

MONUMENTALISING LIFE IN THE ~ NEOLITHIC

NARRATIVES OF CHANGE
AND CONTINUITY

Edited by

Anne Birgitte Gebauer, Lasse Sørensen, Anne Teather
& António Carlos Valera

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Front cover: Long dolmen at Skegrie, Sweden. Photo by Julian Thomas

Back cover: The first timber circle in Iberia found at Perdigões enclosure. Photo by Era Arqueologia

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Introduction

*Anne Birgitte Gebauer, Lasse Sørensen, Anne Teather and
António Carlos Valera*

One of the principal characteristics of the Neolithic in Europe and elsewhere is a significant increase of monumentality in association with innovations in material culture, and a shift in subsistence practices from hunting and gathering to farming and pastoralism. The purpose of this volume is to collate and discuss the most recent various theories of why monumental architecture became such an important part of life in early agrarian societies.

These questions about ‘What types of monuments were built’ and ‘When did it happen’ have been analysed in multiple studies, vastly improving our understanding of monumentality with the help of enhanced dating methods and comparative perspectives. A pan-European review of the origins, spread and development of megalithic monuments has shown a degree of homogeneity of the architectural concepts across the region (Schulz Paulsson 2017; 2019). Refined radiocarbon chronologies and Bayesian statistics have allowed the use of more specific models of sequences in the construction and modifications of individual monuments, as well as the transformation of entire monumental landscapes (Whittle *et al.* 2007; 2011; Cummings *et al.* 2015; Wunderlich and Hinz 2019). In addition, new insights in the temporality of monuments has been critical for interpretations of past societies as a swift design and execution of the building of a monument suggests a greater control over effort and a larger population than a drawn-out process (Scarre 2010; Whittle *et al.* 2011) (Teather, Chapter 1).

Since 2004, various aspects of the stone-built monuments have been the focus of the European Megalithic Studies Group, at times in collaboration with Kiel University (Furholt *et al.* 2011; Sanjuan *et al.* 2011; Laporte and Scarre 2016). In relation to a six-year-long priority research

programme at this university, multiple studies explored early monumentality in a broader sense that culminated in a final publication, *Megaliths, Societies, Landscapes: Early Monumentality and Social Differentiation in Neolithic Europe* (Müller *et al.* 2019). A 2019 conference in Vendée, France adopted a global approach encompassing ‘Megaliths of the World’. Furthermore, contemporary builders of megalithic monuments have been the topic of publications like *Mégalithismes vivants et passés: Approches croisées* (Jeunesse *et al.* 2016; see also Chapter 13). Thus, many attempts have been made over recent decades to make sense of the Neolithic monuments, not only their typology and chronology, but also their spatial distribution (Renfrew 1973), landscape setting (Bradley 1998; Scarre 2001; 2002a; 2002b; 2011), spatial structure (Bradley 2012; Cummings *et al.* 2015) and relationship to houses for the living (Hodder 1984; Bradley 2005; 2007; 2013; Sheridan 2020) together with sensory approaches such as light and acoustics (Bradley 1989; Scarre and Lawson 2006).

The aim of this volume is to offer new insights in the continuing debate on Neolithic monuments by asking why monumental architecture became so important in early agrarian societies? The construction of monuments required technical skills as well as an immense degree of planning and labour. Monuments are often related to death, the supernatural world and cosmology and are frequently located in special dedicated settings away from the domestic and quotidian, or sometimes conversely, embedded in it. What was the motivation among the early farmers and herders to build these monuments? Particular natural locations, where primordial forces and nature spirits could have been worshipped, may have held a sacred significance to

hunter-gatherers. While natural places often continued to be a part of the ritual landscape, early Neolithic societies invested heavily in humanly built structures at a monumental scale. What concepts of monumentality did these societies have? While the input of individuals is critical to construction, it is *societies* that build monuments as expressions of social relationships and different power structures that may be both cohesive and contradictory. Especially in relation to segmentary societies, monument construction has been seen as a strategy in disseminating ideology, promoting the views of leaders, consolidating economic resources and encouraging social cohesion. How do these theories relate to the function and significance of enclosures and funerary monuments in early Neolithic societies? Furthermore, the debate on Neolithic monumentality raises the question of how our understanding of what constitutes a monument compares with those perceptions in the past.

It was to address these issues that a session entitled ‘Building Story Structures – Early Monumentalism in Neolithic Europe’ was organised at the 24th Annual Meeting of the European Association of Archaeologists in Barcelona 2018. With a few exceptions, the papers in this volume were first presented at this meeting and dealt with aspects of monumentality over wide areas of Europe from Malta in the south to southern Scandinavia and Scotland in the north, as well as from Poland in the east to Portugal in the west. In spite of the intention to discuss Neolithic monuments all across Europe, attempts at gathering contributions from important areas like Ireland, England and France were unsuccessful. However, we are delighted to include additional contributions to this publication such as a paper on Kujavian long barrows in Poland and a paper on Peruvian prehistoric megaliths. An important in-depth discussion of Göbekli Tepe by Trevor Watkins, Moritz Kinzel and Lee Clare has contributions from Ian Hodder and Christian Jeunesse. Finally, Julian Thomas has kindly undertaken the important task of writing a concluding chapter.

The initial paper in this volume discusses conceptual thoughts on monuments and locations of extraction sites such as flint mines. The purpose is to elucidate how we define monuments and how these different schemes of analyses affect our interpretation of different categories of past activity. Extraction at depth may have signified something particular for early Neolithic communities as the start of flint mining predates the earliest Neolithic-dated monuments in several regions (Teather, Chapter 1).

The famous site of Göbekli Tepe in southeastern Turkey with the earliest known monumental structures has been awarded special attention in the section ‘Origin of monumentality’. Two papers by Trevor Watkins and Moritz Kinzel and Lee Clare present their theories regarding early monumentality from the Neolithic in southwest Asia. According to Watkins (Chapter 2) a pivotal point in human evolution was reached when large permanently co-resident

communities became embedded in super-communities by means of networking around the beginning of the early Neolithic (9600–8500 BC or PPNA). In this context, monumental constructions served a role in creating and maintaining identity among increasingly larger populations in local co-resident communities and wider regional networks. Although people in a sense were working together with strangers, they were engaged in forging a shared identity of an ‘imagined’ society.

On the other hand, Kinzel and Clare (Chapter 3) view Göbekli Tepe as a domestic site with round houses coeval with the large circular structures, and focus on the longevity of the large structures, as well as their gradual infill constituting eroded settlement debris rather than the remains of feasting events. The definition of monumentality in the context of Near Eastern Neolithic architecture is discussed with the suggestion that size is not the only feature making buildings monumental; the concepts behind the building and the perception by the responsible communities mattered as well. Although the structures seem special from a modern perspective, they were perhaps merely exceptions by a degree from standard practice. Furthermore, experimental works suggest that relatively small groups of people could be involved in the constructions at Göbekli Tepe.

Thus, the role of the large structures at Göbekli Tepe and elsewhere in the development of Neolithic communities and hierarchies is viewed quite differently in the two papers. Given this discrepancy, the editors found that additional insights into the context and possible interpretations of this important site would be useful. Ian Hodder (Chapter 4) and Christian Jeunesse (Chapter 5) both gracefully agreed to write a comment on their views of Göbekli Tepe based on the two papers presented in this volume as well as their own research. Of course, Watkins (Chapter 6) and Kinzel and Clare (Chapter 7) were given the opportunity to respond to these comments. Thus, six chapters in total consider Göbekli Tepe and early monumentality in southwest Asia (Chapters 2–7).

The remaining papers are structured in sections devoted to ‘Monuments and social change’, ‘Funerary monuments’ and ‘Enclosures and landscapes’, reflecting the organisation of the session at the EAA conference. However, those categories are by no means exclusionary, as studies of monumentality may easily address several types of monuments, their interplay with the landscape as well as their role in relation to social change.

The section ‘Monuments and social change’ includes Chapters 8–14 and deals with monumentality and social differentiation. The first paper examines the emergence of archaic chiefdoms within the early Funnel Beaker culture in southern Scandinavia based on social practices involved in learning of agricultural practices, variation in wealth and house sizes, ritual sacrifices and large construction projects related to long barrows and enclosures. Continental evidence

of monumentality as well as contemporary megalith building is included in the discussion as well (Sørensen, Chapter 8). On Rügen in northern Germany and immediately south of Scandinavia a considerable time lag is observed between the introduction of domesticates and the erection of monumental structures. Completely Neolithic communities and intensive megalithic construction only appear after a period of 400 years of gradual acculturation and adoption of agrarian practices (Behrens, Chapter 9). The next couple of papers examine the role of monuments in more mature Neolithic societies. One paper explores the long-term relationship between monument construction, ritual activities and the social dynamics of the Funnel Beaker society in the southwestern Baltic region (Brozio, Chapter 10). The other paper investigates what happens in the aftermath of a boom in monument construction by looking at the economic and political transformations of society in northern Europe in the 3rd millennium (Müller *et al.*, Chapter 11). Adoption of monumentalism only happened late in the 3rd millennium in the Dutch Wetlands and the relationship between long barrow structures in this area and different types of Neolithic subsistence is discussed by Nobles (Chapter 12). Ethno-archaeological studies (Wunderlich, Chapter 13) can illuminate the diversity of social mechanisms related to megalith building in contemporary societies in Nagaland, northeast India. Finally, in Chapter 14 (Wadskjær and Hjortlund), a study illuminates the use of megalithic structures in Peru between the 1st and the 15th century AD in association with an early, but little known, local culture, the Chachapoyas culture as well as the Inca culture.

The section on 'Funerary monuments' concerns recent investigations and analyses of several types of monuments and their role in society (Chapter 15–19). The investigation of a passage grave at a site in southern Portugal with a time depth of two millennia of human activity has revealed that megalithic tombs were not immutable, permanent structures but may have changed in character and function over time in relation to social changes (Larsson, Chapter 15). The funerary rites in the eastern group of the Funnel Beaker culture are addressed in two papers presenting evidence that earthen long barrows were a more common and widespread phenomenon than previously known. Using LiDAR technology, the presence of earthen long barrows in the Greater Poland (*Wielkopolska*) Province is demonstrated and discussed (Pospieszny *et al.*, Chapter 16). The location of long barrows in Kujavia is explored through aerial and geophysical prospection, reconnaissance surveys and cataloguing of archaeological artefacts found on the surface (Papiernik *et al.*, Chapter 17). The trajectories in Scottish monument building are explored both regionally and in relation to the expansion of farming communities using Bayesian statistics of the latest Carbon-14 dates. This narrative discusses which monuments were built, why they took the form they did, and how and why they changed over

time (Sheridan and Schulting, Chapter 18). The role of tomb clustering in creating a stable ritual landscape is studied through the architecture and ritual pottery depositions at a group of megalithic tombs and a cult house in Denmark. The grouping of monuments is seen as an expression of social cohesion as well as a strategy to gain a competitive edge in a segmented society (Gebauer, Chapter 19).

In the section 'Enclosures and landscapes' several papers reflect on the distinction between physical monuments and the associated monumentalising practices. The development and decline of Maltese megalithic 'Temples' spanning almost 1,500 years (3800–2300 BC) have remained an important focus of European prehistory for over a century. Based on recent excavations at Santa Verna, Gozo and the establishment of a new economic and palaeoenvironmental context, the emergence of Maltese monumentalism is now related to the exceptional social and economic constraints of their restricted island setting (Parkinson *et al.*, Chapter 20). An unusual set of enclosures with sinuous shaped ditches, characteristic of the Guadiana basin (South Portugal), is seen as embedded in cosmological principals. The monumentality of these enclosures results from recurrent ephemeral practices of opening and closing ditched segments together with other associated activities (Valera, Chapter 21). Monumentalising of the landscape was a continuous practice throughout the 3rd millennium BC in southern Portugal with construction of walled enclosures on hill tops. Two enclosures are presented by Maria de Jesus Sanches and Ana Margarida Vale (Chapter 22) not only as built features constituting 'monuments', but rather as monumentalised hills occupied for six–eight centuries with periodic rebuilding and seasonal use including the consumption of wild boar and cattle. Based on a case study from southern Poland, roundels, the oldest monumental structures in Europe, are presented as structures used in communal celebrations and with architectural reference to cosmic powers. The emergence of roundels at the beginning of the 5th millennium cal BC in central Europe is related to social and ideological changes accompanying the disintegration of the earliest farming societies from the Linear Band Ceramic culture (Czerniak *et al.*, Chapter 23). In southern Sweden, new large-scale excavations have provided evidence that the introduction of farming, husbandry and flint mining around 4000 BC gave rise to a much more complex social organisation than indicated by earlier research. This comprehensive study of the early Neolithic monumental landscape incorporates settlement patterns, landscape use as well as ritual practices (Andersson and Artursson, Chapter 24).

In the concluding chapter of the volume, Julian Thomas (Chapter 25) discusses multiple aspects of the concept of monuments and monumentality, and argues the most significant are massiveness, memorial and longevity. Monuments may have played a fundamental role in creating the socially stable conditions that were the prerequisite for cultivation

and husbandry. Furthermore, monumentalising life could refer to the process by which aspects of everyday, unconsidered practice were made visible and memorable by bringing to notice things that would otherwise be passed over. Thus, monumentality may also be a relational concept, and not only inherent in any particular structure, but whereby human groups are lent a greater degree of coherence and stability over time by creating, using and venerating monuments.

The editors are grateful to our colleagues who contributed their knowledge to this volume. It is thanks to their discipline, friendliness, patience and professionalism that it has been possible to compile this extensive body of research and publish it within a reasonably short time. We would also like to express a special gratitude to the colleagues who were not part of the original project, but nevertheless stepped in and on short notice provided valuable contributions to the publication. A number of external reviews were written by Richard Bradley, Martin Hinz, Torsten Madsen and Mike Parker Pearson. In depth commentary on Göbekli Tepe was provided by Ian Hodder and Christian Jeunesse. Julian Thomas valiantly undertook the comprehensive task of summarising the wide-ranging articles and writing up a concluding chapter. Language editing was completed by Anne Teather. Anne Birgitte Gebauer has gracefully managed the whole project to completion.

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There is no doubt that Neolithic monumentality will continue to be a focus for archaeologists in the years to come. We hope that this volume provides useful knowledge and arguments in the continuing debate on the role of monumental structures, not only in the lives of early Neolithic farmers and herders, but also among ourselves in modern day society.

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Thoughts on monumentalism

Neolithic monumentality for the 21st century

Anne Teather

Abstract

Prehistoric monuments are some of the most evocative structures standing today. It is unsurprising that they have received enduring attention from archaeologists and a central place in interpretations of the past. Yet, we often uncritically accept the views that monuments occupied a pivotal position in past societies, and that their endurance over millennia was a deliberate manifestation of their past social purpose. In this paper, I critically review our hierarchical approach to site types in the Neolithic as a triumvirate of monuments, settlements and localities where economic resources were exploited. I argue that these in turn have been used to define symbolic, social and economic functions respectively and this approach particularly diminishes the role and morphology of economic sites in the past. From an examination of the morphology of ditches and shafts and a review of temporal approaches to construction, it is proposed that the differences between such sites is less marked, particularly in the late Neolithic. The paper concludes that we need to take a more balanced approach to investigating site types, as it is only with a more even focus of scrutiny that we will be able to offer broader understandings of past communities.

Introduction

Widely thought of as one of the defining characteristics of the European Neolithic, the emergence of monument building is associated with the innovations in material culture and shift in subsistence practices from hunting and gathering, to farming and pastoralism that feature strongly in accounts of this period. However, recent studies and analyses of the Neolithic have increasingly separated the study of monuments from investigations of sites that are not monuments. For example, in discussing the Neolithic landscape of Southern

Scandinavia, Hinz (2018, 211–2) elaborates this idea, ‘the site types that dominate the archaeological record include permanent settlements with their fields, monumental burial sites, such as earthen long barrows, megalithic graves, and causewayed enclosures, accompanied by sites with specific (economic) character, for example, flint acquisition/processing sites’. Hinz’s view reflects a conventional categorisation of Neolithic sites into a functional (and implicitly hierarchical) triumvirate of monuments, settlements and localities where economic resources were exploited. These three categories effectively represent symbolic, social and economic functions respectively.

While it is now rarely suggested that Neolithic monuments solely had an economic function (as stock enclosures, for example) or a single ritual or symbolic function, many have been interpreted as having had a societal function that may also have served, at least in part, an economic purpose. These include providing social areas for gathering and trade purposes (as has been proposed for causewayed enclosures); or monuments such as chambered tombs also having had a functional mortuary role in housing the human dead. Similarly, economic and functional interpretations are juxtaposed and as such bolster each other to create a stronger argument. For example, a causewayed enclosure may have been for people to meet to trade goods, and the size of an enclosure is a functional indication of how many people accumulated there. We build interpretations through aggregating evidence and with reference to other evidence, and like a decoupage, paste an overlapping picture of past human lives.

Yet, sites that are deemed to have less ‘cultural importance’, for example natural landscape features such as caves, and sites of raw material exploitation like mines or quarries, have commonly been viewed as being less interpretively

important in the present, and by analogy of less social importance in the past. With a focus on the British Neolithic, this paper seeks to critically examine what we define as monuments. Through discussing the language and concepts of monumentality and how our arguments and recent research on temporality impacts on our interpretations of this period, I will argue that our current approach is biased in favour of the monuments of the past. We need to take a more balanced approach to investigating site types as it is only with a more even focus of scrutiny that we will be able to offer broader understandings of past communities.

