

## The Network of Style

An analytic study of style and pottery from two causewayed enclosures

November, 21<sup>st</sup>, 2013  
doi 10.12766/jna.2013.5

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### Abstract

This article will discuss the ceramic styles of the early Middle Neolithic Djursland. It argues for a new local style in the area, called the Blakbjerg-Brokhøj style, named after two causewayed enclosures that form the basis of this article. This style draws inspiration from the Virum style, which is characterized by massive decorations of whipped cord, but also includes many new MN I elements such as vertical bands and zipper patterns. It is further argued that this style co-existed with a more general MN Ia style and that these two stylistic appearances supplemented each other in the social network of the Funnel Beaker culture (FBC). An interpretation of this double stylistic appearance will be presented.

### Zusammenfassung

In diesem Artikel werden die Keramikstile des frühen Mittelneolithikums in Djursland besprochen. Hierin wird für einen neuen lokalen Stil für diese Region plädiert, den Blakbjerg-Brokhøj-Stil, benannt nach den zwei Grabenwerken, welche die Grundlage für den Artikel darstellen. Dieser Stil lehnt sich an den Virum-Stil an, welcher durch kräftige Schnurverzierung gekennzeichnet ist. Er enthält aber zudem viele neue Elemente des Mittelneolithikums I, wie zum Beispiel vertikale Bänder und die Reissverschlussmuster. Eine Koexistenz zwischen diesem und einem generellen MN Ia-Stil wird angenommen, und dass sich beide stilistischen Ausdrucksformen gegenseitig im sozialen Netzwerk der Trichterbecherkultur ergänzt haben. Zu dieser stilistischen Dualität wird eine Interpretation versucht.

### Article history:

Received March, 13<sup>th</sup>, 2013  
published November, 21<sup>st</sup>, 2013

**Keywords:** Actor-Network-Theory • Ceramics • Style • Neolithic • Enclosures

**Cite as:** T. Danborg Torfing. *The Network of Style. An analytic study of style and pottery from two causewayed enclosures.* *Journal of Neolithic Archaeology* 15, 2013, 64–87 [doi 10.12766/jna.2013.5].

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## Introduction

This article discusses the ceramics from two causewayed enclosures from Djursland: Blakbjerg and Store Brokhøj. Neither site has been fully published. This is the first analysis of the ceramics. A systematic analysis is possible because both sites yielded abundant material from closed layers.

There have been several excavations at Blakbjerg. The initial excavation took place in 1917, but more recent excavations have been conducted in 1992, 1993 and 2001. No scientific publications resulted from the investigations, and only one popular reference to them exists (Boas 2001). The material from 1917 has been mentioned and used several times to underline quite different claims regarding the stylistic group. Ebbesen has mentioned ceramics from Blakbjerg several times (in Ebbesen 1979, 74, the site is mentioned as Søbydal; in Ebbesen 1992, 79, the site is mentioned as Ryomgård), first as belonging to the MN I and the Troldebjerg style and later as a late Early Neolithic site, referred to as the Lokes Hede style. Madsen and Petersen use the material in a correspondence analysis, in which they interpret the site as belonging to the MN Ia, but related to the EN II Virum style (1982–1983, 101–101; 107). Since none of the ceramics from these old excavations have been published, and the arguments for their attribution to particular styles are based on few sherds and/or material from uncertain contexts, the stylistic grouping must still be considered as uncertain. The material analysed here stems from the most recent excavations from which stratigraphic information is available.

A report on the excavations at Store Brokhøj has been published, though its focus concentrated on a possible oven for burning ceramics (Madsen/Fiedel 1987). The authors dealt only shortly with the ceramics themselves and developed no systematic analysis. They claimed that the ceramics were a typical example of “Jutlandish MN I”, but they also stressed a relation to the Fuchsberg group (1987, 84–86).

In the present investigation, the styles will be analysed as networks of contacts between different vessels and between different closed contexts. The analysis will contain both quantitative and qualitative comparisons of known sites from the period. The focus will emphasize ornamentation, and shapes will only be discussed to a lesser degree.

## The theory of style

The archaeological entities labelled “social groups”, “communities”, “societies” or “cultures” could all be described as networks of contacts, as expressed by physical phenomena. Other networks might have existed in prehistory, but only those which left physical traces can be archaeologically examined. By connecting the various nodes of a network (whether humans, settlements or objects), we aim to create meaning about the prehistoric world. In this effort, style has played a central role in the history of research of the FBC. Such research goes back at least as far as Sophus Müller (1918), and it continues to play a role in contemporary interpretations of the development and changes in style (for instance see the manner in which Furholt 2010 couples neolithization processes with changes in style). To further this discourse on stylistic theory, I will consider the fundamental function and dynamics of stylistic behaviour and develop a model that can best help us understand the dynamics of the FBC.

Objects have the potential to transfer meaning about social relationships, and thereby possess the potential to change the way social networks function (Latour 2006). The creation of style extends the possibility for people to create and define group identity and

make it durable over time and space. The controversies (as defined by Latour 2005, 27–42) about specific styles are reflected in the material record, the various elements can have contrasting meanings and/or signify different relations. As a consequence, style, or rather individual stylistic elements, must be regarded as possible actors in the same way as Latour considers objects as actors (Latour 2005, 63–86). Not only is the variance, development and change of style crucial to our understanding of the dynamics of prehistoric networks, but through the process that Wiesner (1983, 190–194) describes as the development of positive self image, it is considered to have actively shaped those networks in the past. The stylistic elements become some of the most important actors, since they help to create the self-understanding of the individual and the group. In the FBC, style is never in the background, as can be seen by the ever-changing styles and various local developments. I would therefore argue that style does not just passively reflect social structures. Instead, it is an acting mediator that helps to create networks.

Individual stylistic features are meaningful for the formation of group identity. The angled band of the Fuchsberg style (Andersen/Madsen 1977) creates a common reference which facilitates the interaction and understanding between otherwise distant groups. At the same time, it creates a contrast to those who do not use this particular ornamentation. The decoration does not only reflect levels of contact (Whallon 1970), but also facilitates them, enables them and makes the ties stronger. It is actively used to create a sense of group belonging (Hodder 1979). Since angled bands appear on what could be described as ritual vessels (bowls and lugged beakers), it might even hold emblematic value for the group, contrasting with other groups (Wobst 1977).

These functions are not exclusive but supplement one another and reflect different aspects of the network, such as the close group, wider contacts, and the others. At the same time, other ornamentations on the same vessel might create different or even contrasting relations. In the case of the angled band, the technique with which it is made could be whipped cord and thus create a relationship between the Fuchsberg style and the Virum style (as defined by Ebbesen/Mahler 1979), but generate a contrast to the Volling style. Thus, several stylistic elements can be placed on the same vessel and be part of different networks on different levels of understanding.

Other vessels produced by the same group of people might be made with very different purposes and therefore create still other levels of understanding that might signify other spatial networks or social networks, for example, status, gender, or age. In each of these cases, the dynamics are the same – the stylistic elements are part of the controversy about group creation (Latour 2005, 28–30). They are active either in creating and upholding the network or, by contrasting the existing style, as an actor for creating new networks and stylistic change.

If an individual stylistic element can be regarded as an actor, then the style could be described as a network of connections between these actors. This makes it necessary to distinguish between two major levels of networks: one is the network of style, which is the way the individual variables and stylistic features form a network (a style), and the other is the overall network of people, things and stylistic elements. The first is easier to deal with, the second more challenging.

A network of style is a way of conceiving and analysing style, in this case the style of pottery. This style will be formed by the different relations between the variables, and can be analysed by examining these, plotting out the network they form. The overall network includes the networks of styles, which function as mediators alongside groups of artefacts, places, and people. A change in a

network of style, such as a change in the use of patterns, stylistic innovations etc., would change the way the overall network functions. It could create new meanings or connections, create new controversies, facilitate exchange and cause change in other networks of style, which again affect the overall network. Thus, the two levels are interdependent, creating a dynamic system of stylistic development.

The stylistic changes, developments, and local variances enable the investigation of the network of style. They render the connections, which we intend to examine. Working with style is thus an exercise that requires the researcher to closely consider both material and methods before starting, but also to be attentive to the fact that there might be several levels of meaning. At the same time, the study of style facilitates the study of the overall network and the dynamics between the two. In this article, I begin with a local style and analyse it as a network of style. I then explore the ways in which this style interacts with other styles and how it interacts with people and places through rituals. In this endeavour, I will define the specific ways in which style is created and the ways in which style creates.

### **Analysing networks of style**

Now that I have defined what I mean by style and have made some proposition on how it works, I will discuss how to incorporate this into the methods of analysing style. As style is a network of variables, I argue that it should be examined in a way that allows the different, and sometimes contradicting actors to reveal themselves. First, I will discuss the choice of unit to be analysed. That is, the choice between using single vessels as the basis and using an assembly of vessels from a closed find, for instance a pit. I will argue that the choice is related to the question to be answered, and that if a dynamic relationship is the focus of study, a combination must be applied. Finally, I will discuss the way in which I have designed my analysis and pose arguments for the choices made regarding the sites and methods.

### **Unit of examination**

The choice of unit to be examined is an important step. The answers you obtain depend on this choice. Hence, the questions you ask must be congruent. There are basically two different approaches: one is to consider the individual vessel as a closed unit in itself, the other is to use larger assemblies of vessels deposited together.

