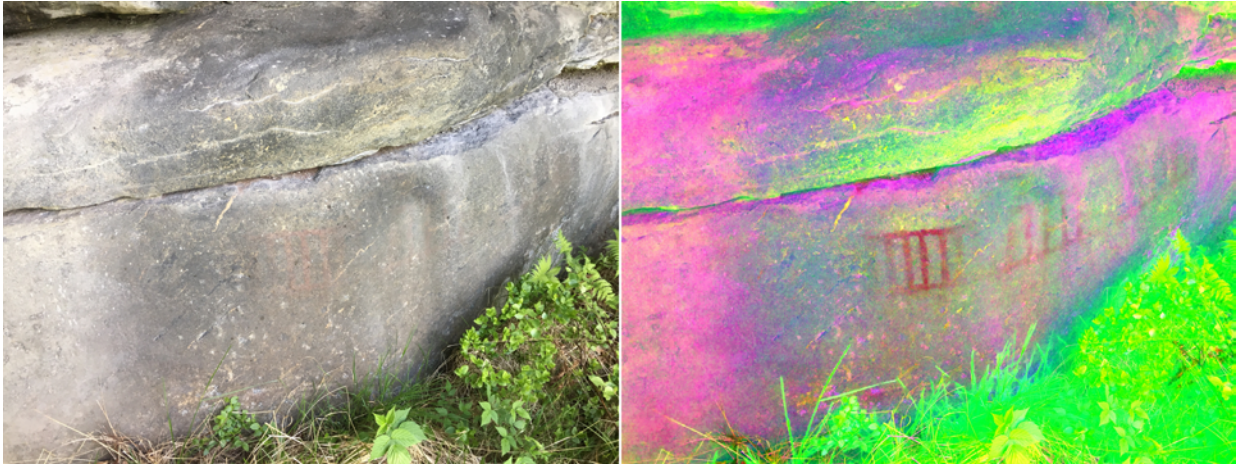


FIGURE 16. THE BOAT FIGURE AT PANEL TWO, ORIGINAL PHOTO TO THE LEFT, AND DStretch FILTER CRGB TO THE RIGHT. PHOTO: H. STEBERGLØKKEN, NTNU UNIVERSITY MUSEUM.

When studying the panel to the left of this boat figure (Figure 17 Almost invisible pigments to the left (original photo) and DStretch filter CRGB to the right. Photo: H. Stebergløkken, NTNU University Museum.) we could see some red pigments. They were very diffuse, and the strong sunlight made it almost impossible to see. In fact, the pigments were so fragmentary that we had to try iDStretch many times before we saw anything that looked like a pattern. In fact, we could only get a photo of the image using our mobile phones. When analysing the photos from our cameras using the software for PC, DStretch could not reveal any pigments. This source of error could have something to do with the distance from the camera to the rock art panel. The more detail you wish to capture, the closer you need to get.

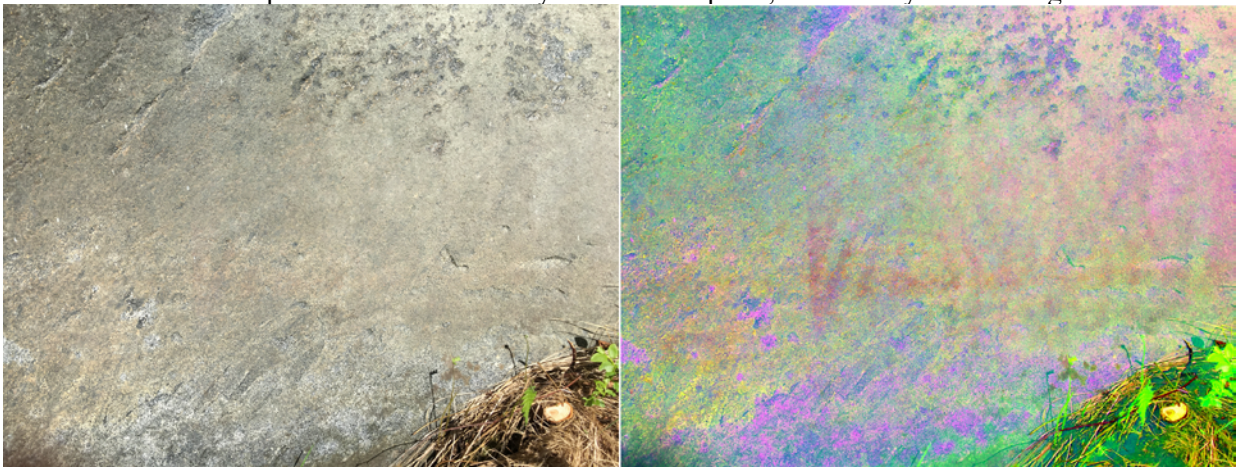


FIGURE 17 ALMOST INVISIBLE PIGMENTS TO THE LEFT (ORIGINAL PHOTO) AND DStretch FILTER CRGB TO THE RIGHT. PHOTO: H. STEBERGLØKKEN, NTNU UNIVERSITY MUSEUM.

Concluding remarks

In this paper, we wanted to share our results from the experiments with DStretch at Sandhalsan in Åfjord, central Norway. The site has also been documented using SfM, but these results are not presented in this paper. These data is stored and is an important and new standard of documenting rock art sites. A 3D-model of the sites, will give a more precise way of documenting how the figures relate to one another and the different topographic elements of the rock surface, which 2D-documentation such as tracings will not illustrate. We have focused here on the application of Decorrelation Stretch (DStretch), and how

this method sheds new light on painted rock art. Therefore, we have focused on the different figures documented throughout the research of this site. Most of the figures have been known since Petersen documented the site in 1931, but we have also discovered new ones and more details of known figures.

Kalle Sognnes (1999: 472-473; 2001: 79-81) has previously questioned why new elements or figures have been discovered at this site almost every time new researchers have visited the place. Nobody expected to find pecked figures at this site, maybe this is partly the reason why nobody saw them before Grønnesby in 1993 (Sognnes 1999: 471). The light conditions, moist or dry weather, different researchers, expectations and perception will affect how we interpret the rock art. That individual factors of expectation and perception may be important factors, and that is also why researchers never should document alone. We need to discuss our observations and explain each other what we see.

As these experiments show, we have a digital tool in our documentation toolbox that is in many ways superior to traditional documentation methods and techniques. This can be summed up by comparing the different stages of documentation at Sandhalsen as presented in Figure 18. Compilation of documentations of the rock art at Sandhalsen. A: Tracing by Petersen (1931). (Gjessing 1936: Pl.LXXI). B: Tracing after Sognnes and Haug (1994). C: Tracing after Lindgaard (2009). D: Marking the remains of the whale figure on tracing after Lindgaard (2009). E: Photo of Sandhalsen. F: DStretch modification of Sandhalsen. G: The grid-figure at Sandhalsen marked. Photos and illustration : J.M. Gjerde – UiT.. Aware of the fact that DStretch aids us to see the panel with new “eyes”, we must also be aware of the pitfalls. How much can we rely on this method? How can this method increase our understanding of the site? What kind of interpretation challenges does it hold? And what other benefits can this digital method provide us. Overall, we believe that this method reveals more of the panel, and a whole other level of details and new figures that have previously been “invisible”, as shown by the examples above. What our study has shown, is that this interpretation needs to be done on site, like all other documentation. The DStretch-app was, in this case, very important, as shown with Figure 17 Almost invisible pigments to the left (original photo) and DStretch filter CRGB to the right. Photo: H. Stebergløkken, NTNU University Museum.; this figure was not visible when using DStretch on the photos taken without mobile. This is a weakness, and you need to be close to the panel to get the details when figures are so fragmentary and faint. Our experience is also that the panel needs to be very clean and free of micro vegetation. This is not a problem at Sandhalsen, but at other sites where moss and lichen dominate the rock surface, DStretch can be challenging. However, there are examples of pigments being visible by DStretch through thin layers of lichen (Gjerde 2012). The thicker this layer of natural algae/moss/lichen is, the harder the conditions for interpretations get. Even under good conditions with clean rock surfaces we still need to interpret the images: DStretched photos do not in any way give us a facit or blueprint of how we should interpret the panel.

As a method, it gives us numerous benefits both when it comes to rock art research, CRM (cultural resource management) and dissemination. Most important, to researchers eyes, is that we can see more and document more of the actual rock art. More figures are found and, not least, details of the figures appear that may be vital to the interpretation of the rock art. The natural iron precipitations and biomasses on the rock surface can also at times be discerned from the figures and discarded as, even though some caution must be addressed when it comes to this. From a surveyor’s perspective, new sites and new figures can be found, In other words: a new tool to find new rock art. Due to its digital advantage, the time from fieldwork to publication is reduced, arguing for the cost-effectiveness of the method. Fieldwork is, however, weather dependent, although this is also the case for traditional fieldwork. From a CRM (conservation / protection) view, we can document the rock paintings without touching the panel. The method can also be applied to see and document damages to the rock and follow them through time to observe whether the condition of the rock art is further deteriorating.

Another important element is dissemination. We can publish a 3D-model with a DStretch photo layer, or only the photos with DStretch to people who wish to study the images. Several of the sites does not have

visible figures and the dissemination value is low. Being on a site where the figures are faint and almost invisible is challenging to show people for obvious reasons. To use DStretch to enhance and manipulate the images gives us some advantages in communicating these sites to people that wish to learn more about them. It also gives us an opportunity to show fragile rock art that is unavailable for most people. In this

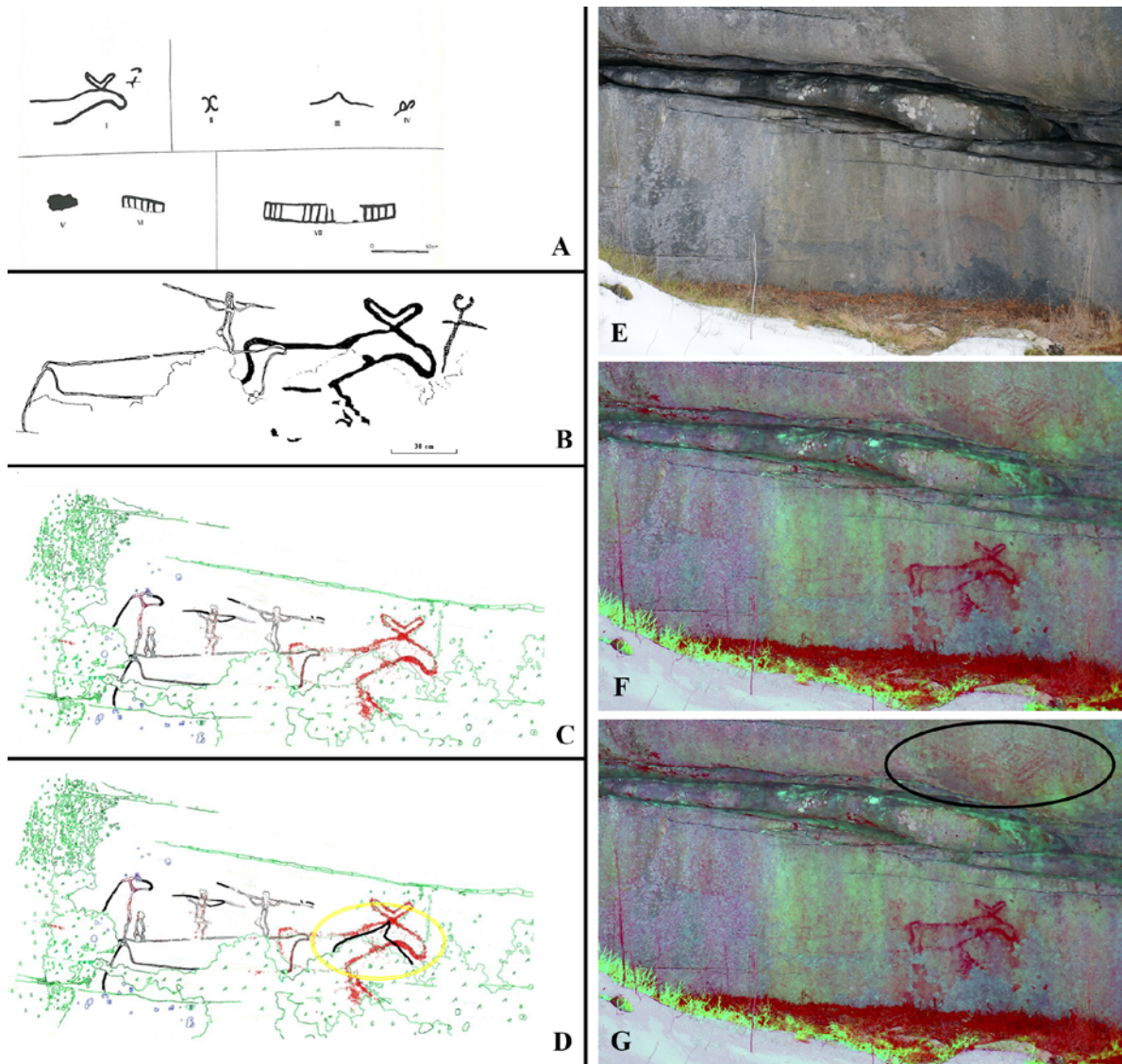


FIGURE 18. COMPILATION OF DOCUMENTATIONS OF THE ROCK ART AT SANDHALSEN. A: TRACING BY PETERSEN (1931). (GJESSING 1936: PL.LXXI). B:TRACING AFTER SOGNNES AND HAUG (1994). C: TRACING AFTER LINDGAARD (2009). D: MARKING THE REMAINS OF THE WHALE FIGURE ON TRACING AFTER LINDGAARD (2009). E: PHOTO OF SANDHALSEN. F. DSTRETCH MODIFICATION OF SANDHALSEN. G: THE GRID-FIGURE AT SANDHALSEN MARKED. PHOTOS AND ILLUSTRATION : J.M. GJERDE – UIT.

way, the method opens up new possibilities. However, researchers will still be affected by elements like the light conditions, moist or dry weather, different researchers with expectations and different perception. This is why rock art is so exiting: our interaction with the panel and seeing the rock art as part of the overall archaeological context it belongs to. DStretch has clearly given us a better vantage point for documenting and studying rock art and rock art sites.

Acknowledgements

Thanks to Gerhard Milstreu for his lifelong investment as a role model in documenting and safeguarding rock art. Through his coursework and passion for rock art he has given future generations the opportunity to pass on his knowledge.

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Chapter 18

Giants Cauldrons and Rock Art

Magnus Tangen

This article aims to put focus on the “canvas” in which prehistoric artists pecked their art; the bedrock and its qualities itself. Researchers have been studying different aspects of the phenomenology of rock art with fluctuating interest. Though sun-angle, colour of the rock, running water, pecking sound/echoes, viewing-angle and other detail-studies sometimes are undertaken, they are seldom the main focus. The landscape is often neglected in the research and documentation, both in a micro and macro level. The immediate topography and qualities, the medium of the art, is too often forgotten in search for the images (hidden?) meaning. Half the information disappears when the images get decontextualized and the choice of place is disregarded. The surfaces on which the art is made are equally as important for recording as the figures themselves (Helskog and Høgtun 2004; Tilley 2008:19-20).

In Norway, context-studies has been advancing in the Stone Age rock art tradition. Knut Helskog, Gro Mandt, Kalle Sognnes, Trond Lødøen and Jan Magne Gjerde, to mention some, has been paying much attention to the landscape and microtopography in their works (clearly stated in titles like; *Rock Art and Landscape* (Gjerde 2010), and *Vingen – Et Naturens kolossalmuseum for Helleristninger/Nature`s Colossal Museum for Rock Art* (Lødøen and Mandt 2012). When it comes to the Norwegian Bronze Age-tradition, the emphasis on context has however been more sporadic (Kalle Sognnes, working with both traditions, being an exception). This is especially the case in South-Eastern Norway, which holds by far the most Bronze Age rock art sites in Norway (Østfold county alone approximately 700 sites 01.01.2018).

The landscape at a macro level has always been part of the discussion (the dichotomy farmland or maritime society/seascape), but in too little degree has the natural details on the panels or their vicinity been showed interest by researchers in Norway. With the project *Rock Carvings in the Borderlands* 1996-99, there was a good cooperation over the border between Østfold (Norway) and Västra Götaland (Sweden), which culminated in a book with the same name, by Anne-Sophie Hygén and Lasse Bengtsson. Bengtsson writes a chapter about microlandscape. Here he pays attention to different natural “ingredients” at the sites, and how they play an important part in the compositions. Ingredients being a superb word. Hygen also states that rock art is connected to the surroundings and landscape, - “part of the rock, water, soil and sun, and human senses” (Hygén & Bengtsson 1999: 30, 40-48). Examples from the studied area, testing and empirical data of these features and phenomena to back up their statements, is however lacking or spread thin.

What are these noticeable features and “ingredients”, and where do you find them? That is my main research focus with rock art. In my opinion the “canvas” could and should play a bigger part in the research of Bronze Age rock art in Norway. In this article I want to share some thoughts about one of these features and a very noticeable phenomenon; rock art near so called “Giants Cauldrons”.

What is a Giants Cauldron?

A Giants Cauldron is more scientifically known as a Glacial pothole. These cavities or depressions in the bedrock was formed during the last ice age that ended approximately 12.000 years ago. Underneath the huge mass of ice, glacial rivers made turbulent currents of pebbles and rock, and the pressure (in geological terminology called cavitation), drilled rounded forms in the bedrock. These natural forms are very striking in the (geological) landscape (Holtedahl 1953:1040-1043; Jørgensen et al. 1995:119-129). In northern Europe, and especially Norway, Sweden and Finland they are relatively common, but still rare enough to encourage people's imaginations in the past. These big cavities are still named Giants Cauldrons. In Norwegian; jettegryte/Swedish; jättegryta, - jette/jätte being a giant or troll, as the size express big force, natural or not. In folklore they didn't only play a part as the giant's kitchenware, but also as their spot for grinding. Another term for the phenomenon is thus glacial mills (in french; moulin). I believe this imaginative explanation of the forms is connected to the old Swedish word for the rock art cupmarks; älvkvarnar, which directly translated is elf-querns.



FIGURE 1. GIANT CAULDRONS IN GRANITE. THESE ARE CLOSE TO TODAY'S SHORELINE AT HVALER, Østfold, BUT MANY ARE FOUND INLAND AT THE SAME LEVELS AS BRONZE AGE ROCK ART, 20 METERS ABOVE MODERN SEALEVEL. PHOTO: THE AUTHOR

Other more irregular depressions and formations in the bedrock has also played a major part in the folklore. For example footprints after monsters, trolls/giants and saints. One feature found in Oslo 1873, was shaped looking like a giant mollusc shell, where the ice had drilled a 4-meter-deep spiral into the bedrock. An interpretation by a scientist in 1826 was in fact that a prehistoric sea-creature was drilling the holes (Brøgger & Reusch 1874:3,16,29). We know very little about what people thought when encountering Bronze Age rock art, at least before science started paying attention to it (in Østfold, first 1826). Did people understand that all the images were manmade, in for instance the 1600s? or were some figures comprehended as made by someone else than man? Querns of the elves, spirals after sea-creatures, and cooking pits of Giants. Did they separate nature from culture?

Some glacial potholes and "footprints" in the bedrock, among other natural phenomenons, are in Norway connected to St. Olaf (the national saint). Christianity started to play a bigger part in Norway soon after St. Olafs death in 1030 AD. The pilgrimage to his grave in Nidaros was extensive in the following centuries, from all over Europe, and the pilgrims noticed and stopped at features and irregularities in the landscape.

One of the church's most important missionary assignments was to eliminate peoples pagan worshipping of trees, stones and springs (decided already in The Church Meeting in Arles 452 AD). As a strategy some springs were sanctified, to make the Christian transition easier. Many landscape-features is thus still connected to the rich legendarium of St. Olafs life in oral tradition. Instead of Giants Cauldrons some potholes were named St. Olafs Cauldrons, and the water filling them was thought to have holy, healing effects. The water from holy springs, possibly also potholes, was actually incorporated into baptism (in Norway until the 1900s). The Bronze Age rock art site Sporneset, in Rauland in Telemark County, contains pecked footprints, and these were said to be St. Olafs in the local oral tradition (Hodne 2000:236-238; Eckhoff 2000:200, Werner 1998:6-9)

Potholes were also connected to the quite opposite, a persistent paganism, and therefore perceived by the Church as evil. Some deeper potholes still bear the name Helvete (Hell). The Norse mythology was also present in many landscape-features and their names. Hoofprints in the bedrock, after St. Olaf riding his horse, had initially been the mark of the Norse god Thor riding his bucks. Landscape-features like potholes were clearly charged by meaning and significance long before Christian times (Hodne 1990:48; Hodne 2000:237). Some rock art sites are known to have undergone the same demonization as these formations, by the Church. For instance, a rock art site in Årum, Fredrikstad (ID:19695), still bear the traditional name "the Satan-site", after a peculiar humanoid figure with upraised chasing arms. Interestingly this site is damaged by a big central exfoliation-area, suggested to be a possible ritual burning or "purification fire" by the Church (see Bengtsson for more on this discussion) (Klavestad 2000:52-53; Bengtsson 2004, 36-50).

As we have seen, the irregularities in the topography has according to historical sources always been important to people encountering them. These sources are pointing backwards into prehistory, with customs, beliefs and uses connected to peculiar landscape-features. Giants Cauldrons, for one, seem to have had a way of kindling imaginations and were incorporated into the worldview, and understanding of the landscape. When people in the Bronze Age encountered the same strange forms, much supports, that they also put meaning to what they sensed. When artistic expression appears close to such features, they are interwoven, and should be regarded as a whole. I will now present some examples where this could be the case.