What is a prehistoric monument?

At the very end of the 20th century, Thomas (1999, 34) reviewed how prehistoric monuments had been interpreted by archaeologists as direct reflections of the societies that built them. While Renfrew (1973, 556) saw these monuments as ‘the natural counterparts of other features of society’, Bradley’s (1985) focus was on their temporal properties, including the permanence of their architecture and their longevity in the landscape. Thomas (1999, 35–37) argued that monuments framed social relationships through transforming and controlling human spatial experience, and that would probably also have been reflected in non-monumental architectural spaces. Therefore, while these interpretive positions differed, there was a consensus that monuments reflect one or another aspect of the social environment of the time of their construction. More recent work has focused on the enduring importance of monuments evidenced through their later modification and reuse (e.g. Gillings *et al.* 2019) and also their relationship to other non-monumental archaeological evidence (e.g. such as settlement, French *et al.* 2012). These are informative perspectives, although the separation between interpretations of monuments on the one hand and the morphology and characterisation of monuments on the other is a division that is rarely considered. What attributes or combination of features makes something a monument, rather than a settlement or a place of economic exploitation?

For prehistorians, the term ‘monument’ usually refers to a visually salient and impressive megalithic, timber or earthen structure that exhibits purposeful and often standardised architectural design. Additionally, a monument should be of demonstrable effort to construct and have required the mobilisation and organisation of a substantial number of people in order to create it. A further, though not essential attribute, is that a monument should have a discernible social purpose – for example, to serve as a gathering place, or to facilitate mortuary activity or social cohesion activities such as feasting and/or displays of power. There are often structural similarities in monumental architecture across geographical distances that allow archaeologists to establish typologies of monuments, and there may be additional similarities in surface decoration, such as rock art and/or

applied pigment. Finally, the longevity of monuments in the landscape may be evidenced through continued or repeated use, suggesting that some monuments retained an enduring importance after their initial use. In summary, a monument is a type of prehistoric archaeological site whose construction typically followed a normative design, required considerable effort to create and was likely to have had enduring social meaning for both its creators and for succeeding generations of people.

In the English language, the word ‘monument’ originates from Latin *monere*, that means to remind. Similarly, Latin origins have resulted in Swedish (minnesmärke), Norwegian (minnesmerke) and Danish (mindesmarke) terms that confirm that the word for monument is strongly related to memorialisation; in German, the common term *denkmal* is a composite word of *denken* (to think) and *Mal* (either meaning an occasion, or alternatively a sign or mark). Hence the original meanings of the English and European terms for ‘monument’ are inextricably bound up with the notion of committing a past event to memory (or in some instances of commemorating an individual’s life). The temporality of a monument is therefore interpretively fixed at its moment of construction as a memorial, rather than evolving and transforming through social time. To elucidate this point: a war memorial containing a Christian cross, common in Britain today, contains the same symbolism as that found in a church. Yet, however monumental churches and cathedrals may be, they were not constructed to be memorials, but rather to serve as places for the living to meet and worship. That churches are continuously used, rebuilt and increasingly repurposed is due partly to their central locations in urban or rural environments, and their history of being habitual places where people gathered. A few churches become memorialised as historically and culturally important in their own right; but again, this may be largely because of their association with manifestations of political and social power. For example, Westminster Abbey in London is the traditional place that English monarchs are crowned and their mortal remains buried. Returning to prehistoric ‘monuments’, the present-day motivations for classifying monuments are primarily for typological and curatorial convenience, rather than to increase understandings. An unfortunate consequence is that our terminology for these past structures is far too focused on a specific approach to temporality; one that I will explore and challenge in this paper.

Monuments and temporality

Recent research aimed at creating a more refined chronology for monument construction has had a sweeping and perhaps unintended impact on our interpretations of Neolithic society. I have previously expressed concerns regarding the role of a new historicism in archaeology and its application in

methodologies in the examination of archaeological deposits (Teather 2018). Yet in terms of built structures, the temporality of monuments themselves and their social role has come under increased scrutiny. This tension between interpretations of a prehistoric monument perceived as a planned structure, set against evidence that monuments were subject to different forms of construction and modification over time, was the subject of vigorous academic debate during the 1990s by many scholars (*e.g.* Bradley 1984; 2002; Tilley 1994; Thomas 1996; 1999). The current turn to historical particularism could be argued to reflect that of the late 1980s and a subject attended to in some detail by Barrett (1991). Almost 30 years ago, Barrett (1991, 13) reflected that Avebury ‘was not conceived as an entity, a plan in the mind of some autocratic chief’. He argued (1991, 132) that even large building projects such as those at Avebury or Durrington Walls might only have represented people spending minimal time away from mundane activities. Yet the recent intensive radiocarbon dating exercises that have taken place on many British Neolithic sites (principally enclosures and burial mounds) challenges this view. This work has shown that most monuments were built and used, at least in their primary intended role, within a short timeframe of perhaps only two or three generations or up to 75 years (Bayliss *et al.* 2007; Whittle *et al.* 2007; 2011). Therefore, the dominant narrative has changed from interpretations of multi-phase or emerging monumentality driven by the consequences of social change. Instead, the favoured interpretations now focus on monuments having a framed chronological temporality that encompasses both causewayed enclosures and chambered tombs within the Neolithic as a whole, and with a social temporality measured in a few generations or a single life-span. Like smaller cogs in a bigger wheel, people are imagined working their lives and perhaps those lives of their children, at building and using one monument.

The question of the temporality of monuments is therefore critical for any interpretation of a past society. A swift design and execution of the building of a monument suggests a greater control over effort and a larger population; whereas a piecemeal approach where elements can be manipulated or altered during construction can allow for a more dispersed, mobile population and a more fluid cultural and social structure. Temporality impacts on demography, effort and expenditure; returning us seamlessly towards processual arguments that concern labour; person-hours, economic surplus and the subsistence requirements of a workforce (see below). How long it took to build a monument is perhaps the most fundamental key in constructing past societies. While these arguments have a profound impact on how we may view monuments, they form a discrete branch of theoretical concern that is rarely applied to analyses of settlements or areas of raw resource exploitation. A review of settlement theory is out of the scope of this short paper and I will focus instead on the temporality of economic exploitation.

The cultural and economic impact of quarrying and flint mining

Localities of natural resource exploitation such as flint mines now largely sit outside normative interpretations of archaeological activity, though they were thoroughly investigated as part of the New Archaeology research programme. During the 1970s excavations at the late Neolithic flint mines at Grime’s Graves in Norfolk, England, ideas of craft specialisation and mining as a Neolithic industry were proposed. Mercer’s (1981, 20, 112–113) calculations on the human effort required for extraction of the 1971 shaft of 12.1 m depth (15–16 men over 2–3 months), the area of cultivation of cereal required to sustain the workforce (one hectare) and the estimate of axes from a single shaft (between 1.12 and 2 tons of axes from 8 tons of flint) are impressive. Yet the picture they draw of Neolithic mining is almost entirely devoid of human behaviour apart from people as industrial work units. This was partially acknowledged by Mercer, who commented when discussing the presence of Grooved Ware in a lamenting tone, ‘little has emerged of a cultural unit (in a Childean sense)’ (Mercer 1981, 113). This dissatisfaction in not finding evidence of other ‘household’ activities led to his conclusion that ‘the overwhelming impression gained from the site is one implying the work of a highly institutionalised and ‘professional’ mining community’ (Mercer 1981, 112).

The British Museum excavations at Grime’s Graves from 1972–1976 were published as five fascicules of which the fifth contains the most social interpretation (Longworth and Varndell 1996, 79–89). In many respects this is similar in tone to Mercer’s work, concentrating on factual data concerning the amount of flint extracted and calculations of the labour required. The lack of settlement evidence at mining sites in general had led to the understanding that the subsistence activities required to sustain daily life did not take place in the immediate vicinity of mine sites. Regional tribal groups initially proposed by Drewett (1978) were evoked, supporting ideas of these tribes being socially categorised as ‘miners’, in opposition to other categories of person (‘farmer’ etc) and through this, indicating an industrial approach and a segmented or caste-structured, fairly sedentary, society.

The classification of flint mines as centres of industrial production led to the focus of academic study on the one artefact consistently interpreted as being produced from raw material obtained from mining contexts – flint axes. Through the above view of regional groups, interpreting flint mine sites and axes as purely functional began to merge together. As each mine shaft was clearly capable of yielding tonnes of flint, the assumed purpose of a flint mine was to extract flint to be worked into axes. It has long been noted that the quality of flint from mines may be slightly better than surface deposits but not so much as to impact on manufacturing technique. Gardiner (1990, 119) suggested

that the size of nodule required to make a flint axe and the quality of it would be critical for axe manufacture: only large good-quality flints would be effective for the production of a sizeable tool. The evidence from ‘working floors’ at mine sites suggested that although the flint was worked into a basic axe shape, or roughout, close to the mine sites there is little evidence of knapped debris from finishing the axes, or for polissoirs, which would indicate that grinding and polishing the finished axe must have taken place elsewhere. Hence, mining was viewed as simply an extractive process for the purpose of obtaining raw material for axe production, the later finishing taking place at a distance (Mercer 1981, 113).

A recent research project funded by The Leverhulme Trust (NEOMINE) has sought to chronologically situate flint mining and quarrying in the Neolithic of northern Europe (Schauer *et al.* 2019; Edinborough *et al.* 2020). Through a programme of new radiocarbon dating, it approached the products of these acquisition sites (axes) and investigated their potential role in the establishment of new farming communities primarily through enabling land clearance. This has shown that flint mining appears to be closely related to the emergence of the Neolithic in many areas. For Britain, the start of flint mining slightly predates the earliest Neolithic dated enclosures, although it should be appreciated that there are a number of other less well dated monument classes that may show contemporaneity with early mining activity in some areas (*e.g.* earthen long barrows). Early Neolithic flint mining in Britain is geographically focused within the chalk bedrock of Sussex and Hampshire, with some mining in Scottish gravel deposits at the Den of Boddam and Skelmuir Hill, at Ballygally Hill, Northern Ireland and some later Neolithic mining in chalk bedrock in Sussex at Church Hill, and Grimes’ Graves, East Anglia (Fig. 1.1). In morphological terms, flint mining in glacial secondary deposits (such as Scotland and Grand Pressigny, France) is entirely different to that of primary deposit extraction, being more likely to exhibit quarrying or open cast mining due to the instability of the surrounding deposits (Saville 2005).

The early Neolithic flint extraction activity on chalk primarily takes the form of shaft and gallery mining; a similar process as that seen at the major contemporary European mine sites of Spiennes, Belgium, Hov, Denmark and Krzemionki, Poland. However, is it possible to examine mines from a perspective of monumentality? How far do they fit within our interpretive schemes, and would their inclusion as monuments be interpretively useful?

Temporality, effort and completeness

Richards *et al.* (2013) have discussed completeness as one of the quandaries of monument construction with regard to two monuments – the Stones of Stenness and the Ring of Brodgar, Orkney. As they state, ‘it is difficult to reconcile the immense

amount of labour expended in creating the rock-cut ditches, with the incomplete circle at the former and haphazard or hasty erection of individual monoliths at the latter’ (Richards *et al.* 2013, 119). They have partly addressed the temporal problem regarding the construction and use of stone circles by incorporating discussion of quarrying and social factors within the research and analyses of several sites, an approach used by some of the same scholars for Rapa Nui (Hamilton *et al.* 2008). Therefore, the site of acquisition of the stone (a quarry), the journey that the stone traverses and the nature of architectural phases of ‘wrapping’ (*i.e.* embedding the stones into an enclosing space), all form part of the temporal study of the building of the monument. This is helpful in that the temporality of monument construction is potentially elongated beyond simple, rapid erection; but it could be argued to neglect the temporal dimension of the quarrying itself. For example, the movement of raw materials such as stone from quarries at different locations on Orkney to build the Ring of Brodgar, may have been a deliberate act with the intention of incorporating different parts of Orkney into one monument (Richards *et al.* 2013). Yet, the stones may have taken decades to quarry and move, during which time the quarry may have been monumental in itself. Perhaps these examples serve to deconstruct the idea of a monument as a planned and finished entity, as much as it dissolves the location of the monument from one central place to several dispersed places. This is also echoed in the work to locate the origins of Stonehenge bluestones from Welsh quarries, that may have already been incorporated into two earlier monuments prior to their inclusion in Stonehenge (Parker Pearson *et al.* 2019). Therefore, the physical monument becomes displaced geographically and chronologically. In order to make progress, we need to articulate these places and processes differently.

Flint mine morphology

Flint mine shafts are large and impressive. Ranging from 2 m to almost 13 m depth in Britain (Teather 2016), they show that there was a sustained effort to remove soil and chalk overburden and dig through upper flint seams to reach a level where there was a consistent source of high-quality flint. In addition to shafts at mining sites, there are a number of likely Neolithic shafts that are rather poorly dated, such as the singular Monkton Up Wimborne shaft in Dorset (Green 2000), and groups such as those at Cannon Hill, Berkshire (Bradley *et al.* 1976), at Blackhorse Road, Hertfordshire (Moss-Eccardt 1988) and the 21 shafts between 1 and 2 m wide and 2 to 8 m deep at Eaton Heath, Norwich (Wainwright 1974) (Fig. 1.1). The Monkton Up Wimborne and Blackhorse Road shafts are in chalk and may have been intended as flint extraction shafts, although those at Cannon Hill and Eaton Heath are not located on the correct geology for dense flint extraction but had early Neolithic flint tools and pottery in



Fig. 1.1 Map of Britain (without Northern Isles) with mining sites mentioned in the text.

their deposits (Thomas 2013, 239–240). Even noting these examples, digging to this depth was an unusual activity in the earlier Neolithic when other monuments, such as causewayed enclosures, exhibit ditches that only survive to *c.* 2–2.5 m depth of excavation (although these may of course have been deeper when initially constructed). Similarly, ditches that accompany long barrows that date to the mid-4th millennium BC rarely have ditches that extend beyond a 2.5 m depth, yet, in the late Neolithic, digging to a greater depth is manifested differently.

The later Neolithic witnesses shaft digging and the excavation of ditches at a different scale. The huge henge monument at Avebury, Wiltshire that dates to *c.* 2500 BC (Pollard and Cleal 2004), is almost 350 m in diameter and has a recorded ditch depth of *c.* 10 m depth, although the crest of the bank would have risen 16.8 m above the base of the ditch (Ashbee 2004). This 10 m depth is similar to many of the depths recorded at the contemporary flint mining site of Grime's Graves (Teather 2016) and at Maumbury Rings, Dorset, where the late Neolithic henge site contained up to 45 shafts in a circle, that on excavation proved to be up to 11 m deep (Bradley 1975) (Fig. 1.2). In comparative architectural terms, Maumbury Rings combines both shaft extraction and the addition of a ditch and external bank, whereas at Avebury there is the henge without shafts; and at Grime's Graves there are shafts without a henge. Recent dating has revealed that later flint mining also took place at the early Neolithic site of Church Hill (Teather 2019), suggesting that late Neolithic and early Bronze Age flint mining was more widespread than previously thought. Therefore, while deep and complex extraction (over 4 m) was primarily for the purposes of mining flint in the early–mid Neolithic, it became integrated into wider monumental activity during the later Neolithic. The idea of deep extraction then, and the physical enaction of digging, culminated in an integrated approach to producing architectural modification and monumentality that is absent in the earlier Neolithic. It seems that extraction at depth may have signified something particular and contained for early Neolithic communities, but was

more widely enacted during the late Neolithic primarily for monumental purposes.

The question of this paper was – are flint mines monumental even though they do not follow a schematic and cohesive architectural plan similar to an enclosure, henge or stone circle? Henge ditches are monumental, whether they are 2 m or 10 m deep, because henges were built to a standardised circular design. Shafts with monuments are monumental because of their integration into structures that have other monumental features. Yet, flint mines do follow a form of plan, but that is determined at least in part by geological imperatives rather than human preferences. In following flint seams and beds of particular geological strata, they are only found in particular geographical locations and perhaps it would be more useful to consider geology as not just a passive resource but as an active social agent that contributes to the formation of sites (*cf.* Peterson 2019). Quarries and mines therefore are not monuments, but rather the density of extraction or other features can make them monumental.

Conclusion

This paper has discussed our approaches to monuments and locations of raw material extraction in order to elucidate how we construct different schemes of analysis for different categories of sites of past activity. This has implications for how we look at past human societies. No archaeologist would argue that all structures that we class as monuments today were built and designed for the purposes of memorialisation (either in the present or in the past); however, our language is perhaps restricting our ability to examine the traces of past building and activity beyond monuments. This paper commenced with a quote from Hinz (2018, 211–212) that summarised a conventional categorisation of Neolithic sites into a functional (and implicitly hierarchical) triumvirate of monuments, settlements and areas of resource exploitation. I have argued that monuments are framed as a temporally cohesive social event of thought and construction through approaches to their architectural similarities. As Barrett (1991, 18) pertinently argued, architecture 'is a material technology enabling the regionalisation of a place to emerge through practice, creating different categories and moments of being'.

