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Fragmentation during the Neolithic

Transformation and enchainment from a south Swedish perspective

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A large, moss-covered rock formation in a rural landscape under a clear blue sky. The rock is the central focus, with a smaller rock in the foreground and a wooden fence in the background. The sky is a clear, pale blue.

NEOLITHIC DIVERSITIES

**Perspectives from
a conference in
Lund, Sweden**

Edited by

Kristian Brink

Susan Hydén

Kristina Jennbert

Lars Larsson

Deborah Olausson



The members of the conference "What's New in the Neolithic", May 2013. Photo by Kristina Jennbert.

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Neolithic Diversities

Perspectives from a conference in Lund, Sweden

Editors:

Kristian Brink, Susan Hydén,
Kristina Jennbert, Lars Larsson & Deborah Olausson

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Cover photo: The dolmen at Hofterup, western Scania. Photo by Kristina Jennbert 2012

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Preface

In the study of the distant human past, certain events and periods have come to represent decisive passages from one human state to another. From a global perspective, the characteristic feature of the last ten thousand years is that people in different parts of the world, and at different points in time, started to grow plants and domesticate animals. The rise and dissemination of agriculture were crucial factors for the continued existence of humankind on earth. The incipient agriculture is often regarded as the very beginning of human *culture*, as it has traditionally been perceived in western historiography, that is, as control over nature and the “cultivation” of intellectual abilities.

As a result of the increasing national and international interest in the northern European Neolithic (4000–2000 BC), combined with large-scale archaeological excavations which helped to nuance and modify the picture of the period, senior researchers and research students formed a Neolithic group in 2010. The Department of Archaeology and Ancient History at Lund University served as the base, but the group also included collaborators from Linnaeus University and Södertörn University, and from the Southern Contract Archaeology Division of the National Heritage Board in Lund and Sydsvensk Arkeologi in Malmö and Kristianstad.

Meetings and excursions in the following two years resulted in the holding of an interna-

tional conference in Lund in May 2013 entitled “What’s New in the Neolithic”. Invitations to this conference were sent to two dozen prominent Neolithic scholars from northern and central Europe.

The conference was a great success, with presentations and discussions of different aspects of innovative research on the Neolithic. The members of the Neolithic group took an active part in the discussions following the presentations.

It was decided before the conference that the papers would be published. The members of the Neolithic group also had the opportunity to contribute current research to this publication.

After the conference an editorial group was set up, consisting of Dr Kristian Brink, PhD student Susan Hydén, Professor Kristina Jennbert, Professor Lars Larsson and Professor Deborah Olausson.

A grant was received from Riksbankens Jubileumsfond for the meetings and excursions of the Neolithic group 2010–2013. We would like to thank The Royal Swedish Academy of Letters, History and Antiquities and Berit Wallenbergs Stiftelse for grants which enabled us to hold the conference “What’s New in the Neolithic”. Grants from The Royal Swedish Academy of Letters, History and Antiquities, and Stiftelsen Elisabeth Rausing’s Minnesfond financed the layout and printing of this publication.

III. PERSPECTIVES ON MATERIAL CULTURE

Fragmentation during the Neolithic

Transformation and enchainment from a south Swedish perspective

Lars Larsson

Abstract

Studies of the creation of material culture, objects as well as structures, are well represented in research. The ways in which objects and structures go out of use should be as interesting and important an aspect as how they were made.

In recent research fragmentation has been closely connected to enchainment, the relation between objects and humans. The effect of fire represents a special form of fragmentation. Finds indicate that the use of fire on artefacts, especially flint, is well known throughout the Neolithic. Axes are more affected than any other type. In order to achieve the right fragmentation the flint has to be heat-treated. In the second stage the flint can be placed directly on a fire.

At two sites in southeastern Scania mass destruction of flint objects was performed. The evidence from the sites suggests that the process of destruction involved transforming key items of material culture. This means that the enchainment is not an isolated episode but a process including both separate individuals and a number of members of the society.

The building of earthen long barrows and large palisades involved moving soil and cutting trees, which caused fragmentation of environments, but at the same time had the goal of social unification.

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Introduction

HOW MIGHT WE recognize particular world-views, ideas and values archaeologically? In the case of objects, we can certainly identify evidence for structured forms of treatment, from the conditions in which certain objects were made to the manner in which many were deposited. But we can only begin to make sense of that evidence, once we recognize the close categorical and biographical links that often join people and things. For example, tools have a birth, an active life and a death. How the process of birth and death is dealt with depends, as for people, on how particular tools and materials are evaluated, a process that can vary from one example to another. In other words, the “life” of a tool may take different paths, depending on decisions taken by individuals or collectives.