Fluberget

The rock art site Fluberget, near Stavanger in Southwestern Norway, was discovered in 1879 by S.A. Buch. It holds 173 pecked figures (boats, hands, footsoles, antropomorphs, ring- and frame-figures) and 80 cupmarks, documented numerous times up until recent years. The art is spread in concentrations, often documented and referred to as 12 groups. Fluberget is the second biggest concentration of rock art in this part of the country. The extraordinary geology at this site draws attention to it by any visitor in the past or today. A 15-meter-high vertical rockface has been polished by the glacial ice, and huge (4-5 meter high) concave depressions ("half cauldrons") has been formed by erosion. This magnificent display of natural powers is filled with pecked rock art. - Inside, on the rim, and underneath the Giants Cauldrons, where the water overflows.

Fluberget is located on the farm Revheim, where a pair of bronze lurs were found in a bog in 1894. The exact findspot is forgotten, but the bog lies only 100-200 meters from the rock art. These are two of only four bronze lurs found in Norway and was found with the different pieces of the lurs unassembled, placed together. The find was interpreted as a depot offering, and together with two other separately finds of a bronze sword and axe at Revheim (S.1631 and B.3332) we have indications of high-status Bronze Age activity in the area. Whether the lurs are contemporary with the rock art at Fluberget, we do not know for certain, but blowing the lurs close to the curved rockface at Fluberget, might have sounded amazing.



FIGURE 2. THE LURS FROM REVHEIM, S.1880. PHOTO: TERJE TVEIT, ARKEOLOGISK MUSEUM I STAVANGER.

On some of these “half cauldrons” at Fluberget, the whole rounded bottom is intact, and boats seems to be moving out of it. In one of them a higher edge is sticking up in front, and on this remaining rim, there is a pecked concentric circle, interpreted as a sun-symbol. The site is therefore often referred to as the sun-altar (Fett 1941: 72-77). The topography and geological forms on this site cannot be separated from the pictures without losing the intention of the artist. Nature and culture is interwoven.

Today there are houses very close by, which unfortunately doesn't play by the same delicate rules.



FIGURE 3. A PHOTO OF THE “SUN-ALTAR” AT FLUBERGET, ASSUMED TO HAVE BEEN TAKEN AROUND 1920, BY HAAKON SCHETELIG, BERGEN MUSEUM. UNLIKE TODAY, YOU CAN SEE THE COAST IN THE BACKGROUND.

Begby

Begby is one of the more famous rock art areas in Østfold county, southeastern Norway. The panels here are part of Oldtidsveien, “The Prehistoric Road”, a tourist trail with high level of management. Here, as with Fluberget, some of the concentrations of pecked art is placed in, and close to, extraordinary glacial forms in the rock. Distinct curving slopes and waterruns through the granite. The pecking artist has used these features as part of his/hers composition. As the water runs through these channels and slopes and onto the rock art, it creates an illusion of movement. This is especially the case with the boats on Begby, but also with an image called “the dancer”. With direct sunlight on the wet rock it is glimmering, creating an effect that is similar to that on metal. - Another important factor when choosing medium and place for the art, and observable at many sites.

A few meters above these polished, granite waterways in Begby (Gullskår Nedre I, ID.49243), on a little ridge, is a Giants Cauldron. This one has a more ordinary size. It is approximately 60 cm wide and 50 cm deep. When its been raining and the cauldron overflows, the water runs from it and down the slope onto the glacial forms and the rock images beneath. The water seems to be spreading onto two panels (on these panels there are especially boats, and one birdlike antropomorph, which all undergoes the illusion of movement). As the low ridge runs a kilometre, with polished rock of the same quality all the way, it seems likely that the artist stopped here because of attention to these captivating features. The Giants Cauldron is charged, and it and the rock art radiates meaning to the other. The Cauldron seems to be initial in the story or scene, because the water runs from it first, if seen as a sequence.



FIGURE 4. SOME CAPTIVATING NATURAL GLACIAL FEATURES IN BEGBY, RIGHT ABOVE THE ART. PHOTO: THE AUTHOR.

Rå

The same positioning of rock art images is the case in Rå, Fredrikstad, Østfold (ID.75161). Rå was initially discovered in the 1870s, but was fully uncovered in 2017. Here, just like Begby, a Giants Cauldron was discovered above the rock art in a sloping panel. This site had earlier been badly damaged because of roadworks only paying attention to the images, and not to their topographical context. Exfoliation and

cracks in the bedrock has possibly changed the direction of the running water, making it hard to witness the original waterflow. However, the densely pecked panel nearby suggest more, now gone, images in the damaged parts. The proximity to the Cauldron, thus suggests a connection. And if recognized as a sequence, the water running over the art is “coming from” the Cauldron, as with Begby.

Revjehaugen Hissingby

In late 2016, Tormod Fjeld found 12 cupmarks at Revjehaugen Hissingby in Råde, Østfold (ID.226303). These cupmarks lies only one and a half meter from a Giants Cauldron. They are not positioned in a way that clearly states a connection, but the artist pecking them surely saw the big depression that close. Whether the Giants Cauldrons inspired the making of cupmarks, with a clear resemblance in form, we can only speculate. It should be mentioned that the area next to the Cauldron is overgrown by turf, and might hold more images (The Norwegian heritage law prohibits the removal, because of the chance of layers with archaeology).

Årum Søndre

Årum Søndre, Fredrikstad, Østfold (ID.13105) is another rock art site with a Giants Cauldron. The connection on Årum is vaguer, but still possibly intended. Here the order of the waterrun sequence is the other way around. When it is raining, water runs down an almost 90° vertical rockface with two pecked boat images, and into a small Giants Cauldron underneath them. You could say that the water running over the boat images is collected in the natural bowl shape. There is a little ledge between the boats and the cauldron underneath, and with vegetation on the ledge, the waterrun is a bit distorted. This Cauldron is very small, only approximately 35 cm wide and 25 cm deep. The rim of the cauldron stands out of the vertical rockface. The two boats are a bit uncommon with steep and big spiral stems, and with furrows that are shallow and quite weathered, pecked on a rockface stretching north – south. At midday, when the sun rounds the hill from the south, they become visible for a very short span of time. This adds to the interesting spectacle at this site.



FIGURE 5. BOATS ON THE RIVER, VALLE SØNDRE (ID.225893). PHOTO: THE AUTHOR.

With these examples I have tried to show that the glacial forms called Giants Cauldrons might have played a part in Bronze Age rock art compositions in Norway. Features in the rock, that nobody knew how got there, seems to have been laden with meaning. A meaning that might be entangled with the images pecked close by, - an addition to the “story”, and a kind of backdrop or scenery.

Finally, I would like to present an example showing how the natural canvas without any doubt has been used by the Bronze Age artist. A newly discovered site in Fredrikstad, Østfold, called Valle Søndre (ID.225893). Here, boats travel down a waterrun, and the fact that the keels on both sides is facing the running water, shows an intentional idea. This microtopographical scene, depicts boats travelling on a river. The beauty of it is that they have been, for 3000 years.

The idea behind this article is to establish an awareness of how natural forms in the landscape is evident in Bronze Age rock art in Norway. They add to the significance, complexity and beauty of the art, and needs to be discussed to fully grasp “the whole picture”, literally. As the examples presented are from a very limited area, it will be interesting to look for more cases of proximity between rock art and Giants Cauldrons in other regions.

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Chapter 19

Snowshoes and skis in North European rock art.

Knut Helskog

Snowshoes and skis are implements for moving on snow. Snowshoes can be made by a solid plank, like skis, or by a round or oval pointed frame with a central footrest. The framed snowshoes are made solely for walking while some of those made by a solid plank are parallel sided and long enough for sliding forward, as if having a double function. Skis on the other hand, are made more for sliding forward although walking is possible. The length varies normally according to the length and size of the user. Both were and are important to maintain contact between people, as well as when hunting and trapping, although today they are more associated with recreation and sports than a necessary means for survival. In North America, there were only snowshoes until skis were introduced by Scandinavian immigrants in the 1800's (AD) while both categories are known in the Eurasian area: from the North Atlantic, in the West, to the North Pacific in the East. Both are described in a few early written sources, as well as in more recent research. The main focus on skiing might simply reflect the attention stirred by the large number of remains of prehistoric skis and existing use (e.g. Berg 1993; G. Berg 1933; 1941; Burov 1989; Huntford 2008; Jordan 2015; Levin & Potapov 1964; Naskali 1999; Ovsyannikov 1989; Salo 1967; Weinstock 2003; Wiklund 1926). The absence of finds of prehistoric snowshoes led to a focus on ethnographic and modern use (e.g. Davidson 1937, Huntford 2008: 4-5; Hatt 1916: 249; Klepp 1976: 279, Wiklund 1928). Therefore, this paper focus on prehistoric snowshoes, hybrid ski-snowshoes and associated equipment depicted in the rock art of northernmost Europe.

Historic sources

In ancient literature, skis are mentioned in the approximately 2000 years old classic Chinese text "Shan Hai Jing", where it is written that humans of the Dingling nationality in the Altai mountains, in NW China, moved like goats in the valleys and on flat ground. They wore "horns like goats", knee high hide boots on planks of wood with an upward bent front tip. (See Huntford 2008: 16 – 22, Weinstock 2003) As summarized by Wang Bo (2011: 230-234), this is interpreted to mean that skis were used in the Altai Mountains (211-201 BC) in the last centuries BC.

The Finni, mentioned in *Germania* written by the Roman historian Tacitus (56-117 AD), are interpreted to be an early Sami population in the North. This is connected with Procopius of Caesarea (490-562 AD) description of Skriithiphinoi, where skrithi is interpreted as running on ski, a technology and practice believed to be a continuation from the Phinoi (Finni), described by Tacitus (Birkely 1994). Archaeological finds confirm that there were skis at this time.

In the pre-Christian mythology, recorded in 12th century AD, there are stories about running on skis and hunting. The god Ull is described as handsome, warrior-like and the best user of skis and bow and arrows. Skade, who was a Jotun woman married to Æsen Njord, was the best runner on skis in the world of the Norse gods. (Huntford 2008)

Concrete finds of skis and snowshoes

Approximately 300 remains of skis and sledge runners are found in Northernmost Europe. In a bog in the Vycheгда region in Russia west of the Ural mountains, a head of an elk (*Alces alces*) carved on the ventral side on a bent plank dated to 6700-5763 BC is suggested to be the tip of a ski. (Burov 1989). The possible meaning of the head is unclear although the suggestion that it functioned as a sort of a plough in loose snow or as a break against sliding backwards is a bit far-fetched. If a tip of a ski, the head probably served as symbol or decoration on a special purpose ski or sledge runner. In addition, evidence of sledge runners and dogs at Chokov island in Eastern Siberia indicate that dogs and sledges might have been used as early as 9000 to 15000 years ago (Pitulko & Kasparov 2017).

Most of the prehistoric skis are found in Finland, Sweden and Norway. The oldest ski is from Kalvträsk, in Västerbotten, in northern Sweden, dated 3600 – 3110 BC. In Finland, the oldest skis are dated to approximately 3300 – 3000 BC, approximately contemporaneous with the ski from Drevja (3340 - 2940 BC) in northern Norway and Kalvträsk in Sweden (Huntford 2008). As such, concrete finds indicate that moving on skis and pulling sledges might have a history at least to 4th millennium BC in Fennoscandia, and back to the 7th millennium BC in northwestern Russia and as early as 7th to 13th in eastern Siberia (Burov 1989; Pitulko & Kasparov 2017).

The lack of skis in North America show that one can manage with snowshoes, and coastal populations in all arctic areas show that resources can also be exploited without skis or snowshoes. As such, they are not a requirement for living in the arctic, but certainly would be especially advantageous for permanent winter settlement in interior areas.

The current variations of ski probably surpasses that of prehistoric and early historic times although the variation of prehistoric skis point to adaptation to different types of snow, terrain and purposes as seen in historic, ethnographic data and present use. Those used in open terrain with hard packed snow were long and slender while those used in deep and loose snow could be shorter and wider. Some were sufficiently short to allow walking as much as sliding, as a combination of snowshoes and skis. Such a ski, 105 cm long and 18.5 cm wide, with a ventral side covered by skin, C14 dated to 700 BC, was recently found in a glacier in Norway (Finnstad & Pilø 2016: 492 – 493; Løvmo 2017). The use of skis where the ventral side was covered with skin were once used in Scandinavia and are still used by some people in Western Russia, Siberia and NW China, although more as novelty to maintain a historic tradition than the practical value they once had (Jordan 2015; Zhaojian & Jiashan 2016). Prehistoric snowshoes of the frame type have not yet been found, except for the depictions in prehistoric rock art. As such, rock art connects humans, skis and snowshoes in a variety of activities, and provide technical information about construction and supporting equipment as spears, bows and poles.

Rock art: a window into prehistoric use of snowshoes and skis

There can be little doubt that figures of skis, snowshoes and associated equipment illustrate real items, even if they could be sacred or profane symbols in stories, rituals and ceremonies. Furthermore, in some instances it is evident they were positioned on specific rock surfaces or features that were seen as meaningfully connected. Examples of such micro surfaces are the location of ski tracks at Zalavruga and Kanozero (Kolpakov & Shumkin 2012, 168), the boat in the “river” at Nämforsen (Gjerde 2010: 375) and footprints in Alta that show where bears walked between different seasons and dimension of space (Helskog 2012; 2014:74-85). Such micro environments on or in the surface, and the larger environment in which surfaces/panels were located and season when used, could all be integrated with the meaning of the

petroglyphs. For example, in case of the skis and snowshoes, one such context is winter and snow. Given that petroglyphs in Fennoscandia were made on rock surfaces in coastal tidal zones or in shores of rivers and lakes, they could have been made during any time of the year.

Combined snowshoes-skis

In Fennoscandia, southern Siberia and the Altai mountains in Mongolia and China and Russia, rock art depicts the use of ski, combined ski-snowshoes and snowshoes in different situations. Most of these figures are found west of the Ural mountains, especially among petroglyphs at the outlet of the river Vyg in the southwest corner of the White Sea. A few are found at panels in Alta, in northern Norway, and at Kanozero, on the Kola Peninsula.

The oldest depiction in Scandinavia of a person on skis might be at Bøla in central Norway (64.37.24N/ 12.14.16 E) estimated made approximately 4000 BC (Figure 1) (Sognnes 2001). A 147 cm tall person, with a pole in one hand and ski on his/her feet. The apparent footrest is emphasized with a zigzag line. 213 km North, are two figures of persons on skis (Gjessing 1936: 9 – 10). One is the well-known human like figure with horn/antler like protrusions from the head, and slightly bent knees as if sliding downhill on what might be a pair of very long skis. The protrusions on the head indicate some sort of a headdress, or that the figure represents a non-human, human like being as a spirit. One hand holds onto the top of a short stick like object, the other at the middle as if controlling/stabilizing a movement. The lower end of the object bends 90 degrees to the right made Gjessing suggest it represented a tool connected with hunting or trapping such as an axe or something similar. The skis of the second figure is similar to the above, although the possible human-like figure is shorter and not as well defined as in the former figure, with the “person” being connected with a short, bent object, similar to the former figure. (Gjessing 1936: pl VIII & XLIX).



FIGURE 1. THE SKIER AT BØLA IN NORD-TRØNDELAG, CENTRAL NORWAY. DIGITALLY ENHANCED WITH RED COLOR. FROM SOGNNES 2001

The fourth skier is among the youngest figures at the panel Apana Gård in Hjemmeluft , Alta (69°58 N, 34°07 E) , Norway from approximately the last millennium BC. A human figure stands on a short pair of skis (Helskog 2013). Due to damages in the rock surface, it is difficult to distinguish all lines but the line

in the left hand might represent a bow, where the right arm is still bent after having let go of an arrow against the moose (*Alces alces*) to the left. (Note that all figures referred to in Alta can be accessed in the database at: <https://www.altamuseum.no/no/bergkunst/bergkunstarkivet>.)

The next set of evidence comes from the large and complicated rock art sites at Kanozero, on the Kola Peninsula, in NW Russia, presented in great details by Kolpakov and Shumkin (2012). At Kameni 7, there are a set of tracks from ski/snowshoes and ski-poles following the tracks of a bear walking uphill on a rock surface before they do a 90 degree turn down the slope (Figure 2). At this point the ski/snowshoe tracks become three times longer as if sliding. The long marks in the “snow” behind the basket mark on the right side indicates both haste and the direction of skiing. Thereafter, the two short parallel lines, perpendicular to the direction of the slope, indicate that the hunter left the skis/snowshoes to proceed on foot as marked by roundish footprints that end in a man holding a spear against the chest of a large bear. Judging from the tracks, the person walked on combined skis/snowshoes of wood. The double marks from ski poles indicate he had both bow and a spear with baskets, although the bow appears not to be depicted and there is no basket on the spear (Kolpakov & Shumkin 2012: 323, 396). On the other, hand there are multiple figures of poles and spears with baskets, some of which are lodged into the back of reindeer. In addition, there appear to be three figures on skis (Kolpakov & Shumkin 2012: 168-169, 291-292, 296-297). The bear hunt is not only a good example of how the topography of the rock surface was integrated with the story depicted and told, but also reinforces the significance they had among northern peoples.



FIGURE 2. THE BEAR HUNT AT KANOZERO, KOLA PENINSULA, NW RUSSIA (KOLPAKOV & SHUMKIN 2012: 323).

The well-known depictions of skiers at Zalavruga (64° 29 N, 34° 40 E) on the lower reaches of the River Vyg, in Russian Karelia, are undoubtedly the most numerous and detailed prehistoric human figures on skis and combined ski-snowshoes in the world, to date (Figure 3). Published in 1970's by Yuri Savvateyev they have become the classic figures on skiing and frequently referred to (Savateyev 1970). There are altogether 17 skiers at Staraja Zalavruga and 13 at Novoye Zalavruga. They are dated to approximately 4000 – 2500 BC (Janik et al 2007; 2010; Lobanova 2007; Gjerde 2010: 291-300, 375-397) and the best known of these is the composition where three hunters each kill a moose (*Alces alces*) after having stalked them through the Karelian landscape. Two were killed with arrows and one with a spear. Judging from the double pole marks and the kill itself, each hunter carried a bow and a spear fitted with a basket that also allowed them to function as ski-poles. It would have been quite impractical to carry two poles in addition to a spear and a bow. The baskets are clearly depicted in several of the compositions but appear not have

been a part of the discussions of the equipment (Figures 4 - 6). The baskets are particularly visible in the equipment of the first hunter, who has lodged two arrows in the back of the moose, and on the spear with which the second hunter is killing the moose. The missing spear on the third hunter (to the right in figure 3) might be represented by the longest of the three arrow-like figures in the back of the moose, or the spear missed the pray. Another composition shows a man who has shot seven arrows into a large animal, probably a bear, who has climbed into the top of a tree (Figure 5). The eighth arrow is ready on the bow. Like the other hunters, he carries a quiver. The lower end of the bow is wide with a basket. The basket marks on both sides of the track indicate he also carried spear, although it is not depicted as a part of the action.

Each of these hunters stand on a short pair of planks bent upwards on both ends, and judging from the walking tracks, the figures depict snowshoes or ski snowshoe combinations. They were short and wide, and to avoid slipping backwards the ventral side could have been covered with animal skin with the hairs oriented backwards. Skin also reduces a sliding forward movement and, as such, the skis/snowshoes provide a stable solid foothold when hunting. It is also likely that skins from various animals such as seal, reindeer and moose were used, with some differences in glide and braking abilities.



FIGURE 3. THE THREE HUNTERS ON SNOWSHOES, OR POSSIBLY COMBINED SNOWSHOES AND SKIS, AT NEW ZALAVRUGA IN NORTHERN KARELIA, RUSSIA. PHOTO: KNUT HELSKOG



FIGURE 4. DETAIL OF THE LEFT-HAND HUNTER IN FIGURE 3. THE CURVED ENDS AND THE SHORTNESS OF PLANKS INDICATE SNOWSHOES MORE THAN SKIS. NOTE THE BASKET ON THE SPEAR. PHOTO: KNUT HELSKOG



FIGURE 5. A HUNTER ON SNOWSHOES KILLS A BEAR IN THE TOP OF A TREE. THE BASKET AT THE LOWER END OF THE BOW ALLOWS IT TO ALSO FUNCTION AS A SKI-POLE. FROM NEW ZALAVRUGA (SAVVATEYEV 1970: FIG. 35)



FIGURE 6. THE ESCAPING MEN AT OLD ZALAVRUGA. THE PLANKS UNDER THE FEET ARE ONLY CURVED IN THE FRONT, MORE REMINISCENT OF SKIS THAN SNOWSHOES. NOTE THE BASKET ON THE LOWER END OF THE SPEARS, WHICH ALLOWS THEM TO DOUBLE AS A SKI-POLE (SAVVATEYEV 1970: FIG. 14).

The single continuous track from the three hunters (Figure 3) before they split to kill separate animals can be interpreted to represent tracks from sliding downhill due to the sloping rock surface. Alternatively, the regularity and closeness of the basket/pole marks indicate walking as much as sliding, and the tracks from three persons walking in a line on snowshoes are likely to create a continuous line rather than the footstep like track when each focused on a single animal.

Besides significant for moving on snow between settlements or when hunting, ski and combined ski-snowshoes allowed for fast movement in intergroup conflicts, as seen in a composition of people with arrows stuck in their bodies (Figure 6). In one of these, six people hold spears with baskets in their hands, and with arrows stuck in their backs they run for their lives while one appears to be lying dead in the snow. The person at the rear of the group is falling backwards, and the individual body positions of the remaining five indicate that they are in serious trouble; struggling to escape and survive. The individual positions of arching backs, heads thrown back, falling backwards and forwards, tells of an artist who mastered depicting details in body movement, beyond that of simple stick figures. The escape is on skis. Four of these are bent upwards in the front and appear to be longer than those in the previous hunting scenes, although the skis on the two persons in the front are bent upwards both in the front and the back, like combined ski-snowshoes. The differences to those in the previous hunting scenes support the likeliness that there was a variation in skis, depending on the activities/purpose involved, as well as types of snow.

There can be no doubt whatsoever that spears and bows with a basket to serve as ski poles are known from historic times in Scandinavia and Siberia (Tornæi 1672; Levin & Potapov 1964: 701) is a continuation of a practice and technology that began at least 6000 – 5000 years ago (Figure 7).

