Causewayed enclosures and megalithic monuments as media for shaping Neolithic identities

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Zusammenfassung

In diesem Artikel soll dargestellt werden, dass die Akzeptanz einer wirklich neolithischen Lebensweise, die Umstellung auf eine Vollzeit-Landwirtschaft, ein langwieriger und komplexer Prozess war, der in Nordeuropa seinen Höhepunkt in der zweiten Hälfte des 4. Jahrtausends v. Chr. erreichte. Wir sehen zu dieser Zeit hier die Einführung und Akzeptanz des Ard-Pfluges. Dies führte zum einem Bedarf an großflächigen Rodungen, ermöglichte aber auch die Kultivierung größerer Gebiete und ärmerer Böden. Ergebnis hiervon muss Raum für mehr Einwohner gewesen sein. Dies könnte wiederum das Entstehen verschiedener Widersprüche und Konflikte zur Folge haben, denen durch die Ausführung zahlreicher ritueller Aktivitäten begegnet wurde. Diese sind heute noch als Spuren der Konstruktion von zahlreichen megalithischen Bauwerken und von Erdwerken sichtbar, in denen diese speziellen Aktivitäten stattfanden. Diese Aktivitäten materialisieren sich etwa in Form besonderer Behandlung menschlicher Knochen, aber auch von Tierknochen, Keramikgefäßen, Flintbeilen, Mahl- und Schleifsteinen sowie von Getreide. Diese Materialien waren zumeist größeren Transformationen ausgesetzt, etwa Brand und Fragmentierung, die ihnen eine neue Bedeutung gaben. Die Niederlegung dieser Fragmente an verschiedenen Orten und der große Aufwand, der für den Bau von Megalithgräbern und Erdwerken mobilisiert wurde, muss die Menschen zusammengeführt und zur Ausbildung von Netzwerken bei denen geführt haben, die bei diesen Aktivitäten teilnahmen. So erhielten und beförderten diese Aktivitäten alte und kreierten neue Netzwerke. Um ein modernes Konzept zu gebrauchen: die Menschen übten sich in „Team Building" als Basis für die Akzeptanz der neolithischen Lebensweise.

Die hier dargelegten Interpretationen sind ein Ergebnis archäologischer Forschungen, die seit 1971 in der Sarup-Region, in SW-Fünen, Dänemark, durchgeführt wurden. Innerhalb eines kleinen Gebiets von 12 km^2 wurden zahlreiche neolithische Monumente, wie Häuser, Megalithanlagen und Grabenwerke entdeckt und ausgegraben. Einige Ergebnisse dieser Forschungen werden in diesem Artikel präsentiert.

Summary

In this paper I proffer the opinion that acceptance of the real Neolithic way of life, to become a full-time farmer, was a long and complicated process which, in Northern Europe, reached its peak during the second half of the fourth millennium. Here we see the introduction and acceptance of the ard. This demanded clearance of large areas, but also provided the possibility of cultivating greater areas and poorer soils. It must have created room for more inhabitants. This, in turn, could have given rise to various discrepancies which they man-

aged to handle through the performance of many ritual activities. These are apparent today as traces of the construction of numerous megalithic features and of causewayed enclosures in which the special activities took place. We find these activities materialised in the special treatment of, especially, human bones, animal bones, ceramics, flint axes, querns and grinding stones and of grain. These materials have for the most part been subject to major transformation, for example burning and fragmentation, conferring on them a new significance. The deposition of these fragments in various places and the great efforts expended in building the megaliths and the enclosures must have bound people together, creating a network between the people who participated in these activities, and henceforth maintaining and reinforcing this or new networks by way of these actions. To employ a modern concept, they were using team building as a basis for acceptance of the Neolithic way of life.

The proposals presented here are the result of archaeological research carried out in the Sarup area, on the SW part of Funen, Denmark, since 1971.

Within a small area of 12 km^2, numerous Neolithic monuments such as houses, megalithic structures and causewayed enclosures have been found and excavated. Some of the results of this research are presented in this article.

The introduction of the Neolithic

The introduction of the Neolithic was a long and complicated process which, in Denmark, culminated during the period between 3400 and 3200 BC. Here we see a thoroughly ritualised society possessing the tools that enabled the shift from a Mesolithic to a Neolithic way of life.

It has been broadly accepted that the Neolithic in Denmark began in the form of a large package introduced around 4000 BC. However, if we look at the society from this period, in reality we see only few changes from the Mesolithic Ertebølle culture which had already been in contact with Neolithic societies south of Denmark for a couple of hundreds of years.

In the early part of the fourth millennium we find Funnel Beaker ceramics and some indications of small-scale agriculture and the keeping of domesticated animals; fine polished flint axes also appeared. Pollen analysis reveals some clearance of the woodland cover and small areas must now have been open, under a form of hoe cultivation.

We still know very little about the settlement system, and in the earliest part (between 3900 and 3700 / 3600 BC) it seems that people continued to live at the old sites (the køkkenmøddinger) previously inhabited by people of the Ertebølle culture (Andersen 2008, 71), or they settled at new sites, but still close to wetland areas. Later, by 3600 BC, the settlement areas grew larger and were located on dry ground and show evidence associated with an agrarian economy (Madsen 2010, 15). The development of stable agriculture requires a stable settlement system, where people could live within a delimited area. With the establishment of a stable settlement system people now lived in one place and waited for the seasons to 'come' to them, rather than following the animals as before. They kept their livestock on pastures. When people settle as farmers the relationship between time and space changes and they have to organise their lives with reference to this.

Pollen analysis reveals the results of human impact on the landscape starting around 3700 BC with intensive burning, followed by the beginning of Iversen's Landnam. The latter starts with a maximum in birch, followed by hazel, and there is pollen of Plantago lanceolata, indicating freely grazing livestock, and we find evidence of cereal cultivation (Rasmussen et al. 2002).