The duration of that “life” may also vary; in some cases no more than days, in others, as with heirlooms, having a life-span that exceeds several human generations (Hakiwai & Smith 2008). In some instances, objects can even be regarded as more valuable than people, possessing names and biographies that are well known to the community.

Studies of the creation of material culture, including objects as well as structures, are well represented in research. But in research the ways objects and structures go out of use is as interesting and important an aspect as how they very made. Studies have been performed (Berggren 2010) but more can be done. There is a need to study the causes of the destruction of objects, intentional as well as unintentional: worn out and discarded, deposited in graves, caches or

ritual depositions etc. The same applies to constructions. There can be many different reasons of social importance why an object or construction was taken out of service.

There are several aspects to be considered within the processes of deposition and destruction. Scandinavian archaeologists have long interpreted collections of tools buried in the soil outside occupation sites mainly as the result of ritual acts. Outside Scandinavia, however, it seems to be more difficult to find acceptance for the interpretation of Stone Age depositions as objects not to be recovered (Bradley 1990). A collection of tools is often regarded as a cache for later use. But the large number of finds in wetland environments of southern Scandinavia makes no sense except in terms of ritual purposes (Larsson 2007). Thousands of flint axes have been found in wetlands. In many cases the artefacts were deposited within a delimited area of a bog, even though individual depositions may include artefacts covering a considerable time-span (Karsten 1994).

John Chapman was the archaeologist who was able to make the theme of fragmentation well known and a subject of discussion (Chapman 2000). Research on this theme has developed (Jones 2005; Chapman 2007; Chapman & Gaydarska 2007, 2010; Gamble 2007) and has also been criticized (Brittain & Harris 2014). In the recent debate on fragmentation the term *enchainment* has been used frequently. The *enchainment* between humans and the objects marks changes in the social sphere between humans when the object is made, used and fragmented. *Enchainment* does not have to be linked to fragmentation but it is especially obvious that a change in the *enchainment* takes place as an object is intentionally fragmented.

Most of the discussion has been aimed at the *enchainment* before and after the event of intentional fragmentation, which in most cases is a short action. The simple intentional breaking of an object like the figurines from southeastern Europe is the topic of Chapman

and Gaydarska. When fire is involved in the process of fragmentation it involves a relation to objects of natural and artificial origin that is needed for just one stage in the process, such as making and maintaining a fire (Hodder 2011)

It might be a considerable process including several hours or days and involving a number of people. This is of special importance when fire is used on objects that do not burn and are not entirely destroyed by high temperature. In addition, the handling of object might involve a deliberate process of changing the quality of the object but simultaneously preserving the shape, as in the treating of flint axes. In these cases the change of *enchainment* might involve a process of considerable alterations between the objects or features and the members of the society.

Transformation of flint by fire

The effect of fire represents a special form of fragmentation. Finds from settlement sites indicate that the deliberate exposure of flint artefacts to fire was well known throughout the Neolithic. Fire alteration of tools is relatively frequent at sites from the whole of the Neolithic (Karsten 1994; Malmer 2003). The effect of fire on flint axes could be accidental, but at several sites the percentage is too high (often higher than 20%) to be viewed in such mundane terms (Karsten 1994). Most sites show marked differences in terms of the tool types affected by fire. There is also evidence that the exposure of axes to fire was in itself highly structured (Larsson 2000, 2002). The alteration of flint by direct exposure to fire provides different products of fragmentation from those seen on many sites. Simple exposure to high temperatures results in the fragmentation of flint artefacts into very small pieces. This is not what we find with many flint tools affected by fire, which are often recovered as larger-than-expected fragments.

Experiments have been conducted, exposing

newly-made flint axes to different forms of fire, including direct as well as indirect heat in large and small fires, in order to find out what happens to flint at different temperatures (Larsson 2006). In order to get large pieces of flint affected by fire, such as are found at the sites, you have to treat it in two evocative stages. First, the flint has to be heat-treated. In the second, more public, stage the flint can be placed directly on a fire. The flint undergoes a colour transformation from natural black or grey to white. This shows that the majority of flint tools were handled carefully, in order to obtain a colour change with a minimum of destruction. The artefact undergoes remarkable change during the act.