Bi-pointed oval snowshoes

In addition to possible combined ski-snowshoes, there are also figures of bi-pointed oval frame snowshoes (Figure 8). Most of these are discovered in northern Fennoscandia, especially in Alta, northern Norway. All the snowshoes depicted in Alta are oblong, wide in the front and more pointed in the back (Figure 9). The general shape indicates a frame strengthened with cross bars and a footrest of braided roots, bark or branches. Variation in shape indicate some differences in how they were made and adapted to different types of terrains and snow, as well as bound by local traditions and identities. Five of the

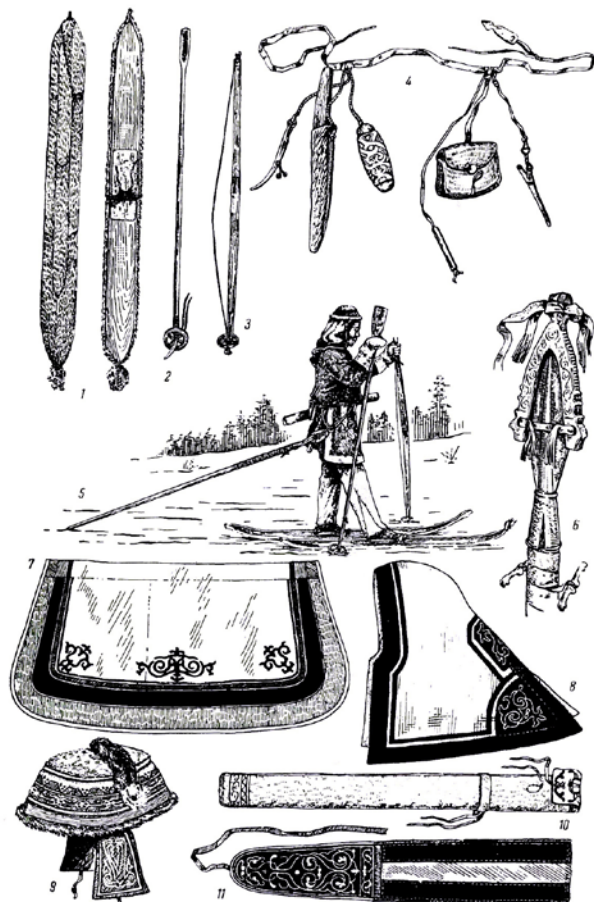


FIGURE 7. HUNTERS CLOTHING AND EQUIPMENT AMONG THE NANAYS IN SIBERIA (LEVIN & POTAPOV 1964: 701)

Hunter's clothing and equipment:
 1—hunting skis; 2—ski pole; 3—bow adapted for use as ski pole; 4—belt with equipment; 5—fully equipped hunter; 6—upper part of spear in carved wooden scabbard; 7—apron; 8—head-covering; 9—hat; 10—fish-skin quiver; 11—sleeve-covering.

depictions combines human figures and snowshoes, while the rest emphasizes snowshoes themselves. The most detailed combination shows a broad legged human figure on a pair of bi-pointed oval snowshoes (Figure 9). The sides were made by a single piece of wood where the ends are tied together and the central area is separated by two cross bars to form space for a footrest of a braided net of roots, bark or branches. Another composition illustrates one human figure on similar snowshoes hunting a moose with an arrow on the bow (Figure 10), a second illustrates a human like figure holding onto a structure of some sort, possibly a shelter/house, with a possible bow and arrow in the hands (Figure 11). A third depicts a person walking forwards with tracks stretching behind from the snowshoes. In the left hand, a possible pole, that is ground/incised rather than made by the normal pecking, thus deviating from the normal expected, which is bound to have had a special significance (Figure 12). The context of these compositions are all different in relation to adjacent figures or, alternatively, the meaning may be associated only with the figure on snowshoes. To decide which figures are associated is indeed difficult, especially as there is no identical pattern of figures.

Lastly there are snowshoes, in rows or singly, where the focus is on the shoes themselves rather than those combined with human figures and associated activities/actions (most of these are on the panels Kåfjord II and Bergheim I, in Alta). At Kåfjord II, there is a line of eight snowshoes (Figure 13). The three to the left are larger than the five to the right, as if representing two different sized individuals walking together. The first and last step of the large individual was with the right foot, while the individual to the right began and ended with the left foot, in a movement that continues forward. It is to be expected that there is variation according to size of the users, e.g. child vs adult, large vs small. Furthermore, differences between the figures indicates some variation in the construction of the footrest.

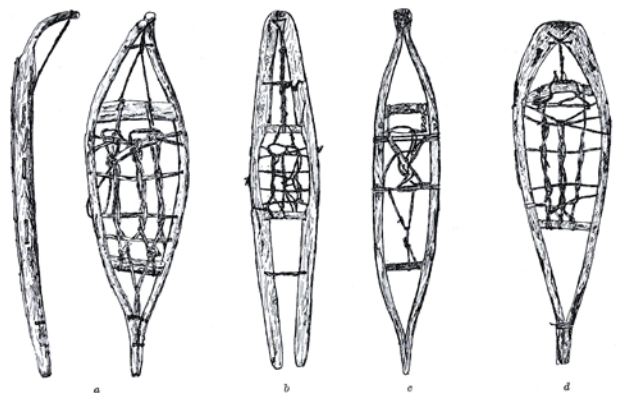


FIG. 32. Athabascan Type Snowshoes with Pointed Toe. a. Eskimo of King's Island (shod with bone strips) (30½ in.), M. A. I. b. Eskimo of Bering Sea (note divided heel), Reading Museum. c. Siberia, probably Koryak (underside; note spikes near front crossbar), A. M. N. H. d. Chukchee, A. M. N. H.

FIGURE 8. SNOWSHOES OF THE POINTED TOE AND HEEL TYPE FROM EASTERN SIBERIA (DAVIDSON: 1937).

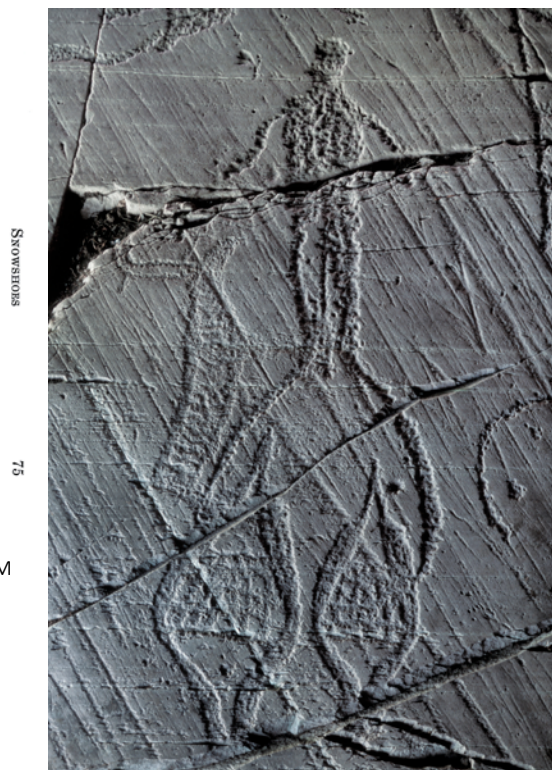


FIGURE 9. HUMAN FIGURE ON SNOWSHOES FROM KÅFJORD II IN ALTA, NORTHERN NORWAY. NOTE THE DETAILS IN THE SHOES. PHOTO: KNUT HELSKOG.



FIGURE 10. THE HUNTER ON SNOWSHOES AT THE PANEL OLE PEDERSEN I B, IN ALTA. PHOTO: KNUT HELSKOG.



FIGURE 11. HUMAN FIGURE ON SNOWSHOES HOLDING ONTO A "CAGE-LIKE" STRUCTURE. DIGITALLY ENHANCED WITH WHITE COLOR. PHOTO: KNUT HELSKOG.

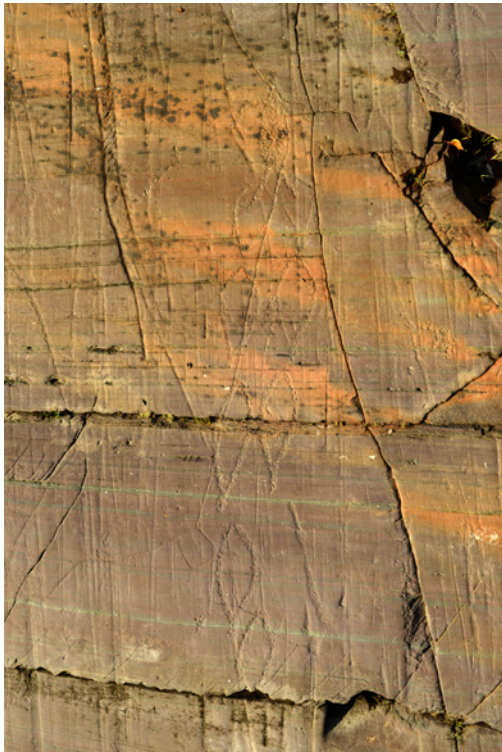


FIGURE 12. PERSON WALKING ON SNOWSHOES AND TRACKS IN THE SNOW. KÅFJORD II IN ALTA, NORTHERN NORWAY. PHOTO: KNUT HELSKOG.



FIGURE 13. SNOWSHOES AT KÅFJORD II, IN ALTA, NORTHERN NORWAY. PHOTO: KNUT HELSKOG.

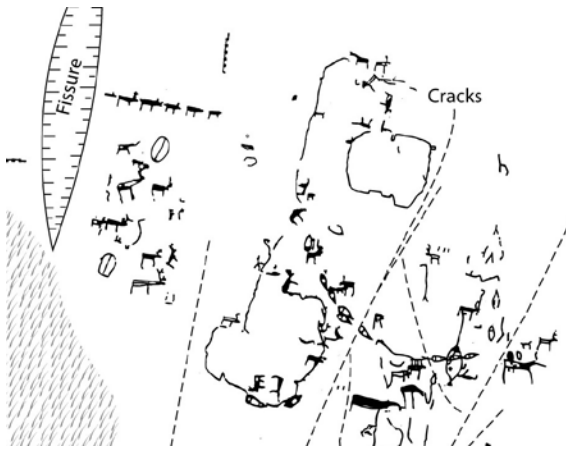


FIGURE 14. SNOWSHOES ON THE UPPER HALF OF THE PANEL BERGHEIM I, ALTA, NORTHERN NORWAY. DRAWING: KNUT HELSKOG. GRAPHIC: ERNST HØGTUN

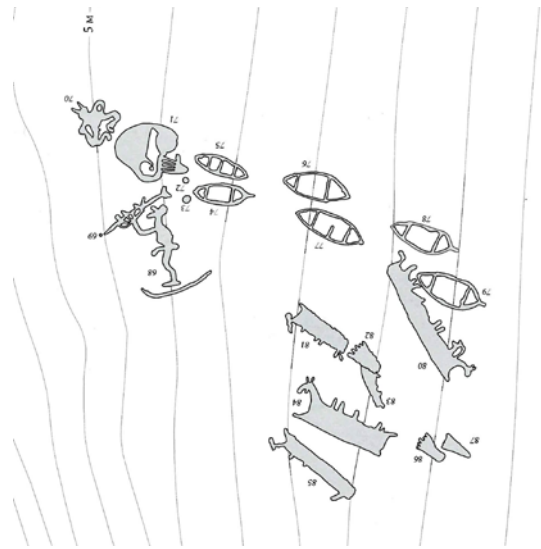


FIGURE 15. SNOWSHOES AT KAMENI 1, KANOZERO, KOLA PENINSULA, NORTHWESTERN RUSSIA. (KOLPAKOV & SHUMKIN 2012: 117)

The composition at Bergheim I (Figure 14) is entirely different from those at Kåfjord II. In a heavy eroded part of the panel there appear to be 15 snowshoes. All are of the bi-pointed oval type: widest in the front and technologically similar to those depicted at Kåfjord, but the adjacent figures are quite different. Chronologically, they fall within the fifth millennium BC. Twelve of the snowshoes form a “semi-circle”, one shoe after the other, of which three are touching toe to heel. Another two connect from toe to heel on a line that might represent part of a reindeer enclosure/hunting fence. Altogether, there are four single line enclosures at the upper section of the panel: three on the east side, one on the west side, plus two circular, vulva like figures. Reindeer are the dominant animals, plus two moose (*Alces alces*), and a halibut on a hook. There are no human-like figures in contrast to the lowest section as Bergheim I, where moose (*Alces alces*) and human-like figures dominate.

East of Scandinavia, figures of bi-pointed shaped snowshoes are, so far, only found among the petroglyphs at Kanozero (67°01' N, 34° 07' E) (Figure 15), on the Kola Peninsula in northwestern Russia (Kolpakov & Shumkin 2012), and possibly at Skogerveien, in Drammen, (59°44' N, 10°10'E), southern Norway (Engelstad 1934:plate XLVII). None of these are directly connected with human-like figures.

Skis and Snowshoes in rock art outside Northern Europe

Skis and snowshoes in rock art are not unique to Fennoscandia. A sledge runner at the Chokov Island, north of the Siberian coast, dated to the seventh millennium BC.7000, together with historic use of skis, indicate techniques of moving on snow have a long prehistory in the northern regions. Scattered depictions from southern Siberia, Mongolia and northwestern China confirm such a view (Miklasevich, E. 2014; 2018. Personal communication; Zhaojian & Jiashan 2016). Although neither remains of prehistoric snowshoes nor depictions in rock art have yet been found in Siberia, it is likely that these kinds of snow equipment were also made and used. Moving southwards, into the Altai mountains in northwest China (47° 52 N, 88° 08 E) there is a petroglyph of a human like figure on snowshoes, and a painting with human-like figures on snowshoes, or possibly combined snowshoe-ski or skis - as pointed out by Shan Zhaojian et al (2011 : 328 - 331). The petroglyphs are on display at the local museum in Altay and Buerjin county museum. The painting is found at the Dundebulak (or Dunde Bulake) site. (Zhaojian et al 2011: 328-331;

Bo 2011: 227-248; Tacon et al 2015). All are considered prehistoric, although exact dating is problematic. For example, the suggested dates for the Dundebulak sites ranges from 10000 BP (Wang Bo 2011) (to 4000 -5200 BP (Tacon et al. 2016) and less than 3000 BP (Bednarik 2015: 7). Ten human-like figures in a line look like each have a sack on the back and two or three stand on a short horizontal line which is interpreted as skis. Two appear to hold onto a staff (Figure 16) The legs of two the human figures are bent, as if in a forward movement associated with skiing. However, the length of the horizontal lines/object is too short to represent skis, unless length did not matter when depicted. Alternatively, the lines might represent snowshoes or combined snowshoes/skis like the hunters at Zalavruga in NW Russia. Furthermore, on eight of the figures, the line might equally represent feet/footwear, perhaps snowshoes, due to no or minimal extension behind the heel. Even so, skiing and the use of snowshoes has a long prehistory in the Altai mountain region and Siberia: regions where homemade skis with fur lining the sliding surface are still are made and used.



FIGURE 16. A SECTION OF THE PAINTING AT DUNDEBULAK IN NW CHINA, WITH HUMAN-LIKE FIGURES, TWO OF WHICH ARE WALKING ON WHAT APPEAR TO BE SHORT PLANK-LIKE SNOWSHOES. ONE PERSON CARRIES A STAFF. PHOTO: KNUT HELSKOG.

Diffusion or multiple inventions

Seen as a whole, finds of prehistoric skis and representations of skis and snowshoes in rock art are unlikely to represent the distribution of skis and snowshoes though time and space from the north Atlantic to the Pacific. The distribution is too accidental. Judging from the rock art, they co-existed. Altogether, the relatively rare petroglyphs of skis and snowshoes illustrate both prehistoric technological features, as well as use such as hunting and intergroup warfare. Skis in petroglyphs are depicted on human-like figures in hunting and warfare, armed with bow and arrows or spears. They appear never to have been depicted alone, as the case was with snowshoes. Petroglyphs of bi-pointed frame snowshoes illustrate construction details. Both illustrate different contexts of use.

There is no common agreement as to where and when snowshoes were first taken into used. The ethnographer Gudmund Hatt (1916: 249) suggested that moccasins and snowshoes are functionally related, and pointed to the region of the Tungusian tribes, and southwards, as an area of origin for snowshoes. Similarly, Nansen

(1898) on linguistic evidence, suggests the Altai area for the origin of skis while others, like Cooper (1946: 248), Davidson (1937: 4) and Wiklund (1926; 1928) assert that snowshoes must have had several places of origin, as snowshoes are not confined to the circumpolar arctic. For example, the Finnish ethnographer Sirelius (1919: 366) suggested that snowshoes were originally constructed to walk on bogs. G. Berg (1928: 8-9) thought they were constructed for walking on snow, that in the northern parts of Fennoscandia there were mainly skis and that the further south one gets, the more common snowshoes become, until they totally replace skis. In essence, from finds, historic sources or linguistics to claim a single place of origin for snowshoes and skis is reasonably speculative (Huntford 2008; Berg 1953: 167 – 171). From these points of view, the knowledge of making snowshoes and skis probably emerged in several places, including northernmost Europe, which currently has the largest number of finds of skis, or Siberia and the Altay mountain region in central Asia. If the dates 1300 – 7000 BC (BP 1500 – 9000) for Eastern Siberian dogs and dog sledging (Pitulko & Kasparov 2017) are correct, then it is not unlikely that knowledge of skis and snowshoes existed when the continental ice sheet was draped over the Nordic countries, thus, a Fennoscandian origin seems unlikely. However, more evidence is needed to pinpoint a possible area, or areas, of origin. It is likely that when somebody had made the first ski and/or snowshoe, the knowledge spread quickly through intergroup contacts, although this does not mean both were everywhere adapted into universal use, as seen from the lack of skis in the American North and regional differences in the use of snowshoes.

Kunt Helskog, Tromsø University Museum, UiT The Arctic University of Norway.

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Chapter 20

Following the bear through the rocks

Elena Man-Estier

Bears are very paradoxical animals. Today, they have almost disappeared from Western Europe, yet they are familiar to every one of us. They evoke both savagery and childhood. They fascinate us as much as we may fear them. This amazing relationship with men may come from the earliest times. For centuries, he has appeared as a cousin or ancestor of men. Many societies have considered him a guide, a teacher. He is present in numerous tales and legends of the Northern Hemisphere. But little by little, its embarrassing stature led religion to ostracize it by turning it into such ridiculous figure. The bear then became a wild man to be saved by making him look human (most of the time by shearing and dragging the funny beast from village to village to entertain young and old. Even in this status, as a prisoner, he took his revenge by becoming, during the twentieth century, the favorite confidant of children, the Teddy Bear we all cherished as child.

How was this paradoxical relationship born with an animal so close and yet, at the same time, so suspicious? Can we find its roots in a bear-specific relationship within prehistoric societies? The fantasy of a bear cult has long been praised by authors who saw it as a form of evidence, that ancient societies, inevitably, admired this animal that seemed so close to the man in its stature, but yet so mysterious in its behavior.

In my approach, I have followed the trail of the bear in ancient societies. My subject of study was one of the most valuable symbolic evidences available to us: artistic productions. It was then a question of counting, inventorying and studying images, often very diverse, from cultures spread over millennia and hundreds of kilometers, and on very different supports. Whether on everyday objects, or on the most remote rocks of decorated caves, bears have an unique place, on the one hand different from that of other animals, but on the other, exactly corresponding to it. Bears are, both discreet and present, in the heart of spectacular scenes but at the same time hidden. Nearly two hundred representations, attributed to the Aurignacian (approximately 40000 to 28000 years BP), and Magdalenian (approximately 19000 to 12000 years BP), divided equally between cave art (caves and occasionally rock shelters) and portable art on objects (weapons, tools, but also many “non-utilitarian” objects).

Through well-known sites of the Chauvet cave (Ardèche), as well as discreetly engraved bears from the cave of Combarelles (Dordogne), I was able to identify the various ways of depicting the animal, that do not appear to show much variation over time; depicted in a naturalistic way with rounded lines, in oversize, with certain anatomical details, such as ears, exaggerated. Bears drawn or engraved by Paleolithic artists appear rather like peaceful animals, discreet outlines seen from far away in herbaceous plains, and not as predators with sharp teeth and pointed claws. At first, this was surprise. In historical iconography, it's this dimension that shows through. Bears are a dangerous nuisance, a danger for man. It's attributes are presented in the same way as weapons and his bipedal stature is highlighted as unbearable competition. Conversely, in prehistory, he is only exceptionally represented as a hunter or a fighter. Only two scenes, on small objects, present the bear to us as an enemy of man.