The first monumental barrows were now being constructed, the so-called un-chambered long barrows. These began to be erected from around 3700 BC and were followed about 200 hundred years later, around 3500 BC, by the construction of megalithic dolmens. Contrary to the finds from the dolmens, where there are no finds of complete skeletons from their first period, inhumations of whole skeletons have been found in the un-chambered long barrows. Often several individuals were buried together and this is the closest we come to collective burial of whole skeletons during the Danish Neolithic!

The occurrence of plough furrows beneath the barrows from the same period provides the first indication of the introduction of the ard. Relative to hoe cultivation, based upon human muscle power employed in a garden system, an ard could be up to 16 times more effective. This made it possible to cultivate larger areas and also poorer soils (Halstead 1995, 13). It was also possible to work on a wider range of soils than before. This must have been very important in relation to the short cultivation season in the Northern Europe. The oxen had to be trained to draw the ard and they also provided quantities of useful dung.

Before the first farmers could cultivate these larger areas, they had to clear them of boulders (glacial erratics) and vegetation. And they would have had to remove the enormous tree stumps, all of which must have demanded a great deal of energy and planning. Many people now had to cooperate in a very different way and on a much greater scale than before. But the demand for larger areas for cultivation could also have involved a certain risk of disputes. The period when the ard was introduced seems also to see the introduction of dairy products from cattle, goat and sheep and wool as important elements in the subsistence economy. At the same time, lactose tolerance must have become more common. The period of these many new subsistence strategies is normally referred to as the Secondary Neolithic Revolution (Sherratt 1981).

From the very same period when we see opening up of the landscape and the introduction of the ard, there are many indications of numerous ritual activities (Andersen 2000). These include the building of thousands of megalithic monuments, such as dolmens and passage graves, and probably hundreds of causewayed enclosures (Ebbesen 1984). In bogs, many people, often young individuals, were sacrificed (Koch 1998, 155 –57). There was the production of exquisite and extremely richly ornamented ceramics, the most elaborate of all times, and this was supplemented by the manufacturing of very large fine flint axes. Many of these materials underwent transformation, for example fragmentation.

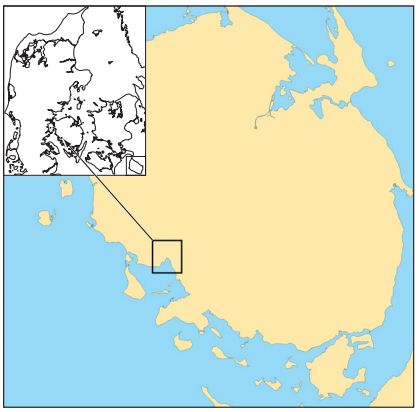

Fig. 1. Location of the Sarup area, SW Funen, Denmark.

Abb. 1. Die Lage der Sarup-Region in SW-Fünen. Dänemark.

The Sarup sites

The many activities, such as the building of huge monuments and the production of many special items, must, in my opinion, have had a special purpose relative to the process of transformation from a Mesolithic to a Neolithic way of life. This idea has been generated by my own excavations and studies of the Neolithic landscape in the Sarup area in the SW part of Funen (fig. 1). We began here in 1971 with the excavation of a Neolithic site on a sandy promontory in the

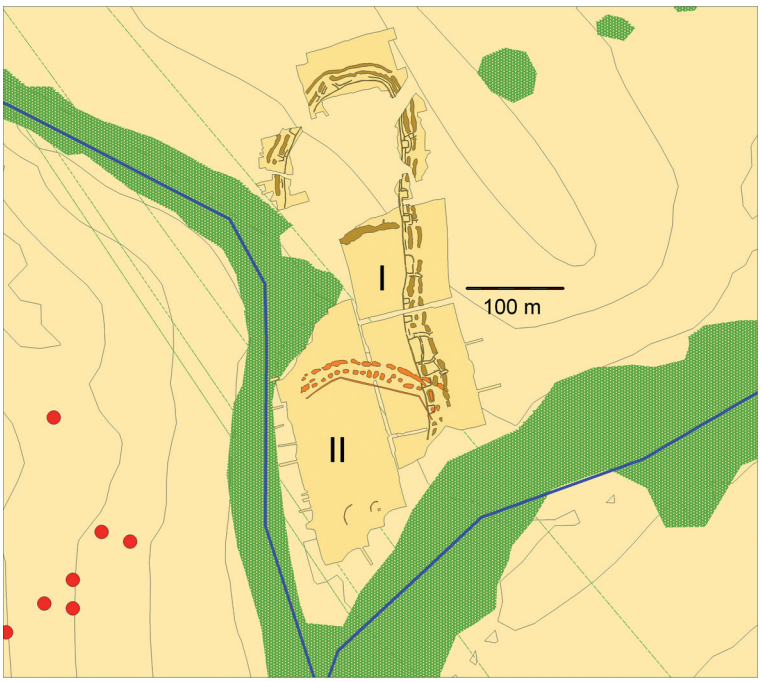

Fig. 2. The Sarup I (from 3400 BC) and Sarup II (from 3200 BC) enclosures were sited on a sandy promontory of 9 ha, located between two watercourses.

Abb. 2. Die Erdwerke Sarup I (ab 3400 BC) und Sarup II (ab 3200 BC) befanden sich auf einem sandigen Sporn von 9 ha Größe zwischen zwei Wasserläufen.

village of Sarup, and we are still conducting archaeological fieldwork in the neighbourhood today (Andersen 1997).