We have developed more intricate ways of addressing monumentality perhaps at the expense of better analyses of sites of resource exploitation. The sites that sit outside the classification category of monuments, such as settlements or quarries and mines, and arguably other areas of resource exploitation, occupy a marginal interpretative zone in this chronological and memorial approach. Quarries and mines appear to represent a lack of coherent planned architecture that culminated in a particular form; instead they represent decades of action or episodic returns to active growth, or decline and modification, and their structure may be determined as much by geological opportunities and constraints

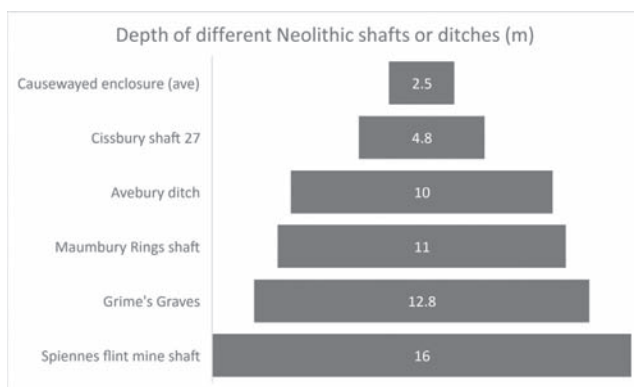


Fig. 1.2 Schematic of the depth of various prehistoric features.

as by human design. They are therefore not monuments in both our defined physical and temporal terms, but they can be monumental. The lack of evidence for much Neolithic settlement on mainland Britain in areas of dense monumentality, has hindered any comparison between the structure and temporality of settlements with that of monuments. While I have previously argued that the complex architecture of shaft and galley flint mine sites should be seen as monuments (Teather 2011; 2016) this may not be wholly appropriate. While the deposits in mines and in contemporary surface monuments are remarkably similar (Teather 2016), they are morphologically distinct. Not every bank and ditch is a monument, and neither is every pit or shaft, however, extraction sites can become monumental, as perhaps can settlement sites.

Therefore, rather than dissolve our triumvirates of site types, we should seek to redress the hierarchy and expand our descriptive language. As I write we are in the midst of a global pandemic, where our areas of resource exploitation (supermarkets) have become more socially important almost overnight, as have our areas for housing the recently deceased (mortuaries). Our monuments and churches are closed, but our everyday existence relies on foods farmed and mostly preserved months, if not years, ago. Hospitals are being created in a monumental style within exhibition arenas all over the UK.

In compressing these temporal moments of monuments and the acquisition of things that make human life possible, we deny the social complexity of the Neolithic. It seems most likely that Neolithic monuments were momentary societal expressions of solidarity with an ideology. While the input of individuals is critical to construction, it is *societies* that build monuments as expressions of social relationships and different power structures, that may be both cohesive and contradictory. Yet whatever humans do, whether extraction, building or habitation, can be performed at modest or monumental scales. We should examine these evidential categories along a spectrum and not a hierarchy.

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Origin of monumentalism

Monumentality in Neolithic southwest Asia: making memory in time and space

Trevor Watkins

Abstract

An impressive feature of the settlements of the earliest Neolithic of southwest Asia – a feature that has its origins in the preceding Epipalaeolithic period – is the investment of great amounts of labour and symbolic power in the creation, maintenance, reconstruction, and ritual ‘burial’ of communal buildings of monumental scale. At a different scale, the building, maintenance, rebuilding and replacement of houses within settlements indicates that they were the physical embodiment of the household as an institution. The communities that inhabited the settlements and the households for whom the houses were the centres of their lives were the descendants of the mobile forager bands of the Upper Palaeolithic, and they continued to live by the hunter-gatherer ethos of sharing. Later, as the practice of agricultural economies led to ideas of property and to inequalities of wealth and hierarchies of power, things would be different. The evolutionary problem that they had to solve was twofold: how to live together permanently as large, autonomous communities in daily cooperation with many people whom they scarcely knew; and, as settled (no longer mobile) communities, how to sustain the extensive networks of social exchange on which their societies depended. The hypothesis proposed here is that, in the early Neolithic trans-egalitarian interim, households, communities and networked super-communities relied on their ability to create ‘imagined communities’, building and sharing ideologies of social memory by means of new institutions and their symbolic, physical instantiations.

Introduction – preliminaries

Before we consider the monumental architecture and sculpture of the early Pre-Pottery Neolithic period in southwest

Asia, it will be helpful to identify two misconceptions that may get in the way of our understanding of the phenomenon. The first mistaken idea is the common equation between the beginnings of farming and the Neolithic; and the second is the tagging of the settlements of the period with the label of villages.

The common idea of what is central to the Neolithic is both partial and misleading. Childe’s idea of a ‘Neolithic revolution’ is more than 80 years old; it has been widely dispersed and has become embedded, but its meaning has also been stripped down to ‘when farming replaced hunting and gathering’, and ‘the domestication of plants and animals’. Robert Braidwood led his teams into the field in the Kurdish region of northeast Iraq in 1948, seeking to test Childe’s theory (Childe 1936). Braidwood made important discoveries and initiated a new multi-disciplinary mode of research on the recognition of plant and animal domestication and the origins of farming. The focus became the quest for the origins of agriculture: hence the reduction of the ‘Neolithic revolution’ to its equation with the time when farmers replaced hunter-gatherers.

We need to understand the Neolithic of southwest Asia as a three-stage process. The early Pre-Pottery Neolithic (9600–8500 BC) continued social, economic and cultural trends that can be seen developing through the Epipalaeolithic period (23,000–9600 BC). Within this first phase of the Neolithic, there is evidence for the management of animal populations, the management of woodland species (Asouti and Kabukcu 2014), and for pre-domestication agriculture (that is, the non-intensive cultivation of some cereals over a period of centuries, or more than a millennium (Willcox 2013)). But these earliest Pre-Pottery Neolithic societies, living in permanent settlements, were essentially intensive forager communities that managed the territory around their

settlements, harvesting storable plant food resources, some of which were obtained through a degree of cultivation. Botanists and zoologists have recognised the indicators of the domestication of cereals, and of sheep, goat, cattle and pig in different combinations from different regions around the hilly flanks of the Fertile Crescent and central Anatolia around or soon after 8500 BC; but domestication did not bring an end to hunting and foraging. The second stage, especially from 7500 BC, saw the steadily increasing dependence on domesticated crops and herded animals, and rapidly increasing settled community size. The dramatic monumental architecture that has been discovered over recent decades belongs almost entirely within the earlier phase of the Pre-Pottery Neolithic.

The second part of the Pre-Pottery Neolithic, during which mixed farming gradually became established, saw continuing rituals, particularly in those regions concerned with intramural burial, skull retrieval and curation, but only rarely the creation of large-scale monumental buildings. The scale of settlements grew greatly during this second phase, reaching a climax in the ‘mega-sites’ of the southern Levant and Çatalhöyük in central Anatolia, whose population has been estimated between 5,000–8,000. The third stage of the Neolithic began with the final Pre-Pottery Neolithic, which saw the abandonment of many of the large, late Pre-Pottery Neolithic settlements. It seems to have begun before the rapid climate change event of the last centuries of the 7th millennium BC, but the processes of population dispersal and the formation of new or revised subsistence economic strategies were doubtless hastened and amplified by the reduced levels of rainfall, and widespread aridification of landscapes (Weninger *et al.* 2009; Marciniak 2019).

There is another legacy of the early years of research on the Neolithic of southwest Asia that needs to be brought into the foreground. Our words for villages, towns and cities are a poor fit for the early Neolithic societies. Braidwood made an important contribution to the vocabulary of Neolithic research; he introduced the term ‘village-farming’ to encapsulate both the social and the economic aspects of the new way of life that emerged in the Neolithic of the hilly flanks of the Fertile Crescent (Braidwood 1956; Braidwood and Howe 1960). While Braidwood was engaged in fieldwork on the opposite wing of the hilly flanks zone, Kenyon was ‘digging up Jericho’ (Kenyon 1957a). In her early report on Pre-Pottery Neolithic Jericho, a large settlement surrounded by a substantial wall and rock-cut ditch, she alluded to Childe’s urban revolution theory; the scale of the settlement (which was overlain by a Bronze Age city), its public works, and the complex cultural practices of intramural burial, skull retrieval and curation, assured her that it was not a village but a town which may have had a population of several thousand inhabitants (Kenyon 1956, 184). And she linked towns with the formation processes of emerging urban civilisation in Mesopotamia (and in the Levant, as

at Jericho itself). Braidwood (1957) and Kenyon (1957b) jostled with the terms that characterised both the Neolithic and urban revolution theories of Childe. Then, in the early 1960s James Mellaart, who also knew well the works of Gordon Childe, undertook his excavations at the huge and unique Neolithic site of Çatalhöyük in central Anatolia. He took delight in stirring things up: Çatalhöyük was bigger (and better) than anything that either Kenyon or Braidwood had found, and it was nowhere near the ‘hilly flanks of the Fertile Crescent’, which Braidwood had defined as the zone of Neolithic social and economic innovation. With obvious relish Mellaart proposed that Çatalhöyük showed the classic characteristics of an urban society as defined by Childe, so that it could be claimed as a (the first) city (Mellaart 1967). Ian Hodder (2006), who has spent 25 years devoted to the Çatalhöyük Research Project, opted for the median of those three categories in the subtitle of his book about the site, but significantly put the word ‘town’ in quotation marks. Village, town, or city: we have three categories of settlement in English, and the early Neolithic settlements do not fit into any of them.

Forms of monumentality and memorialising

The earliest Neolithic communities continued to live by the ethos of sharing that they inherited from their deep Pleistocene past; farming and a household mode of production emerged many centuries later. Operating the sharing ethos at the new scale of large, permanent communities and building the essential and resilient social capital required the demonstrable corporate creation and maintenance of forms of monumentality and ways of memorialising (Watkins 2012). Monumentality and memorialising have been found widely in the settlements of the early (Pre-Pottery) Neolithic of southwest Asia (dating approximately between 9600 and 6500 BC). These practices can be seen to originate and develop in the Epipalaeolithic of the Levant, but space requires that we focus here on the Neolithic.

There is a range of memorialising that starts with the ritualised burial of individuals within settlements, sometimes within houses, sometimes within house-like buildings dedicated to housing the dead. This was not, of course, a new phenomenon in the Neolithic: there were multiple ritualised *Homo sapiens* burials in at least two of the Middle Palaeolithic occupations in the Mount Carmel caves in the north of Israel, dating at least 120,000 years ago. Burials associated with open settlements, the earliest examples of skull retrieval and curation, and the use of previously occupied rock shelters or caves as cemeteries of sometimes dozens of individuals can be traced as a slow crescendo through the Levantine Epipalaeolithic (23,000–10,000 BC), out of which the early Pre-Pottery Neolithic grew. The intramural burial customs of the early Neolithic have been surveyed (Croucher 2012), and the intensive ritual and

ceremonies, feasting and multiple sub-floor burials accommodated by the houses of Çatalhöyük (7200–6500 BC) have been investigated and documented extensively (*e.g.* Hodder 2006; Bogaard *et al.* 2009; Russell *et al.* 2009; Hodder and Pels 2010; Boz and Hager 2013; Anspach 2018). In the mid-range of memorialising is the concern for the house as a ‘living’ and respected entity that requires continual renewal, as at late 8th-millennium BC Boncuklu, near Çatalhöyük in central Anatolia (Baird *et al.* 2016), or at early Pre-Pottery Neolithic Qermez Dere in North Iraq (Watkins 1990). The semi-subterranean structures at Qermez Dere were furnished with pairs of strange pillars made of clay around a stone core. Since these were the only structures found in the settlement, it was assumed that they were used as houses, but houses full of meanings that we could not decipher. Similar sub-circular, sub-rectangular, semi-subterranean building, furnished with pairs of standing stones have now been found at a series of early Pre-Pottery Neolithic settlements in the upper Tigris valley in southeastern Anatolia (see, for example, Hasankeyf Höyük; Miyake *et al.* 2012; or Gusir Höyük; Karul 2011). The paired monoliths of these Tigris valley sites form a link between Qermez Dere in north Iraq and the Euphrates drainage sites to which we now turn.

In the last 20 to 30 years we have learned of the existence of communal projects to create and maintain buildings of a monumental scale and purpose, both at the heart of early Pre-Pottery Neolithic settlements in the Euphrates valley in north Syria, in southern Cyprus, and southern Jordan, and at a special mountain-ridge site, Göbekli Tepe, in southeast Turkey. With few exceptions, these examples of communal or special, non-domestic buildings all belong in the early part of the Pre-Pottery Neolithic, between about 9600 and 8500 BC, that is before the domestication of plants and animals, and well before farming became the established mode of subsistence. The massive structures at Göbekli Tepe seem to have continued in use for a short time beyond that date, but only smaller and rather different buildings were created after the middle of the 9th millennium BC. The settlement of Nevalı Çori in the upper Euphrates basin in southeast Turkey had a repeatedly rebuilt, semi-subterranean building that, like the enclosures of Göbekli Tepe, was populated by large T-shaped monoliths (Hauptmann 2011). And the long-lived settlement of Çayönü, further upstream and near Diyarbakir, possessed a series of special purpose buildings in a large central plaza (Schirmer 1990; Erim-Özdoğan 2011), one of which possessed a pair of tall stone monoliths set in a terrazzo floor. However, for the most part, the dramatic architectural monuments (and their associated sculpted and carved imagery) belong in the earliest part of the Pre-Pottery Neolithic, which in many ways is an extension of the social, economic and cultural developments of the preceding Epipalaeolithic period.

The best known of the monumental communal buildings is a series that replaced one another in the heart of



Fig. 2.1 Jerf el Ahmar, Syria. The second in a series of large, circular, subterranean communal buildings. There were traces of stored cereals and legumes in some of the cells, but the function of the open area of low platforms is unclear. The spread-eagled skeleton of the young female can be seen whose decapitated body was thrown onto the floor before the structure was burnt and buried. (By kind permission of Dr Danielle Stordeur.)

Jerf el Ahmar, a small settlement built and repeatedly rebuilt over several centuries on a low natural mound beside the Euphrates in north Syria (Stordeur *et al.* 2000; Stordeur 2015). Despite the fact that these were salvage excavations undertaken while a dam was under construction, the excavators of Jerf el Ahmar were able to combine acquiring in-depth knowledge of the centuries-long history of the settlement with broad exposures that enabled them to map the structure of the settlement’s shifting layout. The houses of the settlement were small, represented by their sub-circular stone foundation courses clustered around communal cooking-hearths. The earliest communal building was poorly preserved and could not be fully investigated before the waters in the dam on the Euphrates rose to engulf it. But its form was very like that of the much better known second communal building (Fig. 2.1). This was in an area at the centre of the settlement (Fig. 2.2), surrounded by rectangular, multi-cellular buildings. It took the form of a massive, cylindrical, subterranean structure (diameter approximately 7 m, depth below ground level at least 2 m). The sides were formed of a retaining wall built of stone blocks set in mud mortar. Access must have been from the flat roof, which was supported on a number of timber posts and beams. Like its predecessor, around half of its perimeter the structure was equipped with a series of door-less cells formed by mud-brick walls. In the cells there were small amounts of carbonised cereals and lentils, indicating that they had served as massive storage bins for the community’s harvested food supplies. The rest of the floor was open and formed into two or three low rammed earth platforms. The excavators are certain that this building had been rebuilt at least twice. At the end of its life, the final phase was deconstructed and obliterated. But before deconstruction was begun, the

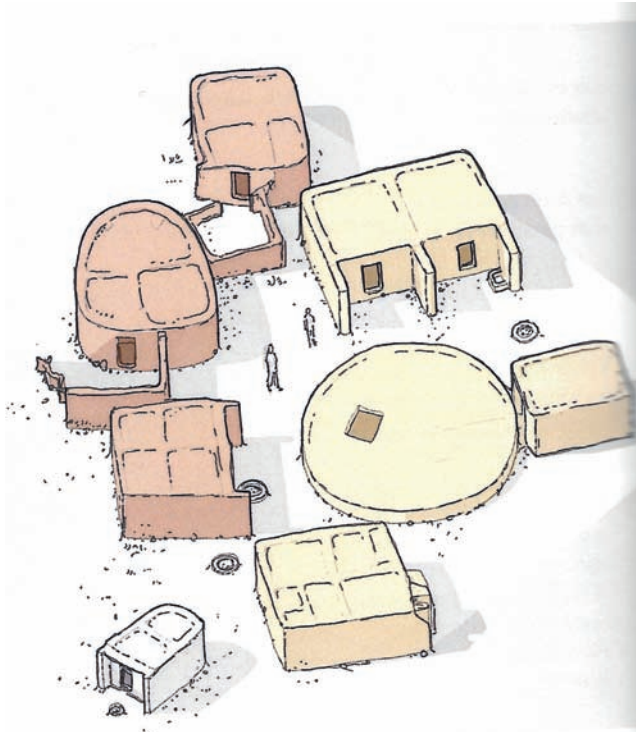


Fig. 2.2 Jerf el Ahmar, Syria. The area around the subterranean communal building in Fig. 2.1. The cluster of four-square buildings include rooms full of multiple quern-stones – for the communal processing of the stored cereals? (By kind permission of Dr Danielle Stordeur.)

decapitated corpse of a young female was dropped onto the floor. The roof-supporting posts were withdrawn (in one case replaced by a human head), and the wood and brushwood of the roof was set on fire, and finally the whole cavity was backfilled with soil and occupation debris.