The first approach is tempting, since you will always be certain that the different variables are in fact contemporaneous (Ebbesen 1975, 11–15). At the same time, it makes it possible to use the vast amount of material from the megalithic tombs, which cannot be recognized as closed finds, and would otherwise have to be discarded in analyses of style. The problem is, as Madsen points out (1978, 53), that this method is very poor in providing an understanding of the reason behind variance in the material. One cannot assume that variations are chronological as Ebbesen does (Ebbesen 1975, 42–50; 1978, 62), since they could be caused by regional variances, the social status or gender of the maker/owner, or the function of the vessel, and so forth. In the same way, one cannot use individual vessels to claim something about local styles as Gebauer does (1988), since it cannot be proven that the observed variance is not caused by differences in chronology, function, gender, or status. This method succeeds in re-



vealing the potential actors of the network, but leaves them hanging without context, and thus makes it difficult to form an interconnected network.

A good example of this problem is the Fuchsberg styled bowls and lugged beakers. If examined as individual vessels, there are very few stylistic elements that tie them to the funnel beakers with which they are actually found. It is not only the angled bands that separate them from other vessels, but also the rim decorations. Where the most frequent pattern on (9 out of 23) vessels with angled bands from Toftum is a horizontal row of vertically placed impressions of whipped cord, this is rare on vessels not decorated with the angled bands (funnel beakers). Chisel stamps and vertical cord impressions are also used frequently on the bowls (on 6 out of 23 vessels) and lugged beakers (on 5 out of 23 vessels) (Andersen/Madsen 1977, 137–138). Only chisel stamps are sometimes used on the funnel-necked beakers. The rim ornamentation on funnel-necked beakers is dominated by patterns such as one or two rows of impressions (50%), as well as chisel stamps, crosshatchings and horizontal zigzag lines (Madsen 1977, 167). The last two patterns do not appear on any of the bowls or lugged beakers from Toftum. Thus, several of the frequent patterns are reserved for specific vessel types, with very little crossover.

So at Toftum, two different styles are present, one for bowls and lugged beakers and another for funnel-necked beakers. This difference is obviously not caused by chronology or regional differences. The variance goes beyond the limitations of the form, since lugged beakers and funnel beakers have the same basic form and the same zones of ornamentation. The difference is therefore a matter of choice within the same group of people to decorate the vessels differently. The difference can be seen to be dependent on the role of the vessel in the network, in which bowls and lugged beakers are more highly decorated and can perhaps be regarded as ritual vessels. I will return to this point and its implications at a later stage. For now, it illustrates the limitations of the single vessel approach, since it cannot connect the two different styles, and it would separate them into different, unrelated groups.

The second approach is to examine a vessel in relation to a closed assembly. This method uses closed finds of often fragmented vessels deposited together in sealed pits or layers as the starting point. There are several advantages as well as some disadvantages associated with this approach. One advantage is that two contemporaneous styles within the same group will not be misinterpreted as a chronological difference. At the same time, the context of the pit can tell us something about the reason for the deposition, for example, whether it is garbage disposal or ritual activity. Since the complete vessels are almost exclusively from ritual contexts, such as dolmens, bog sacrifices or ritual pits, examining assemblies broadens the areas of exploration to more mundane contexts, like settlement pits. These advantages, coupled with the possibility for stratigraphic observations, make this method very suitable for addressing questions about chronology.

This method has its disadvantages as well. Material from the dolmens and passage graves would have to be dismissed, since it cannot be regarded as closed finds. This excludes a great part of the network. Another disadvantage is that the method reduces the possibility to acknowledge two different styles in the material, since it commonly deals with fragmented vessels and thus it is difficult to connect the different patterns of a single vessel into a composition. The material from Toftum exemplifies this dilemma, where the difference between bowls and beakers would be blurred. To remedy this problem, one must return to the individual vessel as a basic unit.

Examining a vessel in the context of a greater assembly provides the advantage of connecting it to other vessels, thus enabling the exploration of networks of relations formed by the material. However, this method neglects the individual actor, overlooking the variations and dynamics within the assembly. I suggest that negotiations about group formation take place within an assembly, particularly in the way the different vessels connect. Furthermore, I propose that this occurs both in the creation and deposition of the vessels. Thus, in investigations of chronology or regionality, closed assemblies ought to be used. But concerning questions more related to the dynamics of the style, a combination of the two approaches is needed: both the assembly as a snapshot of a network, and the variations between the individual vessels, patterns and forms which act to create the dynamics of the network.

## Sites and methods

With the basics covered, I will move on to the method I have used for an analysis of the material. I have taken my starting point in a smaller local region: the northern part of Djursland. In the Neolithic, it was an archipelago separated from the south of Djursland by Kolindsund and from the rest of Jutland by Grund Fjord. By limiting the area to a small region, I can explore a local style which can then be coupled to other regions in a network. The choice of Northern Djursland stems from the fact that it has a large amount of non-analysed material, which differs in many ways from the material in other areas of the TRB north group.

Sites from this region have been examined in order to find suitable locations which have ample amounts of ceramics found in closed contexts. I decided to use ceramics deposited in three different pits at two causewayed enclosures, one from Blakbjerg (unpublished) with several phases of depositions and two from Store Brokhøj (Madsen/Fiedel 1987). The choice of causewayed enclosures over settlement pits was made for two reasons: 1) The ceramics have been placed there purposely and the layers were quickly covered again, so that the ceramics can with great certainty be considered contemporaneous, and 2) the causewayed enclosures serve as hotspots for ritual behaviour and might therefore be linked to the increased focus on decorating pottery and megalithic burials (Furholt 2010).

The drawback of the choice is linked to the advantages: Since it is a special material found in a specific context, it might not reflect the entire range of vessels (Lagergren-Olsson 2003, 177–179). We cannot expect the ceramics found in enclosures, ritual deposits, or with megaliths to be exactly the same as ceramics in settlement pits or layers, since ritual ceramics are often different than settlement ceramics, for example, the pedestal bowls of the MN I-II which appear in certain contexts but not in others. Consequently, it is essential to know what type of site we are dealing with when comparing ceramics. Excavations at Toftum (Madsen 1977) and Sarup (Andersen 1997; 1999) provide excellent comparative material from causewayed enclosures that date to the end of the EN and the early MN I. Two assumed settlement assemblies from Blakbjerg will also contribute relevant material to this analysis. At Blakbjerg there are indications of contemporaneous settlement activity, in the form of an area within the enclosure including postholes and burnt clay with wicker impressions, although affirmative evidence of a house could not be found. The uppermost layer, pit DJM 2455 A1 (phase 4), is interpreted as settlement debris and the material from this layer and from another feature (DJM 2021 A41, a 10 cm deep depression with flint waste and ceramics) are included in this study.

Another problem when using single depositions is the possibility of a single potter having a personal taste or style, or even that a single burning has a special appearance that does not reflect a larger trend, but instead just reflects the tools and mood of the day. Using two different sites, however, reduces this possibility and makes it more likely that the materials reflect a style used in a larger area.

### The pit from Blakbjerg

The pit DJM 2455 A1 is part of the causewayed enclosure, which measures 9 ha in size. There are four phases of deposition, three of which have shell layers at the bottom. These three were purposefully filled afterwards, while the top layer was covered with settlement debris. The first two phases are from earlier periods and an analysis is not included here. Phase 3 is subdivided into three layers: 3.1) a shell layer with unburnt bones, 3.2) a dark and sooty layer located immediately above the shell layer, and 3.3) a continuation of 3.2 but less sooty. All three layers contain adequate amounts of ceramics for analysis. The division of the phase was made to ensure that any chronological difference or difference due to depositional behaviour was observed (primary deposits/secondary fill, etc.).

The material from Blakbjerg is very large and fragmented. Therefore, the patterns have been individually counted for predefined zones (rim, neck, shoulder, belly, handle). Sherds from the same vessel and the same zone have only been counted once to avoid that the degree of fragmentation influences the analysis through the domination of larger vessels or vessels from which more pieces are available. Sherds from the same vessel but different zones (like belly and neck zones) have been counted and included separately. For the most common type of decoration, vertical lines on the belly, this was accomplished by using sherds from immediately below the neck-belly transition (the shoulder), following the method of Lagergren-Olsson (2003, 181).

Thus, at Blakbjerg it was difficult to analyse the composition of the individual vessel, unlike the assembly as a whole. This was remedied by the fact that 34 vessels at Store Brokhøj have been reconstructed to such a degree that the overall composition could be analysed. This supplements the analysis from Blakbjerg.

### The material from Store Brokhøj

The material from this site stems from two ditches (LJ and WS) that form part of an enclosure. What is interpreted as an oven for burning ceramics was also found at Store Brokhøj (Madsen/Fiedel 1987). The ceramics from this oven and the ditches are very similar, but only the finds from the ditches have been included in the analysis. It is clear from the excavation report written by Reno Fiedel (1996) that the ceramics in each pit are the result of a single event. At the bottom there are several stone pavings and a fireplace. The ceramics are concentrated above and around these features together with large amounts of burnt clay (in one concentration from LJ, 285 kg of daubing have been recorded). Only relatively complete vessels from Store Brokhøj have been analysed as thoroughly as the ceramics from Blakbjerg. They serve as a test of the validity of the material from Blakbjerg and as a way of examining the overall composition of the different vessels.

## The analysis

Since I will be analysing large quantities of pot sherds and vessels to find the structures made by many different patterns of decoration, statistical tools are essential. Both simple illustrative statistical measures, such as tables, and more complicated ones, such as correspondence analysis, (Madsen 1988a, 9–27; Shennan 1997, 308–341) are used. It is important to stress that they are implemented for exploratory purposes to investigate and make the networks of connections visible. Correspondence analysis achieves this aim especially well, since it shows the networks as a reflection of the connections (variables) between the analysed units. Each unit is placed near other units with which it is closely related and farther from those with little connections. At the same time, the network can be turned along more than two axes, allowing for examinations of different aspects of the network. The result of a correspondence analysis reflects neither chronology nor ethnic groups nor social status, but only the connections between the variables we enter in the analysis. These variables and the connections they form can of course be relevant to interpretations of chronology, ethnicity, gender-roles or social organization. Therefore, it is quite a helpful tool in examining very different kinds of networks (temporal, spatial, and social). The interpretation, however, depends on the units and variables used, and the reasoning employed to explain the observed patterns.