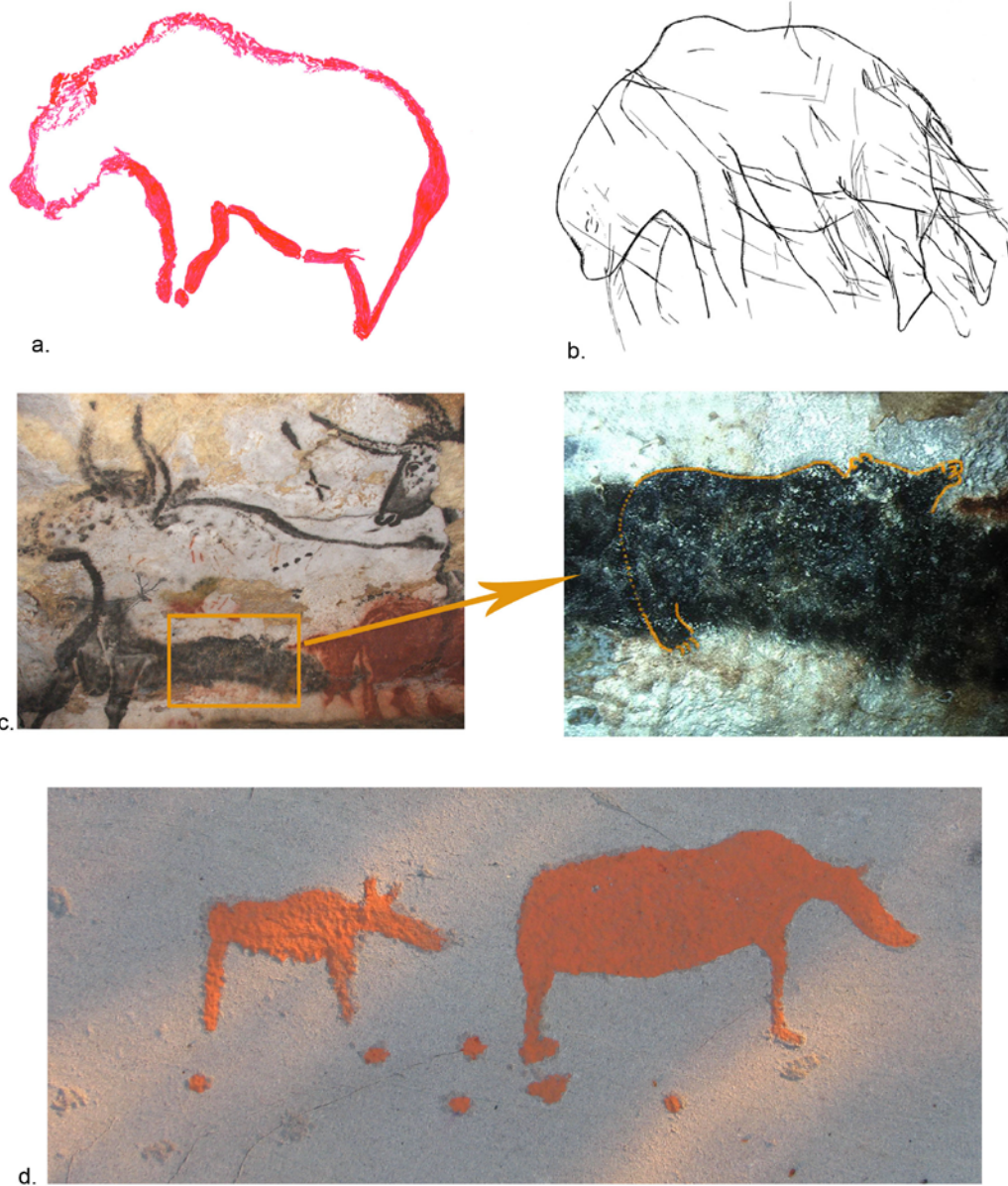


FIGURE 1. DIVERSITY OF PREHISTORIC BEARS EVOKED IN TEXT : A. ISOLATED RED BEAR IN CHAUVET CAVE, B. LAYING BEAR (?) AT THE END OF LES COMBARELLES CAVE, C. HIDDEN BEAR IN LASCAUX CAVE; D. BEARS AND FOOTPRINTS FROM ALTA. PHOTO AND DRAWINGS: E. MAN-ESTIER.

Intrigued by this major difference in treatment, and therefore, perception of the animal, I asked myself about its representation in other cultures, from the beginning of the Holocene; North America, Russia and Scandinavia. How did these people represent the Bear? I realized quickly that, as in the Paleolithic, bears are a rare animal, hidden, discreet. He is present on many panels, but rarely as the main subject. You have to look for them, spend time, and gain intimacy with the rock to see it. There appear to be a small number of categories. One grouping appears to be tracks of footprints leading to a possible cave. My quest to investigate this sent me back to my explorations of the caves in southwest Europe. Searching chambers for hours, crawling in muddy clay, and making our way into this relatively hostile universe, are acts we impose on ourselves, that in turn follow the journeys of the Palaeolithic artists. No doubt, the true aesthetic

grandeur also lies in this magic of places. Through this journey, we enter into a kind of imagined contact with the artists of the past, who have given us their talents by offering them to the cave, and with it, to eternity. The same goes for the rock art in the open air. Only the earliest Paleolithic art can match the level of execution seen. Engravings on granite or sandstone surfaces have weathered and have blended in with the colors of the time. They have become perfectly camouflaged, to the extent that one might wonder if it wasn't what their creators intended. They become almost invisible to non-expert eyes. As in the caves, we need a guide to see them rise from the rock.

So, could the bear be the right vehicle to guide us again? Does not his discreet, but also reassuring presence, lead us progressively to grasp the scope of this art, which is being revealed little by little, by our perseverance? The little black bear in the cave of Lascaux (Dordogne) is almost a caricature. It is found in the heart of the main panel, in the entrance hall known as the "Hall of Bulls". At the heart, is one of the great aurochs. It should be visible to all, but the painter has hidden the image so well that it is found only by seeking ardently!

By persisting in our study of these representations from the past, in the same spirit as that of our ancestors, by continuing to discover them, register them, to understand the modes of execution and the stylistic variations, we can continue to protect these unique fragile works. We continue day by day this work from the past, begun millennia ago, with respect for a heritage that we are only temporary actors in. Let us follow the trail of the bear. Let us be discreet and accompany it, in order to guide our contemporaries through these most beautiful images of the past, to defend them at all costs, and to transmit them to our children.

Chapter 21

Back to life: British rock art in the Iron Age

Tertia Barnett

Introduction

Rock art in Britain is typically found on rock surfaces in the open landscape in northern parts of the country. The carvings are thought to have been created and used in the Neolithic (c.4000-2200 BC) and Early Bronze Age (c.2200-1800 BC), but to have fallen out of use after the early 2nd millennium BC. Although carved stones are subsequently reused in a range of later structures, these relationships are considered coincidental and lacking in meaning. This article discusses the nature of reuse in the Iron Age (c.800 BC-100AD in England and Wales or 400AD in Scotland) and proposes that rock art may have been deliberately incorporated into certain Iron Age monuments in ways that were significant and meaningful.

A short biography of British rock art

Britain has a wealth of prehistoric rock art, amounting to over 6000 carved rocks and thousands of individual motifs, concentrated mainly in Northern England and Scotland (Figure 1). The rock art forms part of a wider Atlantic carving tradition known particularly in Ireland, Western Portugal, and areas of north-west France and Spain. Similar motifs also form part of the prehistoric carving traditions of southern Scandinavia and Alpine Europe.

The carvings are one of the most intriguing aspects of British prehistory. Commonly referred to as cup-and-ring markings, they are comprised almost entirely of abstract motifs. Despite the seemingly restricted range of basic motif types – cups, cups enclosed by one or more concentric rings, and grooves – subtle differences in their form, and their combinations and arrangements on the rock surface, offer immense opportunities for variety. Studies based around the appearance of the rock art tend to distinguish between ‘simple’ carvings (generally cup-marks or cups encircled by a single ring), and ‘elaborate’ carvings that include a greater diversity and complexity of motif types (Figure 2) (e.g. Bradley 1991; 1997; Evans & Dowson 2004).

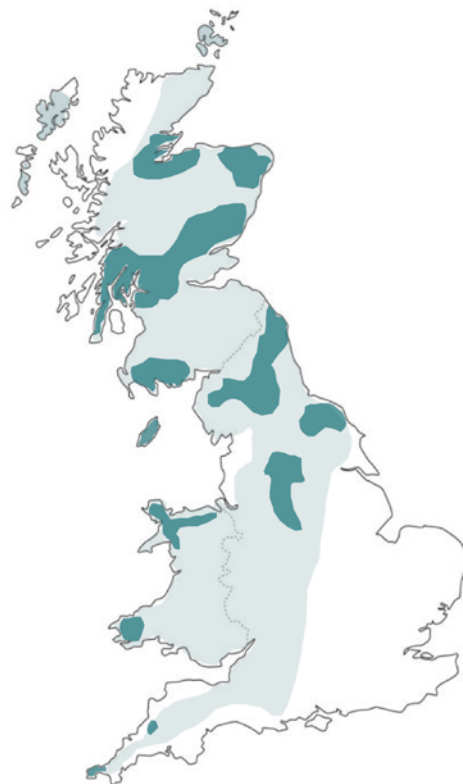


FIGURE 1. DISTRIBUTION MAP OF ROCK ART IN ENGLAND, SCOTLAND, WALES, AND ISLE OF MAN. DARK SHADING REPRESENTS AREAS WITH HIGH CONCENTRATIONS, LIGHT SHADING REPRESENTS AREAS WITH LOW CONCENTRATIONS OF CARVINGS.



FIGURE 2. ELABORATE CUP AND RING CARVINGS AT CAIRNBAAN, KILMARTIN, ARGYLL, SCOTLAND.

In the absence of methods for directly dating the carvings, our chronological understanding is derived indirectly from their archaeological contexts and associations. While the majority of the carvings are found on natural rock surfaces in the open landscape, a small proportion has been incorporated into structures and monuments of known date. The deposition of cup and ring marked stones within Early Bronze Age funerary cairns was originally seen as evidence that all the carvings were created during this period. This temporal framework has been re-evaluated in recent years in light of growing awareness of the complex biographies of the carved panels, and closer scrutiny of their relationships with prehistoric monuments (Beckensall 1999; 2002; Beckensall & Frodsham 1998; Bradley 1992; Burgess 1990; Hewitt 1991; Morris 1989; Piggott 1972; Simpson and Thawley 1972). Current thinking proposes that the motifs were typically created on natural rock surfaces in the open landscape during the Neolithic period, and occasionally carved directly onto stones within Late Neolithic and Early Bronze Age ritual structures. A small number of carved panels were extracted from their landscape contexts and reused within Late Neolithic ritual monuments and Early Bronze Age burials cairns. Excavation of open-air rock art in Northern England and Scotland have strengthened the argument for an earlier phase of carving in the landscape, prior to ritual deposition of selected panels in the Late Neolithic and Early Bronze Age (Waddington et al 2005; Waddington 2007; Jones 2005, 2007; Jones et al 2011).

Although there is some evidence that cup and ring style carvings continued to be produced in the Early Bronze Age specifically for use in funerary contexts, inclusion of rock art in Early Bronze Age burial monuments is thought to signify the metaphorical ‘death’ of Neolithic symbolism (Beckensall 1998; Beckensall & Frodsham 1998; Bradley 1992; 1997; Burgess 1990). The carvings were literally laid to rest as new ways of understanding the world replaced older traditions (Bradley 1992). Reuse of cup and ring markings beyond the Early Bronze Age is generally considered to be meaningless, and simply result from exploitation of locally available building stone, some of which happened to be carved.

Reuse of cup and ring carvings in Iron Age Britain

The association between cup and ring carvings and certain Iron Age structures, notably hillforts and souterrains, was first commented on in the 19th century (e.g. Simpson 1868). The body of evidence has since grown, and there is now little doubt that Neolithic carvings were frequently reused in the Iron Age (e.g. Hingley 1992; Wainwright 1963; Harding 2012). This raises questions about the nature of reuse. Could the carvings have been used deliberately and, if so, what significance did they hold for Iron Age communities? In the following account, I outline some of the evidence for Iron Age reuse, drawing on examples from hillforts in north-east England and souterrains in south-east Scotland, then discuss how we might determine and interpret intentionality (Figure 3).

Reuse in forts

Hillforts and promontory forts (areas on hilltops or promontories enclosed by concentric earth-and-stone banks and ditches, and often with wooden palisades) are characteristic of the Iron Age landscape in Europe. I use the term forts here to refer to both hillforts and promontory forts. Generally defined as fortified refuges or defended settlements serving local tribal communities, forts are also thought to have functioned as centres for storage, redistribution, trade, and ceremony (e.g. Cunliffe 2005; Harding 2012). Evidence for a ceremonial purpose includes the presence of structures interpreted as shrines or ritual enclosures within forts, and ritualised human and animal burials in their encircling ditches and interior pits (e.g. Hingley 1992; Harding 2012). As Harding (2012, p.127) notes ‘a ritual dimension was endemic in all hillforts’ and some of the smaller forts may have had a predominately ceremonial role.

The proportion of all 3,600 Iron Age forts in Britain known to include carved stones has not been quantified, but is likely to total no more than 1%. A different pattern emerges at a regional scale of analysis, and I focus here specifically on the relationship between rock art and Iron Age forts in the county of Northumberland, Northern England (Figure 3). There are 217 hillforts and promontory forts documented in Northumberland, of which around 12% are spatially associated with cup and ring carvings (Lock and Ralston 2017). This is a significant proportion, considering that many of the forts are located in areas with negligible rock art, such as the Cheviot Hills. In a number of cases, the rock art has been uncovered during excavation, and there may be many more unexcavated forts containing prehistoric carvings.

Cup and ring carvings associated with Iron Age forts are typically found in two types of context: within or beneath the ramparts, or within a few meters of an entrance or exit. Different types of carvings are typically used in each of these contexts. Carvings occurring within or beneath the ramparts tend to feature simple motifs (cup-marks or, more rarely, cups with a single ring), whereas those located at entrances are elaborate, and often include unusual motifs. For example, at Dod Law West Camp in north Northumberland, there is an area of exposed bedrock with cup and ring carvings a few meters outside the eastern entrance to the hillfort. The panel is covered in complex engravings, including several sub-rectangular motifs which are unique to this panel (Figure 4a and b) (Beckensall 1999). We find a similar



FIGURE 3. MAP SHOWING THE LOCATION OF THE AREAS DISCUSSED IN THIS ARTICLE.



FIGURE 4A. RECTILINEAR 'CUP AND RING' MOTIFS ON A PANEL SITUATED 5M FROM THE ENTRANCE TO THE HILLFORT AT DOD LAW, NORTHUMBERLAND. THE OUTER RAMPARTS OF THE HILLFORT ARE VISIBLE IN THE RIGHT OF THE PHOTO.

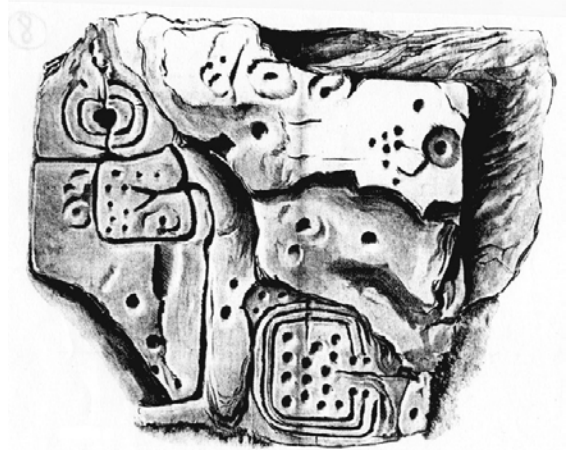


FIGURE 4B. 19TH CENTURY DRAWING OF CARVINGS AT DOD LAW (AFTER BRUCE 1869).



FIGURE 5. LARGE CARVED ROCK POSITIONED 6M FROM THE ENTRANCE TO A SMALL D-SHAPED ENCLOSURE AND HILLFORT AT OLD BEWICK. THE LOW EARTHWORKS OF THE ENCLOSURE ARE IN THE FOREGROUND. A SECOND LARGE CARVED ROCK IS VISIBLE IN THE LEFT OF THE PHOTOGRAPH, APPROXIMATELY 15M FROM THE ENTRANCE.



FIGURE 6A. PROMINENT ROCK SITUATED ABOUT 15M FROM THE ENTRANCE TO THE HILLFORT ENCLOSURE AT OLD BEWICK.



FIGURE 6B. ELABORATE CUP AND RING CARVINGS AND NATURAL WEATHERING CHANNELS ON THE UPPER SURFACE OF THE OLD BEWICK ROCK.

spatial relationship a few miles away at Old Bewick Camp. Here, a large, conspicuous rock featuring multiple, well-preserved cup and ring motifs is positioned a few metres outside the outer enclosure bank of the hillfort, directly in line with its eastern entrance (Figure 5). Interestingly, one of the motifs appears to be a natural depression which has been encircled by a carved ring. People entering or leaving the fort would have unavoidably passed the rock, and would have been able to see and touch the carvings. There is a second prominent rock in this location, about 15m from the hillfort's outer entrance (Figure 6a). The upper surface of this rock is entirely covered with elaborate carvings and natural weathering channels and, unusually, a row of cupmarks runs horizontally along two of its vertical faces (Figure 6b). The rock, which rises to a height of almost 2m and measures roughly 4x5m, can be seen from a considerable distance and would have been highly visible to people approaching and leaving the hillfort. Further north in Northumberland is Roughing Linn, the largest and, arguably, most elaborate carved rock surviving in England (Figure 7a). It is positioned adjacent to an impressive promontory fort of probable Iron Age date, enclosed by five concentric stone-and-earth ramparts. Significantly, the rock is situated a few metres from the fort's south-eastern entrance. The rock's surface is sculpted by numerous deep weathering channels and elaborate carvings, including several atypical motifs (Figure 7b). The monumental scale of the panel,



FIGURE 7A. LARGE CARVED ROCK AT ROUGHTING LINN POSITIONED WITHIN 10M OF THE SOUTH-EAST ENTRANCE TO A PROMONTORY FORT.



FIGURE 7B. MULTIPLE, ELABORATE CARVINGS COVER THE SURFACE OF THE ROUGHTING LINN PANEL.



FIGURE 8A. CARVED ROCK A FEW METRES INSIDE THE ENTRANCE TO A SMALL HILLFORT AT CHATTON CAMP. THE INNER RAMPARTS OF THE HILLFORT ARE VISIBLE BEHIND THE ROCK.



FIGURE 8B. SCREEN SHOT OF A 3D MODEL OF THE CARVED ROCK AT CHATTON CAMP SHOWING A SYMMETRICAL SERPENTINE GROOVE, AND CUPS WITH MULTIPLE RINGS. THE MODEL WAS CREATED IN AGISOFT PHOTOSCAN STANDARD EDITION AND RENDERED IN MESHLAB.

which rises 3.5m above present ground levels and covers around 300m², makes it an imposing landmark. It is likely that people using the fort were not only aware of the rock and its carvings, but viewed them as an important part of their connection with the fort.

Carved rocks are also occasionally situated within the interior of a fort. An example of this arrangement can be seen at the small hillfort of Chatton Camp in North Northumberland. The earthworks enclose a prominent carved rock, located a few metres inside the fort's single entrance (Figure 8a). The rock is carved with elaborate motifs, including a symmetrical serpentine groove which gives the rock a vaguely anthropomorphic appearance (Figure 8b). Symmetrical serpentine grooves are rare in British open air rock art, and are more commonly found within Late Neolithic Passage Graves. One of the few similar grooves not associated with a Passage Grave is located within an Iron Age context.

The relationship between cup and ring carvings and Iron Age forts appears to be carefully structured. The carvings are either hidden within the fort's enclosing ramparts, or located at its threshold. As the carved rocks located at entrances are invariably fixed or immovable, it could be argued that the forts were deliberately orientated with reference to the panels so as to ensure that they were encountered by people passing in and out.

Reuse in souterrains

Souterrains (sometimes termed 'earthhouses' or 'Pict's houses') are underground, or partly underground, corridor-like structures, built within Iron Age settlements in parts of Europe. They are relatively frequent in Scotland and Ireland, but unknown in England except in the far south west. Souterrains were constructed throughout the Iron Age, although their dates and styles are regionally varied (e.g. Wainwright 1963; Miket 2002). The Scottish souterrains are characterised by a single curving, banana-shaped corridor (Figure 9a). Some are more complex, with lateral corridors or chambers interconnecting with the central corridor. The corridors were dug into the ground, then lined and roofed with stone slabs or wood, before being reburied (Figure 9b). They were generally accessed from the adjacent settlement via a short flight of steps and a narrow entrance situated close to one end of the corridor.

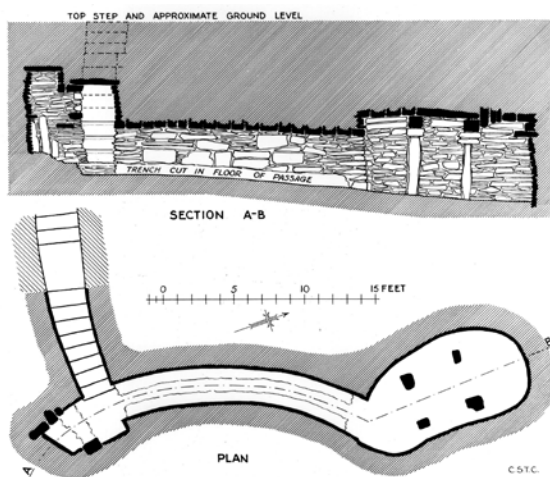


FIGURE 9A. PLAN AND SECTION DRAWING OF GRAIN-BANK SOUTERRAIN, ORKNEY. SC00336487©HES.

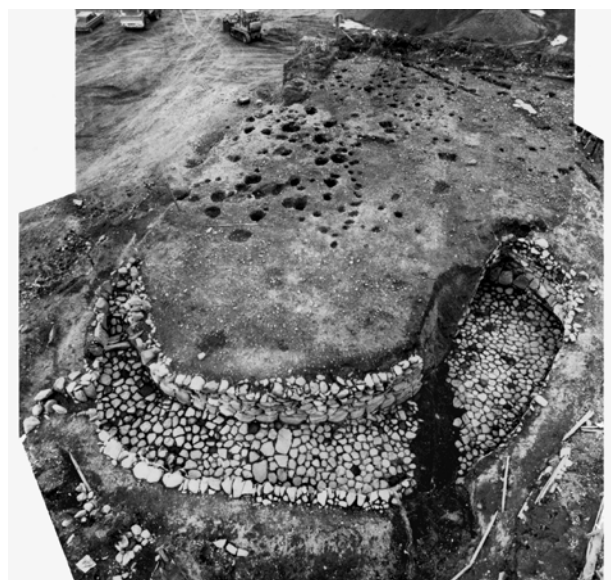


FIGURE 9B. PHOTO MONTAGE OF THE STONE-LINED CORRIDOR OF NEWMILL SOUTERRAIN, ANGUS. SC00370240 ©HES.