When the settlement was rebuilt, its centre was shifted somewhat, and a new circular subterranean communal building was created. This time there were no door-less storage bins; the floor was open, and a circular stone-kerbed bench was formed around the base of the wall. The roof was supported on massive pine posts set between the chevron-decorated stone slabs that fronted the bench. Who climbed down from the trapdoor in the roof to meet there, and for what purpose?

This is not the place to go around all the examples of communal buildings at the centre of early Neolithic settlements. We must visit the unique and remarkable monuments that were built at Göbekli Tepe in southeast Turkey (Schmidt 2006; 2011; 2012). The site is a large mound more than 300 m in diameter and approaching 15–17 m in height. Although it looks like a large tell-settlement, its location high on a bare limestone ridge demonstrates that it was a special location. To the south it overlooks the north Mesopotamian plain and to the north the headwater catchment of the Balikh river, a tributary of the Euphrates. For

most of its history, people came to Göbekli Tepe to take part in the construction, reconstruction, renewal, and ultimately the ‘burial’ of circular, subterranean monuments that resembled the communal buildings at the centre of contemporary settlements, but at three to five times greater scale. These massive circular structures were formed by retaining walls of stones set in mud mortar, but, unlike those in the settlements, these buildings were ‘inhabited’ by massive T-shaped monolithic stone sculptures (Fig. 2.3), some of which have arms and hands that show that they are highly schematised human forms (Figs 2.4 and 2.5). Each circular building has a pair of T-monoliths set in the floor, and there are about 10 or 12 more monoliths standing around the periphery, facing into the centre. The monoliths were quarried from the local limestone and were shaped to be rectangular in cross-section. On their surfaces there are motifs sculpted in raised relief; some are very simple, having one or perhaps two animals – a wild bull, a wolf or fox, a wild boar, scorpion, spider or snake; others are complex, displaying nets formed of interlaced snakes, multiple long-legged birds or non-naturalistic symbols. Some of these signs and symbols can also be found at settlement sites in the region incised into small stone plaques that would fit in the hand. The communities living over a wide area shared the architectural principles for creating communal buildings, as well as a ‘vocabulary’ of carved or incised signs and symbols.

Even if there were a permanently resident community at Göbekli Tepe, there would not have been the labour force required for creating the great circular structures, which seem to exist in numbers all over the site. The labour forces required must have been very large: how much was required for the digging of the cylindrical spaces for each construction, building the stone and mud mortar retaining walls to a height of 5 m, smoothing the natural rock to a level floor, quarrying, sculpting, moving and erecting the monoliths? And there are also many smaller three-dimensional sculptures that have been found. Such labour forces required logistical support by an almost equal number of people who brought water, prepared the food, and replaced the chipped stone tools that were consumed in vast quantities. The scale of the enterprise makes it necessary to assume that substantial numbers of people from settlements around the region congregated to spend weeks or months at a time at the site. The original excavator, Klaus Schmidt, argued that the site was the central ceremonial meeting-place for communities from a wide region in southeast Turkey and north Syria, comparing it to the ceremonial and religious centre of an amphictyony of the Archaic, pre-classical Greek world. A recent study of the assemblage of ground stone implements for grinding and pounding has shown that great numbers of grinding stones were concentrated in the dense concentrations of rectangular buildings around and above the main group of excavated enclosures (Dietrich *et al.* 2019). The phytolith evidence both from the surfaces of the grinding

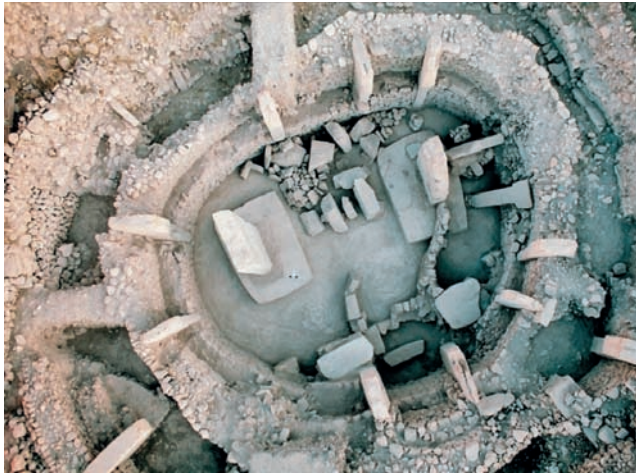


Fig. 2.3 Göbekli Tepe, southeast Turkey. A vertical view of Enclosure C, showing its successive reductions in diameter (from almost 30 m to almost 20 m). The filling of the enclosure had been partly excavated at some later date, and the pair of central monoliths were found 'decapitated'. (Copyright DAI. By kind permission of the Göbekli Tepe research project.)

stones and from the sediments on the floors indicates that large quantities of cereals were continually being processed in those buildings. Taken together with the evidence for seasonal hunting of gazelle, and the interpretation of other evidence for large-scale feasting events (Dietrich *et al.* 2012), the authors reinforce the conclusion that Göbekli Tepe was a place where large numbers of people assembled.

Regional and supra-regional socio-cultural networks of sharing and exchange

Archaeologists working on the Neolithic of southwest Asia have been primarily focused on the investigation of single, and often singular, settlements. The demands of multidisciplinary research on single sites has tended to obscure the essential role of networking, which was key to Neolithic society, as to Pleistocene hunter-gatherer predecessors and to all subsequent societies. Over the Epipalaeolithic-Neolithic transformation, the nature of networking changed (Watkins 2008). We know that the mobile forager band that may regularly have returned to occupy a particular rock-shelter or cave-mouth was a component of a larger socio-cultural group, or tribe. The typical Neolithic community was much larger than a mobile forager band (by a factor of 5, 10 or even 100), and it was permanently co-resident in the settlement it had inherited and continued to reform and rebuild. It may have been autonomous in most regards and functionally self-sufficient, but Neolithic communities were engaged in extensive and intensive networking. The scale of time and effort that underpinned the movement and exchange of materials and the sharing of cultural innovations that we see in the archaeological record was surely very considerable;

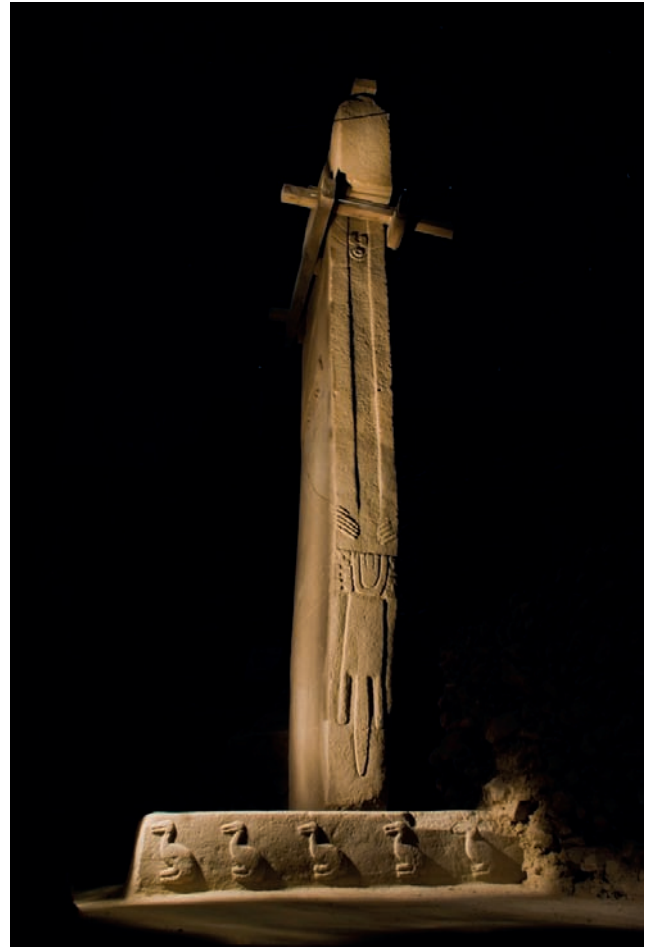


Fig. 2.4 Göbekli Tepe, southeast Turkey. One of the pair of central T-monoliths in the largest of the enclosures excavated to date. The floor of the enclosure is the smoothed surface of the natural rock. The monolith is poised in a cavity in the plinth formed from the rock. The monolith is 5.5 m tall, and it has human hands and arms in low relief. It wears a collar at its 'neck', from which a pendant bearing a symbolic motif is suspended. (The monolith is temporarily supported by steel ropes attached to a wooden brace at the head of the figure.) (Copyright DAI. By kind permission of the Göbekli Tepe research project.)

and it follows that extensive local and regional networking was essential to the life of communities.

We began to register the extraordinary scale of Neolithic networking when Colin Renfrew and his collaborators identified the central and eastern Anatolian geological sources of the archaeological obsidian that is found on almost every Neolithic settlement site around the arc of the hilly flanks of the Fertile Crescent (Renfrew *et al.* 1966; Renfrew and Dixon 1968; 1976). Of course, social networking was not new in the Neolithic; it had been present from at least the Middle Palaeolithic, but the extent and the nature of the special materials that were exchanged in the European Upper Palaeolithic led Clive Gamble to argue that exchange



Fig. 2.5 Detail of the T-monolith in Fig. 2.4. The figure wears a decorated belt around its 'waist', fixed with an ornamented buckle at the front. A fox skin is suspended from the belt. The motifs that decorate the belt and buckle have also been noted occasionally on other monoliths; they are presumed to be elements in a system of meaningful symbols. (Copyright DAI. By kind permission of the Göbekli Tepe research project.)

allowed people to maintain social relations with distant groups whom they scarcely knew at the level of individuals; social groupings became extensive and individuals were able to feel that they belonged to a wider community, which Gamble characterised as the 'release from proximity' (Gamble 1998; 1999). From the Epipalaeolithic and through the Neolithic in southwest Asia the extent, intensity, and variety of exchange grew in a marked crescendo. In the light of much more data, greater refinement of radiocarbon chronology, and more refined statistical analysis, Renfrew's model of 'down-the-line trade' based on the fall-off in amounts of obsidian with distance have recently been replaced.

Ongoing research by a group of Spanish workers is also showing us the sophistication of Neolithic exchange networks (Ortega *et al.* 2014; 2016; Ibáñez *et al.* 2016). Their simulations of obsidian exchange networks over the 800 km range from central Anatolian sources to the most distant southern Jordanian settlements showed that a 'small-world network' was effective. This would have allowed some participants to access 'distant links', bypassing their nearest

neighbours, to reach exchange partners up to 120 km from home in the early Pre-Pottery Neolithic and up to 180 km in the later Pre-Pottery Neolithic. Their map-diagrams of the hypothesised exchange networks of the Levant in the later Pre-Pottery Neolithic look uncannily like the hierarchical settlement patterns expected of Bronze Age urbanism; indeed the researchers observe that the largest amounts of obsidian relative to flint occur at the largest settlements in the southern Levant.

Why should self-sufficient, autonomous, well-functioning communities that were used to living close together spend so much effort on participating in networking with other communities near and far? Some systematic understanding of the processes of cumulative cultural evolution has been gathered by a number of researchers and research groups from various disciplinary backgrounds (*e.g.* Shennan 2001; Steele and Shennan 2009; Dunbar *et al.* 2010; Sterelny 2011b; 2016; Gamble *et al.* 2014; Henrich 2015; Laland 2017; all with many references). And there are good cultural evolutionary reasons for maximising demographic

scale and density, and for the intensity of interaction of the socio-cultural community. Across the end of the Pleistocene and the beginning of the Holocene, through the course of the Epipalaeolithic-Neolithic transformation in southwest Asia, the first large-scale human communities emerged, engaged in intensive socio-cultural networking that formed extensive super-communities.

Building cohesion in trans-egalitarian super-communities

The Epipalaeolithic-Neolithic transformation in southwest Asia represents a pivotal point in human cultural evolution (Watkins 2017; 2018). The ability to sustain large, permanently co-resident communities and to embed those communities in super-communities by means of extensive and intensive socio-cultural networking brought into existence a new, highly successful and expansive way of living that sets earlier prehistory apart from subsequent history. The modes evolved through the Epipalaeolithic and the earlier Pre-Pottery Neolithic in southwest Asia were further developed in the later Pre-Pottery Neolithic and the pottery Neolithic. During the later Pre-Pottery Neolithic, mixed farming became a reliable subsistence strategy, further fuelling rates of population growth and the expansion of farming populations in all directions.

Paul Seabright (2004; and see Sterelny 2011a) has explored how our vast contemporary societies can function when we live in *The Company of Strangers*. He begins the book by recognising that our immensely complicated networked existence has evolved from the extraordinary transformation of the Epipalaeolithic-Neolithic, which ‘would forever change the character of life on our planet’ (Seabright 2004, 3). As Seabright recognised, the Epipalaeolithic-Neolithic transformation was a pivotal moment that changed the pace and direction of human social and cultural evolution, as ‘with barely a pause for breath in evolutionary time [Neolithic societies went on to form] social organizations of startling complexity. Not just village settlements but cities, armies, empires, corporations, nation states, political movements, humanitarian organizations, even internet communities’.

The emergent super-communities of the Neolithic in southwest Asia were of course not without precedent; Gamble has shown how the European Upper Palaeolithic societies extended and intensified their networking, using the sharing and exchange of exotic materials and things (Gamble 1998; 1999). People learned to recognise that their extensive communities consisted of many people who they might never meet and never get to know. The super-communities of the Neolithic were orders of magnitude larger, and, consisting of large, sedentary communities that depended on the successful management of the subsistence resources of their immediate landscape. The evidence of the expansion

of colonists indicates that the hilly flanks of the Fertile Crescent were effectively fully populated from at least the beginning of the Holocene, given the subsistence strategies that were practised. From the Upper Palaeolithic, through the Epipalaeolithic and on through the whole of the Neolithic, the steadily rising number of settlements in the southern Levant (which is the only part of the hilly flanks zone for which we have substantial data), their increasing size, and the increasing density of buildings within settlements implies increasing pressure on the equation between resources and intensified subsistence strategies (documented with references in Watkins 2018). From some time in the Epipalaeolithic, before 10,000 BC, colonists from the southwest Asian mainland had begun to colonise the island of Cyprus (Vigne *et al.* 2012; 2017). During the early Pre-Pottery Neolithic there were further waves of colonists, bringing with them a range of (cultivated but still morphologically wild) plants and animals (both sheep and goat to herd, cattle, and also fallow deer) that were necessary for subsistence but were absent from the island ecology of Cyprus.

If we accept the arguments of numerous researchers (some of whom were mentioned briefly above) that the benefits of cumulative culture relate to effective population density and the intensity of social relationships, then the new, sedentary way of life in large, permanent communities, locked by their sharing and exchange networks into extensive super-communities, brought advantages in the diversification of culture, the capacity for sensitive innovation, rapid evaluation and adoption of adaptations, and resilience. But there were of course costs and risks. Living together in large, dense, permanent settlements required that everyone lived by strict norms of behaviour of many kinds, whether for the disposal of waste, for example, or for the avoidance or the resolution of differences and potential conflicts. The intensity of networking among settled communities was of great importance. As already mentioned, we are now encouraged to think of the operation of the exchange in terms of ‘small-world networks’, in which some participants might exchange directly with partners up to 180 km from home (Ortega *et al.* 2014; Ibañez *et al.* 2015). That implies some members of your community occasionally visited distant places, where they met exchange partners, returning with prized exotic goods and news to talk about. Ensuring that communities shared cultural capital served to suppress the tendency for members of a strongly cohesive community to assert their superiority over ‘others’, or to be suspicious of, or hostile to, others. Communities may indeed have been competitive, but it seems that they engaged in what Renfrew (1986) has called ‘competitive emulation’ within a ‘peer polity interaction sphere’. A number of scholars believe that inter-communal conflict became normal especially as communities became sedentary, depending on the exclusive ownership of the land that they farmed (Choi and Bowles 2007; Bowles 2012; Turchin 2015). While there

are examples of identified large-scale lethal conflict in the mainly European Neolithic (Guilaine and Zammit 2005), a discussion of the hypothesis that there was endemic inter-communal conflict and warfare in the context of the Neolithic of southwest Asia found only ambiguous or precious little evidence (Bar-Yosef 2010, a theme paper followed by several responses).

How did the early Neolithic communities assure their internal stability, and, more significantly, how did those settled communities manage to establish and maintain what I have called super-communities? Traditionally we have thought of Neolithic societies as essentially egalitarian, but it has been clear that there were leading figures who had learned various kinds of inherited knowledge, and who could design, plan and lead the execution of projects such as the construction of the monumental, subterranean, circular communal buildings that have been found at sites like Jerf el Ahmar and other contemporary settlements on the Syrian Euphrates, Wadi Feynan 15 in southern Jordan (Finlayson 2016), and Klimonas in Cyprus (Vigne *et al.* 2012). Following Hayden, we should think of these communities and super-communities as trans-egalitarian (Hayden 2001; Hayden and Adams 2004; Garrido-Pena 2006). While they benefited from the contributions of leadership figures in different social and cultural spheres, the status and authority of such figures was based on prestige (Henrich *et al.* 2015); these societies had no institutions of ascribed political authority. Leadership is only part of the story: the clue is to be seen in the unique site of Göbekli Tepe, where over a period of many centuries communities came together to join in the construction of massive monuments, returning repeatedly to add more circular monuments, or to remodel and remake existing monuments, reworking and re-siting some of the tall, T-shaped monoliths. There was much else going on at Göbekli Tepe, including the making of many three-dimensional sculptures, which have all been found deliberately broken or disfigured, and the costly labour of back-filling monuments with thousands of tons of debris at the end of their active 'lives'.