Two of the three sides of the Sarup promontory were bounded by watercourses (fig. 2). The site was located in the middle of a landscape dominated by an area of flat glacial heathland measuring 3 by 5 km and lying between 5 and 10 m above present sea level. This flat area is, in turn, surrounded by more hilly terrain reaching a height of 40 m above sea level. The Sarup site is situated on a flat area, overlooked by the elevated terrain around it; it does not occupy a conspicuous location. However, it did rise 7 m above the watercourses. It is said by modern farmers in the area that the flat heathland area is warmer and dryer than the surrounding areas, and that it can support a relatively easy and long season of cultivation. The area has, as a consequence, been intensively farmed for several centuries.

Between 1971 and 1984, it proved possible to uncover 6 ha of the 9 ha area of the promontory. Evidence dating from 11 prehistoric periods was found here, including five periods in the Funnel Beaker culture, two of them with causewayed enclosures. All features within the 6 ha area were exposed and recorded (about 10,000 in all, of which 3228 yielded a total of 258,168 finds). However, most of the features were only partly excavated and are still extant today. The site is now scheduled, i. e. protected by heritage law.

The Sarup I enclosure

The first Neolithic enclosure – Sarup I – was constructed around 3400 cal BC, during the so-called Fuchsberg phase. The enclosure defined an elongated area of about 8 ha. This comprised: a palisade fence, fenced enclosures built on the outside of the palisade, a fenced entrance passage and two parallel rows of system ditches.

The palisade

The palisade was placed in a c. 1 m deep trench that could be followed over almost 580 m. In areas with a high groundwater level the lower parts of the planks from the palisade were still preserved. The

planks were of split oak trunks, up to 42 cm in diameter, and were placed closely together. By way of vertical sections through the trench it proved possible to see the decomposed wooden remains of the planks; these have not been removed from the site. Often the planks were placed in the middle of the trench, but their attitudes revealed that they leaned inwards or outwards, which must be interpreted as carelessness; the Neolithic people clearly did not strive to maintain the planks in a vertical position for very long. The planks must quickly have lost their significance, i. e. before the earth had settled firmly around them, within about a year (Andersen 1997, 32). A total of 350 m^3 of earth had been removed from the trench, in which 1290 planks were then placed. Each plank could have had a length of at least 4 m, with 1 m being buried in the trench. Every one of the planks would have weighed around 250 kg. The finds of only a few flint axes, and debris resulting from them, suggests that the planks were not manufactured on-site but some distance away. Planks weighing about 335 tons were transported to the palisade.

Only 14 %, or 81 m, of the palisade trench has been excavated. In the exposed area of the trench we found large amounts of pottery, 1958 pieces from 276 pots. No complete pot was recovered; 65 % of the vessels were represented by only a single fragment and only 14 % of the pots were represented by more than five sherds. A total 94 % of the sherds were ornamented and 32 % were rim sherds. It appears only fragmented and deliberately chosen ceramic materials were placed by the palisade (Andersen 1997, 33 fig. 27).

Remains of burnt bones were recovered at five points by the palisade. For the most part, the bones had been crushed into small pieces no larger than a grain of rice; one bone could, however, be identified as a human finger bone. Charcoal of different kinds was also recovered and can be interpreted as debris taken from hearths to the palisade. Only 357 pieces of flint were found, for the most part debris. These included seven fragments of axes; a very small amount.

The palisade must have been a very impressive structure for the people who participated in the construction of the Sarup site and for those who visited it. The greatest concentrations of finds from this period were found here and show us the central role it must have had. It is surprising how fast the palisade had been allowed to decay and also that the planks were not removed from it. Could the transformation of the palisade brought on by its natural decay have had a special significance? The situation is quite clearly in contrast to the permanence of the megalithic features!

Almost in the middle of the site, a 1.6 m wide opening was found in the palisade trench which had constituted an entrance. In front of this, a passageway led from the outer area into the site.

Fenced enclosures

A series of fenced enclosures had been built on the outer side of the palisade. Some were about 6 by 7 m, some 7 by 20 m, and others had various different forms. We do not know their purpose, but they have also been found at other sites (Andersen 1997, 292 – 93). A fence was constructed on the northern part of the site parallel to the palisade, and other fences were built connecting the palisade with the outer row of ditches. About 900 m of trenches had been emptied here to allow the placement of a further 2100 planks. Virtually no finds were found by these trenches.

Ditches

Two rows of system ditches have been revealed in front of the palisade and the fenced enclosures. The inner row followed a zigzag course which respected the fenced enclosures; the outer row lay like oblong beads on a string. On average, the ditches were 15 m long, 4 m wide and had a depth varying between 0.2 and 2 m. The variation in depth must mean that the ditches were not emptied for the purpose of supplying earth for the construction of a bank, and in two places further untouched earth, resembling a horst formation, was left in the ditches (Andersen 1997, 44 fig. 44). The purpose of the ditches was more related to their horizontal form, their layout, than a place from which some earth could be obtained. The total length of all the ditches is 608 m, of which only 20 %, or 119 m, has been excavated.

In one of the ditches, the basal layer comprised stratified layers of fine and very fine sand, natural inwash or colluvium from the sidewalls of the ditch (Andersen 1997, 48, fig. 49). These layers have a thickness of only few centimetres. Such finely stratified basal layers could arise within a few days, even hours, with rain or solar drying of the side walls. All archaeologists working in sandy soil have experienced this phenomenon! However, most of the ditches at Sarup do not even have these fine sandy layers. This means that they must have been re-cut secondarily or quickly back-filled using a more homogeneous fill. The latter comprised a mixed material, which must have been thrown back on deliberately from the heaps lining both sides of the ditches. The same situation has been found at many other sites in Denmark, Germany and England (Geschwinde / Raetzel-Fabian 2009, 242; Seidel 2008, 220 – 26; Smith 1967, 473). The ditches have to be seen as a: "rituelle Dauerbaustelle, deren Aktivitätsshema an die stets wiederkehrende Aussaat erinnert (Furchenziehen, Säen und Verschliessen der Furche)" (Geschwinde / Raetzel-Fabian 2009, 245).