The correspondence analysis in fig. 2 is based partly on first-hand examinations of the material from Blakbjerg, as well as material from other sites from various publications. Here, I have relied on the classification made by the authors, supplemented by illustrations and photographs. In the division of variables, I follow Lagergren-Olsson (2003), with some changes. This is done for three reasons: 1) It is a simple and well-described system which allows for an addition of more sites, 2) the variables were able to divide the phases, and 3) it was the only way to include Lagergren-Olsson's sites that I deemed necessary, since a complete count of stylistic variables is provided that is only presented in a few other publications about the period.

I would have liked to include some Fuchsberg sites as well, because an analysis that could place Fuchsberg sites in relation to Virum and MN I sites would, in itself, be of interest, since the analysis of Madsen and Petersen (1982–1983) was not able to separate these satisfactorily. But no sites or pits have been published in a way that allowed for this association. However, since no Fuchsberg material is found at Blakbjerg, this is of minor consequence for the result.

It should be noted that one of the most common types of decoration, vertical lines on the belly, is excluded from the analysis. This is done because the pattern is abundant in both the EN II and the MN I, which is exactly the periods I wish to separate. Furthermore, Ellersødgård (Nielsen 1987) was included in the correspondence analysis at first, but then removed as an outlier with an extreme presence of applied lists. This feature could either be an indication of an early date or simply the result of a single potter's decision.

The add-in program CAPCA (v 2.2) programmed by Torsten Madsen has been used for this investigation (Madsen 2012). It claims to provide an absolute stability of results on the first three principal axes and good stability for up to around 10 principal axes (Madsen 2012, 5).

## Style on different levels

Now we can turn to the analysis of networks of style. I will first show how the material from Blakbjerg is different from that of other

known sites and that a local style is present. Then, by using the vessels from Store Brokhøj, I will argue that there are in fact two styles in the material: one local and one regional.

### Zipper patterns and whipped cord

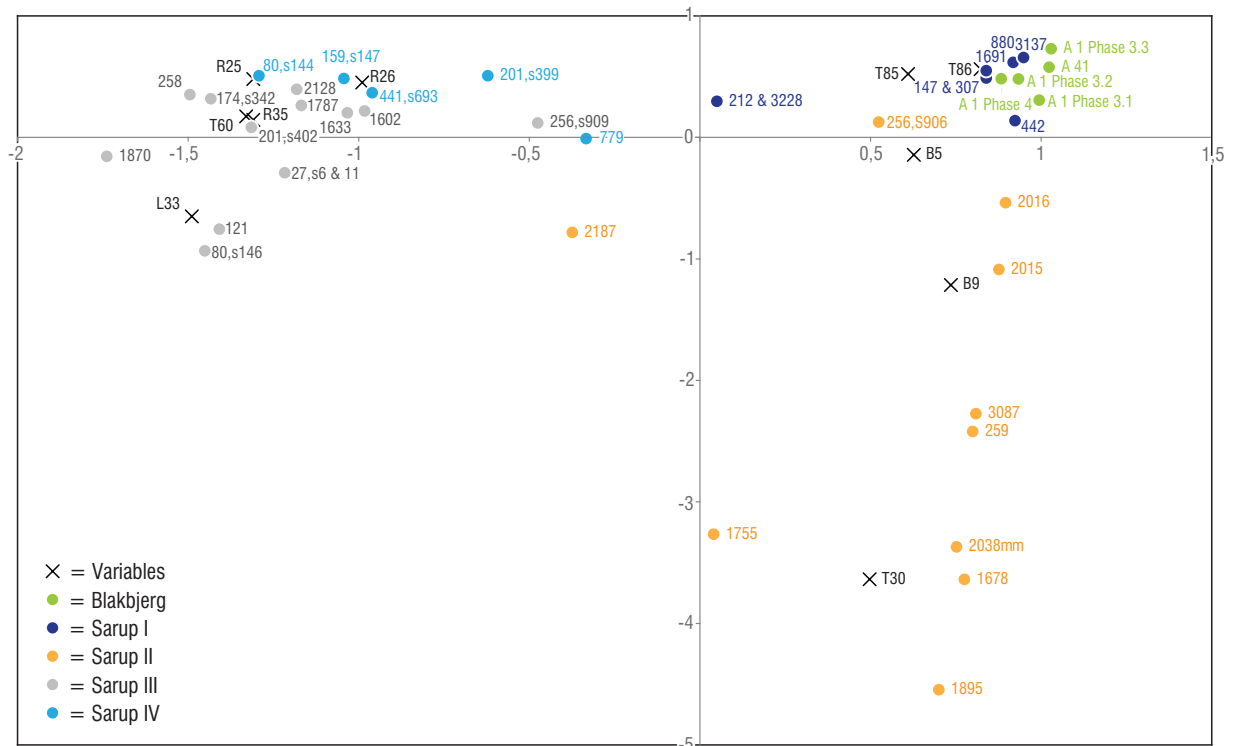
To define a pattern of ornamentation as a local style, it is also important to consider its chronological position, since the compared sites must be from the same period. Blakbjerg and Store Brokhøj must both be placed somewhere in the EN II or the MN I, based on ornamentation and vessel forms. Here, a closer analysis follows to narrow the date.











Both two-ply cord and whipped cord are frequently regarded as an Early Neolithic technique. For example, in the Sarup publications (Andersen 1997, 22–25; 1999, 31–34) the two techniques are used together with angled bands to define the Sarup I-phase (the Fuchsberg phase), while the zipper pattern and arched stamps are used to define the Sarup II-phase (the MN Ib). Andersen has made a correspondence analysis of the Sarup material, which makes it easy to compare the ceramics of the two sites by adding the Blakbjerg material to the analysis (Fig. 1).

In the analysis, the Blakbjerg material is closely connected to the Sarup I material. This connection is established solely on the presence of whipped cord and a few sherds with a two-ply cord technique, while angled bands are completely absent at Blakbjerg. This could suggest a style contemporaneous with the Fuchsberg style, like the Virum style or another related style, which would support the notion that Virum style was dominant on Djursland (Madsen 1994). But a closer examination of the data matrix (Table 1) reveals that the zipper pattern is relatively common at Blakbjerg, while the arched stamps are missing. The mixing of whipped cord and zipper patterns could be caused by a mix of material from different periods, but as 12 of the 14 registered zipper patterns in Blakbjerg A1 are either made with whipped cord or found on sherds with whipped cord, this is not the case (Table 2 and Fig. 3 c–d, g). The combinations of traits suggest a phase between the Fuchsberg style and the MN Ib.

Fig. 1. Correspondence analysis of Sarup and Blakbjerg: Objects (ceramics from pits, ditches or layers therein) and variables (pattern elements) on 1<sup>st</sup> and 2<sup>nd</sup> principal axes.

Abb. 1. Korrespondenzanalyse mit Material von Sarup und Blakbjerg: Objekte (Keramik aus Gruben, Gräben und Grabensedimenten) sowie Variablen (Musterelemente) auf der 1. und 2. Achse.



											
Data from Sarup vol. 2, p. 31	Pattern element:	B5	T85	T86	B9	T30	T60	R35	L33	R25	R26
Sarup I–IV (Andersen 1999)	Pits, ditches or layers therein	Group 1	Group 1	Group 1	Group 2	Group 2	Group 3–4	Group 3	Group 3	Group 4	Group 4
Blakbjerg	A41	•	•	9	1	•	•	•	•	•	•
Blakbjerg	A1 Phase4	•	5	33	6	•	•	•	•	1	1
Blakbjerg	A1 Phase3.3	•	•	22	1	•	•	•	•	•	•
Blakbjerg	A1 Phase3.2	•	•	26	4	•	1	•	•	•	•
Blakbjerg	A1 Phase3.1	•	1	11	3	•	•	•	•	•	•
Sarup I	147&307	10	7	32	•	1	1	1	•	•	•
Sarup I	212&3228	1	•	1	•	•	•	1	•	•	•
Sarup I	442	4	1	9	•	1	•	•	•	•	•
Sarup I	880	4	5	11	•	•	•	•	•	•	•
Sarup I	1691	1	2	1	•	•	•	•	•	•	•
Sarup I	3137	2	2	8	•	•	•	•	•	•	•
Sarup II	256,S906	1	•	3	1	•	•	1	•	•	•
Sarup II	259	1	•	1	1	2	•	•	•	•	•
Sarup II	1678	•	•	•	1	1	•	•	•	•	•
Sarup II	1755	1	•	•	2	8	2	•	2	•	•
Sarup II	1895		•	•	1	3	•	•	•	•	•
Sarup II	2015	2	•	4	1	2	•	•	•	•	•
Sarup II	2016	2	1	4	2	1	•	•	•	•	•
Sarup II	2038mm	1	•	•	2	3	•	•	•	•	•
Sarup II	2187	•	•	•	1	•	•	1	•	•	•
Sarup II	3087	1	1	2	3	4	•	•	•	•	•
Sarup III	27,s6&11	1	•	1	1	•	3	4	5	•	•
Sarup III	80,s146	•	•	•	•	1	3	1	3	•	•
Sarup III	121	•	•	•	1	•	2	•	4	•	•
Sarup III	174,s342	•	•	1	•	•	2	4	1	3	•
Sarup III	201,s402	1	2	2	•	1	23	5	4	4	1
Sarup III	256,s909	3	1	7	•	1	9	3	1	1	•
Sarup III	258	•	•	1	•	•	9	4	•	3	•
Sarup III	1602	•	•	3	•	•	5	1	2		1
Sarup III	1633		•	1	•	•	1	•	1	1	•
Sarup III	1787	1	•	1	•	•	4	1	1	2	1
Sarup III	1870	•	•	•	•	•	2	2	3	1	•
Sarup III	2128	•	1	•	•	•	3	1	•	•	1
Sarup IV	80,s144	•	•	2	•	•	5	2	•	6	•
Sarup IV	159,s147	•	1	•	•	•	2	•	•	1	•
Sarup IV	201,s399	•	2	9	•	•	10	1	1	5	•
Sarup IV	441,s693	1	•	1	•	•	3	1	•	1	1
Sarup IV	779	•	•	2	2	•	2	•	•	2	•

This strengthens the argument for the division of the MN I in an early phase (Ia - Troldebjerg) and a later phase (Ib - Klintebakken) that has been drawn into question (Gebauer 1988; Midgley 1992, 126–141).