The purpose of souterrains is uncertain, and they may have served several different functions. The traditional explanation is that they were used as food stores, or as hiding places for the local community during troubled times (e.g. Wainwright 1963). The fact that they tend to be damp, narrow, and usually have a single entrance makes them ill-designed for these functions, however. An alternative view is that they had a primarily ceremonial role, possibly connected with chthonic beliefs and rituals (e.g. Page 2015). Their dark, subterranean nature is redolent of caves or tombs, and some are literally built into the remains of Late Neolithic chambered cairns. Material remains recovered from souterrains include human inhumations, cremated bone, animal bones, stone figurines, and what appear to have been formally deposited fragments of pottery, rotary querns, iron slag, and metal and bone objects, which are more indicative of ritual practices than domestic activities (e.g. Page 2015).

Of the 880 souterrains documented in Scotland, around 1% contain prehistoric carved rocks. While this statistic seems low, it is equivalent to the estimated proportion of Early Bronze Age burial cairns incorporating rock art (Burgess 1990). There are 68 confirmed souterrains concentration in south-east Scotland, in the old County of Angus (Figure 3). Nine (13% of the total in this area) of these ‘Angus type souterrains’ are known to include cup and ring marked rocks. Given that many of the structures are badly preserved, it is possible that the original proportion with rock art was higher. A number of the souterrains have been excavated and, in some cases, partly reconstructed. In the more intact souterrains, the carved rocks have been used as roofing slabs and in the stone walls lining the passages. Some of the motifs are broken or weathered, as if removed from larger carved rock surfaces that had been previously exposed in the open landscape.

Although the evidence is rather restricted, we can discern a consistent pattern in the position of carved stones within the Angus type souterrains. They are located at specific points – immediately inside the entrance, in the central section of the corridor where it curves away from the entrance, at junctions between corridors, and at the ends of terminal end of the corridor. The complexity of the motifs varies in different parts of the souterrain. Elaborate carvings tend to be placed at entrances, central points, and junctions, whereas simple cup-marked stones are used at the ends of corridors. At Tealing, for example, a stone decorated with several cup-marks, cup and ring motifs, and a cup with four rings is built into the wall directly inside the souterrain’s entrance (Figure 10a and b). The Pitcur souterrain complex includes two elaborately carved stones positioned in the lower wall coursing at the point where lateral corridors join the central corridor. In the Barns of Airlie souterrain, the large, central capstone features several linear grooves, and two symmetrical serpentine grooves ending in cup-marks (Figure 11) (RCAHMS 1983, p.29). Symmetrical serpentine grooves are unknown in Scotland’s rock art repertoire, and rare in Britain. As one of few examples recorded in Britain is located within Chatton Camp hillfort, mentioned previously, this motif seems to have had particular relevance for Iron Age communities. Elaborate carved stones have also been used in souterrain entrances, as central roofing stones, and in walls at Ruthven, Letham Grange, Hurly Hawkin, Newmill, and possibly Pitcur (MacRitchie 1900; Simpson 1868; Taylor 1982; Watkins 1980). The Hurly Hawkin souterrain has a simple cup marked stone located at its terminal end, following a pattern repeated elsewhere in Scotland (Taylor 1982). In general, the carved surfaces of the stones are turned inwards towards the souterrain’s interior. There is an interesting exception to this trend at Letham Grange, where one of the wall stones is carved on both sides with elaborate motifs (Figure 12). In this instance, the more elaborate surface faced towards the interior (Simpson 1868; Wainwright 1963).

When people entered the souterrain, they would have been able to see the carvings near the entrance in natural light, but visibility would have decreased on moving along the corridor (Williamson 2013). The corridor’s curve effectively blocks any daylight filtering in through the entrance from reaching the far end of the souterrain. Motifs furthest from the entrance would have been evident only with artificial light and touch. The contrast between light and dark may have been deliberately designed to heighten the visual and tactile impact of the carvings, and their significance within the structure.



FIGURE 10A. VIEW INTO THE TEALING SOUTERRAIN SHOWING THE POSITION OF AN ELABORATE CARVED STONE BUILT INTO THE WALL JUST INSIDE THE NARROW ENTRANCE.



FIGURE 10B. DETAIL OF THE CARVED STONE IN THE TEALING SOUTERRAIN SHOWING THE ELABORATE MOTIFS.



FIGURE 11. CARVED STONE WITH SYMMETRICAL SERPENTINE GROOVES, LINEAR GROOVES, AND CUPMARKS, USED AS A CAPSTONE IN THE BARN OF AIRLIE SOUTERRAIN. SC0145138©HES.



FIGURE 12. TWO ELABORATELY CARVED SURFACES ON OPPOSING SIDES OF A STONE FROM LETHAM GRANGE SOUTERRAIN (AFTER SIMPSON 1868, PLATE XX).

Light and touch may have been used in other Iron Age contexts to affect how carved motifs were viewed and experienced. Excavations within the Iron Age hillfort of Traprain Law in southern Scotland have revealed a round hut constructed over carved bedrock (Armit and McCartney 2004). The carvings are elaborate and comprise a number of unusual motifs, including at least five cup and rings, small rosettes, lozenges, and chevrons. Like the serpentine grooves, some of these symbols are more commonly associated with Passage Grave Art. The excavators note that the most complex carvings are situated close to the hut's hearth (Armit and McCartney 2004). Although faint, the motifs would have been visible and animated in the flickering firelight. The positioning of the hut in relation to the rock art has been interpreted as

fortuitous, but it could equally be argued that this arrangement was intended, so as to ensure that the carvings could be seen by people within the hut. Other unusual carvings are associated with this hillfort (although now removed), and there is evidence that the site has a long and complex biography. It appears to have been used as a ritual centre and burial place in the Neolithic and Bronze Age before the first fortifications were constructed in the Late Bronze Age, and it may have been regarded by the Iron Age occupants as a place with ancient power.

Determining intentionality

Although there are numerous cases where Neolithic carved stones have been included in Iron Age contexts, the practice is generally considered to have been unintentional. As Burgess (1990, 22) puts it, ‘these decorated stones were convenient building material, no more, no less.’ If reuse was indeed purely coincidental, we would expect the carved rocks and other building stone to have been sourced from the immediate vicinity of the Iron Age structures. We would also expect their placement within the Iron Age structures to be entirely random. The first of these points could, in theory, be tested through petrological graphic analysis of the carved stones in comparison to the local geology. Such analysis would be informative, but would not rule out the possibility that carved stones were reused from Late Neolithic or Early Bronze Age monuments situated near the Iron Age structure, and had already been transported for inclusion in these earlier contexts. Another approach is to assess the proximity of areas with carved rocks that could conceivably have been the source of reused material. Spatial analysis of the relationship between the Angus type souterrains and rock art shows that cup and ring carvings in this region tend to be concentrated on higher ground flanking wide, fertile river valleys, whereas the souterrains are generally low-lying within river valleys and on the coastal plain (Figure 13) (Williamson 2013). No rock art in its primary context is closer than around 2km to a souterrain, and in most cases the carvings are situated more than 3-4km away. This seems a considerable distance to transport building material when other sources are readily available close by, and suggests deliberate procurement of carved stones from specific places in the landscape. Attempts to reconstruct the prehistoric landscape are inconclusive however, not least because all locally available rock art may have been removed for inclusion in Iron Age structures. The current distribution is further skewed by intensive land-use and development since the Iron Age. Nevertheless, there appears to be a discrepancy in the locations preferred for cup and ring carvings, and those used for souterrains, which suggests that rock art extraction was targeted and significant.

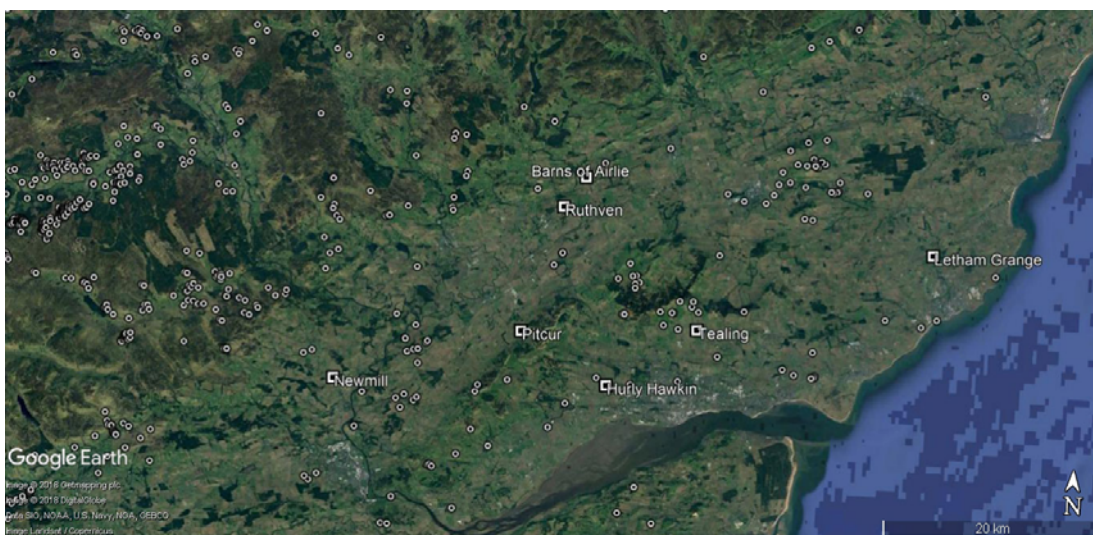


FIGURE 13. GOOGLE EARTH SATELLITE IMAGE OF PART OF ANGUS, SOUTH EAST SCOTLAND, SHOWING THE SPATIAL RELATIONSHIP BETWEEN KNOWN ROCK ART PANELS (SHOWN AS WHITE DOTS) AND THE SOUTERRAINS MENTIONED IN THE TEXT (DENOTED BY WHITE SQUARES).

This brings us to the second point mentioned above. If reuse of cup and ring markings was entirely coincidental, there would be no pattern in how they were placed within Iron Age monuments. In this brief account, I have drawn attention to certain consistencies in the relationship between rock art and Iron Age structures. As we have seen, the carvings are primarily associated with structures that have both domestic and ritual dimensions. Within these structures, the carvings are positioned either in hidden or partially obscured contexts, or in liminal places. Those that are not buried in earthworks always have the carved surface turned towards the living. Different types of carvings are deposited in each context – simple motifs in hidden/obscured places, and elaborate motifs at junctions and thresholds. While the evidence cited here is neither comprehensive nor conclusive, the careful structuring of the carvings within forts and souterrains provides an argument for deliberate reuse.

A similar argument has been applied to determine intentional reuse of Neolithic rock art within Early Bronze Age burial cairns (Beckensall and Frodsham 1998; Bradley 1992). The placement of cup and ring carvings in these monuments appears to be ordered and selective. Elaborate carvings have been used preferentially for cist covers and kerb stones, whilst simple cup-marked stones were deposited in the cairn material. The carved surfaces are typically turned inwards to face the burial, as if directing the symbols towards the dead (Bradley 1992). There are parallels between the configuration of rock art in Early Bronze Age burials and in Iron Age monuments, so if we accept the reasoning for intentionality in the Early Bronze Age, then we should consider that comparable arguments are relevant for the Iron Age.

Valued by the living

As we have seen, the structured deposition of cup and ring carvings in Iron Age forts and souterrains could indicate that the carvings were considered significant, and that their reuse was deliberate and meaningful. Determining the motives for reuse is a more challenging proposition or, as Bradley (1992: 171) puts it, ‘it is one thing to identify a structure in the selection and re-use of carved stones and quite another to provide an interpretation’. There has been limited discussion on this theme for the Iron Age, however. Arguments that the carvings were selected and displayed simply for their aesthetic value neglect the fact that many are buried or partially hidden (e.g. Sherriff 1995; Waddington 2007). Where deliberate reuse is seen as a possibility, at least in souterrains, the carvings are suggested to have had a ritual function, or communicated ritual knowledge (e.g. Armit 1999; Hingley 1992; Williamson 2013).

Reuse rarely implies continuity of specific meanings. Monuments, places, and objects are continually being recycled and reinvented and, while their new meanings can be shaped by their earlier life-histories, they can also be remote from them. In more general discourse on the significance of the past in the past, reuse of older monuments, artefacts, and burials is frequently viewed as a means of legitimising social change (e.g. Bradley 2002; Hingley 1996; Gosden & Lock 1998; Driscoll 1988, 1998; Williams 1998). These accounts propose that emerging political, social or ideological structures were sanctioned through the construction of historical or mythical relationships with the past. Studies of reuse of Southern Scandinavian Bronze Age rock carvings in the Iron Age offer an alternative interpretation in which the past may, at times, have been unwanted, or even feared (Nilsson 2010). From this perspective, rock art sites held negative, as well as positive, connotations for Iron Age people, and their ritualised reuse served to appease potentially malevolent forces (Nilsson 2010).

Accounts of how the past was perceived in the British Iron Age propose that people were imitating Neolithic pottery and deliberately placing items in Neolithic burial structures (Hingley 1996; Ross 1994). It is also suggested that the architecture of Iron Age huts and souterrains was inspired by Neolithic chambered tombs and ritual monuments (Hingley 1996). Reinventing and redefining earlier material culture may indicate an interest in establishing a dialogue with the past, which Hingley sees as a desire to ‘project the identity of a lineage through association with ancestors’ (Hingley 1992, p241).

Iron Age reuse of cup and ring carvings could be viewed within this broader framework of a Neolithic revival. The carvings are easily accessible within and on the margins of land that was intensively settled and farmed in later prehistory. Over time, some carved panels may have become obscured by vegetation or erosion, but many, particularly those with elaborate motifs and on conspicuous rocks, would have been unmistakable. They would have formed part of the everyday landscapes known intimately by local communities. Although by the Iron Age direct historical links to the people that made and used the rock art may have been lost, it is likely that social knowledge of the carvings persisted. Awareness of their antiquity may have been important in how they were perceived by successive generations. If some carvings were situated in places of particular local significance, they may have acquired specific meanings through their connection to these locations.

Unlike monuments, artefacts, and figurative rock art, the distinction between cup and ring carvings and natural features on rock surfaces in the open landscape is not always obvious. The abstract motifs can resemble and are often intermingled with natural hollows, depressions, and weathering channels (Figure 14). The carvings, and natural features associated with them, may have been considered the work of ancient beings, and revered for their ancestral potency (e.g. Bradley 2000; Jones 2007; Tilley 2008). Interestingly, uncarved rocks with distinctive natural features are also used occasionally in Iron Age contexts, and their placement follows a similar pattern to those of carved stones. Lordenshaw hillfort in south Northumberland, for example, has a large, upright stone positioned directly in line with the fort's main entrance, a few meters outside its outer rampart. The stone is uncarved, but its upper surface is sculpted by deep weathering channels comparable to those on carved rocks outside the entrances of other Northumberland forts, including those mentioned above at Roughting Linn and Old Bewick. The deliberate placement of the Lordenshaw stone could imply that it was perceived as significant and regarded in the same way as carved stones. Similarly, stones with natural cup-like depressions have been incorporated into several souterrains, although the evidence is not sufficient to reconstruct their precise location within the monuments (Williamson 2013).



FIGURE 14. ERODED CUP AND RING MOTIFS (IN THE FOREGROUND) AND DEEP WEATHERING CHANNELS (TO THE REAR OF THE PANEL) AT ROUGHTING LINN, NORTHUMBERLAND.

One of the most striking things about Iron Age reuse of cup and ring carvings is that the rock art was invariably brought into direct contact with the living, and incorporated into structures that were central to people's domestic and ceremonial lives (Hingley 1992). Rather than being feared, the carvings appear to have played an important role in the everyday activities associated with settlements, and in the well-

being of their occupants. The Iron Age is thought to be a time of social and political uncertainty, set within a context of environmental instability (e.g. Cunliffe 2005; Harding 2012; van Geel & Berglund 2000). Agricultural intensification and extensive deforestation in many parts of Britain transformed how the landscape was understood and managed (Tipping 1997). In light of these changes, there may have been a need to draw on ancient powers to aid and protect local people. If the carved rocks were considered to have potency, bringing them into the domestic and ceremonial spheres of activity could have served to harness their power for the benefit of living communities. There are possible analogies here with other forms of Iron Age deposition in forts and souterrains. What appears to be the ritualised placement of human, animal, and material remains within the ditches of some Iron Age forts and the corridors of some souterrains could be synonymous with the act of burying carved rocks within and beneath fort ramparts, or obscuring them in the dark interiors of souterrains. Ritual deposition of powerful things in these contexts may have had an apotropaic function which served to protect places that were important to local communities, as well as the communities themselves.

Conclusion

The traditional view that all British rock art was produced in the Early Bronze Age has been revisited in recent years, leading to recognition that the carvings were created and used principally during the Neolithic and, to a lesser extent, the Early Bronze Age. Our rock art narrative currently ends with the deposition of the carvings within Early Bronze Age funerary monuments (Bradley 1992). Despite considerable evidence of later reuse, this practice is considered incidental and lacking in meaning. I have suggested in this article that the carvings have a more complex past, and were intentionally deposited within Iron Age structures.

Inclusion of rock art in Iron Age structures appears to be regionally diverse, and I have focused in this account on two areas of eastern Britain (north-east England and south-east Scotland) where the phenomenon is most pronounced. Studies of Early Bronze Age reuse suggest that cup and ring carvings retained their significance in eastern parts of Britain after the Neolithic, but their value diminished in western areas as new forms of symbolism spread from Ireland and the Atlantic region (Haddingham 1974; Evans & Dowson 2004). While it seems unlikely that the meanings of the motifs persisted for hundreds of years into the Iron Age, knowledge of the carvings may have endured more strongly in the oral traditions and practices of communities in eastern areas. Rather than fading into obscurity, the carvings in these areas continued as fixed points of reference within a changing landscape. Over time, they acquired new meanings, shaped by specific social needs and perceptions. Re-contextualising the carvings within structures important to Iron Age communities directed their potency towards the living.

I would like to end with a brief comment on engagement with the carvings in later periods. Aside from Hingley's (1992: 29) cautious suggestion that rock art could have continued to be produced during the Iron Age, the notion that the tradition of creating cup and ring carvings survived anywhere in Britain beyond the Late Neolithic or Early Bronze Age has been wholly rejected (e.g. Burgess 1990; Sherriff 1995; Wainwright 1963). This dismissal may be misleading. A number of rocks in Iron Age contexts have unusual motifs or features that do not fit easily within the typical criteria for cup and ring carvings. Some of these anomalies are stylistically and technically distinct from the other motifs on the rock surface, and give the impression of different authorship. We should perhaps consider that Iron Age reuse was not restricted to incorporating Neolithic rock art into significant structures, but also involved interaction with, and modification of the carved rock surfaces.

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Chapter 22

World heritage rock art documentation in Tanum – a brief history of methodology and projects until the early 2000s.

Ulf Bertilsson, SHFA

Introduction

In 1994, the Tanum rock art and rock carvings were added to UNESCO's World Heritage list. In the expert opinion of John Coles commissioned by ICOMOS, whose opinion became the basis for the World Heritage Committee's decision, it was stipulated: *"The rock carvings of Bohuslän are one of the treasures from the ancient world of the Nordic countries. Nowhere in the whole of Europe can such amount and variation in the vivid images carved into the rock surfaces be found"* Coles 1994.

On the website of WHC/UNESCO Tanum's World Heritage is described as follows: *"The rock carvings in Tanum, in the north of Bohuslän, are a unique artistic achievement not only for their rich and varied motifs (depictions of humans and animals, weapons, boats and other subjects) but also for their cultural and chronological unity. They reveal the life and beliefs of people in Europe during the Bronze Age and are remarkable for their large numbers and outstanding quality."*

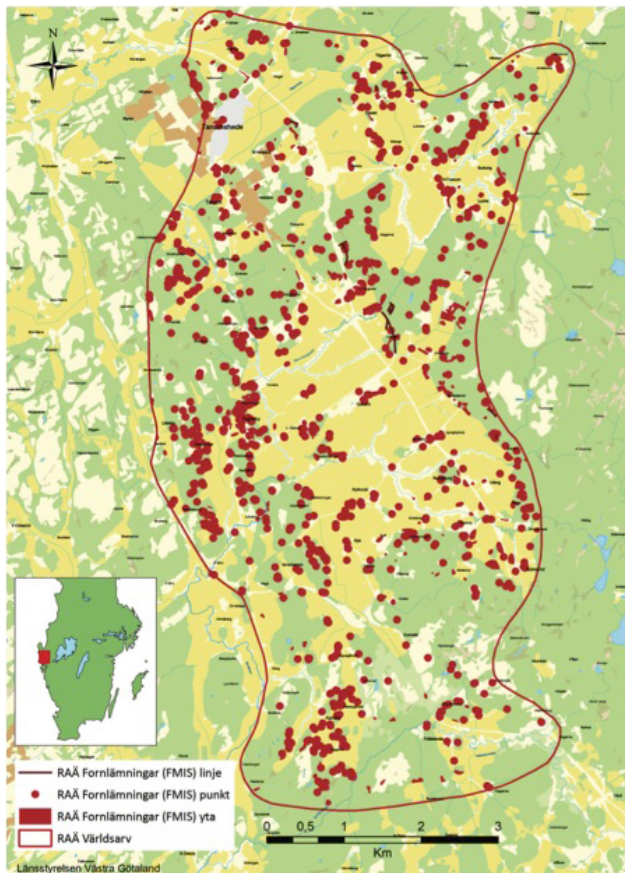


FIGURE. 1 MAP OF TANUM WORLD HERITAGE AREA WITH ANCIENT MONUMENTS – ROCK CARVINGS, PREHISTORIC TOMBS AND SETTLEMENTS MARKED BY DIFFERENT SYMBOLS AND AREA BOUNDARIES IN RED. MAP: COUNTY ADMINISTRATIVE BOARD OF VÄSTRA GÖTALAND.

Thus, in UNESCO's decision there is no mention of "...*the continuing settlement during 8000 years*", a phrase often presented as such and considered crucial for the World Heritage nomination. This phrase is rather a part of ICOMOS' motivation for choosing one of the three criteria of the "Operational Guidelines".