It is clear that all those communities that came together to form the labour forces and their logistical support not only shared in the aims and objectives that drove all the construction work, but they also shared the complex repertoire of symbolism that controlled the architectural form of the monuments, the form of the many T-shaped monoliths that populated the monuments, and the iconography that was carved in relief on the monoliths, or was represented in the sculptures. Many of the sculptures reference mythological scenes or events, such as the human heads surmounted by a large raptor that grasps the head in its claws. Those who came to join in the work at Göbekli Tepe would have been aware, consciously or unconsciously, of the rich ideology that they shared. But they would also have been engaged in what has been called costly signalling (Sosis

and Alcorta 2003; Bulbulia 2004; Conolly 2017; Sterelny 2018). Communities were demonstrating by their costly efforts their commitment to the super-community that was represented at Göbekli Tepe; people could see and share the serious and long-term commitment of the other members of the super-community.

Although the many people who came together at Göbekli Tepe were working (and feasting: Dietrich *et al.* 2012; Clare *et al.* 2018) in 'the company of strangers', as Paul Seabright (2004) has titled the phenomenon, they were engaged in the forging and sustaining of the identity of an 'imagined community' (Anderson 1983). Both Benedict Anderson and Paul Seabright were concerned with our contemporary societies of tens or even hundreds of millions. In the earliest large-scale settled communities of hundreds and thousands of people, networked into extensive super-communities, we are seeing the prehistoric prototype from which evolved the first urban societies, the first states, kingdoms and empires, out of which our own social world has grown.

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Monumental – compared to what? A perspective from Göbekli Tepe

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Abstract

Since the discovery of the Pre-Pottery Neolithic tower at Tell es-Sultan/Jericho in Kathleen Kenyon's excavations, the importance of monumental structures for the development of complex societies has been the subject of some controversial debate. Archaeological fieldwork underway at Göbekli Tepe since the mid-1990s has fuelled these discussions, specifically concerning the role that large structures could have played in the development of Neolithic communities and hierarchies. This topic begs the question as to how to define monumentality in the context of Near Eastern Neolithic architecture. Were early Neolithic monumental structures merely exceptions from standard practice? Is it only the size that makes buildings monumental or is it perhaps the concepts behind the building and how the responsible communities perceived them? In some cases, the events that took place within these buildings were potentially more important than the structures themselves. For this reason, we should look to the role of monumental structures in the identity-building processes of communities and ask how built environments may have influenced the development of social complexity. This paper discusses relevant cases from different Neolithic sites in the Near East in light of the latest research results.

Introduction

It is not until the Neolithic transition in the Near East that buildings appear in the archaeological record that are larger and appear to conceptually differ from simple dwellings. Although the functional aspects and the role of these structures in Neolithic societies still elude us, architecturally they can be described as 'special buildings' (*cf.* Kinzel 2019). In general terms, it is the size of a structure that appears to

dictate what is (and what is not) considered monumental, although a building could still serve a monumental purpose socially even if the scale is not monumental. Accordingly, as archaeologists we could consider a range of possibilities for considering monumental buildings, that they a) be massive or imposing; b) be exceptional in quantity, quality, extent or degree; c) be of historical or enduring significance; d) have the quality of being larger than life; e) serve as a monument, and/or f) be sturdy, enduring and impressively large. According to Levenson (2019, 24), there are several different monumentalities that exist separately and independently of one another, but which can describe one and the same monument or structure. These include a) intended and built monumentality, b) perceived monumentality and c) received monumentality. A building's importance, therefore, may derive from the 'personal relationship' to it, thus making its 'monumentality' independent of its size and function. According to others, monumentality evokes an aura of greatness, a sense of power and gravity that demands public recognition (*e.g.* Tilley 1994; Popitz 1995, 117; Bradley 1998; Jones *et al.* 2012; Osborn 2012; Priwer and Philips 2015; Brysbaert *et al.* 2018). Over time, they may have become markers of history and repositories of collective memory, monuments can project multiple and sometimes contradicting meanings.

Conversely, simply the effort invested in a structure, for example, to maintain and preserve it could be considered a marker for monumentality; or is a long building biography merely one characteristic of a monumental structure? In this respect, perhaps one of the most critical questions relates to how Neolithic groups perceived buildings and their settings. This paper discusses the buildings at Göbekli Tepe and their stratigraphic analysis and radiocarbon dating, that suggests that the building sequences were more intricate, and as such

indicate a socially monumental approach to the curation of them, than previously argued.

The case of Göbekli Tepe

Göbekli Tepe lies some 15 km east–northeast of Şanlıurfa and 2.5 km east of Örencik village in the Germuş mountain range. The site, which lies upon a star-shaped limestone plateau, has commanding views over the Harran Plain to the south; the modern city of Şanlıurfa and the Fatik Mountains to the west and southwest; and the Tektek Mountains to the southeast. On days with good visibility, the eastern Taurus Mountains and Karacadağ volcanic massif are visible on the horizon to the north and east (*cf.* Knitter *et al.* 2019). Originally discovered during an archaeological survey in 1963 (Benedict 1980), excavations did not begin at the site until its ‘re-discovery’ by Klaus Schmidt in 1994 (Schmidt 2006). The site has been described as a prehistoric mound of an artificial (anthropogenic) accumulation of material, including architectural remains and midden deposits, that amassed upon the flat surface of the rock plateau (Schmidt 2006, 227 f; 2009, 188–191; 2012, 214 f; Kurapkat 2015, 11, fig. 10 and fig. 14). The tell features higher-lying knolls up to 15 m in height, separated by lower-lying hollows. The highest point of the mound corresponds to an elevation of 786 m above sea level, making it the second-highest peak in the Germuş Mountains (Fig. 3.1).

Since 1996, excavations have exposed a total of eight monumental structures with a round-oval ground plan, two massive ‘central’ T-shaped pillars (up to 5.5 m high), up to three enclosing stone walls (reflecting different building phases) into which smaller T-shaped pillars were incorporated (2.5–3.0 m in height) and against the interior faces of which stone ‘benches’ were built (Schmidt 2006). These structures, interpreted as ritual buildings of significant importance in a broader regional context (Schmidt 2006), were found filled with enormous amounts of detritus material. These deposits, commonly referred to as ‘backfill’, consisted of vast amounts of fist-sized limestone rubble interspersed with archaeological artefacts, primarily lithics, worked stone and animal bone, as well as small amounts of fragmented human bone (Gresky *et al.* 2017).

The limestone plateau, upon which the prehistoric builders erected the earliest Neolithic buildings at Göbekli Tepe, also provided the essential construction material for the stone-built structures (*cf.* Schmidt 2009, 207–217; Kurapkat 2014, 70; 2015, 26–27). As the settlement became denser over time, the rock formations became increasingly inaccessible to the Neolithic stonemasons, who relocated their efforts to the more distant fringes of the plateau to acquire suitable building material.

The buildings at Göbekli Tepe are considered to represent some of the oldest monumental human-built structures reflecting a social complexity previously unexpected for



Fig. 3.1 Regional map of the Urfa-Region in Upper Mesopotamia showing sites with T-shaped pillars (DAI, GT project).



this period (Notroff *et al.* 2014). This site has been argued to have solely been a ritual centre or (mountain) sanctuary. However, in recent years the analyses of the accumulated data and the results from new research has started to shed light on a considerably more complex site narrative, though without questioning the ‘special’ character of some of the structures (Kinzel *et al.* in press). Furthermore, recent studies have shown that the structures exposed at Göbekli Tepe feature prolonged use- and maintenance-histories. Buildings experienced phases of rebuilding, repair and modification over long periods; meaning that various stages of buildings and building concepts existed side by side. Therefore, in contrast to earlier stratigraphic models, we are dealing not only with a vertical but also a horizontal stratigraphy at the site (Fig. 3.2). Unfortunately, additional radiocarbon dates will probably not resolve the stratigraphic uncertainties at Göbekli Tepe due to the high degree of re-used material in the structures; in other words, the prehistoric recycling strategy, especially of mud-mortar with its biological inclusions, poses a major problem for absolute dating at the site, but we can rely on stratigraphic analyses to aid interpretation. It has previously been argued that these buildings were intentionally backfilled during special ceremonies (Notroff *et al.* 2014), however, this explanation now appears increasingly unlikely. Instead, the monumental structures were, as we will show later on, probably inundated by building collapse and eroded deposits from higher-lying parts of the mound. Notably, this new interpretation challenges the previously postulated ritual ‘burial’ interpretations and therefore also the hypothesis that these were realised in the frame of lavish feasting events (*e.g.* Schmidt 2006; Notroff *et al.* 2014).

The early Neolithic structures at Göbekli Tepe appear to have been constructed initially directly upon the bedrock rather than cut into older archaeological deposits, after which they became surrounded by other buildings and not by sediments as postulated in earlier studies (*e.g.* Kurapkat 2012, 162). This observation could be especially true for the ‘special buildings’ at the site, though some structures may have been built partly into the slope, as known from other PPN sites such as Aşıklı (Özbaşaran *et al.* 2018), Shkārāt Msaied (Kinzel 2013, 41) and Beidha (Kirkbride 1966; Byrd 2005, 74).

A new chronology for Göbekli Tepe

Despite the inherent difficulties associated with the absolute dating of the architecture at Göbekli Tepe, the careful consideration of the available radiocarbon dates combined with building archaeological observations are nevertheless providing a tentative insight into the complex horizontal and vertical stratigraphies at the site. Accordingly, a total of eight different building phases are now apparent, compared to the three layers (I–III) formerly attributed to the site by Schmidt

(2002; 2008, 60–61) which have since been abandoned. These eight phases – which will be described in more detail below – span at least 1,500 years between the second half of the 10th and the early 8th millennium cal BC. One of the most remarkable insights from this study is that the ‘special buildings’ in the main excavation area were extremely long-lived structures with elaborate biographies.

Phase 1: The earliest settlement phase is associated with the first building activity at the main excavation area (southeast hollow) (Fig. 3.2, dark blue), which saw the first construction phases of the ‘special buildings’ and round-oval domestic structures, two of which appear to directly abut Building D on its western and eastern side respectively. As such, architectural structures assigned to Phase 1 testify to the presence of a (semi?) sedentary community at Göbekli Tepe from earliest times and contemporaneous with the construction of at least four communal buildings (Buildings A–D). Although radiocarbon dates are lacking for this phase, it likely belongs to the second half of the 10th millennium cal BC (PPNA), though an earlier (Younger Dryas) age cannot be ruled out. The domestic round-oval structures recently discovered in the north-western part of the site (K10–13/23) and on the adjacent western flank of the mound (DR2) could also belong to Phase 1, a tentative indication that the settlement in this earliest phase extended beyond the Main Excavation Area (Southeast-Hollow) of the site (Clare *et al.* 2019a, 16; 2019b, 546).

Phase 2: The following phase (Fig. 3.2, light blue), which corresponds to the early 9th millennium cal BC (PPNA/EPPNB), witnessed a first significant modification of the four ‘special buildings’. In this phase, new walls were constructed within the earlier Phase 1 buildings thereby reducing the internal area of the structures. It is in this phase that the first monolithic T-shaped pillars appear incorporated into the walls of the ‘special buildings’. Additionally, the number of apparently domestic structures increases at this time, especially on the north-eastern side of the Southeast-Hollow. The ground plan of these buildings is still round-oval, though there is a gathering tendency towards a more rectangular form. The spatial extent of the settlement at this time (as with Phase 1) is difficult to ascertain due to later building activities which saw the gradual replacement of transitional PPNA/EPPNB buildings with rectangular structures in the subsequent phases.

Phases 3–5: In the EPPNB rectangular (domestic) structures were built on the western and northern slopes overlooking the ‘special buildings’ in the Southeast-Hollow. Many of these buildings show signs of multi-phase construction activity which includes, for example, the addition in Phase 4 (yellow) of benches with incorporated T-shaped pillars (*e.g.* Space 8; see below) and the construction of new walls often placed against the older (Phase 3; orange) inner wall faces, resulting in a more rectangular ground plan. During the EPPNB, the ‘special buildings’ also underwent some

modification which included the repair of earlier walls and the addition of new walls and benches against the inner faces of Phase 2 walls. Based on building archaeological and stratigraphic observations, the EPPNB ended with a slope-slide event which saw the inundation of the lower-lying hollow with the rubble of domestic structures and sediments, likely including midden deposits and burials, from collapsed structures erected during the earlier (PPNA-EPPNB) phases. This event certainly caused severe damage to Building D, culminating in repair and stabilisation works in the ‘special buildings’ (e.g. Building B, see below) in Phase 5 (EPPNB/MPPNB; bright red). This latter phase also saw the final reconstruction of Building C and the erection of a terrace wall on the eastern (western-facing) slope above Building C, probably in an attempt to stabilise the mound at this location. These measures were, however, to prove insufficient, as there followed a second major slope-slide which probably led to the abandonment of Building D in the late 9th millennium cal BC (Phase 6; light green).

Phases 6 and 7: In the late 9th millennium – and potentially into the early 8th millennium cal BC – settlement activity at Göbekli Tepe continued. By this time, however,

the site – or at least the Southeast-Hollow – would appear to have entered into a gradual decline. Phases 6 and 7 are associated with the last major building activities which include modifications in and around Building A. The construction of Building G to the west of Building D, which now appears to have fallen out of use due to its final inundation with eroded and slipped sediment and rubble, and the erection of the so-called ‘Lion Pillar Building’ on the knoll to the north could be a response to the loss of two ‘special buildings’ (B and D). The construction of a further terrace wall in Phase 7 (dark green), which traverses northern parts of Building D and Building B, is a final attempt to stabilise the slope around the northern periphery of the hollow.

Phase 8: The final occupation phase saw the erection of small habitation(?) structures in the main excavation area. Although there is still little information relating to this period, it would appear that a small group (or groups) were still residing, likely on a semi-permanent basis, within the ruins of the abandoned Neolithic settlement. However, it remains unclear whether this development also witnessed the translocation of the settlement nucleus, perhaps to another part of the mound.



Fig. 3.3 Shkārat Msaied/Jordan: upright standing stones as memory markers? (Photo: Kinzel 2010; Shkārat Msaied Neolithic Project/University of Copenhagen.)

Regional perspective on building sizes and functions

Taking a regional approach to the evidence shows that it is not always the size of a building that matters. Actually, the efforts invested to maintain a place or building to ensure its functionality and with it its monumentality, are perhaps a better indicator for status than size. At Jerf el Ahmar, the structures referred to as '*bâtiments communautaires*' or 'communal buildings' are not much larger than the other buildings in the settlement (Stordeur 2015, 139–150), with a house size norm being 20 to 40 m², and a special building around 40 m². Yet the 'communal buildings' follow a different architectural concept in that they have a different layout and are (semi-) subterranean. This means that they are generally in a better state of preservation than the other structures built on surface when excavated.¹ A similar pattern is observable at Göbekli Tepe where the non-special architecture changes over time from circular to polygonal to rectangular structures, but the special buildings maintain their architectural style and ground plan for a much longer period.² However, despite the apparent inconsistency in the ground plans of non-special architecture, it could be argued that the continued maintenance of these buildings was also a reflection of their symbolic value.

At MPPNB Shkārat Msaied, vertical, upright placed stones slabs with a preserved height of 2 m are found in several of the houses and may represent 'memory markers' (Fig. 3.3) (Kinzel 2013, tab. 2.2). As all these upright stones are shortened at nearly the same level (likely due to ploughing), they were probably even a little taller. At least 8 out of the 26 structures at Shkārat Msaied had such an 'orthostat' that was still *in situ* or collapsed. Most of the upright slabs are located to the right-hand side when entering a building and often combined with a stone built platform or cist (Hermansen and Jensen 2002, 91–99). These features have a clear 'ritual' connotation but in a very domestic setting. Only in the case of Unit F, which served as a mortuary house, are we dealing with a more communal structure at this site (Kinzel 2019, 82–83; Hermansen *in press*). Therefore, although there are no 'monumental' buildings at Shkārat Msaied, the 26 structures with an 'orthostat' could have incorporated the momentum of collective memory and also be regarded as monuments (Kinzel 2019).

'Special' – compared to what?

Since the exposure of the first architectural structures at Göbekli Tepe, a debate has ensued around the general character of the buildings. Statements ranging from 'all buildings are temples' (Schmidt 2012, 215–216) to 'all structures were residences' (Banning 2011, 639) have fuelled the debate but have failed to significantly contribute to our understanding of the architecture and settlement patterns. Following Schmidt, Kurapkat (2015, 3) referred to all architectural structures at

Göbekli Tepe as 'special buildings', though he was aware of the inherent difficulties of defining a 'special building' when what may be 'special' at one site seems to be the 'normal' case at another site, as at Göbekli Tepe. In this context, Kurapkat referred to Schirmer and his use of the term 'special buildings' to describe the 'unusual structures' at Çayönü (Schirmer 1990, 378). Dietrich and Notroff (2015) have repeated the arguments of Schmidt and Kurapkat in their response to Banning that (all) the buildings at Göbekli Tepe are of evident ritual character and were 'temples' (*cf.* Renfrew 1985). Regardless of the labels given to the 'special buildings' identified at Göbekli Tepe, it is evident that the architecture at the site is much more complex and shows a much more extensive range of building types than previously described. Undoubtedly, however, the earlier focus on the 'special buildings' with their unique sculptured T-Shaped pillars has culminated in a myopic view that disregards the other structures at the site.