A comparison between the contexts of the zipper patterns at Blakbjerg and Troldebjerg (Tables 2 and 3) reveals a great difference. Whereas the zipper pattern at Blakbjerg is used to separate bundles of belly stripes, the ones from Troldebjerg are almost exclusively connected to bands. The techniques of the patterns connected with the zipper pattern are likewise different at the two sites. While Blakbjerg is dominated by patterns executed in whipped cord, this only accounts for 0.5% of the cases from Troldebjerg. Thus, it can be said

Table 1. Incidence of different pattern types in Blakbjerg and Sarup according to data from the Sarup I–IV (Andersen 1999) and Blakbjerg.

*Tabelle 1. Das Vorkommen unterschiedlicher Verzierungselemente in Sarup und Blakbjerg nach Daten aus Sarup I–IV (Andersen 1999) und Blakbjerg.*



Blakbjerg DJM 2455	Zippers in a band (3)			Zipper patterns bordered by bundles of vertical lines (11)				Total
Feature A1	Engraved contours (1)	contours made with whipped cord technique (2)		Engraved lines (1)	Lines made with whipped cord technique (10)			
The technique of the "zipper"	Oblong stamp or short line (1)	Round impressions (1)	Whipped cord (1)	Oblong stamp or short line (1)	Oblong stamp or short line (1)	Round or irregu- lar stamp (4)	Whipped cord (5)	
Phase 3.1	•	•	•	•	•	2	1	3
Phase 3.2	•	1	1	•	•	1	1	4
Phase 3.3	•	•	•	•	•	1	•	1
Phase 4	1	•	•	1	1	•	3	6
Total	1	1	1	1	1	4	5	14

Table 2. Incidence and production techniques of zipper patterns combined with bands and bundles of lines found in feature A1 at Blakbjerg DJM 2455.

*Tabelle 2. Vorkommen und Herstellungstechnik des Reißverschlussmusters in Verbindung mit Band- und Linienbündelmotiven aus Befund A1 in Blakbjerg DJM 2455.*

Troldebjerg	Zipper pattern connected to bands (c. 1050)		to bundles of lines (≤6)
	Engraved contours c. 1050	Contours made with whipped cord 4	Lines in whipped cord 6 or less
From Ebbesen 1979	SB 44–48, 50, 53–54, 69–75, 79–81a, 82a, 89, 91a, 95, 97c, 109c, BH 11	SB 26	BB 10

Table 3. Incidence and production techniques of zipper patterns combined with bands and bundles of lines found in Troldebjerg according to Ebbesen 1979.

*Tabelle 3. Vorkommen und Herstellungstechnik des Reißverschlussmusters in Verbindung mit Band- und Linienbündelmotiven nach Ebbesen 1979.*

that although the zipper pattern appears quite often at Blakbjerg, it does so in a different way than at both Troldebjerg and Sarup II. There can be two explanations for this: chronology or regional variance. The second explanation has two things in its favour: 1) The chronology would be very tight if yet another phase on the transition between the EN and the MN should be added, and 2) the site of Store Brokhøj shows exactly the same manner of implementing the zipper patterns, whereas the only site suggested as Troldebjerg on Djursland is Blakbjerg, based on a single bowl from an old excavation (Ebbesen 1979, 34–36, fig. 40–43. Note that Ebbesen later re-dates the material from 1979 to the late EN: Ebbesen 1992, 79).

An argument for an earlier phase than the MN Ia-Troldebjerg would be the large amount of whipped cord impressions. This can also be seen on the funnel beakers, where the vertical lines on the belly zone on Blakbjerg A 1 phase 3 have twisted cord in 20% of the cases. This is most in accordance with the Early Neolithic sites (Table 4). Here it is important to note that the MN I sites all lie to the south of Blakbjerg. It is possible that the whipped cord lasted longer in other areas. This could be supported by Rävgrav that also has a higher percentage (13%) of whipped cord than the classic MN I sites even though there are bowls with bands on the site which suggest an MN I date (Larsen 1992). Other sites from Zealand and Southern Sweden with an MN Ia date also have whipped cord as a dominant feature, for example, Verup Mose (Ebbesen 1979, fig. 74; Madsen/Petersen 1982–1983, 107; Mathiassen 1943, 128–129) and Annelöv (Lagergren Olsson 2003, 189, fig. 9).

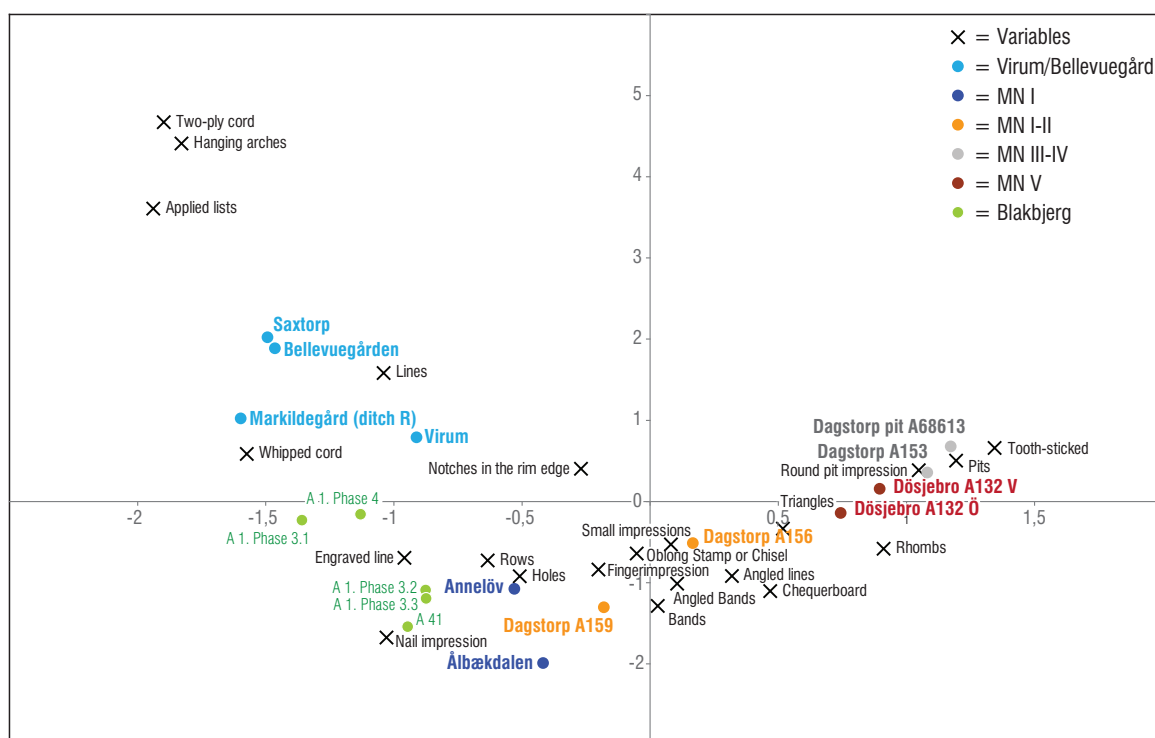


Fig. 2. Correspondence analysis of ceramics from EN and MN sites from Denmark and Sweden: Objects (ceramics from whole sites or closed context) and variables (pattern elements) on 1<sup>st</sup> and 2<sup>nd</sup> principal axes.

Abb. 2. Korrespondenzanalyse mit Keramik aus FN und MN Fundorten in Dänemark und Schweden: Objekte (Keramik aus gesamten Siedlungen oder geschlossenen Befunden sowie Variablen (Musterelemente) auf der 1. und 2. Achse.

Fig. 3. Selected shards from A1, phase 3: a and i shards from the same bowl; b rim and top of a bowl; c, e–g shards from bowls or bellies of beakers; d shard from a neck; h a clay disk.

Abb. 3. Ausgewählte Scherben aus A1, Phase 3: a und i Scherben der gleichen Schale Rand und Oberteil einer Schale; c, e–g Wandungsscherben von Schüsseln oder Becher; d Scherben eines Gefäßhalses; h Fragment einer Tonscheibe.

	Engraved lines	Cord	Other	Applied plastic lists
Blakbjerg A1 EN II/MNI?	77,4 %	20,5 %	2,1%	•
Rävgrav EN II/MN I?	87 %	13 %	•	•
Bellevuegården EN II	60,5 %	28,8 %	•	10,7 %
Virum EN II	78,8 %	19,7 %	1,6 %	•
Ellerødgård EN II	26,1 %	22 %	•	52 %
Toftum EN II	85 %	10 %	5%	•
Troldebjerg MN I	99,4 %	0,6 %	•	•
Hanstedgård MN I	97 %	2 %	1%	•
Bistoft MN I	100 %	•	•	•

Tabelle 4. Incidence (%) of the different pattern techniques found at Early Neolithic sites.

*Tabelle 4. Vorkommen (%) der unterschiedlichen Verzierungsstechniken von frühneolithischen Fundstellen.*

### MN Ia and whipped cord

In a correspondence analysis of patterns where Virum style sites, MN Ib–II sites and later MN sites have been compared, Blakbjerg and Annelöv form a middle phase between the Virum style and the MN Ib–II sites (Fig. 2). This supports the idea of an MN Ia phase, but seemingly one where whipped cord is used more than at Troldebjerg.