Solely from the bases of the ditches there are records of 1343 finds, mostly from the northern part of the site. Despite the sandy soils it proved possible to find some animal and human remains at the base of the ditches; often all that survived was tooth enamel. Ceramics comprised 688 sherds from 138 different vessels, of which 62 % were represented by a single sherd. The same has been observed at the site of Calden near Kassel, where 75 % of the ceramic entities comprised only one sherd (Raetzel-Fabian 2000, 57). A majority of the sherds from the ditches at Sarup I, 59 %, were ornamented. In all, 425 pieces of flint were recovered of which 105, or 25 %, were tools. Pieces of carbonised wood were found in seven ditches. These could be from 10 to 45 cm in length, placed in different directions and they indicate the remains of fires. The sand beneath and above the charcoal had, in some cases, been scorched red indicating in situ burning within the ditches.

Many of the ditches have been subjected to extensive re-cutting. This could have taken place within a short time of the original cutting of the ditch, but in some cases also hundreds of years later. Consequently, excavation can be challenging, as can analysis and interpretation of the materials recovered. During the excavations at Sarup we were always aware of the stratigraphy and in which layer the finds were located. It is interesting to note that re-cutting always took place within the layout of the original cut and that the secondary cuts never went deeper than the previous one. It seems that, even hundreds of years later, people had knowledge of the history of every single segment.

Although unable to establish direct links to the deliberately deposited cultural layers, it proved possible in 23 cases to recover a total of

52 artefacts. These comprised 17 sherds (12 ornamented), small pieces of flint and also fragments of querns and grinding stones. These materials must have been deliberately, and in a fragmented state, placed here by back-filling of the ditches.

The constructers had to dig out about 2000 tons of earth from the trenches and ditches. It is possible, and we have indications that this indeed was the case, that the construction area was stripped of topsoil before the trenches and ditches were cut, and then a further 750 m^3, or 1300 tons, of earth was removed. We found no evidence of topsoil in the ditches; this soil must, naturally, have represented a great value to the first Neolithic farmers.

The inner area

It proved possible to excavate 6 ha of the inner area of the site. Here, 93 features were located which can, perhaps, all be assigned to the same period as they contained a well-dated ceramics assemblage comprising ornamented sherds in Fuchsberg style. However, in the small pits this material could have arrived by chance in a later period! Nevertheless, ten of the pits were larger and contained a specially selected assemblage. One element of the latter was a large funnel jar, 42 cm in height, containing a beaker (a fragmented beaker – deliberately fragmented and placed here) and 0.5 l carbonised emmer grain. The emmer grain was 98 % pure. It must have been specially selected for this action / ceremony, because settlement finds from the area and the results of pollen analysis reveal a more 50 : 50 relationship between barley and emmer. Close to this pit was another pit containing a finely ornamented beaker. A rim sherd from this beaker had been placed in the afore-mentioned large funnel jar and therefore connects the two features. This second pit and its beaker also contained a large quantity of emmer grain, but this grain must have come from another field, as the individual grains were of a different size. Similarly, one of the features contained dehusked grain, whereas the grain in the other was in the form of spikelets, i. e. not dehusked (Westphal 2005).

The finds

We have to address the fact that, of all the ceramic entities recovered from the Sarup I enclosures, only four were complete pots; all of these were found within the inner area of the site. This enclosure was a place where a fragmented material was handled. Two settlements excavated in the area have a ceramic representation comprising between 11 and 31 % of the total finds material, but this figure at Sarup I was 67 %. These ceramics must have been intentionally brought to the site, even in a fragmented state!

The Sarup Gamle Skole enclosure

Half a kilometre south of the Sarup enclosure, at Sarup Gamle Skole, we have uncovered another enclosure from the same period – the Fuchsberg phase. Only a small part of the site has been exposed. At the bottom of one of the ditches we found hollows containing layers of stones: one of these held a miniature dolmen, about 1 m in size. A total of 134 small uniformly-sized potsherds from part of a funnel beaker, and measuring about 3 by 4 cm, were found placed against the western side of the dolmen. Only a segment of this beaker – about a third – had been taken here and then fragmented (Andersen 2009, 32, fig. 10). Again, we have a very clear example from

this period of intentional fragmentation of the material in the ditches, just as the small dolmen chamber provides us with a connection to the larger megalithic dolmens.

The Sarup II – enclosure

During the Klintebakke phase, around 3200 BC, another enclosure was constructed on the promontory at Sarup (fig. 2). It consisted of a palisade fence, made up of small stakes, and fenced enclosures now with system ditches placed inside them. The inner row of ditches was almost square, measuring 4 by 4 m, but the outer row was at least twice as long as it was wide.

Just as at the other enclosed sites, some of the ditches had been re-cut and back-filled many times, but we have to pay special attention to the fact that, in the inner row, all the re-cutting had taken place within the area delimited by the enclosure around them. This shows that the cutting and re-cutting took place during the lifetime of the fenced enclosure, perhaps a period of 20 years. It appears as if there was a clear system of land registration relative to the ditch area and people were obliged to stick to this. They could just as easily have cut another ditch nearby in the sandy soil at Sarup, but instead they preferred always to return to the same ditch.

The finding of fragments of a beautiful ornamented vessel distributed across three ditches and four pits shows that these seven features must have been linked and were open at the same time. But it also demonstrates the intentional placing of sherds from the same fragmented vessel in several places. Placing sherds from the same vessel in several different features could have been a way of uniting these (Andersen 1999 a, 285, fig. 6.8).