The nomination presupposed that the authenticity of the Tanum World Heritage could be supported by an extensive documentation in terms of depictions and descriptions in different media and formats, drawings, photography, diapositives, maps, registers, and descriptions in text. For the Tanum rock art, the requirements were also fulfilled by the archaeological survey descriptions and markings on maps compiled by the Swedish National Heritage Board, which can be found in the Registry of Ancient and Historical Remains. This Registry is also the basis for claiming the statutory protection. All information compiled in the Registry of Ancient and Historical Remains is now available online in the Swedish National Heritage Board's Fornminnesinformationssystem [FMIS, Eng. National Heritage Information].

In the application to the World Heritage Committee an extensive collection of new illustrations and photographs were included. These were graphic presentations of the large rock art sites Aspeberget and Fossum based on Underslös Museum's frottage depictions orchestrated by Gerhard Milstreu, and also hundreds of new colour photographs as diapositives of a number of the most famous rock art sites, taken by Bohusläns Museum's photographer Bo Niklasson. Additionally, black-and-white aerial photographs taken by the Swedish National Heritage Board's photographer Jan Norrman, and landscape and rock art detail images taken by photographer Bengt A. Lundberg, were added to the application sent to the World Heritage Committee in Paris in 1993.

The application was submitted in a purposefully designed folder including all the necessary documentation and forms. Thanks to its presentation it would later become an unofficial template for other applications submitted, also from other parts of the world. The application can be found online for further study at UNESCO's website; <http://www.whc.unesco.org>; WHC Nomination Documentation, 557. The final application was accomplished by Catarina Bertilsson and Birgitta Hoberg at the Swedish National Heritage Board, and successfully introduced among the organisations concerned, including The World Heritage Committee. Additional proof of this is the fact that large parts of the application text was used unedited by ICOMOS in its expert opinion. This expert opinion is crucial for the World Heritage nomination.

Even though the standard of the application was considered exceptionally high at the time, it can be pointed out that there was no complete documentation of the Tanum rock art and rock carvings. There was an account in the form of a list of concerned rock art sites listed in the Registry of Ancient and Historical Remains, as well as a selection of photographs and other types of depictions. Additionally, an extensive list of set pieces and standard works, and other relevant references were added. That the application was successful, despite, mildly put, lacking complete documentation, can be attributed to the fact that the Tanum rock art already was a well-known and nationally and internationally acclaimed cultural heritage. There are many reasons for the Tanum rock art being so widely known, the first and foremost being a 200 year old tradition of research including well known researchers like Carl Georg Brunius, Oscar Montelius, Lauritz Baltzer and Oscar Almgren (Bertilsson 2015). An example is Baltzer's illustrated work, a French edition, with a preamble written by the [ed. Swedish] writer Viktor Rydberg, presented at the Paris Exposition of 1889. Carl Georg Brunius had already before this made a fruitless attempt to have his documentation published by the French Academy (Almgren 1912; Nordbladh 2015).

Another important fact was that many of the larger rock art sites in Tanum had already, 50 years before the application to UNESCO's World Heritage List, been made available to the general public and the growing number of visiting tourists in the wake of mass motoring (Arbman 1946; Fredsjö; Jansson & Moberg 1969). Also, the practice of painting the rock carvings in red to make them more visible for visitors was contributory. Had the rock carvings been left unpainted they would have been perceived as indistinct and

difficult to detect by the visitors. The practice of painting the rock carving started with the signage for the Swedish Tourist Association in the 1950s (Bertilsson 2015b). The oldest known photograph of painted rock carvings was taken by Claes Claesson at the Litsleby rock art site in Tanum at the time of signage, being put up in 1951 (<http://www.shfa.se/VisaBild.aspx?id=496&Bildtyp=t>). The method of painting the rock carvings began to be used regularly by Åke Fredsjö during his documentation work of the Kville rock art from 1938. This work had already been started and been under progress for two years by Sverker Jansson, later curator at the Swedish National Heritage Board (Fredsjö 1966:13). The method had already long been used to fill in runes. Even in this case the objective was to make the runes more readable and easier to interpret. The paint was originally a lime wash mixed with a natural red pigment Engelsk röd (Eng. English red or Brick red). Also, other colours and colour types have been used on the rock art, e.g. white and blue, a colour that luckily has not been widespread. Åke Ohlmarks had the grand Backa i Brastad rock art painted in red, blue, green and yellow to be able to distinguish different parts of the Old Norse Myth he believed the rock art illustrated (Hasselroth 1994:108).

Anyhow, when the World Heritage Committee made the decision to nominate Tanum rock art and rock carvings to the UNESCO's World Heritage List over mankind's unalienable cultural heritage it was a confirmation of the significance of the extensive work of documentation, research, management and presentation by many of Sweden's most prominent researchers, a process started 202 years ago by Carl Gustaf Gottfried Hilfelings drawing of the Litsleby rock art site.

A short documentation history, people and methods

Carl Gustaf Gottfried Hilfelings drawing of the famous Litsleby rock art in 1792 started the now 200-year work of rock art depiction. On a larger scale and more consistently, Carl Georg Brunius continued this documentation work between the years of 1815 and 1817, followed by Axel Emmanuel Holmberg's work during the 1840s. The increasingly far-reaching task was pursued by Lauritz Baltzer whose rock art documentation resulted in many comprehensive illustrated works published during a 30-year period starting in 1871 to 1908. Oscar Almgren's original assignment was to check and orally describe (this was thus lacking) the rock art that Baltzer had previously worked on. His work resulted in an addition of almost 100 rock art findings, found during his work in Tanum during the 1890s and the first decade of the 20th century (Almgren 1912; Bertilsson 2015a).

A large-scale and widely spread documentation project in Bohuslän was carried out 1935–36 by Herman Wirth, directed by Ahnenerbe. The work took the shape of plaster casts of the rock art that were shipped to Germany. Many of the Tanum rock art sites were included in the project (Pringle 2007; Löw 2009.). Many hundreds of rock carvings in the north of Bohuslän were subject to documentation work in this project by first making a negative in latex as a base for the following positive plaster casts. Although some pieces of the plaster cast collection were scattered after the war, a few of them were still, a few years ago, on exhibition at the Europäische Felsbilder Museum, in



FIGURE. 2. AHNENERBE'S CHAIRMAN HERMAN WIRTH IN FULL FIELD CLOTHING, WHITE OVERALL, HIGH LEATHER BOOTS AND EQUIPPED WITH FILM CAMERA, AT TORSBO IN KVILLE DURING THE 1935 CASTING EXPEDITION IN BOHUSLÄN. SOURCE: SHFA. PICTURE ID: H.WIRTH PHOTO ALBUM1935 FOTO1.

Spital am Pyhrn, close to Linz, in Austria. The present writer visited the museum in 1994 to see if the plaster casts could be used for the studies of rock art erosion due to air pollution, a study then operated in the Luftföroreningsprojekt (Eng. air pollution project) by the Swedish National Heritage Board. A closer analysis made by Geologist Jan Magnusson a few years later proved it not to be possible. When the exhibition was dismantled a few years ago, Sweden was offered to take possession of the plaster casts. Gerhard Milstreu, of Underslös Museum, made sure the plaster casts were transported to Tanum in Sweden, where they are now in storage.

Scattered documentation work was carried out during the 1940s by photographing some of the most significant rock art for Holger Arbmans article about the Bohuslän ancient and historical remains in the Swedish Tourist Association's yearly publication (Arbman 1946). During the years of 1953–54 amateur Gothenburg archaeologist, John Bunyan Johansson, tinsmith by profession, visited all the famous rock art of Tanum and tallied Oscar Almgren's figure amount, made markings of the rock art site positioning on the map "Ekonomiska kartan" (ed. a state official map showing property boundaries, ancient and historical remains, town/village names, etc.) and also made detailed orientation descriptions with drawings (Johansson 1954). He registered 146 new rock art findings in addition to the 222 found and presented by Oscar Almgren in his archaeological surveys (Almgren 1912 and Fredsjö 1966:12).

By the end of the 1960s Gunnar Ekelund, Swedish National Heritage Board, began his work with searching for, describing and marking rock art sites on aerial photographs, scale of 1:5000, specifically taken for this purpose. The reason for doing it by aerial photographs rather than on maps was not to burden the forthcoming archaeological surveys planned for a new edition of maps. It was thought that by documenting the rock art separately and before starting the planned archaeological surveys, the latter would progress more swiftly. However, the separate rock art documentation proved to be extensive, but Ekelund engaged the local Archaeological Surveyors: Torsten Högberg, Åke Jonsson and Göran Andersson. The archaeological surveys of Tanum were done mostly at the end of the 1960s and in the beginning of the 1970s. However, some work continued even after the decease of Ekelund and Jonsson until the middle of the 1980s. From 1982, the present writer Ulf Bertilsson undertook the archaeological surveys previously done by Ekelund. Högberg's documentation work of the rock art surfaces was systematic. He tried his own technique of documenting by making a frottage of the surface. He used paper rolls in order to be able to adjust the paper size according to the size of the rock art surface. Parts of his work were published in simple writings (Högberg 1988 and 1989). Additional parts of Högberg's extensive work have been published by Vitlycke Museum (Högberg 1995; Bengtsson & Olsson 2000). All of Högberg's frottage have been scanned and are now available at SHFA's website, at www.shfa.se.



FIGURE. 3. OSCAR ALMGREN DURING THE EARLY YEARS OF STUDY IN UPPSALA IN THE EARLY 1890S. SOURCE: SHFA. PHOTO: OSCAR ALMGREN (TAKEN WITH SELF-TIMER).

Partially at the same time, Bertil Almgren did documentation work on a number of Tanum rock art sites using his Hasselblad camera, a technique he started using in the 1950s. Some of his black-and-white photographs of rock art in Tanum have been published (Almgren 1987). The photographs published in this book along with some other outstanding colour photographs showing the unusual and the plenteous number of figures on the Kasen Ryk rock art site in Tanum are also available on SHFA's website, <http://www.shfa.se/Bild/VisaBild.aspx?id=1058>.

Underslös Museum, founded by the Danish artist Fred Gudnitz in the beginning of the 1950s, started in the 1970s a still on-going documentation project under Gerhard Milstreu's charge. He used and still uses the frottage method. Gradually, a system was developed dividing the rock art surface into a grid of squares of 100 x 70 centimetres to fit the paper size used. Initially, documentation work was centred on a particular type of figure or motif, and its date. However, by the end of the 1980s, when collaboration with the Swedish National Heritage Board was initiated under the then on-going Luftföroreningsprojekt (Eng. air pollution project), the documentation work was oriented to include the whole of the rock art surface. The result of Underslös Museum's documentation work is largely published by the museum in three reports (Milstreu & Prøhl 1999; 2003; 2009).

In the middle of the 1990s the Swedish National Heritage Board commissioned Sven-Gunnar Broström and Kenneth Ihrestam, BOTARK, to do an archaeological survey of rock art of the north of Bohuslän. The fieldwork touched peripheral parts of the Tanum World Heritage, and interesting new findings were made in the northern parts of the parish at Utby and Hallind. Also, in the parish of Skee, the exquisite rock art site at Döltorp was discovered (Bertilsson in SNA) and an unusually deeply carved ship, one of the longest in Bohuslän, at Björke (Broström & Ihrestam 1993; 1995; 1996).

During the County Administrative Board's project INTERREG – *Hällristningar i Gränsbygd* (Eng. Rock Art In Border Country), 1996–1999, a number of Tanum World Heritage rock art and rock carvings were subject to documentation by frottage and tracings on plastic sheets (Magnusson & Kallhovd 1999; Hygen & Bengtsson 2000). Specifically, the large rock art site at Finntorp, including three separate carved surfaces, but also the large rock art site at the other side of Aspeberget, Tanum 18. The reasoning behind this documentation work was to gather representations of different techniques – frottage, tracing on plastic sheets, and photography, and together do some documentation work at some larger rock art sites. The work went on well and was further developed during the years 1999–2000 in the European Commission funded project, run by the Swedish National Heritage Board, *Rock Care – Tanums Kulturarvslaboratorium* (Eng. Tanum Cultural Heritage Laboratory). During this project, the first digital scanning of documentation work, using a roll scanner was made (Bertilsson & Fredell 2001).



FIGURE 4. PHOTO OF ROCK CARVING AT KASEN RYK IN TANUM AT NIGHT WITH ARTIFICIAL LIGHT. PHOTO: BERTIL ALMGREN, SOURCE: SHFA, PICTURE ID: TANUM 326 RYK KASEN.

This project also enabled the documentation work of a large quantity of rock art sites in Tanum and Valcamonica, in Italy, using different techniques; carried out during the international research seminars organised during the summers of 1999–2002 (Bertilsson & Fredell 2001). At this stage, on-site-laser scanning of the rock art surfaces was also tested as a documentation method. The first rock carving face to be scanned using this technique was situated at Öinne vatten in Tossene. The scanning was carried out by the Gothenburg based company Metimur, and the result exhibited at the Gothenburg City Museum. The scanner gathered digital information and used it to manage the process of cutting and milling out a copy in composite of material of the rock art face. The result was very good, however there was no further application of the method due to its high costs and the high weight of the copy



FIGURE 5. COPY OF COMPOSITE MATERIAL OF ROCK CARVING AT LAKE WATER IN TOSSENE, PRODUCED FOR THE ROCK CARE PROJECT 1999 BASED ON DOCUMENTATION WITH LASER SCANNER. NOTE THAT THE SHIP APPEARS TO HAVE A MAST WITH SAILS. PHOTO: CATARINA BERTILSSON, SHFA.

Documentation of rock art using laser scanning was also made in the *RANE project* during the years 2003–2005. A rock carving at Fossumtorp was then scanned with a resolution of three hundreds of a millimeter using *Metimur's ATOS-skanner* (Johansson & Magnusson 2004). Courses in traditional documentation methods were also organised in Tanum by the Swedish National Heritage Board for staff of The County Administrative Boards and County Museums of Sweden. Gerhard Milstreu and Catarina Bertilsson led the courses, and Lasse Bengtsson also played a part. A number of rock carving surfaces at Björneröd, Kalleby and Arendal were subject to documentation work by frottage on graphic paper (“the rubbing method”) and tracings on plastic sheets. The same type of courses were organised in; Boglösa in Uppland, Tjust in Småland, Munktorp in Västmanland, Stornorrfors and Laxforsen in Västerbotten and Simrislund in Skåne; for the regional and municipal cultural conservation engagements. Thus, numerous rock art sites were documented. The documentation material was scanned using a roll scanner by Karl-Magnus Drake at the National Archives. He also worked out the method of digitalising documentation material, which is now further developed refined and still used by the SHFA for scanning of Underslös’ field seminar documentation. Information about the method and other parts of the work process is available on the SHFA website (www.shfa.se/workprocess).

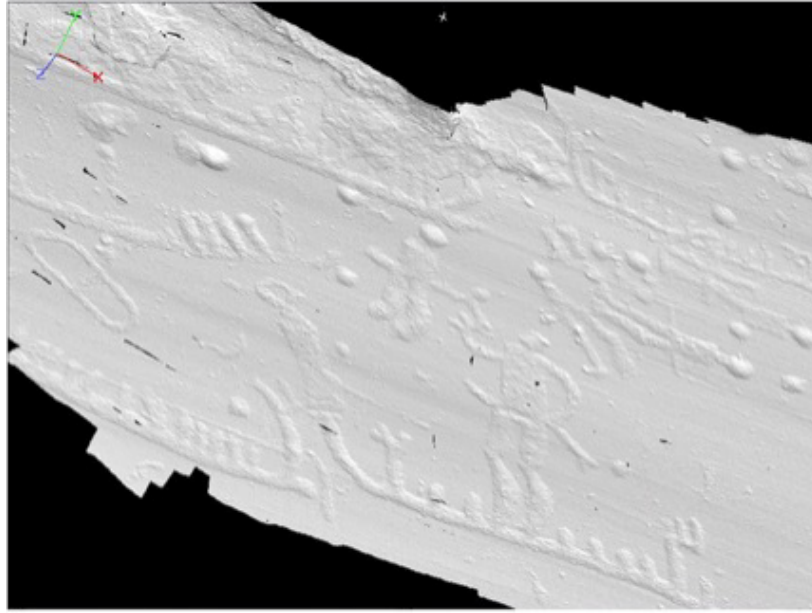


FIGURE. 6. LASER-SCANNED SURFACE ON ROCK CARVING AT FOSSUMTORP.
LASER SCANNING: METIMUR,
SOURCE: SHFA, IMAGE ID: METIMUR TANUM 151 FOSSUMTORP_ROCKCARE.

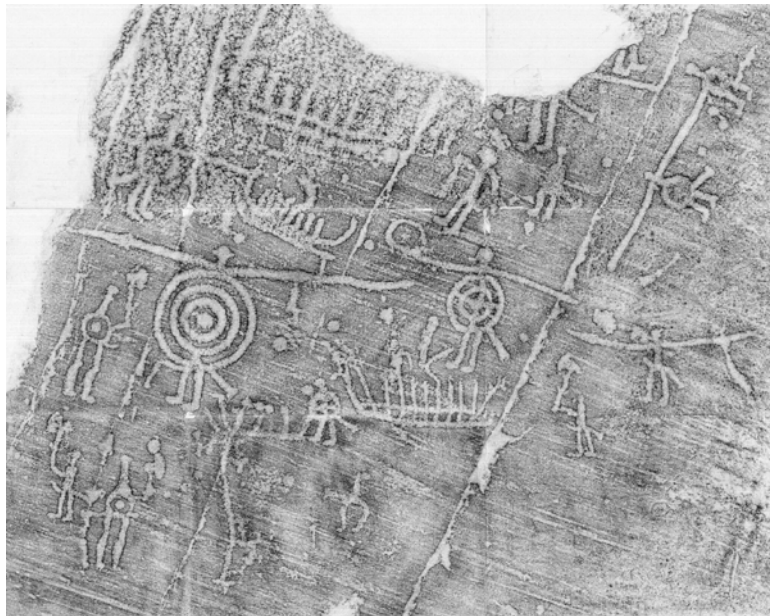


FIGURE. 7. FROTTAGE OF CENTRAL PART OF TANUM 89: 1, FINNTORP,
SCANNED AND MOUNTED. SOURCE: SHFA

In connection with the archaeological damage surveys initiated in the Luftföroreningsprojekt (Eng. air pollution project) by the Swedish National Heritage Board in 1988, a large number of rock art sites were subject to documentation work with photography and systematic damage reports. Ulf and Catarina Bertilsson at the Swedish National Heritage Board developed the method, whilst Lasse Bengtsson, at Vitlycke Museum, mainly carried out the fieldwork. After the World Heritage nomination in 1994, The County Administrative Board of Västra Götaland was commissioned by Jan Magnusson to further develop this documentation work as part of the methodological development for the imminent periodic reports

from the Nordic World Heritage sites to UNESCO in Paris. Magnusson performed his work in 1997, and then again 10 years later with a follow-up revisit to all the rock art sites included in the World Heritage nomination. The primary aim was to survey the damage status of the rock carving surfaces - and therefore colour photographs were taken. These photographs are however not yet registered in the SHFA image database, as are the reports yet not published.

In this general review, it is evident that during the last 222 years several efforts have been made to carry out documentation work of the rock art and rock carvings of Tanum. Brunius initiated the first major project, documenting a hundred or so rock art sites, during the summers from 1815–1817. Almost all rock art being subject to his documentation work were new findings, even if some of them, like the Litsleby rock carving, may have been previously known locally. Holmberg made another effort, though partly in a different way, of about 60 of Brunius' rock carvings during a few summers of the 1840s. When Baltzer took over the objective was to provide a scientifically correct depiction of the rock carving surfaces (Rydberg in Baltzer 1881). Thus the same ambition that Högberg had with his work almost 100 years later. The most extensive documentation work, however, was initiated by Gerhard Milstreu at Tanum Rock Art Museum, at Underslös, in the 1970s -and is still on going. All this work has resulted in extensive documentation, which is largely published. Their work also includes full-scale field originals archived at the Vitlycke and Underslös Museums. The publishing of Brunius' original documentation work has, however, not yet taken place, even though 175 years have passed since it was carried out. His original material is kept at the Antikvarisk-topografiska arkivet, ATA (Eng. Antiquarian Topographic Archive), in Stockholm. The situation of Holmberg and Baltzer's documentation work has to be investigated further.



FIGURE. 8. THE LITSLBY ROCK CARVING IS PHOTOGRAPHED BY MEANS OF A LADDER ON THE TANUMS HÄLLRISTNINGSMUSEUM UNDERSLÖS DOCUMENTATION SEMINAR IN 1982. ON THE STEPS IS HENNING PRÖHL AND TO THE RIGHT OF THE LADDER, UNDERSLÖS MUSEUM'S DIRECTOR, GERHARD MILSTREU. SOURCE: TANUMS HÄLLRISTNINGSMUSEUM UNDERSLÖS.

It also needs to be pointed out that even though many of the larger rock art sites in Tanum have repeatedly been subject to documentation work the last two decades, only a few of the traditional methods have been used. During the 19th century, the documentation work was dominated by ink depictions, the placement of the figures being decided with the help of a grid. Baltzer also used this method, even though he had developed a more advanced system of printing the depictions (Nordbladh 1981). Therefore, there was a development as to the techniques used to document the rock art figures. Baltzer was a pioneer developing the scheme of a systematic scaling down of the rock art figures using a coordinate grid and tablet while on-site during his fieldwork. The same method, however somewhat refined, Åke Fredsjö used during his fieldwork in Kville almost half a century later (Fredsjö 1966:15, Fig. 3). The squares of the grid were now 5 by 5 cm and the figure depiction on graph paper resulted in a considerably improved veracity. From

1944 and onwards Fredsjö also photographed the rock carving surfaces systematically after they had been cleaned with caustic soda (!) and the figures then painted in with a natural red pigment Engelsk röd [Eng. English red or Brick red].