If this is correct, the forms should be dated to the MN I. At Blakbjerg phase 3, three beakers can be reconstructed in a way that allows for a shape analysis. The first is a finely shaped beaker with vertical stripes on the belly, engraved with a stick (Fig. 4). The shoulder is strongly curved and the widest point pushed above the middle. The neck is funnel-shaped with straight sides that are very tall in comparison to the belly. Under the rim, there is a large zigzag line made with an applied list. The shape is comparable to Koch's type VI (1998, 102–103), and there is a strong similarity to two beakers found in Roskilde Fjord, which may be related to beakers of the Denghoog type (Koch 1998, 268–269; Ebbesen 1979, 42). Normally, type VI is dated to the MN Ib, but this date is uncertain and is based on ornamentation only (Koch 1998, 103). It is therefore possible that it could also date to the MN Ia, especially in cases such as this where the ornamentation is simpler and does not have the features that normally relate it to the MN Ib.

The two other beakers have high, funnel-shaped necks that bend slightly outward. There is a clear transition between the necks and bellies. The latter are evenly rounded and have the widest point at the middle. Both have vertical lines engraved with a stick. One has a horizontal zigzag line under the rim, this pattern is engraved with a stick (Fig. 5), and the other has short slanting impressions. They are both Koch's type V1, which is best dated to the early part of the MN I (1998, 94–99).

This means that the three beakers that can be reconstructed would fit well in the MN I. This applies both to the ornamentation and the shape. There are also several fragments of a bowl with vertical bands, which is a clear indication of an MN I date (Fig. 3 a, i). The bands are made with lines that are engraved with a stick, and the filling of the bands consists of horizontal or slanting lines. The filling connects the bands in the top part, and thus forms a so-called pants-pattern, which is seen at Troldebjerg (Ebbesen 1979, 61). There are a few other sherds that have vertical bands (Fig. 3 d, g).



Fig. 4. A small funnel beaker from A1 phase 3, Koch's type VI.

Abb. 4. Kleiner Trichterbecher aus A1, Phase 3, entspricht Koch's Typ VI.



Fig. 5. Funnel beaker from A1 phase 3, Koch's type V1.

Abb. 5. Trichterbecher aus A1, Phase 3, entspricht Koch's Typ V1.

How can the large amount of whipped cord be explained? The context is important. To expand on this, I now turn to Store Brokhøj. At Store Brokhøj there are three groups of beakers, classified on the basis of ornamentation:

- 1: Beakers with no belly or neck ornamentations. Only two vessels are known and the rims are missing. Both vessels can be classified as lugged beakers.
- 2: Funnel-necked beakers of Koch's type V1 or V2 (1998, 94–102). There is also one lugged beaker in this group (Fig. 6f). Belly ornamentations consist of vertical striping, 1 out of 14 ornamentations in whipped cord, the rest in engraved lines. There are no neck decorations, but most beakers have a rim decoration, consisting of single zigzag lines, crosshatchings, and vertical or angled impressions made with stamps or mussel shells. The ornamentation has a clear resemblance to beakers from both Toftum (Madsen 1977) and MNI sites such as Troldebjerg (Ebbesen 1979, 48–69). The similarity to Toftum is strong in the rim decorations, with crosshatchings and single zigzag lines. But in contrast to Toftum, two-ply cord is completely absent at Store Brokhøj. In addition, all the beakers of Group 2 at Store Brokhøj have continuously striped bellies, whereas at Toftum the majority are organised in bundles (Madsen 1977, 167–169). The shape and the lack of two-ply cord date them to the MNI.
- 3: Funnel-necked beakers of Koch's type V1 and V2. Evidently, no beakers had lugs. Some have a high neck but others are close to funnel bowls according to Koch's definition of the relative openness of the vessel (1998, 65–67, for example, the vessel shown as Fig. 6b). Except for missing lugs, these beakers are best categorized according to their shape as Koch's type III broad lugged beakers, which she considers to be a ritual type



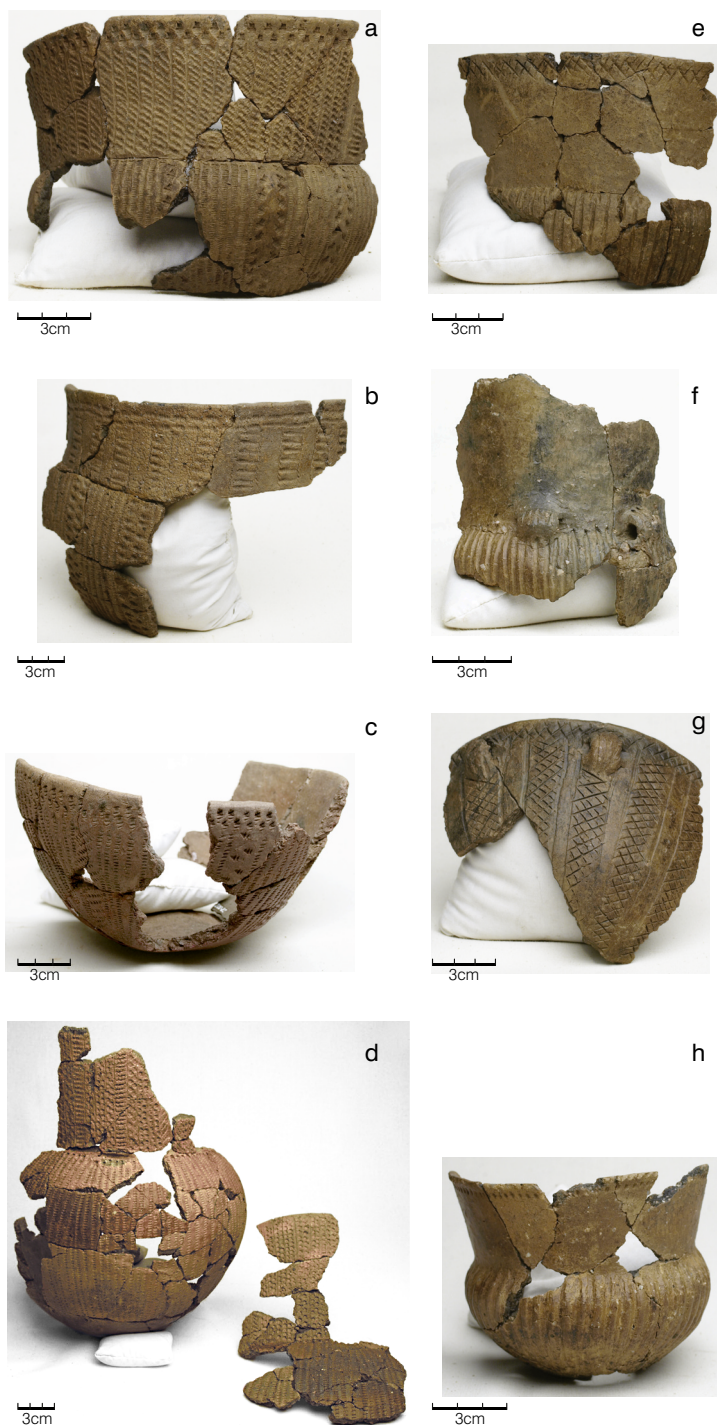


Fig. 6. Two styles from Store Brokholm. To the left: vessels decorated in whipped cord technique, to the right: vessels whose patterns are engraved with a stick (photos: T. Danborg Torfing, Museum Ostjylland).

Abb. 6. Zwei Stilarten von Store Brokholm. Links: Gefäße mit Schnurverzierung, rechts: Ritzmuster (photos: T. Danborg Torfing, Museum Ostjylland).

dating to the ENII and possibly to the MN Ia (1998, 111). The rim, neck, and belly of all eight of the beakers of Group 3 are completely ornamented. They are quite differently ornamented when compared to the beakers of Group 2. The beakers of Group 3 are all exclusively or primarily decorated with whipped cord. The bellies have bundles of vertical lines in whipped cord. Zipper patterns or rows of impressions separate these bundles. The necks can be decorated with narrow bands with various fillings executed in whipped cord. A few necks have broad fields between the narrow bands; these can be filled with oblique lines in whipped cord (two cases) or, in one case, with a combination of vertical and horizontal bands that form a ladder pattern. The rim decorations consist of horizontal lines of whipped cord, rows of round impressions made with the end of a whipped cord or several closely placed zigzag lines made with whipped cord. This last feature is never found in an EN context and is a certain MN I feature. One lugged jar with the exact same decoration pattern could also be added to this group (Fig. 6 d).

The difference between Groups 2 and 3 is striking. Of the 9 beakers with whipped cord, only one has no neck decoration, and *all* of the beakers with neck decorations are decorated primarily with whipped cord. At the same time, the distribution of bundles of lines combined with zipper patterns follows the same pattern: They are all connected to the vessels with neck decorations. This also adequately explains the situation at Blakbjerg, where whipped cord and zipper patterns are closely linked. So we have a group of beakers (Group 2) that are regular MN I beakers, and then we have a group of more elaborately decorated beakers (Group 3), decorated with whipped cord but associated with the MN I through the use of zipper patterns.

There are 3 groups of bowls in the material. One poorly made miniature bowl is not categorized in any group.