This was one of the first enclosed sites where the interior was uncovered in full. Within an area of less than 3 ha we exposed 144 features, of which 26 are categorised as ritual (Andersen 1999 a, 284 – 87). The only intact finds recovered from Sarup II were found here, within the inner area, just as at Sarup I. These included an elegant battle-axe or, as I preferred to call it, a ceremonial axe! Again a great proportion of the finds were fragmented. For example, the ritual pits contained material originating from 298 pots. Of these, three were complete, in 55 cases the form of the pot could be reconstructed, but 167 vessels (56 %) were only represented by a single sherd.

Two crescent-shaped trenches were found on the southern part of the site. Inside one of these, four large postholes were found, forming a square (Andersen 1997, 83 figs. 116 – 17). Two of these postholes contained human bone material, perhaps from the same person, a young woman of about 20 years of age. Only a small part of her had been deposited here. Her bones had been burnt at a high temperature, and it seems this took place when they were in a de-fleshed state. We have evidence of a process by which human corpses were subject to activities resulting in excarnation, burning, fragmentation and placement at different locations. These activities are also found applied to the treatment of other materials.

Summary for the enclosures in the Sarup Area

To sum up the results from the Sarup area, it seems that the sites:

- Were large, visible and constructed in a single operation.
- Were only used for a very short time – for one great celebration.

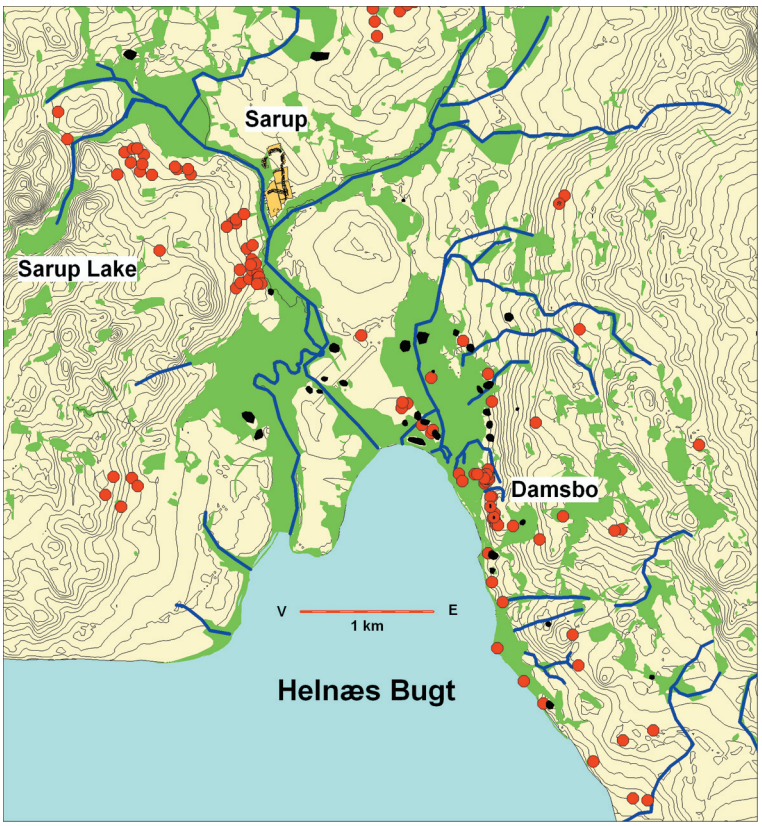

Fig. 3. The area of about 12 km² around Sarup showing the location of megalithic monuments (circles) and settlements (black dots).

Abb. 3. Ausschnitt der 12 km² um Sarup, mit der Position von megalithischen Monumenten (Kreise) und Siedlungen (schwarze Flecken).

- Demanded a great investment of labour, involved a lot of people and must have been planned over many years.
- Involved placement of special assemblages of finds – most often deliberately destroyed – in particular, remains of humans and cattle, pottery vessels, axes, grinding stones, querns and grain. Parts of these finds are missing.
- Were constructed of perishable material in contrast to megalithic graves.
- Were re-used many generations later.

Over the last 100 years and more, there have been numerous interpretations of these sites. Many of these are based on preconceived notions and less on what has really been found at the sites. When we try to understand these sites we have, in my opinion, to consider them in a more holistic perspective and to see them in their regional landscape, rather than just continue to uncover parts of many further enclosures. If we still wish to conduct expensive excavations of these large monuments we have to find examples providing excellent conditions for the preservation of bone and other organic materials.

The settlement landscape around the site at Sarup

As stated above in the summary of the enclosures, the building of these monuments must have demanded the participation of many people, hundreds, and these people must have come from a large surrounding area. It was decided to examine an area of 3 by 4 km² around the Sarup site as part of further studies of the settlement landscape (fig. 3). Since 1984, detailed surveys have been conducted of the area, private collections have been visited and recorded, old maps have been studied and digitalised, magnetic surveys have

been conducted at places of interest and aerial photographs, both old and many new, have been examined (Andersen 2009). A sediment core, 14 m in length, was collected from the lake, Sarup Sø, for the purposes of pollen, microfossil and other analyses. Five metres of this sediment corresponds to the Neolithic (Rasmussen et al. 2002). Hundreds of new sites have been discovered. Of special interest is the location of 88 settlements dating from the Funnel Beaker culture, numerous stray finds and about 120 demolished megalithic features. Prior to this exercise, we only knew of the existence of four megalithic features, of which just two were scheduled, i. e. protected by the Heritage Law. A total of 16 excavations have lead to the uncovering of 32 megalithic features and three settlements. This settlement archaeology has added a further c. 150,000 finds to the database for the area. Together with the 250,000 finds from the Sarup site, these provide a statistically useful basis for further studies!