Previously we have touched on the technique of depicting rock art using frottage, introduced in Tanum during the 1960s and systematically applied by Underslös Museum since the late 1970s. The method is ancient and was, for example, used by Georg Schliemann when he carried out documentation work of stone reliefs in Troy. Frottage is very suitable for rock art documentation specifically, thus adding an objective element lacking in the earlier depiction techniques that are more interpretive. This being so, because it is for the depicter to decide what had been carved or not into the rock art surface. On a frottage, however, the figures appear gradually, the depicter not being able to decide in advance what is to be included in the frottage and not. Consequently, an interesting and heretofore unknown element is introduced to the documentation work. Another benefit is also that the carved lines appear in their original form on a frottage, while the lines often are given straight edges on a tracing on plastic sheets which means that important information about carving techniques are being unintentionally rationalised as a consequence of the method being used.

Högberg usually made frottage on rolled paper without making any reference marks on the rock carving faces. This meant that the actual rock art figures will have to serve as references. Normally, this works smoothly. However the paper used can both stretch and shrink, depending on the weather and how it is stored, thus complicating later correct repositioning of the paper on the rock carving surface that has been depicted. Rolled paper for frottage is today used by Stiftelsen för dokumentation av Bohusläns hällristningar [Eng. The Foundation for Documentation of Rock Art of Bohuslän]. There the frottage is however only used as preparatory and additional technique for the definitive documentation, which is made by tracing the rock-carving surface using a felt-tip permanent-ink marker on transparent plastic sheets. Milstreu's system of frottage in a grid based on the actual size of the paper used (100 x 70 centimetres) can seem more systematic and connects partially to the system previously used by the documenters. It is also easier to later replace or redo failed frottage papers as long as there are clear reference marks. On the other hand, frottage made on rolled paper or tracings on rolled plastic have one advantage, that of less extensive handling during the subsequent laser scanning.

Increasingly, photography has been used for the purpose of rock art documentation. After the initial efforts of Baltzer and Almgren during the early 1900s, photography was used systematically as an additional technique by Åke Fredsjö in the Kville project. Thenceforward, photography earned its significance as a means of highlighting the artistic and aesthetic dimensions of rock art by Pehr Hasselroth and Bertil Almgren. Hasselroth's photographs are full of drama and contrast thanks to a bright and low light coming from the side, a method he started to use in the beginning of the 1960s (Hasselroth-Ohlmarks 1966 and Hasselroth 1984 and 1994, and also Jansson, Lundberg & Bertilsson 1989). Also, in Bengt A. Lundberg's photographs, photographer at the Swedish National Heritage Board, taken with the purpose of rock art documentation at the beginning of the 1990s, the aesthetic element of the rock art appears clearly.

The systematic search for new rock art findings in Tanum resumed in conjunction with the archaeological surveys run by the Swedish National Heritage Board at the beginning of the 1970s. Soon, the amount grew to such an extent that it was difficult to keep up the documentation work of the new findings. A common process was then to measure and count the number of different figures on the rock carving faces and report it in the descriptions registered in the Registry of Ancient and Historical Remains. Since there was no time to carry out new documentation work on the rock art sites, work that was often seen as unnecessary, a reference was made to Baltzer's then 100 years old illustrated work. Högberg also took black-and-white photographs after the figures had been painted in a lime wash mixed with chalk powder. With his photographs, Högberg focused on new and remarkable findings, and general overviews were most often

not taken. The photographs were glued into the field notebooks. Gradually, the number of new findings grew to such an amount that documentation work became crucial. Högberg, who then had been promoted curator at the first Vitlycke Museum, started an ambitious effort to cover all the new findings area by area using frottage that was never to be completed. At the same time, Tanum Rock Art Museum at Underslös had begun their still on-going documentation work led by Gerhard Milstreu.

In this way the documentation material accumulated to such an amount that the present writer Ulf Bertilsson was commissioned by the Swedish National Heritage Board to Tanum to describe and register the new findings into the Registry of Ancient and Historical Remains. The work was started in April in 1982 and ran for almost three months, and was continued for a few days during 1983 and 1984 (Bertilsson 1985). In total, more than 60 new rock carvings were registered and additions were made to already known and registered rock carvings. Descriptions were written directly into the field notebooks, and markings made on the Ortophotos (scale of 1:10000) that were used during the ordinary archaeological surveys in Tanum in 1976. Thus, the new findings were immediately under statutory protection. However, the new findings were not published on the map "Ekonomiska kartan" (ed. a state official map showing property boundaries, ancient and historical remains, town/village names, etc.) until after the revision surveys carried out in Tanum in 1991. Normally, no depiction documentation of the rock art sites was made at that stage. It had either already been done or was going to be done afterwards by Högberg. In many cases, however, preparatory work by digging up and cleaning hidden rock carving faces for the coming depiction documentation by means of frottage was necessary. This is true for *e.g.* Balken (Tanum 262:1), Fossumtorp (Tanum 254:1), and Skatteklåvan in Tanum. The rock-carving surface of Balken with the famous Sun Horse figure was largely hidden by an old house foundation, which was painstakingly manually torn down by him and the present author: a task that took many years.

If the objective is to achieve a comprehensive uniform documentation of all the rock carvings of Tanum, even now after more than 200 years of zealous field work, including some of the greatest rock art researchers, it is yet unachieved. This could be seen as a discouraging conclusion, but that may not be so. Brunius and Baltzer alike managed to cover and fully carry out complete documentation work on all rock art sites that were known at the time. The fact that the amount grew gradually was because new findings were made when the already known rock carvings were retraced or being subject to a re-documentation. In this way, there was a gradual increase in the numbers that still was possible to overview and manage. Later programmes of work all have in common that they contribute to and complement the already known picture. This is the case for Oscar Almgren's and John Bunyan, Johansson's, Gunnar Ekelund's and Torsten Högberg's work. Almgren verified and complemented Baltzer, Johansson verified and complemented Almgren, Ekelund and Högberg verified and complemented Baltzer and Almgren. Ulf Bertilsson's task was different in that the objective first and foremost was to verify and register Högberg's new findings, once Ekelund's work had been done.

A conclusion that can be drawn from the above review is that there is a great need to bring about a new and comprehensive documentation of all the rock carvings in Tanum. A documentation that can be produced archived and made available in a quick and easy way using modern technology. A documentation that can serve research, as well as management and public communication. This process has now been set in motion, since 2013, upon the initiative of the County Chief Antiquarian in collaboration with SHFA. However, the history of this will be told elsewhere.

During the decade that has now passed, since the present author's first call for the need of a new and comprehensive documentation, the circumstances have changed (Bertilsson 2008). A disadvantage is that the funding allocated to the task, first and foremost that of the County Administrative Board, has decreased even further. This means that the work must to be carried out in the most efficient and timesaving way possible, which means that new and more cost-effective methods must be applied.

An advantage is that the Swedish Rock Art Research Archives/SHFA is now established nationally as an archive for rock art documentation and research, and that since the start-up in 2007 a well-functioning system of digitalizing and storing all existing documentation has been developed. Additionally, SHFA has introduced new technology and systems for digital documentation of the rock carving surfaces, while on-site, in a 3D-format. This concerns both the most modern form of laser scanning, as well as the photography/photogrammetric based method of "Structure from Motion"/SfM (cf. Bertilsson et al. 2014). Both techniques have already been successfully used at SHFA's arranged courses for Goteborg's university on Documentation, Presentation and Interpretation of Rock Art hosted by Underslös Museum.



FIGURE. 9. PHOTOGAMMETRIC DOCUMENTATION OF TANUM 120, ASBEBERGET IN TANUM WITH SFM. THE WHITE SQUARES WITH BLACK MARKINGS ARE GEO-REFERENCES. SOURCE: SHFA. PHOTO: ELLEN MEIJER AND CATARINA BERTILSSON.

Ulf Bertilsson

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Cecilia Hedlund, Catarina Bertilsson and Ellen Meijer.

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Chapter 23

Bevar dialogen med klippen.

Dokumentationens betydning for fortidens helleristninger og fremtidens forskning.

Ditte E. P. Kofod

The phrase “seeing too much” is a well-known term in rock art studies. People who have worked with rock art documentation know this feeling and know how one must find the right balance when documenting and preserving the prehistoric rock carvings. In a time where digital techniques are common documentation methods in the field it is important to remember how pictures cannot replace what the eyes see and what the fingers sense.

Why are documentations of rock carvings important? To answer this question, one must understand what rock carvings are and who made them? The rock carvings are symbols and figures made by the prehistoric civilization in the Bronze Age around 1700-500 BC. Not many carvings are known in the Danish landscape, except on Bornholm, whose surfaces include sites on rock formations (Bertilsson 2004: 21). Since the distance between the surface layer and the bedrock is a lot thinner on the island than it is in the rest of Denmark, Bornholm is the only place where the bedrock is present at the surface. These rock-surfaces have somewhat given the prehistoric people a reason to decorate them with figures and symbols, which are seen as a message or stories from prehistoric times (Glob 1969). Thus, making the rock carvings a cultural heritage which needs to be protected in order to understand the prehistoric civilization and their actions behind the images.

The very first documentation methods consisted of drawings, which later were developed into the tactile methods frottage and outline tracing (Glob 1969; Milstreu, 2005). In the 1990's, the first digital techniques were explored and several excellent methods as SfM (Structure from Motion) and laser-scanning now do an incredible job in the field (Bertilsson 2015; Meijer 2015). In the beginning, the digital methods were believed to be time-consuming and rather expensive to use, compared to the tactile methods as frottage or night photography, but the methods have since then been proved to be very user-friendly and low budget (Meijer 2015: 66).

When discussing the different methods, it is in no way meant to criticize the digital techniques, but to simply emphasize how important it is to practice the different methods together in order preserve the rock carvings as best as possible without destroying them further. A way to clarify this conclusion is by emphasizing some details from each, which describe that all methods have advantages as well as disadvantages. These can be seen in Figure 1.

Tactile methods		Non-tactile methods	
Advantages	Disadvantages	Advantages	Disadvantages
Small expenses	Requires specialist/ expert	Minimal damage	Economic disadvantages
Dialogue with the rock surface	Surface attrition	Detailed results	Reduce the dialogue with the rock surface
Detailed	Seen upon as primitive	Does not necessarily require an expert	Pictures on the screen can cheat the eyes
Easy use in the field	Demand storage space	Great depth information, not seen with frottage	Involve lots of overtime work when making the models
			Photographs need to be precise and sharp

FIGURE 1. TABLE PRESENTING SELECTED ADVANTAGES AND DISADVANTAGES OF THE TACTILE AND NON-TACTILE METHODS.

These are only a fraction of the variations which can be found when working with tactile and non-tactile methods. But the most important part is the dialogue with the rock surface. One of the first techniques that can be taught in rock art preservation and documentation is how important it is to feel the carvings form and depth with the fingers. If in doubt with what the eye can see through the lens of the camera, it is very important to get an impression of the carving with the fingers. In this way, it is possible to judge if the carving is made by human, or nature. The digital methods can give an excellent model of the depths of the carving, for example, to illustrate how some carvings have been changed by prehistoric humans to match the development in axes or ships. This way, it can be proven how the Bronze Age people returned to a carving to change the bow of the ships or the head of axe/spear (Meijer 2015). These very specific details can be difficult to capture on frottage or night photography, therefore making SfM and laser scanning an essential method in order to achieve the best result in documentation. The different results of three of the methods; night photography, frottage and SfM; are illustrated in Figure 2.

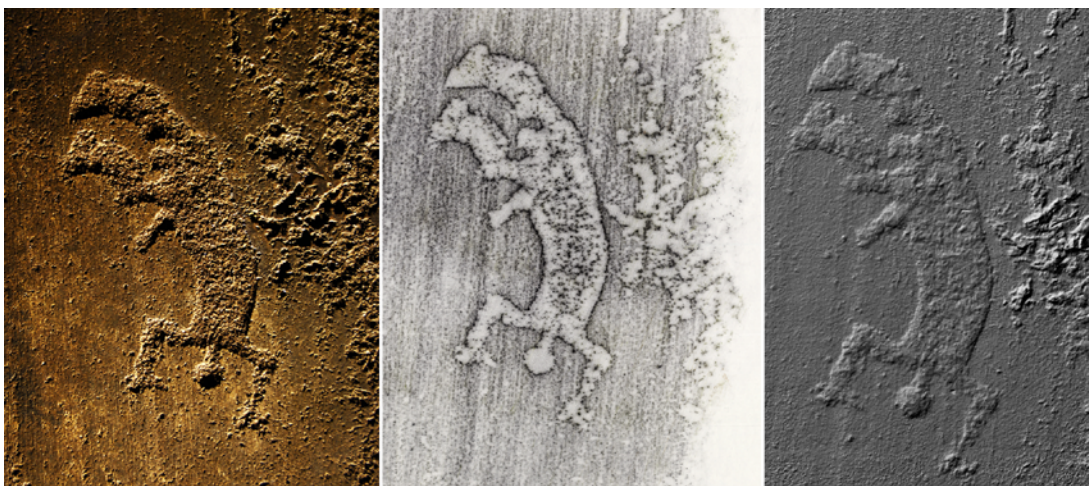


FIGURE 2. DOCUMENTATION RESULTS OF “THE ACROBAT” FROM TANUM 14:1, ASPEBERGET. THE LEFT ILLUSTRATES NIGHT PHOTOGRAPHY, THE MIDDLE, FROTTAGE, AND, LAST, THE SfM RESULT. AN INTERESTING DETAIL IS HOW THE METHODS IN THIS EXAMPLE SHOW THE SAME RESULT, PROVING THAT ALL ARE NECESSARY IN ORDER TO GET THE BEST RESULT (MEIJER 2015: 72).

In conclusion, all documentation methods have advantages and disadvantages, so in order to preserve the prehistoric carvings and preserve a future for further studies, it must be put forward how all forms of documentation must be used in the company of each other. Some people, although with the best intentions, argue that the tactile methods are becoming unnecessary with the development in the digital techniques, which is, in this situation, seen as preposterous. The tactile methods provide us with a detailed duplicate of the rock surface and gives the person, who documents, a one of a kind dialogue with the carvings. The tactile methods should not be replaced by the non-tactile but should be used in co-operation. The only possibility, is to analyze the condition of the rock carvings in the field; in order to conclude which method will be of best use in every situation.

Sometimes the resources for digital methods are not possible, and so a frottage and night photograph must be sufficient. In some cases, the surface of the rock will be too fragile or worn, thus a frottage will not be satisfactory since the surface is almost gone. In these situations, the methods of laser-scanning or SfM are a rescue, due to their capacity to capture the depths of the carvings which are not visible in the frottage or to the naked eye. And with the enormous potential that the digital techniques demonstrate, it is impossible to argue against their purpose. But it is also essential to emphasize how essential the traditional methods are and that they cannot replace one another. It is hoped that this section has highlighted how important several documentation methods are crucial when preserving cultural heritage.

In honor of the man who made this project and the preservation of rock carvings possible: Gerhard Milstreu

Author's note: This article is based on the original Danish text of my Bachelor dissertation of the same title, presented at The Department of Prehistoric Archaeology, Aarhus University, Denmark, December 2015

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Chapter 24

Towards a new era of rock art documentation

Ellen Meijer & James Dodd

Abstract

The best way to research a rock carving is on site, in contact with the surface, feeling the curved lines and the structure of the pecking. Unfortunately in practice, most researchers will not have the possibility, or means, to go out in the field and therefore have to rely on the available documentation. This makes the praxis of documentation and the history of documentation an important and often overlooked part of rock art research (Goldhahn 2004: 24). The majority of the research is based on the available documentation and this makes the documentation a vital pawn in the field of rock art research. In this article we will look at the importance of the documentation, the methodologies used today and its scientific value within the research of rock art in present and future.

Introduction

Many scholars have discussed the importance of the documentation from different points of view. The documentation may be done with the interest of research in mind, but there are also obligatory reasons for documentation such as: conservation, protection, preservation and long-term maintenance. Finally, there is also a demand for public presentation, including the need of accessibility, signposts, etc. (Hygen & Rogozhinskiy 2012: 3). These disciplines each have their own requirements with respect to the method of documentation and the features that need to be recorded. The focus in this paper will be on the importance of the documentation for present and future research. As mentioned above, the best research is done on site, in dialogue with the surface, feeling the evenness of the curved lines, the structure of the pecking and appreciating the craftsmanship of the carver. In practice, however, most researchers have to rely solely on the available documentation material. Thus the documentation generally forms the basis for the interpretation of the images. In the past, many theories have been based on documentation that is incorrect or insufficient. Even in present times, theories are still based on reproductions which were obtained with subjective documentation methods and/or without consulting more than one source.

However, the documentation itself is an interpretative process as well. No two rock surfaces are alike and each surface requires a slightly different approach where the documentation technique may have to be adjusted to the circumstances. As such, there is no universally perfect documentation technique. Even the new and extremely accurate digital documentation techniques contain an element of subjectivity (Norsted 2012: 32).

Without going into the history of the documentation (Bertilsson 2015; Goldhahn 2008; Fredell 2003; Nordbladh 1998) many of the methods used are based on the imagery on the panels, supplemented with the major fissures and damages. However, these damages and fissures are not prioritized and the reproduction of the figures is subjective, and dependent on the method used as well as the skills of the person(s) responsible for the documentation. Of course, the techniques and tools to visualize the figures

on the rocks have improved considerably over the past decades, as has our ability to “read” the rock surface, which has led to a better and more detailed reproduction, but the focus is still on the figures, and even though the whole surface is investigated during the identification process, it is not integrated in the final documentation. The actual rock – the canvas for the art – is ignored in favour of the imagery, and all relevant features that are of importance for the meaning of rock art and its relation to the social context in prehistory are left out. Such traits concern the great variation in the visual appearance of rock art, variations related to the depth of images, to the occurrence of lichens and to the effect of time, when ageing images are transformed from their initial shiny, almost white color, to a nuance that makes them vanish into the surrounding rock (Ljunge 2015:184).

From figure based to surface based

It is not until the late 1980’s that Tanums Hällristningsmuseum Underslös, as one of the first in Scandinavia, changed the focus of their documentation from figure based to surface based. The institute started the systematic re-documentation of all the known rock surfaces in the Tanums World Heritage Area, using the frottage, or rubbing technique, supplied with temporary painting for illustrative images. At that time, the main reason for this change was the increasing awareness of the accelerating weathering, due to environmental changes (Milstreu & Prøhl 2009). It was important to reproduce the entire rock surface, to at least have a recording of the rock, before the weathering completely destroys the imagery. At the same time, continuous innovation and evolution of the documentation methods made it possible to visualize details that were unknown until then. This change was a huge step forwards in rock art documentation, especially compared to the contemporary figure based techniques, as it became possible to monitor the changes in the structure of the surface, caused by weathering or other damages. The figure based documentation is useless as it does not show the structure of the surface.

The two main analogue techniques used to reproduce rock art in recent times are tracing and frottage or rubbing, complemented with night photography, environmental photographs and photographs of temporary painted figures. There is an ongoing discussion concerning these two methods and which one should be used. However, this is a discussion that has largely taken place behind closed doors. Some of the discussions that have or are taking place have personal agendas lying behind them. Some scholars will opt for tracing, because the first selection between what is carved and what is naturally formed has already been done in the field by experienced rock art researchers. Reproductions of carvings made with the tracing technique, represent the figures and major damages and fissures, although the latter is, as mentioned before, not prioritized. How much of these features are represented in the reproduction depends on the person responsible for that reproduction. There are no basic rules or gentleman’s agreements on how much interpretation is allowed during the documentation. Thus, it is impossible for scholars to know the extent of the interpretation used to reproduce the imagery from documentation that is based on the figures rather than on the surface of the rock.

It is sometimes argued that the rubbing method should not be seen as a documentation as it does not show the depth of the figures; and small lines and cup marks are hard to differentiate from natural damages (Bengtsson 1998, Andersson & Toreld 2015). This may be true to a certain extent, but, as with many of the analogue techniques, the amount of information it reveals largely depends upon the experience of the person responsible for the reproduction. In the case of tracing, the difference in depth is indicated by the intensity of points, which in turn is supposed to indicate the individual pecking marks. Given the general condition of the rock surfaces in Sweden, it will be difficult if not impossible to distinguish the individual pecking marks, of course depending on the quality of the rock surface. Thus, the intensity of the points (the deeper the image, the more intense the points) is determined solely on the interpretation of the person making the tracing and the tangibility of their fingers (Figure 1). The accuracy is subjective, and, at best, an indication of variation in depth of the figures, which may vary from documentation to documentation

and even within one and the same documentation. Quite often the documentation is accepted without questioning the documentation process itself. The reproduction has become the original, and is seen as representing the reality. The rubbing technique too only reproduces the variation in depth of the figures, but it is a more objective method than tracing. In fact, a good rubbing will reveal information that is barely visible or tangible, such as initial pecking marks and updates. Still, as with tracing, it does not tell the exact depth of the images, but is restricted to the variation in depth.

Though both the tracing and the frottage method start similarly with the identification of the figures on the surface using artificial light, there are a few major differences between the two techniques, as shown in the table:

Tracing	Rubbing
Figure based	Surface based
Demands interpretation (shape and depth)	No interpretation demanded
Accuracy and quality of the reproduction unknown	Accuracy and quality of the reproduction visible
Variations in depiction with re-documentation	Evenness in depiction with re-documentation
Two dimensional reproduction of the imagery and the topography	Two dimensional reproduction of the imagery and the topography

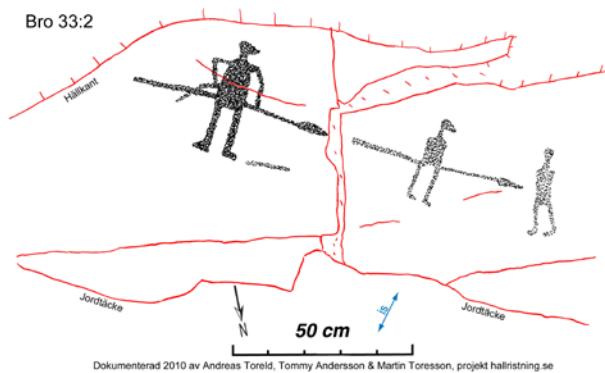


FIGURE 1. LEFT: THE INTENSITY OF THE DOTS INDICATES THE DEPTH OF THE FIGURES. DOCUMENTATION BY STIFTELSEN FÖR DOKUMENTATION AV BOHUSLÄNSK HÄLLRISTNINGAR. SOURCE SHFA ID 5813. RIGHT: THE RUBBING SHOWING THE VARIATIONS IN DEPTH. TANUMS HÄLLRISTNINGSMUSEUM UNDERSLÖS

Objectivity

In a number of cases the term “objective” has been discussed. According to Goldhahn, any secure and objective way to present rock art documentation is a utopia and it would be better to try and present a “subjective interpretive document” that allows fellow rock art researchers to see how and why the conclusions and interpretations were reached (Goldhahn 2008:157-158). Goldhahn raises an interesting thought, because the only way we can evaluate these conclusions and interpretations, is by comparison with the original. It is common knowledge that the reality makes it difficult for many researchers to visit the panels of their interest, thus, the evaluation either has to be based on other reproductions, or the information given by the persons responsible for the reproduction. One may wonder whether these persons

will state that the representation of the figure is most likely not in accordance with the original intended appearance, due to the condition of the surface. Thus, research and conservation should preferably be based on more than one documentation method used on the panel, provided it is available.