- 1: Flat bowls. At least three such bowls are present. Two bowls are entirely undecorated. The third bowl has a line of holes under the rim.
- 2: Tall bowls with lugs, so-called Troldebjerg bowls. Two bowls are available. One has a rim pattern consisting of crosshatchings with vertical bands below this that are filled with yet more crosshatchings. The implemented technique is exclusively engraved lines (Fig. 6g). The second bowl is very special. It has a great angled band like that of the Fuchsberg bowls, executed in whipped cord impressions. But where most Fuchsberg bowls have the same filling pattern all around the bowl, the bowl from Store Brokhøj has alternate fillings, including horizontal lines, crosshatchings and 'herringbone' patterns (all in whipped cord technique). This marks out the individual bands, much like the Troldebjerg bowls. Another late feature can be observed in that the angled band is combined with zipper patterns executed in whipped cord. The rim decoration is made by short vertical impressions of whipped cord in two rows with alternate blank fields (chequerboard pattern), again somewhat like that of the Fuchsberg style. The lugs are broken and the decoration is missing, but the lugs are long and pipe-shaped, which could be an MN I feature (Davidsen 1974, 36; Gebauer 1978, 131).
3. Spherical bowls. There are at least four bowls of this type. Three of them are decorated – like the bottoms of Group 3 beakers – with bundles of lines made in whipped cord, separated by zipper patterns or other impressions (Fig. 6c). The rim decorations include one case of zigzag lines in whipped cord, one case of two rows of impressions made with the end of a whipped cord, and one case of a single row of stamp impressions. This matches the rims of the Group 3 beakers. The fourth bowl has a rim decoration consisting of three rows of impressions made with the end of a whipped cord, followed below by a surface-covering chequerboard pattern made with short vertical lines in whipped cord technique.

These groups of bowls can be related to the groups of beakers in three stylistic groups: no decoration, a common MN I style in which whipped cord is not used, and a more elaborate local style which makes extensive use of whipped cord. It is this last group that I denote as the Blakbjerg-Brokhøj style. The division of the two last groups is very interesting, since it puts the question of stylistic choice to the fore.

There are two bowls at Store Brokhøj which do not fit in this division: the bowl with the large angled band and the spherical bowl with the surface covering chequerboard pattern. It is noteworthy that both seem to contain elements of the styles dominant in Jutland during the end of the EN – the large angled bands of the Fuchsberg style and the chequerboard pattern seen on vessels decorated in the Volling style. These elements have been included and updated to fit into the new stylistic expression. This could either be an expression of converging styles, or it could be a result of several different stylistic groups meeting at Store Brokhøj, performing common ritual depositions of ceramics.



Concerning the bowls at Store Brokhøj, the local style is seemingly confined to the non-lugged bowls, although this conclusion could be shaped by the small number of vessels. It should be noted therefore that at Blakbjerg DJM 2021 A41 only one bowl was found: a tall lugged bowl, which follows the decoration of the Blakbjerg-Brokhøj style, with bundles of lines made in whipped cord separated by various patterns of impressions. Thus, it seems that the situation at Store Brokhøj is at least partly based on coincidence. It should also be noted that the locally styled bowls seem to be available in greater numbers than the common MN I styled bowls. In the material from DJM 2455 A 1 and DJM 2021 A 41, there is only one bowl that belongs to the common MN I style (Fig. 3 a, i), and while the material is fragmented and shapes are difficult to determine, at least three bowls of the local style are present (including the above mentioned lugged bowl and Fig. 3 b). Considering the regular combination of lines in whipped cord and zipper patterns, it seems that the local style is dominant on the bowls at Blakbjerg as well as at Store Brokhøj. But a larger amount of data must be available to verify this.

The elaborately decorated beakers have a belly ornamentation which resembles that of the bowls. In the same way, the Fuchsberg lugged beakers resemble the Fuchsberg bowls, and the Prachtbechers in the Troldebjerg and Klintebakke styles have bands like that of the Troldebjerg and Klintebakke bowls on either both necks and bellies or just on the bellies, with patterns on the necks resembling that of the pedestal bowls (Kaul 1995; Ebbesen 2011, 53–54, fig. 36.7 and 37a.2; Winter 1935, fig. 35). It is noteworthy that even though bands are found at both Blakbjerg and Store Brokhøj, they are only rarely used on the bowls or the bellies of beakers, while it is a dominant feature on the necks of the elaborately decorated beakers.

Since a couple of the Blakbjerg-Brokhøj styled beakers are rather short, nearing the shape of funnel bowls, it is possible that they should be regarded as a part of a development from lugged beakers of Koch's type III towards funnel bowls and shouldered bowls as suggested by Koch (1998, 111). The suggested dating within the MN Ia would fit this development between the lugged beakers of the EN II and the shouldered bowls of the MN.

The ornamental feature of vertical lines separated by zipper patterns is also seen on a group of funnel bowls and shouldered bowls in the Hagebrogård style (Jørgensen 1973, abb. 26: nr. 167, 168, 144, 146; Fabricius/Becker 1996, Pl. B IV, nr. 106). In the Hagebrogård style, they are supplemented with neck decorations of chequerboard patterns made with a large stamp. This element is seen on other vessels in the Hagebrogård style (Jørgensen 1973, abb. 26, nr. 167, 172; abb. 22 nr. 183), but not in the Blakbjerg-Brokhøj style. At Blakbjerg and Store Brokhøj, the necks are exclusively decorated with vertical bands or broad fields in whipped cord, which are not used at Hagebrogård or Herrup (Jørgensen 1973; Fabricius/Becker 1996). The two styles can thus be distinguished by their neck decorations. The surface-covering neck decorations with a chequerboard pattern seem to be a continuation of the EN Valling style, where it seems to be a common feature, although proper analysis of this material is needed.

### The Blakbjerg-Brokhøj style

The shapes of this style belong to the MN I, and we also have the MN I decoration elements of bands and zipper patterns, but incorporated in the design in a very different way than at Troldebjerg or Klintebakken. For these reasons, the sites of Blakbjerg and Store Brokhøj are best placed in the MN Ia phase, with whipped cord as an element

that points back in time, drawing on the tradition of the Virum and Fuchsberg styles. So we have a style available at the sites which is contemporaneous with Troldebjerg and Hagebrogård, but radically different in appearance, meaning that it must be regarded as a new local style: the Blakbjerg-Brokhøj style. It is characterised by the use of bundles of lines in whipped cord, separated by zipper patterns or other impressions on the bowls and bellies of the beakers and the necks of the beakers decorated with vertical bands and broad fields, mostly in whipped cord techniques.

It should be noted that Ebbesen classifies vessels from Blakbjerg and Store Brokhøj to his late EN style: the Lokes Hede style (Ebbesen 1992, 79 and notes; Ebbesen 2011, 51–53 and fig. 35). The material presented here neither fits to the EN dating nor his description of the Lokes Hede style. As an example, no two-ply cord appears at Store Brokhøj and it is extremely rare at Blakbjerg. Actually, the whole definition of the Lokes Hede style appears very uncertain. An example could be the beaker with one handle on Ebbesen's fig. 35 (2011, 53), which looks identical or perhaps is the same as the one from Ettrup, which Ebbesen dates to the MN I in the same book (Ebbesen 2011, 336–337). The other vessels are from various sites, and very little seems to tie them together. Lokes Hede itself has not been fully published. The few beakers from this site that have been depicted in publications hardly support an exclusive EN date (under the name Øls holdeplads - Ebbesen 1979, fig. 40–43).

Neither in 1992 nor in 2011 has Ebbesen put forward any proof concerning a contemporaneous dating of the different sites, nor any analysis which shows Lokes Hede to be dateable to the Early Neolithic or even to one phase, since most enclosures have several phases. It should also be noted that while Ebbesen categorizes the vessels from Blakbjerg and Store Brokhøj as part of the Lokes Hede style, he places other vessels from the northern part of Djursland in both Virum and Fuchsberg styles (Ebbesen 2011, fig. 33.3 is from Mogenstrup – see Nordman 1918, 97, fig. 72, while fig. 34.10 is from Glæsborg – see Müller 1918, 24; 29, nr. 96). This underlines the importance of using closed finds to examine the range of decorations within a local area rather than looking at individual vessels. Therefore, until a more detailed analysis of the Lokes Hede site and the context of the other vessels are presented, it must remain a loose theory that there is a Lokes Hede style contemporaneous with Fuchsberg and Virum styles in Northern Jutland. The material from Blakbjerg phase 3 and Store Brokhøj would not fit into such a stylistic group, since there are so many MN I elements.

### Local and non-local styles

As seen above, there are two radically different styles involved: the presently termed Blakbjerg-Brokhøj style and a more general MN I style. This is similar, for example, to the situation with the Fuchsberg phase at Toftum, where, on the one hand, the bowls and lugged beakers have the distinct Fuchsberg-style and, on the other hand, the funnel-necked beakers resemble other related styles. But in contrast to the situation at Toftum, the two styles at Blakbjerg and Store Brokhøj are not limited to specific vessel forms. There are funnel-necked beakers, a few lugged beakers, as well as a few bowls in general MN I style, and there are funnel-necked beakers, a few lugged beakers, and several bowls (with and without lugs) in the Blakbjerg-Brokhøj style.

So how should we understand the Blakbjerg-Brokhøj style and its relation to the general MN I style? Here, we have a controversy about the stylistic development. The Blakbjerg-Brokhøj style leans

on the tradition from the EN with its use of whipped cord and horizontal lines as rim decorations, but also attempts to accommodate new trends such as bands and zipper patterns. There appears to be a strong group creation process, which distinguishes the group form from other related groups. At the same time, a clear connection trend is established through the use of both the general style and the new incorporated features.

It is interesting to see how the new elements (bands and zipper patterns) are made with the old technique (whipped cord). Also, the composition is different from that of Troldebjerg, where the bands are sometimes placed on the bellies of the Prachtbechers, while in the Blakbjerg-Brokhøj style they are exclusively on the necks. This might also be a continuation from the EN, where the Virum style has broad fields with oblique lines and hanging arches on the necks. Broad fields with oblique lines seem to be incorporated into the new Blakbjerg-Brokhøj style, but now combined with a zipper pattern between each field.