The intention was not to destroy the flint objects, but to keep them in parts as large as possible, even after their transformation by fire. At almost every site, axes are more affected than any other type. This phenomenon is independent of chronology, occurring from the earliest Early Neolithic to the latest Late Neolithic. Alteration by fire, however, seems to be most common during the Middle Neolithic, including the late Funnel Beaker culture and the Single Grave culture.

There are several aspects that may be considered within the processes of deposition and destruction – or perhaps we should we say “different means of transformation”. Transformation in this connection is viewed as a process in several stages when the enchainment between humans and tools changes and is tied to the interaction with structures such as hearths but also elements such as heat and smoke. The flint object is changed by holding a number of cracks but it has still its original shape. The fragmentation can easily be performed with a slight action as a break. If the action is performed it is through the intention of the members of the society.

Fire-damaged flint axes are found in connection with megalithic tombs (Jørgensen 1977), as well as in pits and trenches associated with causewayed enclosures. The fragmentation of

flint axes has been regarded as the result of ritual acts in which fire played an important role (Andersen 1997).

It is of special interest to identify a relationship between the fabrication of axes and the transformation of these same tools. At some causewayed enclosures of the late Early Neolithic and early Middle Neolithic (Andersen 1997) as well as palisades of the “second generation” (Svensson 2002; Brink 2009) from the late Middle Neolithic (MNA–MNB), waste from flint axe fabrication transformed by fire has been documented (Runcis 2008). There seems to be a direct link between the birth and death of axes (Strassburg 1998), related to monumental enclosures.

Mass destruction by fire

A special and so far rare type of site with examples of fire-altered flints, covering an area of approximately 70 × 70 m, has been found on a plateau at Kverrestad, southeastern Scania (Larsson 2000, 2002). Excavation revealed a number of pits of varying size and depth, in which flint and stone artefacts affected by fire had been deposited together with a considerable amount of fragmentary pottery. The largest pit was about 4 m long, the shortest measuring less than 0.5 m. A majority of pits are small and shallow. Finds from the few larger pits were made throughout the fill, which shows that the artefacts had been deposited during the entire process of filling of the pits. Fragments of about a hundred thick-butted, concave-edged axes and chisels have been found, as well as arrowheads and other flint and stone tools (Larsson 2000). A small number of burnt human bones, intentionally cracked into small pieces, were also found, providing another example of a special enchainment between humans and axes. One has to be aware that the colour change of flint exposed to fire is similar to the cremation of a human body.

The finds are dated to the later part of the

Battle Axe culture. As an interesting aspect of the “life cycle”, the axes at Kverrestad included rough, unpolished examples, only shaped into form, as well as examples with very well executed polish over the entire body. Some of the latter show traces of use.

The choice of axes in particular for altering by fire, as recorded at settlement sites, is also obvious among the finds at Kverrestad. More than 90% of the axe finds display changes by fire. However, among a number of arrowheads made by pressure-flaking, originating from the Oder area on the other side of the Baltic Sea, just 30% show the same alteration by fire. These marked differences indicate intentional selection – some tools required treatment by fire more than others. If we use enchainment, the explanation might be that the relation between the objects from a group at a far distance was different from the relation of axes that were accessible in an area at a much shorter distance. Similar evidence has also been found at Svartskylle, some 17 km west of Kverrestad (Larsson 1989). Svartskylle is dated to the Early Neolithic/Middle Neolithic transition. At Svartskylle, preforms as well as polished flint axes were found. The same habit is evident despite a time gap of almost one millennium. This phenomenon is independent of chronology, occurring from the earliest Early Neolithic to the latest Late Neolithic.

There is a very marked difference in the attitude towards burning, compared with deposition in water. In the former case, the destruction of the artefact is easily visible at the point when the practical function of the tool disappears. Fire is the destroyer, but also the creator. Slash-and-burn clearance of the forest creates arable land. That flint axes are linked to fire could be explained by a special relationship between fire, flint and people. A common way of making fire was to use flint and iron pyrites. The sparks appear to originate from the flint, and the idea that fire was inherent in this material might have been an accepted element of the worldview.

The sociotope of fire

What is being expressed at Svartskylle and Kverrestad with no connection to settlements or graves, differs from the destruction by fire of single tools or small numbers of tools, as evidenced at settlement sites and megalithic tombs. This type of deposition is found throughout the Neolithic, but on certain occasions the act achieves an impressive effect.