The architecture at Göbekli Tepe has a multi-layered and multifaceted story to tell. As argued by Notroff *et al.* (2014, 93) the PPNB architecture at Göbekli Tepe does not resemble the 'domestic' architecture from other sites in the region, as at Nevalı Çori (Hauptmann 1988; 1993), Çayönü Tepesi (Schirmer 1990; Bıçakçı 2001; Sicker-Akmann 2007), Gürcütepe (Schmidt 2000) or Akarçay Tepe (Özbaşaran 2012). Notably, our understanding of the architecture at these sites is potentially misleading, as the described buildings types – grill-plan and cell-plan – refer to the substructure and not the superstructure. At Göbekli Tepe, substructures of PPNB buildings remain unexposed. Also, the sites mentioned above feature predominantly isolated and solitary buildings that form loose clusters upon gentle slopes. In contrast, at Göbekli Tepe we are grappling with dense settlement structures built on steep slopes, a concept that is similar to settlement structures at some southern Levantine PPNB sites, such as Basta (Gebel *et al.* 2006), Ba'ja (Kinzel 2013), 'Ain Jammam (Waheeb and Fino 1997; Fino 2004; Gebel 2006; 2008; Kinzel 2013), Ghwair (Simmons and Najjar 2006) and el Hemme (Makarewicz-Rose 2011).

Not all structures are 'special' buildings (Kinzel 2019) and not every building with a T-shaped monolith is necessarily a 'special building': we have to assume there may have been functional differences. In the rectangular (PPNB) structures, which were in most cases 'domestic' structures, the T-shaped pillars had – in addition to their symbolic significance – a clear structural function. Kurapkat (2015, 98–113) has shown in his study that the T-pillars were an architectural element of structural significance which, over time, became substituted or transformed into buttresses, a process which commenced with the replacement of damaged parts of T-pillars with masonry.

The use of T-pillars in a more 'domestic' sphere may also represent the manifestation of a cult or memorial practice in the 'private/domestic' sphere, *i.e.* with a functional duality

(symbolic and architectural) of the monoliths. Furthermore, it would not be surprising if the T-pillars found in the rectangular buildings also proved to have close links to one or more of the larger ('special building') structures, especially if we follow earlier interpretations that these were 'clan-houses' belonging to distinct groups of people within early Neolithic society (Kuijt and Goring-Morris 2002; Banning 2011, 640; McBride 2015).

As argued above, the specific topography at Göbekli Tepe seems to have determined building design, layout and concept, which differ so considerably from the 'domestic' architecture at other known sites in the region. Recent studies of PPNB architecture at Göbekli Tepe have revealed a new domestic building type, which, we believe, may be identified at other T-pillar sites around the Harran plain, *e.g.* at the new excavations in Karahantepe. There follows a description of this building type based on excavation results from trench L9-56, Space 8.

Case study: L9-56 – Space 8

Space 8 in L9-56 is a single-spaced room on the east-facing slope westerly adjacent to Building B (Fig. 3.2 and Fig. 3.4a–b). The longitudinal, rectangular space is oriented in an east–west direction and measures 4.05 m (E–W) and 3.23 m (N–S). The structure comprises the following walls: Loc. L9-56-224 (north); Loc. L9-56-230 (east); Loc. L9-56-228 and 229 (south); and Loci L9-56-226/227/225 (west). The floor area in the eastern part of the space covers approximately 7.4 m². In a later building phase, a bench (Loc. L9-56-235) – 0.97 to 1.95 m wide and 0.3 m high – was inserted in the western end of the building. A 1.58 m high T-shaped pillar (PXIII; Loc. L9-56-55) incorporated into this bench divides it into two equal parts. The surface of the bench has a fine plaster cover formerly interpreted as the floor of the building. Room 8 was about 1.7 m high; room heights of between 1.3 m to 2.0 m are not unusual for PPNB buildings (Kinzel 2013). From other Neolithic sites, *e.g.* Basta (Nissen *et al.* 1991; Gebel *et al.* 2006), Ba'ja (Gebel and Kinzel 2007) or Beidha (Byrd 2005), we know, however, that the height of the roof/floor was not level throughout the rooms and could vary considerably. A fine-grained (potentially lime) plaster floor (Loc. L9-56-215) just east of the bench (Loc. L9-56-235) was exposed in 2016 (Sönmez 2017). In the north-western corner, a low single-faced wall (Loc. L9-56-214) separated a niche (0.56 m wide and 0.95 m deep; Loc. L9-56-207) from the main room. From this low wall a fragment of a larger stone slab – possibly a T-shaped pillar fragment – was reused. Along the northern and eastern wall (Loci L9-56-224 and 230) two smaller walls completed the feature (Loci L9-56-212/213). The function and purpose of this niche are still unclear, though excavations of other rooms at the site, including Spaces 9, 38 and 147, have revealed the same

feature; however, these cases have so far failed to provide additional information regarding its purpose.

Grinders are frequently found in these buildings embedded in roof/floor collapse, thus hinting at grinding as an activity that may have taken place on the roof or in an upper storey. The same is true for the presence of the 'enigmatic' stone rings/frames that were perhaps the 'frames' for a roof or floor hatch (Kurapkat 2015, 144–148). In Space 8, therefore, we cannot exclude the presence of a second or upper storey in a final building phase. The presence of walls (Loc. L9-56-225/236/224) which continue over possible beam supports and plaster floor remains (Loc. L9-56-227/47) might support this conclusion (see Fig. 3.4). In most cases, however, the preservation of the upper building parts is insufficient to provide a satisfactory reconstruction (Kurapkat 2004).

At least 20 other, potential PPNB structures discovered at Göbekli Tepe have so far yielded all the elements as mentioned above for Space 8. For this reason, this room may serve as a model for this as yet undocumented building type. Indeed, the identification of a standard or 'normal' building type could be a key to understanding the built environment and occupation in general at Göbekli Tepe (Peters *et al.* 2019).

Creating or lacking the crucial mass?

The proposal that ritually charged gatherings at Göbekli Tepe attracted the necessary workforce for the construction of the megalithic buildings, and that the increased demands of this group on food resources was a catalyst for the transition to agriculture, is a hypothesis that has been frequently repeated in the course of the last two decades (Schmidt 1998, 45; 2001, 48; 2000, 41; 2002, 25; 2005, 16; 2006, 246–248; 2011, 53; Dietrich *et al.* 2012, 692; 2017, 126). Formulated initially by Klaus Schmidt in 1998, later publications have highlighted the role of feasting in this process, also paying particular attention to insights from ethnoarchaeological literature (Schmidt 2011, 53; Dietrich *et al.* 2012; 2017; Dietrich and Notroff 2015, 86). However, so far, the only hard archaeological evidence put forward for feasting at Göbekli Tepe are accumulations of animal bones from the excavated fill of the 'special buildings' and tentative indications for fermentation (interpreted as evidence for beer brewing) from analysed residues extracted from limestone troughs. However, in light of the new archaeological evidence from Göbekli Tepe, *i.e.* that the fill of the 'special buildings' stems from collapsed buildings and middens from the adjacent slopes of the mound, we are now certain that the faunal remains from the buildings are not attributable to individual feasting events but instead represent accumulations of older displaced deposits. Moreover, we note that bones from meat-bearing parts of animals which were cracked open to extract the marrow do not necessarily equate to feasting events (Dietrich *et al.* 2012,

690; for a broader discussion, see, *e.g.* Dietler and Herbich 2001; and for ‘seasonality’, Wengrow and Graeber 2015). In the same respect, neither does the presence of a small number of fermented food residues indicate the production of beer and the occurrence of ritual feasting (Dietrich *et al.* 2012, 687). Other sites have produced much better contexts for feasting events, for example, the intentional deposition of feasting remains at PPNB Kfar Hahoresh (Goring-Morris and Horwitz 2007) or Epi-Palaeolithic Tell Asiab (Bangsgaard *et al.* 2018). Only when there is a (ritual) deposition of feasting remains is there an arguable case for the occurrence of such events (Bangsgaard *et al.* 2018, 17).

Constructing Göbekli Tepe

Experimental archaeological works carried out in spring 2019 at Göbekli Tepe have demonstrated that a relatively small group of people can construct quite monumental appearing structures in a small amount of time. At Göbekli Tepe, six workmen required just one and a half workdays to build an approximately 55 m long, 0.5 m wide and up to 0.9 m high rubble stone (terrace) wall, which equates to about 22 m³ of stone-built structure. In other words, six people can construct about 14.6 m³ in one day. According to these data, the built environment of ‘all’ exposed PPNB structures located north of Building D – comprised of 675 m³ of stone and earth material for walls, floors and roofs – could have been built by the six workers in about 46.3 days. Anticipating some days off and some days extra to procure materials, one could increase the calculation to two months or 60 days. Indeed, even if we double this estimate to 120 days or four months, this would still be a realistic and manageable time frame. Therefore, if a group comprised 12 to 24 persons, there would be enough capacity to build several structures, go hunting, prepare food and even quarry stone (building material) from the adjacent plateau. At present, the time required to carve a T-pillar remains unclear, as all experimental attempts to understand this process involved inexperienced staff or used different stone material (Beuger 2018).

Besides the issues concerning the building process(es), there is the question as to the number of people that either resided or gathered at Göbekli Tepe. Although it is possible to build larger structures with a relatively small group of people, there are circumstances which may limit the invested efforts to construct new structures or to maintain a building or place (*cf.* Kujit 2008; Birch-Chapman *et al.* 2017). At least during the earliest occupation phases at Göbekli Tepe, the workforce was apparently sufficient to react whenever a building was threatened or damaged by erosion or wall collapse. However, when the damage caused by slope-slides became too substantial to warrant removal and repair, efforts instead focused on stabilising unstable surfaces and slopes, *e.g.* by installing fist-sized stone layers and terrace walls. Only through the abandonment of some

of the damaged buildings could repair efforts concentrate on selected structures; subsequently, damaged and abandoned buildings fell into ruin.

Living with ruins – continuity at Göbekli Tepe

Monumentality at Göbekli Tepe is not only associated with functioning buildings, but it also incorporates the existence and the partial active use of their ruins. For example, in the case of Building D, this structure could still have been considered ritually charged or the carrier of collective memory. The continuity of structures and their locations play a seemingly essential role (Kinzel *et al.* in press). Some structures were modified ‘beyond legibility’ to preserve them (Kurapkat 2015, 49–60), for example, the complete re-organisation of the interior of Building A. Indeed, in the case of this building, the pillars are the only connection between the different stages, though even these show traces of re-arrangement and translocation.

Nevertheless, what was the ‘original’ concept of the ‘special buildings’? Nowadays, these edifices appear as sunken, sub- or semi-subterranean structures, though it is questionable whether this was the case from the beginning. Most ‘special buildings’ were built directly on the bedrock, and sediment deposits accumulated between the buildings over time. According to the findings in the context of Building D, several walls collapsed into ‘empty’ spaces situated between this and other structures which means that the ‘special buildings’ had at least partial visible facades.

What all the structures have in common are traces of continuous and diversified renewal, modification and rebuilding processes — each of these made up a quintessential part of the life histories of buildings. However, the most striking aspect of Neolithic architecture is building continuity. Ethnographic studies on mud-brick houses, similar to those from Aşıklı and Çatalhöyük, suggest that they may have lasted between 30 and 60 years or, in exceptional cases, even up to 120 years (Baranski *et al.* 2015; Özbaşaran *et al.* 2018). Significantly, these estimates find support from radiocarbon dating. As such, the average life of a building equates to the generally accepted span of a few human generations, which means that an adult individual must have witnessed different building cycles at some time during his or her lifetime. Therefore, buildings probably not only represented durability and continuity but could have embodied the metaphorical immortality of a particular social group that identified itself with the structure and took care of it as long as it was considered significant (Kinzel *et al.* in press).

Building continuity has several different facets. First of all, it reflects repeatable and diverse (cultural and practical) actions, including essential building maintenance and repair works. Secondly, it manifests itself in multiple rebuilding processes of existing structures, actions which can culminate in the creation of new divisions (internal walls) and the

assignment of new functions within buildings and internal spaces. Further, the extension and decrease in the size of buildings, as well as the replacement of old structures with new buildings on the very same spot, are examples of building continuity. Finally, the re-use of non-structural and structural elements in new buildings, *e.g.* beams, posts, wall installations and human skulls, may have served as a means to refer to earlier structures. All the above processes may leave similar traces, and the overall appearance of the buildings might be similar. However, as architecture defines particular communities and their symbolic worlds, the way architectural details are designed, constructed and used can differ substantially (Kinzel *et al.* in press).

The case of Building B

An interesting insight on continuity is provided by the recent building archaeological research at Göbekli Tepe which challenges many of the earlier results relating to stratigraphic analyses as well as the interpretations of architecture at the site. Accordingly, there is a much more complex history behind building life cycles, and there is no evidence of an abrupt change of ground floor layouts as previously postulated by Schmidt (2006, 228–235). In contrast, the buildings appear to have been subject to gradual transformation and modification to suit new needs and circumstances. As a part of this process, earlier structural elements, walls and T-shaped pillars in particular, found re-use in newly built structures. Notably, recently obtained absolute (^{14}C) dates support the general idea of regularly maintained and long-lasting buildings at Göbekli Tepe.

Six new radiocarbon dates from Building B include two charcoal samples extracted from in-situ mud-mortar in its wall, two charcoal samples from upper fill sediment, and two dates from collagen and biopate from an aurochs (*Bos*) tooth recovered from fill deposits just above the floor of the structure (Table 3.1). The two dates from the mud-mortar place at least one of the building phases in the mid-9th millennium cal BC (based on the age of the youngest measurement and subtracting approximately two centuries for old wood effect).

The four new radiocarbon dates from the fill were made on three different samples (Table 3.2). While UGAMS-21046 has produced a calibrated age³ of 8630±60 cal BC (at 68% probability), Poz-72856 is only marginally younger at 8550±80 cal BC (at 68% probability). These two determinations, made on charcoals from the highest levels of the fill, postdate the two data from the wall of the building (Table 3.1). The two other measurements, made on a single *Bos* tooth recovered from just above the lime plaster floor, are the youngest dates from the new data sequence; a determination made on its collagen (UGAMS-17908c) is the younger of the two (7270±70 cal BC at 68% probability), while the other, made on biopate (UGAMS-17908), is slightly older (7560±20 cal BC at 68% probability). These two measurements are remarkably young (mid-8th millennium cal BC) and unreliable; indeed, earlier studies have already indicated the inherent difficulties of using animal bone for radiocarbon (AMS) dating at Göbekli Tepe (Dietrich *et al.* 2013, 36). The same uncertainty also applies to absolute ages made on samples taken from pedogenic carbonate coatings adhering to worked limestone blocks (Pustovoytov 2002; Pustovoytov *et al.* 2007). Therefore, although the measurements from the fill of Building B could hint at a reverse stratigraphy of the sediments, *i.e.* with the oldest debris at the top and youngest material at the bottom, the quality and reliability of the dated samples make this conclusion extremely uncertain. Table 3.2 also presents a compilation of all absolute data from the fill of Building B, including the four new absolute dates from this study (UGAMS-21046, Poz-72856, UGAMS-17908, UGAMS-17908c), in the order of their elevation (metres above sea level [m a.s.l.]).

Excavations at Building B commenced in 1997, making it the second ovoid, polygonal structure with T-shaped pillars exposed by Schmidt at Göbekli Tepe (Schmidt 2001, 50; 2002, 9; 2008, 63). The building was later described by Kurapkat (2010, 61–67; 2015, 66) as a single phased structure, characterised by two monolithic T-shaped pillars (P9 and P10) at its centre and surrounded by at least nine⁴ other pillars ‘inserted’ into the very irregularly built exterior wall. The exposed areas of the floor show a possible lime plaster floor with a high content of limestone gravel in the plaster

Table 3.1 Building B – Radiocarbon ages from the mud-mortar in the wall between pillars P58 and P62. Calibrated [calBC] ages after CalPal (v.2020.3) software (Weninger and Joris 2008) and using the INTCAL13 dataset (Reimer *et al.* 2013).