The megalithic features around Sarup

The distribution of megalithic monuments close to the Sarup Enclosure indicates that these were often concentrated in clusters, and that some of these clusters were surrounded by wetland areas (fig. 3). It seems that the clusters divide the area into units of equal size and perhaps mirror a segmentation of the land area. Together with the many settlements of uniform size, these could be indications of the social organisation of a segmented tribal society – and the ditches were also segmented! Five clusters of megalithic monuments have been uncovered during our excavations and it seems as if they have had the same history. This starts with a long barrow containing a small dolmen chamber, progressing to two detached dolmens and finally a passage grave. This appears to be a chronological development extending over about 200 years – from a simple chamber to a more elaborate one. It is remarkable to see all these chambers located close together, often within few metres of each other, although there must have been adequate space. Just as with the ditches at Sarup, people returned again and again to the same spot and here too, perhaps, is another example of land registration of the area.

When working with megalithic features we have to be aware of the many activities which have taken place in and close by them. In Denmark, there are no more than ten dolmen chambers containing human bones which could perhaps represent part of the original funeral (Andersen 1997, 343 note 290). These human bones have always been manipulated. A complete or articulated human skeleton has never been found placed in a dolmen during the first period of its use. All the many complete skeletons recovered from these monuments date from later periods. The first period of use has only yielded fragmented skeletons with clear re-organisation of the bones (Raddatz 1979). This is a clear shift from the complete inhumation seen in the first part of the Neolithic – the period of the un-chambered long barrows. It appears that manipulation and movement of human bones was characteristic during this dolmen period, a form of treatment also found expressed at the enclosures. These actions must depend on an acceptance of ancestral rites. Through inclusion of only parts of their skeletons the personality of these individuals seems to have been removed or lost; the dead now became enlisted within a greater homogenous group of ancestors. By this action, Neolithic people acquired a medium for linking different groups and limited the appearance of social differentiation (Kuijt 1996). So far, the Danish evidence has not revealed any signs of social differences for the period during which the dolmens were erected and the enclosures constructed, i. e. the Fuchsberg phase.

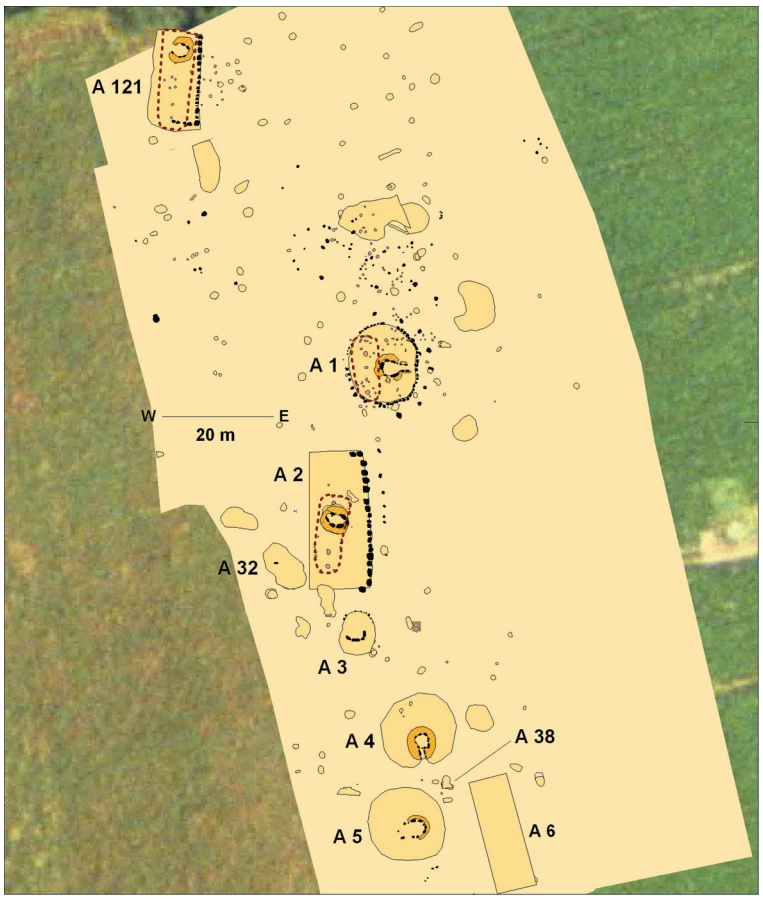

Fig. 4. Megalithic monuments found at Damsbo Mark. Here, in a demolished state, we found long dolmens, detached dolmens and passage graves. Postholes from three two-aisled houses, dating from about 3400 BC, were found covered by three megalithic monuments (A2, A1 and A121).

Abb. 4. Die Megalithanlagen von Damsbo Mark. Hier wurden zerstörte einzelne Dolmen, Langdolmen und Ganggräber identifiziert, außerdem Pfostenpläne von drei zweischiffigen Häusern, datierend um 3400 BC, die von drei Megalithanlagen überdeckt waren (a2, A1, A121).

In the Damsbo area, about 2 km SE of Sarup, we have excavated an area of 200 by 80 m (figs. 3 and 4). Here, in its southern part, we found a cluster consisting of a long barrow (A6), two detached dolmens (A5 and A38) and a small passage tomb (A4). In the middle part there was a cluster comprising a long barrow (A2), two detached dolmens (A3 and A32) and a passage grave (A1). The northern part had a long barrow facing an area which has not been exposed (A121; fig. 4). The long barrow in the middle has had a kerb of large stones and a chamber with an opening to the NW – towards Sarup. The long barrow was sited directly on top of a Neolithic longhouse. The latter was two-aisled, 14 m long and 4.9 m wide. Five large posts were located along the middle and smaller ones were placed in the walls (Andersen 2009, 41). It appears that the house had burned down, after which it was ploughed over with an ard. A number of finds emerged from the area around the house which can be dated to the Fuchsberg phase. The northern long barrow (A121) at the Damsbo site also covered a long-house. Both house areas have yielded a limited number of finds. Perhaps both houses had a special purpose, or purposes, or perhaps activities involving greater numbers of artefacts and quantities of debris took place at some distance from the houses, in areas where we find cultural layers with no evidence of houses.