The reason behind this double style can perhaps be found in the development of the Virum and Fuchsberg styles at the end of EN. The appearance of the Fuchsberg style must have created a conflict in the late Early Neolithic, where Valling had previously been dominant in Jutland. At the same time, Virum influence is seen on Djursland (Madsen/Petersen 1982–1983). The style of the southern and eastern areas was changing, and the structure of the network followed suit, thus creating a corridor for conflict and change. Some of the trends (such as vertical lines as belly ornamentation) are then absorbed in the late Valling style (Madsen 1973–1974) as a response to this new “global” development. Thus, the common style of the funnel-necked beakers with vertical lines became a gathering point which all groups used at the time. The common style acted as a way to facilitate identification between the different groups.

The spread of the vertical lines on the funnel-necked beakers over a large area acted as a mediator, connecting the groups and allowing new trends to move through the network. These trends had very different ways of being incorporated into the local networks. One might argue that in Jutland the Troldebjerg style (MN Ia) is only seen in the burial types of pedestal bowls and clay spoons, signalling a common identity in a highly ritualised sphere. This common identity is then contrasted by various local styles, such as the Blakbjerg-Brokhøj style and the North Jutlandic Hagebrogård style (Jørgensen 1973). These styles had a large degree of common reference and absorbed many of the same trends, but at the same time reacted and continued to display a strong local identity, thus creating a dynamic situation where a closer interaction was constantly being facilitated and led to a more homogenous style in MN Ib and MN II.

### Style and creation

Now that the styles of Blakbjerg-Brokhøj and MN I in general have been explored as networks, I will discuss how the ceramic style at Store Brokhøj interacts with the overall network, in order to highlight the link between the production of pottery and the function of the site of Store Brokhøj. According to the original interpretation, three pits in an enclosure system were excavated in addition to the remains of an oven for burning ceramics (Madsen/Fiedel 1987). While the oven was thoroughly investigated and published, the ditches were only briefly described. Nevertheless, the original excavation report (Fiedel 1996) as well as drawings, list, etc. can be used in the following description and interpretation of the site. The interpreta-

tion of the oven is disputed by Koch, who believes it is the remains of a hut for manufacturing and drying ceramics (1998, 128–129). The oven interpretation is supported by the presence of a possible air-channel, but Koch's interpretation is supported by the temperature of the firing of the funnel beakers that indicates that they have been burnt in an open fire and therefore not in an oven. What is relevant here is that there are clear remains of pottery production.

Only two of the ditches contained material from the Neolithic period (ditch WS and LJ). The third contained only a few Iron Age sherds at the top (ditch UK). This ditch lay some distance from the others and close to the oven. Its relationship to the enclosure is therefore not certain, and it could be some sort of resource pit. The material from Store Brokhøj was primarily deposited in concentrations on stone pavements, which included quern stones deliberately placed with the used side downwards, and around a fireplace. Sometimes it was deposited together with the clay daubing, sometimes beneath a layer of clay daubing. The layer of ceramics extended up the north side of the ditch, suggesting a direction from which the deposition took place. If this is accepted, the material was deposited from the inside of the enclosure, where the oven was also situated. No stratigraphy or layers were determined within the ceramic deposits so that they must have been deposited in a single event.

The two stylistic groups, the local and the general, were deposited together, and the ceramics from the possible oven at Store Brokhøj contain vessels from both stylistic groups, suggesting that they were also burnt together (although numerous burnings at the same spot are possible). Thus, the two styles have not been separated by the deposition.

### The short life of the ceramics

It could be suggested that the clay daub originated from demolished houses, but since daubing was also found around the oven, it seems to stem from this or a similar oven. The daub ranges from black to orange-red, depending on the degree of burning. This would explain the common deposition of the vessels beneath clay daubing. The entire content of one or more burnings is placed together in the ditches, both the content of creation and the means of creation, establishing a closed cycle. This is also supported by finds of tempered and untempered clay-lumps in the ditches, reflecting the first stages of creation, as well as straw tempered clay cylinders that might have served as anvils in the hammer and anvil technique (Madsen/Fiedel 1987, 85, fig. 7.J).

What was the reason for deposition? Madsen and Fiedel (1987, 85) suggest that the deposition is the result of a failed burning, and while this might be the case for the sherds found in the remains of the oven, of which several show signs of cracking, secondary heating etc., it does not fit the material from the ditches, where such signs are only present in a few of the vessels. The amount of material indicates several burnings, since remains of at least 70 different vessels were present in just one concentration in ditch LJ. It seems less likely that they are the result of failures. The way the material has been deposited above stone pavements also suggests purposeful action. Therefore, I suggest that the vessels were intentionally produced for deposition in the ditches, either with deposition as their sole purpose or, more likely, with deposition intended as the final use after a series of ritualistic or ceremonial purposes. A similar suggestion has been made by Koch regarding a deposit from Sarup pit A 258, which Andersen originally interpreted as a deposit of misfired vessels (Koch 1998, 131).

According to my interpretation, the ceramics were produced, used and deposited within the enclosure system. The ceramics were purposely disposed of, along with the remains of the oven and further raw materials, just as the ditches were purposely refilled. All traces of the activity were destroyed. The actions and results at the enclosure were limited to the participators. Combined with the encircling function of the ditches, which must be said to be symbolic rather than anything else, the creation and destruction of pottery establishes close ties between the participators, marking them out as a group sharing identity. The destruction of the vessels and of the site (and other artefacts?) is a way of excluding others from gaining access to this in-group-identity. After this event was completed, only the knowledge and experience gained by the participants remained.

If analysed from the perspective of style, the production and destruction of ceramics at special sites, such as enclosures, could be described as a way of controlling the process of "identification via comparison" (Wiesner 1984, 229–230), and thus the creation of style. I do not argue that this process only takes place inside the enclosures, or that it is the only activity going on, but rather I argue that the enclosures facilitate the actions leading to group identification and allow for an exchange of knowledge within the restricted area of the enclosure.

### The negotiation of style

The production and destruction of ceramics as part of the activity at the enclosures links the ceramic styles to the enclosures. An enclosure becomes a site for assembling the style, while the style becomes an important part of the creation of group identity. The enclosure is given special meaning by the group's common actions, including the production of ceramics. This strengthens the enclosure's role in the network, making it a central place where agreement is made about group identity. This could be one of the reasons for the need to continuously return to the enclosures: to renew or renegotiate this identity.

In times of crisis and change, the different groups in the local area could meet to reassert a community that extended the small social unit, but also allowed for changes and new ideas to be incorporated. This renegotiation is perhaps why new elements are adopted, but sometimes treated rather differently in different areas. The trait of the zipper pattern exists in several styles, but it is used on Djursland in combination with elements like whipped cord and fields with oblique lines that have their roots in the Virum style, while this is not seen at Troldebjerg. One of the functions of enclosures might be to allow these changes to take place at a regulated pace, to minimize friction between the various groups living in the area. The rather special bowl from Store Brokhøj with Fuchsberg influence could be explained in this light. The participators at the enclosure incorporated this as a way of including a relation to nearby groups (or persons moving from other areas) in an acceptable way, thus creating a link to other networks.

Such a model would indicate that the enclosure also marks a neutral place in which the different local units could meet under regulated circumstances. This hypothesis is supported by the location of the enclosure near waterways and crossings of these, which facilitated travel and meetings. This interpretation is somewhat contrary to the model suggested by Madsen, where the enclosure is the central point of the local group (1988b, 330–333). Instead, I suggest that they are placed on locations easily reached by several groups from a larger area. It is worth noting that the sites which Madsen uses in



his analysis are not contemporaneous, making it more difficult to argue that they should be local centres, since it would leave some areas devoid of a centre for long periods of time. Rather, the enclosures should be seen as places where, when needed, groups from a larger area could meet on neutral ground and renegotiate their affiliations and identities through a series of rituals, including the creation and destruction of artefacts.

The changes in the network of style in the ENII–MN Ia provide a reason for the increased focus on these activities at the enclosure sites during that period, strengthening the networks and creating a continuous unification process of the style towards the MN Ib–MN II. The new influences and changes in society in general make the activities increasingly essential, establishing a greater focus on the identity-creating function of the style. This gradually changes the relations between the different actors, whereby the gradual adaptation of the new stylistic elements suggests a more common ritual identity.

This model underlines that stylistic change is not something that just happens without meaning. It is part of the process by which changing networks create new affiliations and identities and new styles that will, in turn, change the network themselves. The process is thus very dynamic, as the changes in network and style interact.

## Conclusions

Ceramic material from two causewayed enclosures from Djursland have been analysed and the results show a marked difference from previously examined materials, giving rise to the definition of a new local style, the Blakbjerg-Brokhøj style. This style is defined by the rich decorations in the whipped cord technique. The necks of the funnel beakers, jars, and perhaps funnel bowls were dominated by vertical bands. The belly ornamentation consists of vertical lines separated by zipper patterns or two rows of impressions. The ornamentation of the bowls matches the bellies of the beakers, but without vertical bands. Vessels decorated in this style were found together with vessels in a general MN Ia style, in which the funnel beakers had vertical stamps, angled lines and crosshatchings under the rim, no neck decoration and engraved vertical lines on the bellies, and the bowls had engraved vertical bands. It is argued that these two styles reflect different meanings and relations within the network. The Blakbjerg-Brokhøj style is important in the local identity and group creation process and the general style served to create a common language with other groups, creating links in the overall network.

The situation at Store Brokhøj, where all parts of the production of ceramics, for example, raw clay lumps, tools (used as anvils in the hammer and anvil technique), the remains of the oven in form of clay daub, and the finished vessels were deposited together, is interpreted as part of a collective ritualised action where ceramics were made, used, and deposited within a very short time frame. It is argued that this collective production and deposition of ceramics was an important part of the function of the causewayed enclosures. This is interpreted as part of a dynamic development in the stylistic network of the FBC in Southern Scandinavia, where increasingly elaborate decorations and creative investment in style leads various local stylistic groups to melt together into a more homogeneous style in the MN Ib.