Lab-Nr	^{14}C -Age [BP]	Material	$\delta^{13}\text{C}$ [‰]	Trench	Locus	Cal-Age [cal BC] p (68%)	Elevation [m a.s.l.]	Source
Poz-72857	9730±60	Charcoal	–24.80	L09-57	Mud-mortar in wall between P58 and P62 (Sqm 91)	9130±130	774.25	This study
UGAMS-21047	9480±30	Charcoal	–25.50	L09-57	Mud-mortar in wall between P58 and P62 (Sqm 91)	8780±50	774.26	This study

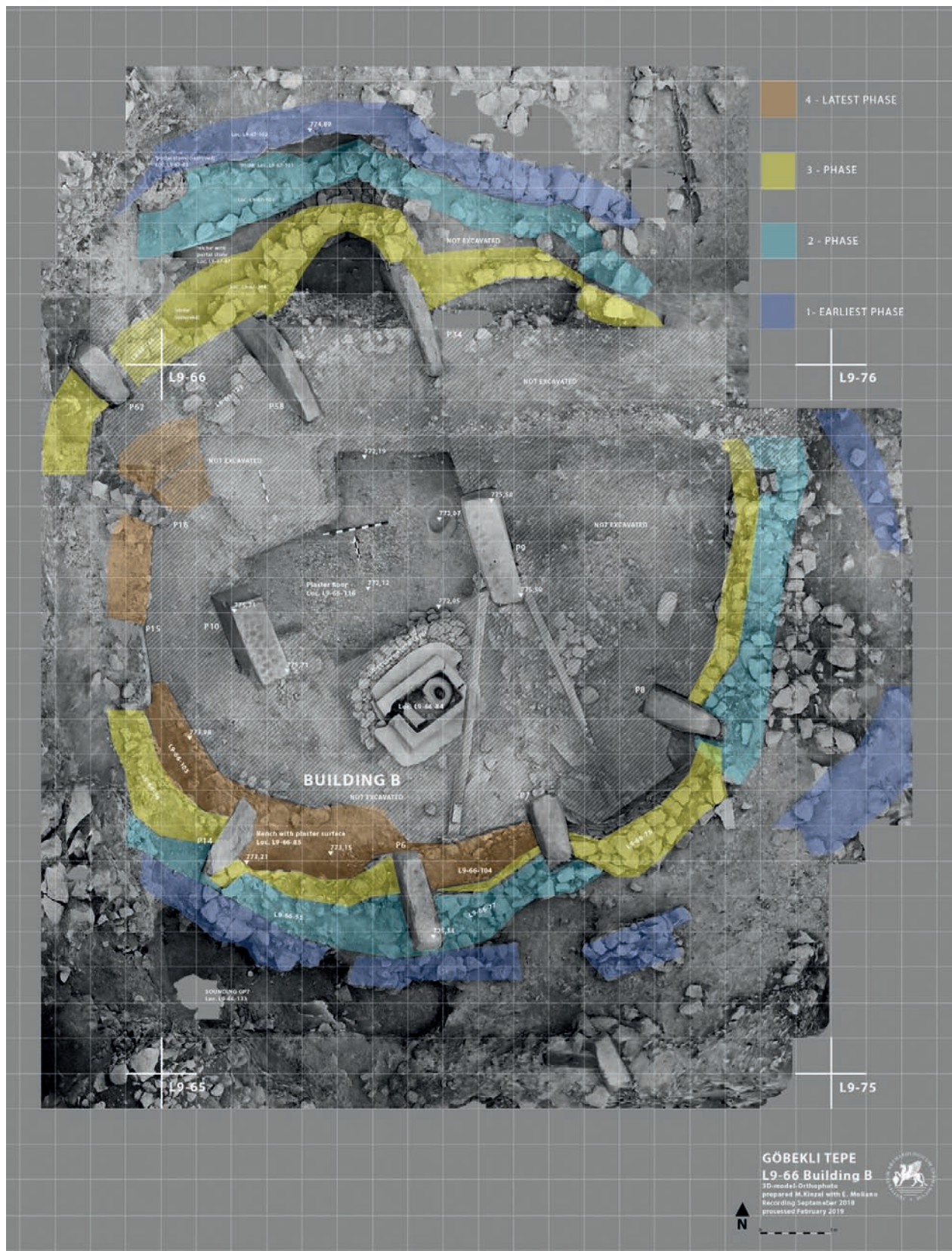


Fig. 3.5 Göbekli Tepe Building B. Orthophoto based on 3D-model recorder in 2018 with preliminary building phases: earliest (dark blue); re-building 1 (light blue); re-building 2 (yellow); final (orange) (DAI/UCPH, Kinzel 2019).

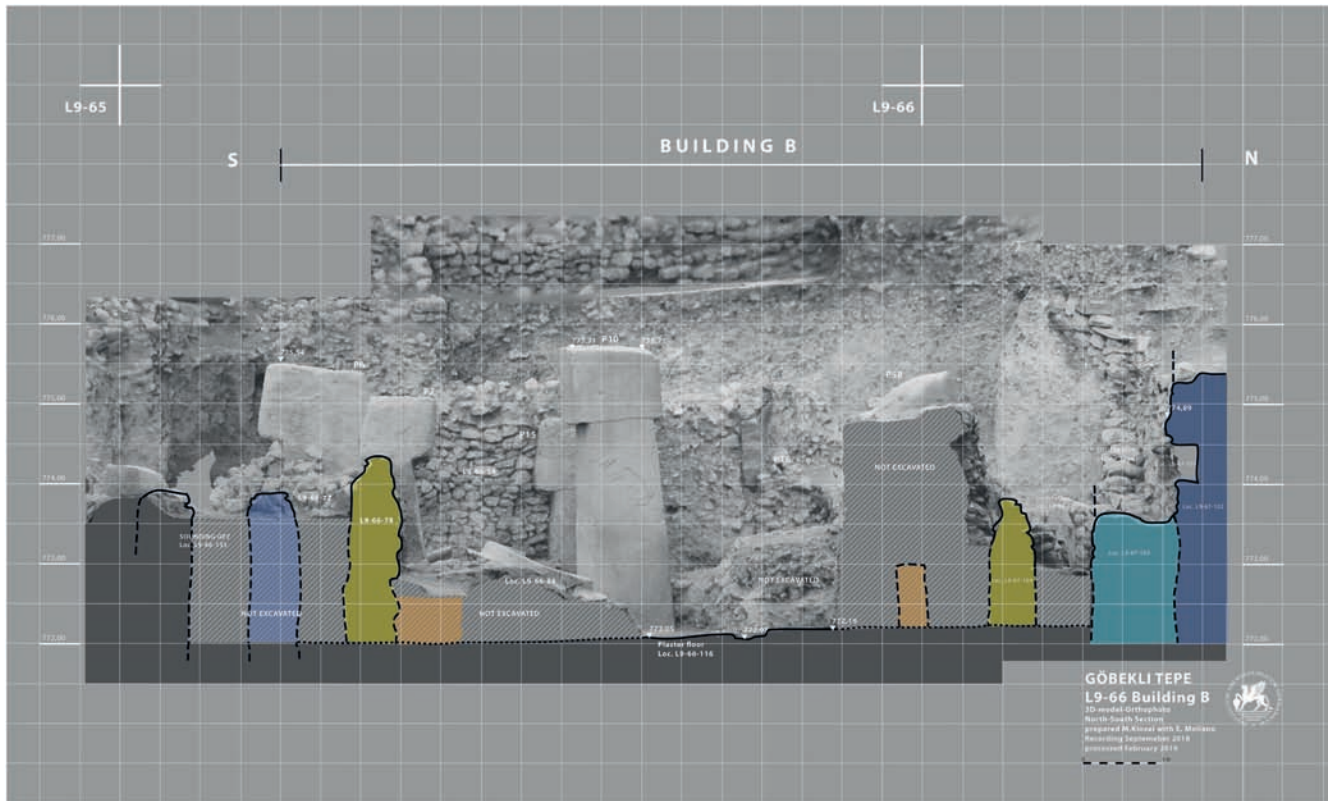


Fig. 3.6 Göbekli Tepe Building B. N-S-section based on 3D recording 2018 with building phases indicated as in Fig. 3.5 (DAI/UCPH, Kinzel 2019).

matrix, thus imitating a terrazzo floor (Loc. L9-66-116). In front of the eastern central pillar (P9) and slightly to its north, just below the fox relief, a ground stone was placed in the plaster floor. This feature is oriented north-south and measures approximately 50×30 cm and 8 cm deep. According to Kurapkat (2015, 65), the prominent position of the feature – in the central part of the room – suggests that it had a non-domestic function.

Building B has seen only partial excavation, and all presented findings are preliminary. However, there are already numerous indications for a complex building biography with at least four building phases (Figs 3.5 and 3.6). The initial layout of the building is unknown as only the latest plaster floor surface is visible in the central area of the structure. The initial phase of Building B may have had a smoothened bedrock surface like those already attested to in Buildings C and D; alternatively, the bedrock at this location may not have been suitable for the preparation of such a floor. A longer segment of an exterior wall that might be associated with an initial building phase can be followed from the north-western quadrant along the northern limits towards Building D, disappearing into an unexcavated baulk in the west and into the unexcavated areas (towards Building C) in the east. Here the sight is blurred by the accumulation of several wall-collapses and the modifications applied for

an interim visitor walkway (2012–2016). In the southern part (towards Building A), the remains of the exterior wall vanish. Only two very disturbed wall segments may reflect the initial outline of the structure here.

In its initial phase, the interior of Building B shows a northerly orientation, as indicated by a small niche located in a central position in the northern exterior wall (Fig. 3.7 and 3.8). The niche lies on the central axis between the two pillars P9 and P10, therefore creating an oriented space. In the following two building phases, the niche is a repeated feature in each new wall constructed against the inner face of the preceding exterior wall. However, with each phase, the niche feature moves slightly westwards (anti-clockwise) and to a lower position. In the third building phase, the niche has moved to a position west of pillar P58. Currently, it is unclear whether the final phase – before its destruction – also had a niche feature, as this part of the wall is still unexcavated. Remarkably two of the niches are marked by ‘portal-stones’. In the third or the fourth (final) phase, a more substantial – apsidal-like – niche also appears between pillars P58 and P34. The wall connecting both pillars follows a curved line suggesting an apsidal setting, which is considerably blurred by the wall collapse towards the south.

Building B features several renovations and modifications, including repaired wall faces and the addition of entire

walls in the northern part of the building; additionally, the head of pillar P14 saw an adjustment of its height using masonry. Benches (Loc. L9-66-85; L9-66-104; L9-66-105) adjoining the southern parts of the interior wall between pillar P15 and P7 also seem to be later additions. Most modifications might reflect attempts to remedy structural inadequacies of the building, especially after seismic activities. Earthquakes and related slope instabilities, possibly triggered by heavy rainfall, could be some of the reasons for the ongoing stabilisation works and final structural failure.

Due to the current state of excavation, the stratigraphic relations of Building B are still not fully understood, though they appear to mirror observations made at other buildings, for example at A, C and D. Kurapkat (2015, 64) has suggested that the wall between pillars P7 and P8 blocks an earlier wall opening. However, it seems more likely that here, for whatever reasons, no new wall was added or that this wall represents a late repair of the exterior wall (Loc. L9-66-78).

The roof construction of the building may have changed over time, *i.e.* during the different building stages. Kurapkat

(2015, 232) has presented a very plausible reconstruction for Building B: some of his understanding of the roof construction stems from the find of a complete ‘portal stone’ (Loc. L9-66-84) to the south of the exposed floor area (Loc. L9-66-116) resting about 0.5 m above the floor surface in and on what could be ‘roof-collapse’ material (Kurapkat 2015, 145).

The stone frame, carved from one piece of limestone, measures 1.80 m by 1.40 m wide and is 0.3 m thick (Fig. 3.9). The lower 15 cm of the object is a slightly ovoid plate, from which there rises a rectangular frame of a further 15 cm thickness. The frame is rectangular and measures 1.25 m × 0.85 m; the opening measures 0.95 × 0.55 m. Only the visible part of the object – the raised rectangular frame around the opening – is carefully smoothed, while its remaining parts are not. Kurapkat (2015, 145) has suggested that this object served as a hatchway, incorporated into the structure of an earthen (most probably flat) roof structure. Indeed, the frame would have fulfilled most requirements for an opening in a flat roof structure: its raised rim would

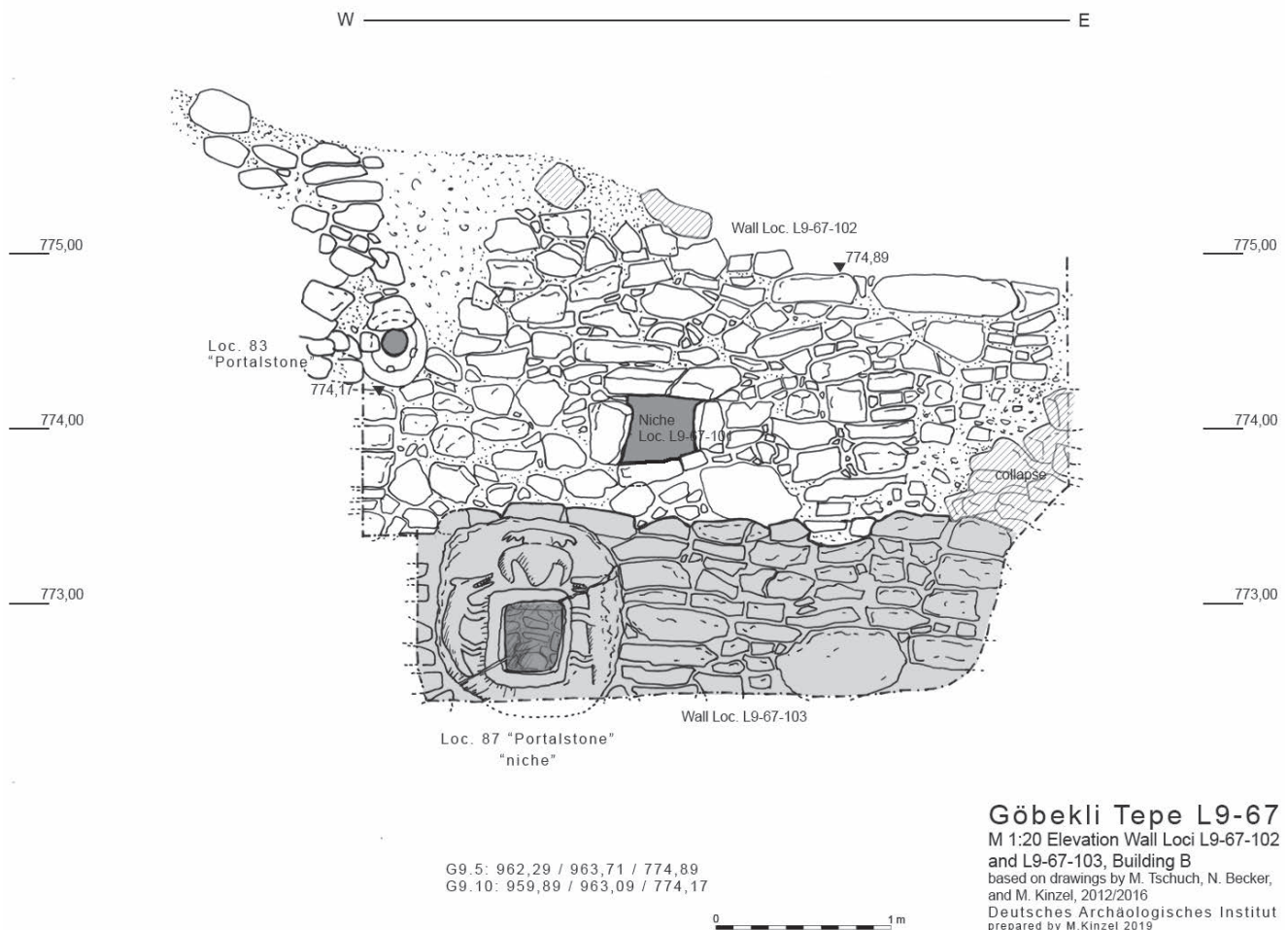


Fig. 3.7 Göbekli Tepe Building B. Elevation drawing of walls L9-67-102 and L9-67-103 with niches L9-67-101 and L9-67-87 (DAI, Kinzel 2016 based on M. Tunsch, N. Becker).



Fig. 3.8 Göbekli Tepe Building B. Sequence of niches in walls L9-65-102 and L9-65-103 (Photo: M. Kinzel, DAI 2019).

have prevented rainwater run-off from penetrating the interior of the building, and its lower part (the ovoid plate) would have held the stone in place, incorporated into the roof-layers and therefore also hiding this roughly worked part of the object. From a structural engineering point of view, the weight of the stone frame (approx. 900–1000 kg) is far too heavy for a Neolithic roof structure (Kurapkat 2015, 145). Indeed, this could have been the case, as attested by the collapse of the roof; on the other hand, the earthen roof was already a heavy load for the overall load-bearing structure, and the addition of a stone-made hatchway may not have added a significant extra load. Unfortunately, all traces of structural elements made of wood are missing in the archaeological record at Göbekli Tepe. However, as the Neolithic builders did not abide by any building regulations, we can assume that structural loads in constructions were stretched to the limit and beyond, perhaps even bordering on structural failure.

For Building B any roof beams would have needed to span some 3.30 m, and the largest span of the joists is about 3.00 m for the roof reconstruction by Kurapkat. Palaeobotanical investigations at Göbekli Tepe (Neef 2003) have shown that the Neolithic builders would have had



Fig. 3.9 Göbekli Tepe Building B. Portal stone in roof collapse (Photo: K. Schmidt, DAI).

sufficient trees at their disposal from which timber of an appropriate length was accessible. As known from other sites, *e.g.* Jerf el Ahmar (Stordeur 2015), Tell Qarassa (Balbo *et al.* 2012) or Shkārat Msaied (Kinzel 2013, 43), tree trunks and beams used for structural purposes were not necessarily straight grown timbers. For the time being, the

methodologies applied to join individual pieces of wood remain hypothetical. Lacings of vegetable ropes or leather straps are two possibilities. However, we cannot rule out that the Neolithic builders were already able to make simple carpenter-like connections, such as combing or leafing (Kurapkat 2014, 80–85).