The middle cluster of tombs at Damsbo has, to the NE, a small passage tomb, A1, where some of the kerbstones still lie in situ, in their original positions, although the chamber was demolished more than 200 years ago (fig. 5). Careful excavation of this monument has yielded much new information. This tomb had also been placed on top of a former Neolithic two-aisled longhouse. This too had burned down and then been ploughed over with an ard. Again only a few finds were recovered – and these date from the Fuchsberg phase. This is the same date as for the two other houses at the site, but 150 to 200 years earlier than the barrow containing the passage tomb that ex-

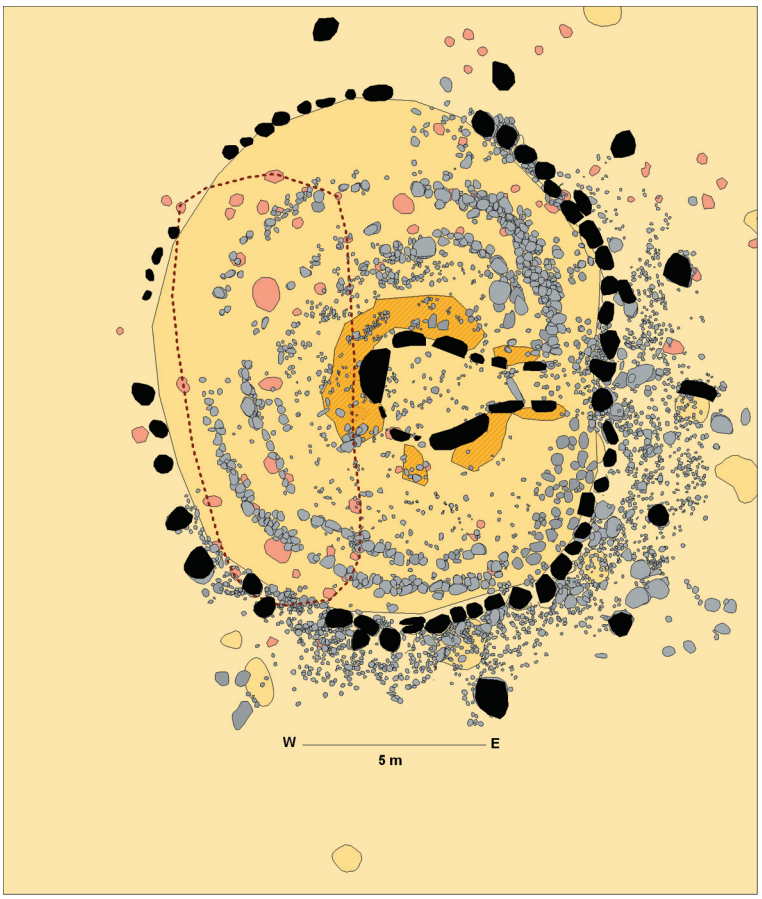

Fig. 5. Plan of a now demolished passage grave at Damsbo (see fig. 4 no. A1). A chamber with a passage leading east was located in the middle. This, in turn, was surrounded by a spiral of smaller boulders, where deposits of fragmented ceramics were found. A kerb of glacial erratic boulders surrounded both the chamber and the spiral, and outside this kerb was a further, outer row of larger granite boulders placed at regular intervals. A two-aisled house, 12 m long and 4.6 m wide, was the first structure on this site.

Abb. 5. Plan des heute zerstörten Megalithgrabes von Damsbo (s. Abb. 4, Nr. A1). Eine Kammer mit ostwärts ausgerichtetem Gang befand sich zentral in der Anlage. Diese war wiederum von einer spiralförmigen Anordnung kleinerer Gerölle umgeben, in der sich Niederlegungen fragmentierter Keramik fanden. Eine Einfassung aus erratischen Findlingen umschloss sowohl die Kammer als auch die Spirale. Darum herum gab es einen weiteren, äußeren Kreis größerer Granitblöcke, die in regelmäßigen Abständen zueinander platziert waren. Der erste Bau auf diesem Platz war aber ein einschiffiges Haus, 12 m lang und 4,6 m breit.

actly covered the house! At ground level a small chamber with a passage leading to the east was enclosed within several rows of small boulders placed in the form of a spiral. Between these boulders, ceramics were found in three places. These comprised parts of well-decorated pots, but they had been deliberately smashed, and some were found with their handle placed directly on top of the heap. Only a small part of the pots had been taken to these three spots. Here, we find signs of special activities having taken place within the area of the barrow prior to the latter's construction. These activities are of the same character as those seen by the enclosures at Sarup, i. e. deliberate fragmentation and placement of a piece of a pot.

This structure, comprising the chamber and the boulders, was covered by a barrow around which a kerb made up of closely-spaced glacial erratic boulders, about 1 m in size, was constructed. Between the barrow and the kerb there was a c. 1 m gap, a passageway, which was left open. This area was found to contain other parts of finely ornamented ceramics which had also been placed in a fragmented state. Similar open spaces have been found associated with a few other Danish passage graves and they confirm the need to perceive these graves as very complicated features with many phases of activity (Skaarup 1985, 115 – 21). We still have a lot to learn from megalithic monuments in order to obtain a clear picture of them and their history. This information can only come from the total excavation of monuments, even those appearing to have been demolished! Outside the kerb, and concentric with it, a row of large granite boulders had been placed at regular intervals. The chamber of passage grave A1 yielded about a thousand pieces of human bone. An AMS radiocarbon date and the finding of a wrist guard from the time of the Beaker culture confirm that these later activities in the graves took place during the second half of the third millennium BC.