Throughout time, everyone that has been involved in the documentation of rock art will state that they have captured all the figures, details and features that are depicted on the rock. This may very well have been the case, based on the knowledge and the skills of that time, however, newer documentation methods have proven them wrong on many occasions. Who is to say that there are not more features hidden on the surface that we have not yet learned to recognize? This simple question alone makes it more and more significant to focus on reproducing the surface rather than just the figures and the main damages. Goldhahn, amongst others, have said that: “Throughout time new documentations of panels resulted in the detection of new images or additional features” (Goldhahn 2008:153). The use of the term “new” is somewhat contradictory, as the figures have been there from the moment they were created; we simply have not recognized or seen them before. In many situations, these so-called new figures are also visible in older, surface based documentations, but were either overlooked or not recognized as having been made by human hand.

Norsted also questions the possibility to create an objective documentation: “Since there are an infinite number of features that can be included, total accuracy and comprehensiveness is beyond our reach. In reality, recording is a process of subjective selection which is determined by the theoretical precepts, cultural background and vision of the recorder. Our reading of the elements of a site and their qualities are not objective and cannot be documented in a value-free way, regardless of how precise and neutral we try to be. These circumstances represent a challenge to the unrealistic, ‘classical’ claims for objectivity [...]. Since we are unable to foresee future research requirements, any present-day selection and prioritization of what is considered important will probably be criticized by future generations”. (Norsted 2012: 32). Norsted, however, discusses the different aspects of rock art documentation for conservation purposes, which imposes different requirements on the documentation than, for example, the documentation for research purposes.

Based on the above, it may be good to discuss the term objective and interpretation with respect to rock art. According to the Oxford English dictionary, the term objective and/or objectivity is “the ability to consider or represent facts, information, etc., without being influenced by personal feelings or opinions; impartiality; detachment”. Translated to rock art it means to reproduce the surface with all its features without personal judgement or the personal conception of these features. The term interpretation can be seen as a personal view of the observations made on site. It is difficult to remain neutral when you pass judgement. Every observation seems to be based on experiences from the past, which will lead to the development of associations in the present. During observations at the site, we not only use our eyes and fingers, but also our intuition. Our way of thinking and our memory and experience will influence our perception of the imagery on the surface. In the past, many odd lines or shapes were considered to be damage or weathering because it did not correspond with the general features observed for that specific type of figure. A great number of these are now recognized as initial pecking marks or updates (Milstreu 2017).

Interpretation

Some scholars claim that a good documentation demands interpretation (Andersson & Thoreld, 2015) but one could debate whether the interpretation should be done by the same persons responsible for the documentation. Interpretation and documentation are two different disciplines, which demand different skills. Moreover, one should not confuse the term interpretation with identification. Every documentation method should start with the identification of the figures on the rock, to determine the extent of the surface

that needs to be reproduced and this involves a survey of the texture of the surface. This could be seen as interpretation. However, the purpose of the identification is to identify what is natural and what is made by hand, rather than to identify the shape of the figures itself. In other words, to determine the extent of the carved surface.

Interpretation of the rock surface is a completely different discipline to the documentation of that same surface. With the frottage method and the newer digital methods of documentation, it is even possible to document the rock surface with limited skills or experience. This in contradiction to interpretation, which depends largely, if not solely, on the experience of the person involved. These skills are not learned from books or at the university but from (much) practice in the field, guided by experienced rock art researchers. The interpretation demands a dialogue with the surface, using the fingers to feel the difference between what is naturally formed and what is created by man. When striving for an objective reproduction of the surface of the rock, those doing the documentation should not be involved in the interpretation as it will compromise the objectivity of the documentation, especially when striving for a reproduction that is as objective as possible. Ideally the documentation should be done by more persons, preferably in consultation and dialogue with each other. It is the experience of both authors, that the more highly skilled the team, the better the reproduction. The emphasis here should be on consultation and dialogue. If three persons, independently from each other work with the figure based techniques to reproduce a carving, you will get three variations on the figure. This of course may even happen when one and the same person re-documents a surface a few years after his first documentation.

The methods used for figure based documentation (drawings, graphics, tracings, (temporary) painting) require interpretation of the shape of the figures and therefore lacks any scientific value, especially from a research point of view, as it is, again, impossible to appreciate the quality of the documentation. Firstly, the structure of the rock surface is not documented, thus making it impossible to determine the amount of interpretation that was needed to reproduce the imagery. Secondly, it is essential to know the skills of the person responsible for the reproduction to be able to value the final result, or in the words of Goldhahn: "... that allow fellow rock art researchers to see how and why the conclusions and interpretations were reached" (Goldhahn 2008: 158). The foundation for documentation of the rock carvings of Bohuslän openly admit in their publications of the documented rocks in Bohuslän that the used technique is subjective: These are not objective tracings of the rock surface but more a subjective depiction of our interpretation of rock carvings (Andersson & Toreld 2015: 23).

Surface based documentation: a rich source of information

Tanums Hällristningsmuseum Underslös was one of the first in Scandinavia that changed the focus on the documentation from figure based to surface based, already in the late 1980's. The institute started the systematic re-documentation of all the known rock surfaces in Tanums World Heritage Area, using the frottage- or rubbing technique, supplied with temporary painting for illustrative images. At that time, the main reason for this change was the increasing awareness of the accelerating weathering, due to environmental changes (Milstreu & Pröhl 2004). It was important to reproduce the entire rock surface, to at least have a recording of the rock, before the weathering completely destroys the imagery. At the same time, continuous innovation and evolution of the documentation methods made it possible to visualize details that were unknown until then. The documentation of the entire surface enabled us to learn to "read" and recognize the smaller details and features that are visible on the surface, such as initial pecking marks and updates. Both features tell us more about the creation of the figures, the sequence of pecking and the importance of that specific panel throughout the Bronze Age. The frequency of these pecking marks on the better preserved rocks indicates that this feature has been present on all rocks. Unfortunately, much of that information is now lost, due to the increasing weathering, including the initial pecking marks, the updates and, most likely, also the re-activation of figures throughout the use of the panel (Hauptman-Wahlgren

2002; 2004), gives us an insight into the biography of the figures (Ling & Bertilsson 2016). The presence of all these aspects seems to have been so common that it is no longer possible to say with certainty that any of the figures are completely finished. Both the figures and the making of the carvings are dynamic, subject to changes and additions in order to comply with the demands of the time.

It is sad to realize that much information is lost, not just because the documentation was based on the figures, but also because important details were not yet recognized and consequently not recorded. Fortunately, the carvings that have been documented with surface based methods, such as frottage, show these details, also on surfaces that have deteriorated since their last documentation. From a research point of view, the figure based documentation methods have thus lost their scientific value, as it is solely based on the figures. The shape and depth of the figures is determined on sight, based on the tangibility of the fingers and the experience of “reading” the structure of the surface. Many rocks have been documented on various occasions, often some years apart. A quick look at the results, show that details are reproduced differently, even when the re-documentation was done by the same person. Equally, the variation in depth may vary from documentation to documentation and even within one and the same documentation. Thus, from a scientific point of view, the reproductions through tracing and/or painting serve no other purpose than that of an elaborated index of the type of figures on a specific rock.



FIGURE 2. THE PAINTED IMAGE (EQUALS TRACING) DOES NOT SHOW THE AMOUNT OF INTERPRETATION THAT WAS NEEDED TO REPRODUCE THE FIGURE. PHOTO AND RUBBING: TANUMS HÄLLRISTNINGSMUSEUM UNDERSLÖS.

The third dimension

With the focus more and more on the documentation of entire surfaces and the wish to reproduce as much of the information on the surface as we possibly can before it is destroyed by weathering, there is a constant search for improved methods. Moreover, the above mentioned documentation methods do not reproduce the topography/morphology of the rock but have 2 (or at best 2,5) dimensions. The developments in the digital field have simplified the application of digital documentation: either through photogrammetry methods such as Structure from Motion (SfM) and Reflectance Transformation Imaging (RTI) or laser scanning. The traditional techniques, such as rubbing and night photography, can give objective, detailed reproductions of the rock surface with all its features, but they lack the important third dimension, which makes it possible to analyze the carvings at a micro level and unlock the sequence of the carving activities in more detail (Ling & Bertilsson 2015). The third dimension will also reveal the topography of the rock surface, a feature that may be of importance as well. In a number of cases within the Tanum World Heritage Area the topography adds an extra dimension to the carvings, where naturally

formed glacial grooves, often filled with water, are integrated in the imagery. Another advantage of the digital documentation is that the 3D model can be rotated and illuminated from various positions. This facilitates the study of the imagery away from the rock itself (Meijer, 2015). These new documentation techniques will also make it possible to document the surface at regular intervals, making it possible to monitor the weathering of the surface in more detail.

Already in the 1970's, attempts were made by Jarl Nordbladh and Jan Rosvall to integrate three dimensional techniques into the documentation of rock art (Bertilsson 2015). At the beginning of 1990's, the first attempts to use laser scanning for documentation purposes were introduced. At the end of the 1990's, more successful attempts were completed during the Rock Care project, but the widespread use of the technique was not implemented due to the high costs and the heavy equipment (Bertilsson 2015). It was not until the early 2000's that digital techniques were introduced to the documentation of rock art. Digital cameras became more efficient and affordable, computers became sufficiently powerful to run sophisticated software and 3D laser scanners became more portable and financially available to the archaeology and heritage sectors (Robin 2015: 36)

During the early 2010's, good alternatives to the huge scanning devices that were used in the first pilot projects became available, including hand held triangulation-based light scanning devices. In Tanum, the application of SfM on rock art has been developed by the Swedish Rock Art Research Archives (SHFA) in close collaboration with the University of Gothenburg and Chris Sevara, from the Vienna Institute of Archaeological Science - VIAS and Ludwig Boltzmann Institute - LBI. The pilot project focused on the area of Aspeberget, which consists of over 20 rock surfaces, varying from small rocks with a few figures, to large surfaces with a multitude of images, inclusive of superimpositions as well as a considerable variation in the amount of weathering (Bertilsson et al. 2014). Thus, the Aspeberget area can be regarded as representative of the rock surfaces found within the entire World Heritage Area.

Structure-from-Motion (SfM) is a multi-image photogrammetric technique which allows the creation of high resolution 3D data sets from sets of digital images. Benefitting from rapid increases in the computing power of regular personal computers and readily available software, SfM is increasingly being applied in archaeology to document objects and sites (Hesse; 6). Structure from Motion is a relatively simple and low budget technique, which is based on a multitude of overlapping photographs taken from multiple positions opposite the surface of the rock. The photographs are then processed in a program. During the pilot project the program, Agisoft Photo Scan was used, which automatically estimates and optimizes the camera positions and the internal camera parameters (focal length, principal point location and distortion) are computed (Meijer, 2015: 68) followed by the reconstruction of the depth (distance) maps.

With the progress of laser technology, it is now possible to use the technique out in the field relatively easily. At present (2017) the County Administrative Board of Västra Götaland and the University of Gothenburg are the only institutions in Sweden that use the triangular based hand held laser scanner for the documentation of rock art. The Scanner – a Handy scan 700 from Creaform – uses 7 red laser crosses which produces 480,000 measurements per second. The accuracy can be adjusted up to 0.02 mm, but most of the rocks are being scanned with a 0.06 mm accuracy to avoid data files to be too large to handle. The model appears on the computer screen whilst scanning, making it possible to adjust the settings while in the field and, hence, optimize the model on site. The technique is by far the most accurate, efficient and user friendly digital method to use out in the field.

SfM can be seen as the budget-friendly way of creating three dimensional representations of rock surfaces, however without a guaranteed accuracy. Various tests clearly show that the quality of the model is influenced by the amount of overlap, the quality and resolution of the photographs, the focal length of the lens, the number of levels (distances to the surface), the light conditions and the condition of the rock

surface. It showed that if the photographs are taken at the optimal time of day, close to the surface, in high resolution, with a focal length of 35-50 mm, the image based model can give very good results (Meijer, 2015). However, when using the optimal situation, the number of photographs needed to document larger areas are extensive, resulting in a time consuming computing process which many “regular” computers are not be able to do. Nevertheless, SfM has proven to be a good alternative to laser scanning and when used for the recording of the rock surfaces where there is a desire to emphasize the topography and the placement in the landscape, it can be a valuable addition to laser scanning, not in the least because it enables the creation of textured images and ortho-photographs and can also be integrated within GIS. The textured model and ortho-photographs will reveal the discoloration of the surface and the presence of (micro)vegetation in detail.

The choice of technique depends to a large extent on the available budget. The handheld laser scanner is at the top of the presently available techniques for three dimensional documentation of rock art. It has a guaranteed depth accuracy and, consequently the flexibility in the choice of depth accuracy, during both acquisition and processing of the model. Moreover, the model is built up whilst scanning, making it possible to view the result in the field. A downside is the large amount of small targets that are needed to be able to scan the surface. Although, more recent models are able to work without targets, these have not yet been tested in the field. SfM on the other hand is a good, low-budget alternative. Although the SfM technique can, in optimal situations, compete with the handheld laser scanner, it does not have a guaranteed accuracy, does not show the result instantly and is more sensitive to variations in light conditions. An advantage of SfM is that the image collection can be done unordered and even taken by multiple cameras, inclusive variations in focal lengths and image resolutions. Furthermore, it does not need targets to create a three dimensional model, although it is advised to make use of 4 – 6 targets to increase the accuracy of the model and enable the extraction of correct metrical information (Plets et al. 2012: 147). However, it may not be necessary to choose between the two techniques, as they can supplement each other. Laser scanning can be used to obtain an accurate three dimensional reproduction of the surface of the rock with all its features, initial pecking marks, indications of updates, previously “unseen” carvings, pecking sequence, etc (Ling & Bertilsson 2015, Bertilsson et al 2016), which information can be complemented with SfM to visualize the texture (colorizing) of the surface as well as the wider topographic / morphologic context of the panel, including its position within the landscape.

Discussion and evaluation

The implementation of the new digital techniques has already lead to a new wave of optimism in Scandinavian rock art research. The application of digital technology is expected to result in the uncovering of new, unseen features of rock art (Ljunge 2016: 164). Knowing that the technique will show more details than the traditional analogue techniques, makes us look at the results with different eyes. Some scholars even argue that the scanning technique reveals features that are visible on the screen of the computer, but not on the surface itself. It is regrettable to realize that as we, at present, become more and more dependable on computers and their abilities, that we overlook the fact that most of the software is not perfect. One little bug can create small distortions in the digital surface visible on the screen. Thus, it is important to maintain the same critical attitude towards the results created by the new digital methods, as we have had toward the traditional analogue methods in the past. We criticize the objectivity of the tracings in comparison to the alternative information of the rubbings, yet, when the model is created in the computer, we believe it to be the ultimate truth. Moreover, and maybe even more disturbing, is the fact that these new techniques will take us further away from the carved surface, the contact with the figures, the feel of the texture and the appreciation of the skills of the carvers. In other words: the dialog with the surface. This skill will die out and within a short period of time, we will be set back 50 years in our skill to “read” the surface of the rock on site. The three dimensional model with its 0.06 mm accuracy will become the new truth, the model will be seen as the reality.

The user friendliness of the digital techniques already tends to put the skills needed for the documentation of rock art in discredit. The documentation of rock art is no longer believed to be a specialization within archaeology. After all, one just has to put the target points on the surface and start the scanning. The figures will appear on the screen and an accurate, objective reproduction of the carving is a fact. An important aspect that is overlooked with this reasoning is the fact that the area of the target point will not reveal the texture of the surface, but show a smooth area of 1 cm in diameter. To create an optimal scan of the surface, these target points need to be placed in a random pattern at a distance of maximum 10-12 cm. Needless to say that it is of the utmost importance not to place the target points inside a figure as it will not display its texture and thus lose vital information (figure 3). Hence, even with the newest techniques, the dialogue with the surface and the skill to “read” the surface remains important.

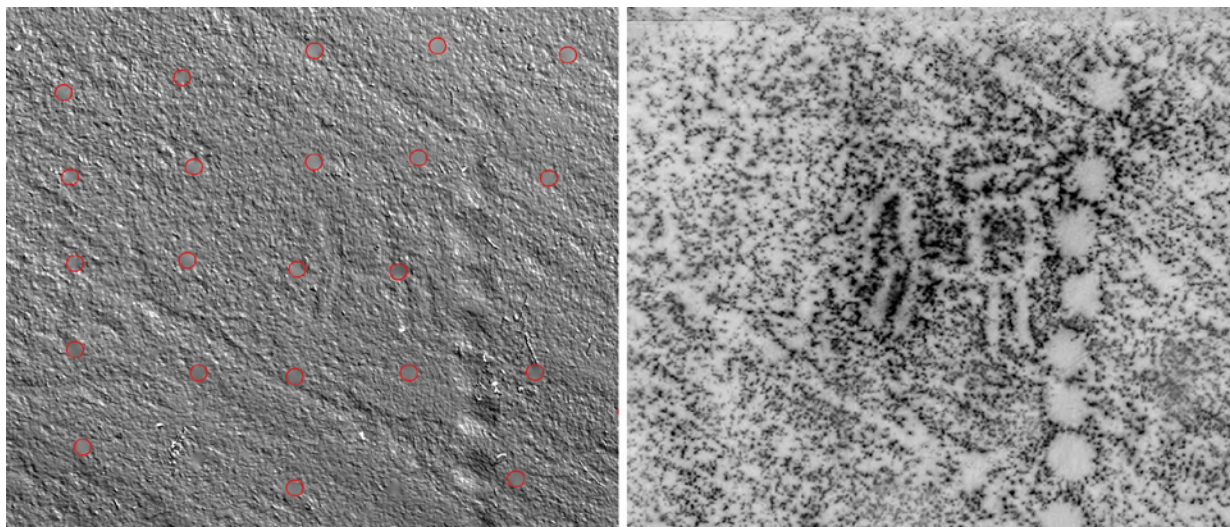


FIGURE 3. THE RED DOTS INDICATE THE TARGET POINTS PLACED ON THE SURFACE. LASER SCAN: COUNTY ADMINISTRATIVE BOARD VÄSTRA GÖTALAND. SOURCE: SHFA. RUBBING: TANUMS HÄLLRISTNINGSMUSEUM UNDRSLÖS.

Putting all criticism aside, the new digital techniques provide us with advantages that cannot be obtained with the traditional techniques, apart from the possibility to study the surface in detail without being present at the rock itself. Software programs can and will be developed to make it possible to “learn” the computer to see the difference in the structure between a hand-made and a naturally created texture. Equally one can “learn” the computer to recognize certain patterns, which will make it possible to have the program assist in the dating of the motives. It will also be possible to emphasize differences in depth, which will facilitate the recognition of the pecking sequences, indications of updates, initial pecking marks, etc. The possibilities with 3D models of rock carvings are numerous.

Even in the field of management and protection, the 3D models could be of interest. It allows among others, the creation of apps which will make it possible for the public at large to “see” the carvings, thus avoiding the devastating custom of painting the figures. The digital models are created 1:1 giving the possibility to create exact three dimensional copies which can either be placed in the landscape or being displayed in museums. The copy can be painted with various colours to show the various periods, or be illuminated with artificial light, etc., thus allowing the public at large to get a good understanding of the use of the rock carvings throughout the Bronze Age.

Though still not fully developed, digital documentation will become the standard for future reproductions of rock art. Within the next 10-15 years, the weathering conditions will make it impossible to still reproduce all the details of the carvings. It is therefore essential for future research of rock art to optimize the reproduction of the surfaces in due course. The restrictions of 3D documentation we are facing at present will undoubtedly be solved in the near future as the technique continuous to improve.

The use of three dimensional documentation, either through laser or through photogrammetry, does not exclude the traditional analogue techniques, such as frottage and night photography, not only because it reveals more aesthetic representations of the carvings, but also because it is a relatively easy, quick and effective way of reproducing the surface of the rock. It will take many years, decade's maybe, to reproduce all carvings with three dimensional digital methods. Thus, it is equally important to compare the results of the digital documentation methods with the information visible on rubbings and night photography. Both techniques have been used over a long period of time, resulting in a vast amount of documentation material, which will take decades to reproduce through the new digital techniques; time that may not be available due to the increasing weathering (Magnusson & Bertilsson 2001).



FIGURE 4. NIGHTPHOTO, RUBBING AND SCANNING OF THE SUN HORSE, SHOWING SIMILAR AMOUNT OF INFORMATION. PHOTO ELLEN MEIJER, RUBBING TANUMS HÄLLRISTNINGSMUSEUM UNDERSLÖS, SCANNING SHFA.

Finally, it is important to realize that regardless the accuracy of the documentation techniques, the obtained result is a reproduction. No matter how detailed and objective the documentation will be, it still is a reproduction of the original rock, taken from its original setting and deprived of its position in the landscape and its contemporary features both on and around the rock. No documentation, regardless of its accuracy and objectivity, will be able to replace the research carried out on the rock itself, particularly finger-tip inspection and the resultant dialogue with the rock surface.

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