Tools affected by fire that lie outside the megalithic tombs can be regarded as an enchainment to the ancestors or deposits through which the ancestors act as agents for further contacts. Deposits including the element of fire, as at Kverrestad and Svartskylle, might place the actors in direct contact with the metaphysical world without the intermediacy of ancestors.

The cosmology that dictated burning, just like that relating to wetland depositions, was active throughout most of the Neolithic. The fact that the depositions at Svartskylle and Kverrestad are the result of short-term activities indicates that they should be regarded as completed deposits of mass material. These seem to have been of exceptional size and intended to impress humans as well as metaphysical beings. Both sites are located in a way that the action could be attended by a large number of people and in addition were surrounded by wet areas as delimitation. The contact that people intended to be established between the physical and metaphysical worlds was impressive and imposing. The transformation by fire of material culture must have been very obvious and the wealth represented by the number of tools and exotics included must have been considerable.

In view of the high quality and great number of axes, there must have been knappers who spent a considerable amount of time producing axes, i.e. true flint-knapping experts. Blacksmiths were regarded in late prehistory as possessing not only the knowledge to master iron, but also the knowledge required to master forces of the immaterial world (Østigård 2007).

A similar status was accorded to the knowledge and action of the bronze smelter (Goldhahn 2007). One can express it a special enchainment between certain persons and the raw material. The flint-knapping specialist who made the axes may have acquired the same status. The knapper, like the axes, was positioned in a zone between the living society and another world, that of the spirits and deities. Those involved in the birth of particular axes may also have been involved in their death, transforming flint objects as part of the transformation of the deceased and effecting their transfer to the world of the forefathers/foremothers.

The evidence from Kverrestad suggests that, among other things, the process of transforming the body also involved transforming key items of material culture and, in the case of flint axes, this also involved prior heat treatment. This prior treatment was not in most cases a public, pyrotechnical event with a huge fire, the cracking of heated flints and splinters flying out of the fire. The subsequent result, a slow colour change without intense cracking, may thus have been all the more remarkable for those attending the more open and public stages of cremation ceremonies.

Actions of fragmentation

Fire was also used as a means of fragmentation in many other activities. In many cases the final act of use included burning. On stratified sites in different parts of Europe the burning of houses has been interpreted as an intentional act incorporated into a wider ritual sphere (Apel *et al.* 1997; Chapman 2000; Chapman & Gaydarska 2007). Because there are virtually no substantial occupation layers associated with Neolithic houses in southern Scandinavia it is very difficult to obtain a full understanding of the final acts undertaken when houses were abandoned (Larsson & Brink 2013). The charcoal in post-holes has usually been explained

in terms of the burning of the post-ends before they were put into the holes in order to improve the resistance of the wood to degradation in the soil. However, it might be reasonable to suspect that charcoal can also originate from the burning of houses. In the absence of well-preserved floor levels, it is impossible to eliminate the possibility of accidental house destruction by fire or burning through hostile action.

The remains of activities within, and especially outside, megalithic tombs reflect a variety of actions causing fragmentation. In some cases, such as the Carlshögen tomb in southeastern Scania, the human remains were separated, probably after some period of decay, particular parts such as the vertebrae being stored together and even placed in a pit inside the tomb (Strömberg 1971).

One example of fragmentation in connection with megalithic tombs is Ramshög in southeastern Scania. Pits were found below the chamber and partially under the orthostats (Strömberg 1971). In these pits burnt and unburnt human bones were found, combined with several hundred flint flakes and fragments of flint axes. The position of the pits indicates that they might have been dug and the items deposited before the tomb was built. Just outside the entrance a small structure built of wood and stone had been burnt. Found within the structure were burnt human skull fragments and some broken pieces of a thin-bladed flint axe, cracked without using fire. Several other features were documented outside the entrance, containing fragments of flint axes affected by fire, chisels or blades, most in association with burnt human bones. At the Trollasten dolmen in the same part of Scania, eleven collections of burnt human bones, along with pieces of axes and chisels affected and not affected by fire were found (Strömberg 1968). In one case almost all pieces of an axe affected by fire had been deposited. Two sets of material included parts of the same axe.

These examples indicate that the change enchainment concerning fragmentation can be related to actions including fire mixed with the remains that were just intentionally broken into pieces.