This late date for the secondary use of megalithic tombs in the Sarup area has been confirmed by many other graves. However, at Sarup Gamle Skole II, about 400 m SW of the Sarup site, we have excavated a passage grave containing two floor layers. On the lower layer we found a few remains of the skeleton of a young woman, obviously brought to the grave in a de-fleshed state. The remains were accompanied by a flint knife and a transverse arrowhead. Here again we found only a few fragments of the remains of a young woman – which, before secondary placement in the tomb, had also been fragmented. Perhaps her remains represent remnants from the original use of the tomb? This burial was covered by a secondary floor with a layer containing material from MN II – around 3100 BC.

The record from the Sarup area included no complete skeletons from inside megalithic monuments and absolutely no signs of collective burials of complete skeletons. At the Sarup II enclosure, from the same period, a few fragments of a young woman were also recovered; this small collection of her bones had been cremated (Andersen 1999 a, 250 fig. 5.86). I think megalithic monuments should be perceived as originally not being a place of burial, but as containers – among many others – intended to hold some of the human bones in a sequence of mortuary activity. In front of this passage grave we found about 26,000 potsherds originating from at least 600 different vessels, many of them only represented by a single potsherd. All the pots can be assigned to the time of the original construction and use of this tomb, i. e. the Klintebakke phase at 3200 cal BC.

Not far from the Sarup Gamle Skole II passage grave we have excavated another similar monument, Sarup Mølle I. In front of the kerb, we found 142 sherds from a finely decorated beaker, all of them between 2 and 6 cm in length and between 1.5 and 4 cm in width, i. e. they must have been fragmented deliberately. Only about 40 % of the beaker had been taken to this spot. Close to this beaker we found another, of which about 70 % had been taken there and then fragmented. Fragments of another 60 pots were uncovered by this passage grave, but most of them were only represented by a single potsherd.

At Bronsyxan, Hindby Mosse, near Malmø, our Swedish colleagues have recovered 28,000 potsherds in front of the kerb of this long dolmen. The sherds belong to about 290 pots of which 256, or 88 %, were represented only by a single potsherd. From the same area, fragments of 80 cremation burials were also uncovered (Burenhult 1973).

These examples from enclosures and from megalithic monuments show us a period when fragmentation of materials was a conscious act. It seems that the fragmentation was deliberate, in particular with respect to such materials as the skeletons of humans and some large animals, ceramics, flint axes, grain, querns and grinding stones. Through fragmentation, the intention must have been to confer a new significance on these materials. And by placing the resulting fragments in different places, these places became linked together and a network was formed and maintained between the people who carried out these activities (Chapman 2000; Larsson 2009). It was a medium for team building!

The settlements around Sarup

About 80 settlements from the Funnel Beaker culture have been located in the area around Sarup; 43 of these contained material dating them to the period of the enclosures and the building of megalithic tombs (fig. 3). The extent of these settlements rarely exceeds 50 by 100 m, often less, and they are sited close to watercourses, i. e.

within 200 m. Trial excavations have been conducted on a few of the sites, providing abundant finds of various kinds. As already mentioned, remains of houses have been found covered by three megalithic tombs at Damsbo. A limited number of finds was recovered from the vicinity of these houses, with relatively more ceramics than flint, providing an assemblage different to that found at sites with cultural layers. In some of the ditches and pits at the Sarup enclosures, accumulations of settlement debris were found. This material must have been gathered at the settlements and then deliberately taken to the enclosure and deposited there.

In the area, it seems there were house sites with only a small amount of debris and sites with cultural layers having abundant debris. The enclosures reveal evidence of specially collected and placed accumulations of settlement debris (Andersen 2009; 42 – 43). A settlement in this area is perhaps not to be perceived as a single spot but as a larger area where the activities, and the refuse arising from them, was scattered, i. e. flint knapping took place where flint was available, manufacturing of ceramics at places with good clay, location of houses on well chosen spots, sitting of fields at different spots over a larger area depending of the rotation etc.

Summing up

In the above article I have attempted to present the results of studies of the Neolithic settlement system within a small area on the SW part of Funen – in the Sarup area. In this area we found abundant evidence of activities in the period between 3500 and 3200 cal BC, leading to the construction of more than 100 megalithic monuments and three causewayed enclosures. Scattered around the area we also found many small settlements, implying a segmented social structure. This was an aspect we perhaps also found reflected in the structure of the ditches at the enclosures and the clustering of the megalithic monuments. This active period came more than half a millennium after the first signs of a Neolithic economy appeared in Denmark. The building of these many monuments must have required a large number of people. Before these people could be assembled in the building processes, they must have had to be organised and to have had a network of communication and planning. Within these three centuries we find, among many other things, special artefacts: finely-decorated ceramics, large flint axes and ceremonial battle axes. Often these materials have been treated in special ways such as being subjected to intentional destruction and fragmentation. The same applies to human bones, some animal bones, querns, grinding stone and grain. These many activities all took place at exactly the same time; a time when we also see real acceptance and development of the Neolithic economy. The change from a Mesolithic to a Neolithic way of life was the greatest transformation in human history. It must have been very complicated for the people involved, and the challenges it presented were managed by way of enormous ritual activities, including the building of numerous monuments and the performance of many special activities.

By 3100 cal BC all these activities had ceased, no new monuments were constructed, but the old ones were re-used. People now lived in larger settlements, the exquisite artefacts were no longer produced and we no longer see their deliberate demolition and fragmentation. Pollen analysis reveals a time with a more stable economy and grain finds reveal the cultivation of improved cereal types.

In order to succeed in the implementation of change all participants must join in and accept the process. This can be achieved

through the collective construction of monuments and the performance of special activities of a ritual character. Such activities lead to a process of team building. Only in such a way can great changes achieve success, and it will be achieved without the emergence of one or more hierarchical systems. As Frances Lynch expressed it: "The authority resided not in an individual but in a group with relationship to ancestors, individually anonymous but collectively powerful" (Lynch 1997, 12).

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