Some questions still remain. How widespread was the Blakbjerg-Brokhøj style? How did it relate to other groups at the same time? For an answer to the first question, a look over the seas to Zealand and Scania could be useful. Sites, such as Verup Mose and Annelöv, have some of the same traits, although more material from closed con-



texts is desirable. The second question is difficult to answer as long as the situation during the EN II–MN Ia transition in Northern Jutland is not better understood. The development of the ceramic styles in the FBC is therefore not yet satisfactorily described, but sites that enable an analysis of these styles exist.

## References

- Andersen 1997: N.H. Andersen, The Sarup Enclosures. The Funnel Beaker Culture of the Sarup site including two causewayed camps compared to the contemporary settlements in the area and other European enclosures. Sarup vol. 1, Jutland Archaeological Society Publications XX-XIII: 1 (Århus 1997).
- Andersen 1999: N.H. Andersen, Saruppladsen. Sarup vol. 2 og 3. Jysk Arkæologisk Selskabs Skrifter XXXIII: 2–3 (Århus 1999).
- Andersen/Madsen 1977: N.H. Andersen/T. Madsen, Skåle med storvinkekbånd fra Yngre Stenalder. Overgangen mellem tidlig- og mellemneolitikum. KUML, Årbog for Jysk Arkæologisk Selskab 1977, 131–160.
- Boas 2001: N.A. Boas, Blakbjerg. In: H. Andersen/K.M.Q. Frandsen/P.S. Rasmussen (eds.), En by og dens mennesker. Marie Magdalene før og nu (Ryomgård 2001) 4–8.
- Davidson 1974: K. Davidson, En mellemneolitisk boplads fra Tønder amt. Aarbøger for Nordisk Oldkyndighed og Historie 1974, 28–39.
- Ebbesen 1975: K. Ebbesen, Die jüngere Trichterbecherkultur auf den dänischen Inseln. Arkæologiske studier 2 (København 1975).
- Ebbesen 1978: K. Ebbesen, Tragtbægerkultur i Nordjylland. Studier over Jættestuetiden. Nordiske Fortidsminder, Serie B - in quarto 5 (København 1978).
- Ebbesen 1979: K. Ebbesen, Stordyssen i Vedsted. Studier over tragtbægerkulturen i Sønderjylland. Arkæologiske studier 6 (København 1979).
- Ebbesen 1992: K. Ebbesen, Simple, tidligneo-litiske grave. Aarbøger for Nordisk Oldkyndighed og Historie 1992, 47–83.
- Ebbesen 2011: K. Ebbesen, Danmarks megalitgrave (Vordingborg 2011).
- Ebbesen/Mahler 1979: K. Ebbesen/D. Mahler, Virum. Et tidligneo-litisk bopladsfund. Aarbøger for Nordisk Oldkyndighed og Historie 1979, 11–61.
- Fabricsius/Becker 1996: K. Fabricsius/C. J. Becker, Stendyngegrave og kultuse. Studier over Tragtbægerkulturen i Nord- og Vestjylland. Arkæologiske studier 11 (København 1996).
- Fiedel 1996: R. Fiedel, Beretning. St. Brokhøj. Museum Østjylland, Randers/Djursland. Unpublished report.
- Furholt 2010: M. Furholt, A Virtual and a Practiced Neolithic? Material Culture Symbolism, Monumentality and Identities in the Western Baltic. [www.jungsteinSITE.de](http://www.jungsteinSITE.de), article from 17. September 2010.
- Gebauer 1978: A.B. Gebauer, Mellemneolitisk tragtbægerkultur i Sydvestjylland. En analyse af keramikken. KUML, Årbog for Jysk Arkæologisk Selskab 1978, 117–157.
- Gebauer 1988: A.B. Gebauer, Stylistic variation in the pottery of the Funnel Beaker Period. In: Madsen 1988a, 91–117.
- Hodder 1979: I. Hodder, Economic and Social Stress and Material Culture Patterning. *American Antiquity* 44/3, 446–454.
- Jørgen 1973: E. Jørgensen, Hagebrogård – Vroue – Koldkur. Neolithische Gräberfelder aus Nordwest-Jütland. Arkæologiske studier volume IV (København 1973).
- Kaul 1995: F. Kaul, Ekskurs om pragtbægre. In: T. Dehn/S. Hansen/F. Kaul (eds.), Kong Svends Høj. Restaureringer og undersøgelser på Lolland 1991. Stenaldergrave i Danmark bind I. Nationalmuseet og Skov- og Naturstyrelsen (København 1995).
- Koch 1998: E. Koch, Neolithic Bog Pots – from Zealand, Møn, Lolland and Falster Nordiske Fortidsminder, Serie B, 16 (København 1998).
- Lagergren-Olsson 2003: A. Lagergren-Olsson, En skånsk keramikhistoria. In: M. Svenson (ed.) I det Neolitiska rummet (Malmö 2003) 173–213.
- Larsson 1992: L. Larsson, Neolithic Settlement in the Skateholm Area, Southern Scania. *Meddelanden från Lunds universitets historiska museum* 1991–1992. New series 9, 5–43.

- Latour 2005: B. Latour, *Reassembling the Social. An Introduction to Actor-Network-Theory* (Oxford 2005).
- Latour 2006: B. Latour, *On Interobjectivity. Mind, Culture, and Activity: An International Journal* 3/4, 1996, 228–245.
- Madsen 1973-1974: T. Madsen, *Tidligneolitiske anlæg ved Tolstrup*. KUML, Årbog for Jysk Arkæologisk Selskab 1973-1974, 121–154.
- Madsen 1977: T. Madsen, *Toftum ved Horsens, et "befæstet" anlæg tilhørende Tragtbægerkulturen*. KUML, Årbog for Jysk Arkæologisk Selskab 1977, 161–184.
- Madsen 1978: T. Madsen, *Perioder og periodeovergange i neolitikum. Om forskellige fundtypers egnethed til kronologiske opdelinger*. Hikuin 4, 1978, 51–60.
- Madsen 1988a: T. Madsen, *Multivariate archaeology - numerical approaches in Scandinavian archaeology*. Jutland Archaeological Society publications, 21 (Århus 1988).
- Madsen 1988b: T. Madsen, *Causewayed Enclosures in South Scandinavia*. In: C. Burgess/P. Topping/C. Mordant/M. Maddison (eds.), *Enclosures and Defences in the Neolithic of Western Europe*. BAR International Series 403 (II) (Oxford 1988) 301–336.
- Madsen 1994: T. Madsen, *Die Gruppenbildung im frühesten Neolithikum Dänemarks und ihre Bedeutung*. In: J. Hoika (ed.), *Beiträge zur frühneolithischen Trichterbecherkultur im westlichen Ostseegebiet*. 1. Internationales Trichterbechersymposium in Schleswig vom 4. bis 7. März 1985 (Neumünster 1994) 227–237.
- Madsen 2012: T. Madsen, CAPCA ver. 2.2. for excel 2003, March 2012. downloaded from [www.archaeoinfo.dk](http://www.archaeoinfo.dk) 29.08.2012, including; Manual for CAPCA and essay; Multivariate Data Analysis.
- Madsen/Petersen 1982–1983: T. Madsen/J. E. Petersen, *Tidligneolitiske anlæg ved Mosegården. Regionale og kronologiske forskelle i tidligneolitikum*. KUML, Årbog for Jysk Arkæologisk Selskab 1982–1983, 61–120.
- Madsen/Fiedel 1987: B. Madsen/R. Fiedel, *Pottery Manufacture at a Neolithic Causewayed Enclosure near Hevringholm, East Jutland*. *Journal of Danish Archaeology* 6, 1987, 78–86.
- Midgley 1992: M. S. Midgley, *TRB culture: the first farmers of the North European plain* (Edinburgh 1992).
- Mathiassen 1943: T. Mathiassen, *Stenalderbopladser i Aamosen*. *Nordiske Fortidsminder* 3/3 (København 1943).
- Müller 1918: S. Müller, *Oldtidens Kunst. Stenalderen* (København 1918).
- Nielsen 1987: H. Nielsen, *An Early Neolithic Pottery Deposition at Ellerødgård I, Southern Zealand*. *Journal of Danish Archaeology* 6, 1987, 63–77.
- Nordman 1918: C. A. Nordman, *Jættestuer i Danmark* (København 1918).
- Shennan 1997: S. Shennan, *Quantifying archaeology* (Edinburgh 1997).
- Whallon 1970: R. Whallon, *Investigations of late prehistoric social organization in New York State*. In: S. Binford/L. Binford (ed.), *New perspectives in archeology* (Chicago 1970) 223–244.
- Wiesner 1983: P. Wiesner, *Style and social information in Kalahari San projectile points*. *American Antiquity* 48, 1983, 253–276.
- Wiesner 1984: P. Wiesner, *Reconsidering the Behavioral Basis for Style: A Case Study among the Kalahari San*. *Journal of Anthropological Archaeology* 3, 1984, 190–234.
- Winther 1935: J. Winther, *Troldebjerg. En bymæssig bebyggelse fra Danmarks yngre stenalder* (Rudkøbing 1935).
- Wobst 1977: H. M. Wobst, *Stylistic behavior and information exchange*. In: C.E. Cleland (ed.), *For the director: research essays in honor of James B. Griffin*, *Anthropological Papers - Museum of Anthropology, University of Michigan* 61 (Michigan 1977) 317–342.

## Imprint

ISSN 2197-649X

Layout draft: Holger Dieterich, Ines Reese  
 Section editor: Martin Hinz  
 Technical edition: Ines Reese  
 Language revision: Eileen Küçükkaraca  
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