Breaking into pieces

In addition to fragmentation by fire, some other interesting observations have been made concerning the fragmentation of stone objects. That a battle axe could break at the shaft-hole is no wonder, since this is the weakest part. Malmer's study (1962) of broken battle axes from the Battle Axe culture provides a special insight into the deposition of broken objects. He documented 346 edge parts, but only 151 neck parts. Although 53 of the edge parts have a newly-finished or unfinished shaft-hole, the disparity is remarkable. There has to be an intentional difference in the way these parts were deposited. Malmer's suggestion was that the neck parts were left at the settlement sites, while the edge parts were deposited elsewhere. At the mass destruction site where fire was used, the number of necks of flint axes is higher than the number of edges.

The fragile nature of pottery makes it vulnerable to fragmentation. However, there is strong evidence of deliberate fragmentation as a regular phenomenon during the Neolithic. Some of the Scanian tombs hold the largest quantities of pottery ever found in megalithic tombs in any region of Europe. The number of vessels at the passage grave of Gillhög, close to the west coast, is estimated at almost one thousand. In some cases the vessels were left standing on the entrance stone, and must have fallen down and broken. The question is whether this explanation can be applied to all of the thousand vessels. At some megalithic tombs on the island of Funen, Andersen (2009) has recognized that sherds are of the same size. This would not be the case if fragmentation was accidental. The

same could apply to a proportion of the sherds from the Scanian megalithic tombs.

Another action of interest connected with the fragmentation of pottery is intentional sorting of sherds. An example is the material from a cemetery of seventeen children's graves dated to the Early Middle Funnel Beaker culture at Borgeby in western Scania (Runcis 2002). The pottery in the graves is represented by intact vessels, fragments of individual vessels and small fragments of as many as 15 vessels. Parts of pottery vessels may dissolve, which is a common explanation for the absence of some parts of vessels. However, when just one or a few sherds from particular vessels are represented we are dealing with an intentional sample of sherds to be represented in a certain feature. Parts of the same vessel could have been deposited in other circumstances, for example forming part of a deposition or in connection with megalithic tombs. The above-mentioned late Battle Axe culture depositions at Kverrestad present a similar situation. Just a small number of sherds from the same vessel are present.

Fragmented environments

The first major fragmentation of the landscape was introduced when the forest was cut down in the Early Neolithic. Even if the landscape in an ecological sense may have been changed during the Late Mesolithic through intentional reduction of the dense forest by fire in order to improve the feeding for wild animals, it was during the Early Neolithic that clearing of the forest became a regular phenomenon. In this fragmentation of the landscape the death of trees due to elm disease may have facilitated the clearance process (Larsson 2003).

Fragmentation of the forest served several purposes for the societies of that time. The most obvious was to clear areas for agriculture. However, a large number of trees were felled in order to incorporate them into struc-

tures, both large and small. One example is the large palisade excavated at Håslöv, dating to the Early Neolithic (Andersson & Wallebom 2013). At least nine thousand posts were used for the arrangement. The construction of large palisades during the later part of the Middle Neolithic required the chopping of thousands of trees. Through fragmentation of the forest, a structure was erected that served the aim of social unification and thereby a marked change of the enchainment both between humans and the environment and also between humans. The trees were transformed from their natural state into an important arrangement in culture.

Another kind of fragmentation of the landscape in order to create social unification is the building of a megalithic tomb. Stones are dragged from localities that may be situated kilometres away. Even if large stones suitable for building material were more common than today, this still required a good knowledge of the landscape. In some cases not only was the size and shape important: the colour also played a decisive role. Stones were sometimes split. One example of such fragmentation is found in Denmark, where two dolmens, two kilometres apart, each have one half of the same large boulder as the capstone (Ebbesen 2011). However, no similar study has been carried out in Scania. The same applies to the studies of the origin of stones or boulders usable for building material, which is complicated by glacial processes during the Ice Age, when stones could be moved a considerable distance from the source by the glaciers. One example indicating that special building material could be transported over a considerable distance is the red sandstone that was split into smaller slabs for use as a filling material between the orthostats at some megalithic tombs, after being quarried some 20 kilometres away (Hårdh & Bergström 1988).

Conclusion

The fragmentation of objects as well as structures is a phenomenon that in some cases just includes a short episode when an object is cracked into pieces or a structure is torn down. As we have seen, however, on a number of occasions the fragmentation includes a process with a duration of several hours or days. As for the fragmentation of flint objects, it includes at least two stages until the desired condition was obtained. This might mean that the enchainment between the objects and humans might have changed focus from individuals to a situation where several of the members of the society were committed. In addition, it signifies a complex enchainment, where in some cases objects that were transformed by fire as an agent could be deposited together with objects that were just broken. The enchainment process seems to include a number of stages that need to be further studied.

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