The load-bearing main structural beams may have spanned from the T-shaped pillars in the walls towards the ‘centrally’ placed pillar pair. Alternatively, the beams could have rested directly upon the exterior walls. A second structural layer of thinner timbers and branches may have spanned the distances between the main beams. Following other examples of Neolithic roofing, *e.g.* known from Ba’ja, Shkārāt Msaied or Basta (Kinzel 2006; 2013), an additional layer of smaller twigs, brushes and wickerwork or grass mats could have followed. The material from Göbekli Tepe suggests that there was also a covering layer of fist-sized stones and compacted earth (at least 20 to 30 cm thick), followed by a possible lime plaster surface finish (Kurapkat 2015, 232).

At a squeeze, about 50 people could fit into Building B, standing in the interior space and occupying the ‘benches’, though leaving no room for movement. In the southern part of the building, a maximum number of 30 people could find space; however, 25 or less is probably a more realistic number, that would leave room for activities (Verhoeven 2002, 247, tab. 6; McBride 2013, fig. 12, 13 and 14; 2015). Notably, this number corresponds with numbers of a clan presented elsewhere (Notroff *et al.* 2014, 94). Also, if access to the building were via the portal stone presented above, then this would have limited the number of people able to enter (as a control mechanism), thus suggesting a lower number of people involved in the activities inside the structure. It is perhaps no coincidence that Building B, the latest phase of Building C, Building F and Building E, all have floor areas of around 80 m². Does this size reflect the number of individuals belonging to a family, clan or community? Or does it merely reflect the number of actively involved group members?

Conclusion

When considering the early Neolithic of the Near East, we still wonder about the role that monumentality played in the creation of group identities and in maintaining common narratives. The size of building did not matter (*cf.* Buccellati *et al.* 2019), though continuity in building location certainly did. The location of a built structure can have strong ties to the memories and narratives of groups, the glue that binds people together or, indeed, differentiates them from ‘the others’. The re-use of broken pillars and other architectural elements may be a reflection of this mechanism at work. At present, we know nothing about earlier wooden predecessors in the region around Göbekli Tepe. The only known case for

contemporaneous wooden sculptures that at least makes us more aware of the lack of wooden artefacts in the archaeological record at the site stems from the Shigir peat bog site in the Urals (Zhilin *et al.* 2018).

As demonstrated above, only a small number of ‘special buildings’ from the Near Eastern Neolithic differs significantly in size from ‘normal’ buildings, thus warranting a reference as ‘monumental’. Be this as it may, the idea of monumentality is still present in some early structures, such as Structure O75 at Wadi Faynan 16 (Mithen *et al.* 2019, 469–524), the tower at Tell es-Sultan/Jericho (Kenyon 1981) or Buildings A, B, C, D, E, F, G, H and J at Göbekli Tepe (Schmidt 2012). At almost all other sites, the difference in diameter of one or two metres compared to ‘normal’ structures makes them perhaps ‘larger than’ but not monumental in scale. In the case of Göbekli Tepe, the function of the special buildings is still unclear, and it is still unknown whether (and if so, which) ‘narrative’ was behind the original design concept.

Without archaeological contexts, features and finds, Neolithic buildings tell us very little about their actual functions and uses, and in contrast to later periods, there is no canon of building-types associated with distinct functions (Kinzel 2013, 235–236) and similar building types do not necessarily imply similar activities, use patterns or perception; it might be primarily a plan type or construction concept. Instead, all buildings appear multi-functional, and in the case of Göbekli Tepe, it is still hard to say precisely where daily activities took place; especially since most contexts are blurred due to the translocation of finds within the steep slope architectural setting. In addition, we only can assume how many people were involved in the building process. However, from our modern perspective, we perceive and receive some of the structures as ‘special’.

Still, the ‘special buildings’ at Göbekli Tepe are ‘communal’ in character, though judging by their size, only a limited number of people would have been able to participate in events taking place inside. Despite this, the structures played a crucial part in the realisation of social ties and in fulfilling social obligations. The massive T-shaped pillars at Göbekli Tepe, measuring up to 5.5 m in height, were doubtlessly monumental and acted as ‘powerful’ carriers of narratives and community memory. On the other hand, the presence of a T-shaped pillar alone does not make a ‘special building’ or ‘monument’, though it can incorporate aspects of a narrative or cult into domestic spheres, thus entangling different worlds and perceptions, carrying an ancestral narrative through time, set in stone for perpetuity.

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Notes

- 1 In this context, we should also be aware that the state of preservation of prehistoric buildings can have a considerable bearing on how we today perceive these structures as ‘monumental’.
- 2 Recent building archaeological studies at Göbekli Tepe have demonstrated that additional features (e.g. benches) were added to the ‘special buildings’ in the course of their use-lives, also with some changes in orientation and the shape of interior spaces also visible; however, key elements were maintained, here especially the T-shaped pillars (Piesker 2014; Kinzel *et al.* in press).
- 3 All ¹⁴C-ages calibrated using CalPal (2020.3) software (Weninger and Joris 2008) with the INTCAL13 data set (Reimer *et al.* 2013).
- 4 This number is likely to increase when excavations continue at Building B.

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From communal to segmentary: an alternative view of Neolithic ‘monuments’ in the Middle East. Comments on Chapters 2 and 3

Ian Hodder

In my various visits to Göbekli under the generous guidance of Klaus Schmidt, it always seemed clear to me that the site was multi-functional and included a strong component of long-term occupation. The sheer quantities of domestic debris and the presence of grinding stones as well as the presence of rectangular buildings that looked to me like houses all suggested a settlement function. So I was excited to learn of the clear evidence from new research such as that reported by Kinzel and Clare in this volume that there are also round houses contemporary with the stone circles, and that the circles were used over an extended period of time. It is clear in my view that Göbekli is a local version of a widespread phenomenon identified at sites such as Jerf el Ahmar and Tell ‘Abr 3 (Stordeur *et al.* 1996; Yartah 2016). It is now to be hoped that larger-scale modern scientific analyses of botanical and faunal etc. data from Göbekli can take place so that the nature of the settlement can be fully understood.

The Göbekli stone circles are indeed amazing structures but I think it is incorrect to see them as communal buildings, ‘*bâtiments communautaires*’. Kinzel and Clare marshal part of the evidence very effectively. They note that in fact large numbers of people were not necessarily involved in their construction and that the stones could have been obtained locally. They also observe that the faunal and other remains from the infill of the circles are probably the product of slippage of earlier domestic material from the surrounding slopes, rather than being indicative of large-scale feasting. Kinzel and Clare also point out that in fact the circles are not very big and could not have held all the population of the settlement. They suggest that Building B could have held 50 people but that a smaller number is more likely given that activities were taking place there (see also Banning 2011).

The circles have always seemed to me to be small and hidden, secretive. On some plans there is a narrow dromos

into Building C, at least in one of its phases. One interpretation is that these are men’s houses of the type described by Flannery and Marcus (2012) for societies such as those in New Guinea. Certainly the predominantly male symbolism on the stelae (Hodder and Meskell 2011), showing animals with erect penises, might be indicative of such a function. Other possibilities are the houses of medicine or hunting cults or other forms of cross-cutting sodality as discussed by Flannery and Marcus for the Nootka in the American Northwest or by Mills (2014) for the American Southwest.

And there are so many of the circles at Göbekli, all apparently more or less contemporary. This far from suggests a communal function, at least not for the society as a whole. In fact the multiplication of circles is rather more suggestive of a segmentary society. There have been decades of discussion in anthropology about the term segmentary or segmentary lineage societies (for a summary see Sahlins 1961) and I use the term here with due caution to mean simply a society in which there are multiple segments that are seen as balanced or equivalent. My aim here is to shift away from the common emphasis in archaeological discussions of Neolithic settlements and villages on the collective, the communal. Of course, there was a need to integrate and hold together these new larger communities as they intensified production and became dependent on domesticated plants and animals. But it seems to me that the evidence rather suggests that these societies were divided and internally competitive, and that this internal division is most eloquently expressed in the multiple circles at Göbekli. The whole was achieved by maintaining a balance between segments.

This segmentary nature of these societies in northern Mesopotamian and adjacent areas is expressed at a number of different levels – and indeed this nesting is characteristic of segmentary societies generally. At the level of the

individual circular building there is a clear and repeated pattern of radial division of space. The different cells with their different functions have a radial arrangement at Jerf el Ahmar, Mureybet, Dja'de and Tell 'Abr 3. In the latter case the radial organisation is at times crosscut by a north–south, domestic-ritual division (Yartah 2016). There is much change through time in the functions of the different radial segments at these different sites, but it is clear throughout that the supposed 'communal' or 'collective' nature of these buildings is achieved by a segmentation and separation of balanced components arranged in relation to each other. The radial stones in the Göbekli circles are simply versions of the same arrangement, albeit focused towards pairs of central uprights – but again these are balanced pairs, not single central dominants.

Some version of the same pattern is found more widely. Structure 075 at Wadi Faynan 16 in southern Jordan (Finlayson and Mithen 2007) is a clear example of a larger building divided into balanced symmetrical segments, perhaps within an overall separation into halves (Mithen *et al.* 2011). All this is in my view far from the central leadership societies proposed by Watkins in this volume; rather the evidence suggests societal organisation through balanced segmentation.

The houses at Wadi Faynan 16 seem arranged around the larger building in concentric circles. One of the revelations for me of the plan produced by Kinzel and Clare in their Figure 3.2 in this volume is the way in which houses are arranged around the circles in an apparent radial pattern. Is it possible that the radial arrangement of space within the circles was extended at another level to the settlement as a whole? Certainly by the time of the PPNB rectangular houses at Göbekli, there seems to be a radial arrangement of the settlement around a group of circles.

A clear example of the radial arrangement of a PPNB settlement is provided at Aşıklı Höyük. A radial arrangement of houses has been identified in the northwest quadrant of the site (Esin and Harmankaya 1999; Brama 2014, 190) formed by abutments and alleyways. I have noted a radial arrangement of houses in both the north and south areas of the Pottery Neolithic phases at Çatalhöyük (Hodder 2014). As at Aşıklı these cut across terraces. The radial lines seem to converge on the high points of the northern and southern sub-mounds of the Çatalhöyük East Mound. The radial arrangements of settlements is found widely across time and place (for example in the Neolithic of northwest Anatolia at Ilıpınar or in the Tripolye culture in Ukraine and in many Bronze Age tells) but at least in many Neolithic contexts it can be associated with a balanced segmentation that may also have extended out into the landscape. Bogaard *et al.* (in press) have suggested that a radial arrangement of the landscape around Çatalhöyük may have been the principle by which land and resources were distributed and shared.

The principle of segmentation is often associated ethnographically with the organisation of segments into nested lineages. I have argued that history making was a key component of the emergence of settled societies and villages in the late Pleistocene and early Holocene in the Middle East (Hodder 2018a). We know at Çatalhöyük that those buried in houses were not nuclear families in a biological sense (Pilloud and Larsen 2011), but nevertheless there is a strong emphasis on the continuity of houses and the passing down of ritual paraphernalia such as bull horns. This is especially true of the more elaborate houses that we have come to term history houses (Hodder and Pels 2010). While it would be wrong to claim these as lineage houses in a strict sense, the focus on ancestry and the amassing of the dead into the more elaborate history houses, suggests at least an emphasis on history making.

It is thus of extreme interest that new dating evidence shows that the circles at Göbekli were used over such long periods and continually rebuilt and transformed, with older stele being re-used and re-incorporated. The rebuilding of houses in the same place is a practice that extends well back into the Epipalaeolithic (Hodder 2007; 2018a, b) and it is a central component of the establishing of societies with delayed returns for labour as subsistence economies intensify. It becomes a clear practice in the larger circular structures that occur widely in northern Mesopotamia in the PPNA. We cannot be certain that the pairs of central stelae in the circular buildings at Göbekli were or represented ancestors in some sense, and the number of burials found at the site remain small. And yet the focus on history making in the Göbekli circular structures seems clear. The segmentation of society and the opposition between parts seems to have been grounded within historical claims, in Göbekli as much as in Çatalhöyük.

It must always have been difficult to coalesce diverse groups and relatively large numbers of people into these early large villages or settlements, whether in the PPNA at Göbekli or later at sites like Aşıklı Höyük and Çatalhöyük. Others have explained that the collective nature of these societies was achieved by strong leadership or communal rituals or monumental constructions. Instead I see societies held together by a tension between segments, a symmetrical balancing at various nested levels from the house and ritual structure to the settlement and perhaps the landscape as a whole. There may have been a sense of the whole, Watkins' 'imagined community', but there was also tension and segmentation.

There is evidence that through time this focus on balanced segmentation came into conflict with the ability of individual houses to control their own resources, to extend in size, to share less. While I do not agree with Watkins that the circular buildings at Jerf el Ahmar can be described as monumental, I do agree that Göbekli was an important focal point and that it produced charged objects that circulated

widely. Houses at the site and in the region wanted to 'have a piece of Göbekli' as seen in the T-shaped pillars of various sizes. It is remarkable that even small versions of T-shaped pillars that could be held in the hand are found widely across the region.

Smaller versions of the T-shaped pillars get incorporated into the rectangular houses as they emerge at Göbekli in the rectangular PPNB houses. This bringing of ritual into the house is part of a longer-term process of bringing more and more into the house. As many authors have noted, houses gradually increase in size and range of function through time through the Natufian-PPN sequence (Byrd 1994; Kuijt 2000). Through time there is more storage, more activity, more burial, more ritual in houses. The T-shaped pillars in the PPNB houses at Göbekli can be seen as participating in an 'imagined community' but they can also be seen in terms of a tension between the circular structures and households. The latter increasingly came to dominate so that by the time of several of the megasites of the late PPN and PN including Çatalhöyük and by the time of the early Neolithic sites in north-western Anatolia, the large 'public' buildings have disappeared.

Thus I agree with Kinzel and Clare that 'the use of T-pillars in a more "domestic" sphere may also represent the manifestation of a cult or memorial practice in the "private/domestic" sphere', and I see this as part of a developing process whereby the tension between houses and 'collective' buildings is resolved in favour of the former, at least in parts of southwest Asia, Anatolia and southeast Europe. In a long-term view (Hodder 2018b), this process is linked to the increasing intensification of subsistence production so that house-based groups, sometimes interpreted as extended families, become increasingly independent and able to fission. This process, so distinctive of the later 7th and 6th millennia, is associated with the breakup in many areas of village-based societies (Marciniak 2019). What we see through the Göbekli sequence is the beginning of this process as the rectangular houses are constructed and the circles are allowed to fill in, whether through a natural process of erosion and soil slip or through some intentional backfilling.

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Elite houses or specialised buildings? Some comments about the special buildings of Göbekli Tepe in relation to Chapters 2 and 3

Christian Jeunesse

Introduction

Göbekli Tepe's 'special buildings' necessarily belong to one of two functional categories: either they are specialised buildings with a collective vocation (community houses, sanctuaries); or they are larger and more ornate domestic buildings than others, inhabited by households occupying a dominant position in the context of a rank or a stratified society. The first option was defended from the outset by K. Schmidt and won the preference of many authors (most recently: Clare *et al.* 2019; Dietrich *et al.* 2019), the second, less widespread, was defended mainly by E.E. Banning (2011).

The recent work of Kinzel and Clare (Chapter 3) has the great merit of partially renewing our vision of the site of Göbekli Tepe. The main advances brought by their refined stratigraphic reading can be summarised as follows: 1, the specialised buildings (SB) have not been intentionally buried; 2, they have had long and complex biographies, largely parallel to each other; 3, the SB constitute only one of the architectural categories of the site, which also includes, from the older levels, many buildings of modest size, a configuration that is comparable to that of the well-known site of Jerf el Ahmar; 4, the whole site gives the image of a compact agglomeration, with SB that are very close to each other and immersed in a dense fabric of small buildings.

The similarities with other sites such as Jerf el Ahmar do not call into question the specificities of the site. Round houses, semi-buried or not, existed already before and are widely represented on contemporary sites. What makes Göbekli Tepe original is: 1, a more marked architectural variability than elsewhere, with a strong contrast between 'specialised' buildings and 'ordinary' buildings; 2, the implementation, apparently, of a true megalithic architecture (or at least the use of large sculpted monoliths) and; 3, the presence of a megalithic art of great sophistication, with

T-shaped monoliths with animal reliefs, some of them at least obviously anthropomorphic. Elsewhere, for example at Körtik Tepe, recent excavations have confirmed the existence of settlements belonging to the same horizon but without SB, a pattern that is in addition to that of Jerf el Ahmar (where there is a presence of SB but whose size only modestly exceeds that of 'ordinary' buildings). Finally, we recall, as T. Watkins pertinently does (this volume), that the recent excavations at Göbekli Tepe have not called into question the idea of a settlement occupied by populations whose subsistence is based on hunting and gathering.

Ethnographic comparisons and the importance of the social factor

As a result of work on complex hunter-gatherers, particularly those on the Northwest Coast (NWC) of America, it is now known that the existence of sedentary villages with perennial architecture is not incompatible with a way of life based on hunting and gathering. The NWC societies show villages marked, in some cases, by strong architectural variability, with spectacular differences in size between cedar plank houses. This variability is related to the position of the households in the scale of prestige and renown. The differences in size are complemented by differences in the richness of the painted and sculpted decorations, those of the house, but also those of the so-called 'totem poles' erected in front of the facade. The houses are carefully maintained and can last several centuries. They embody the unity of the household (and of the clan for the most important ones) over time and serve as a ceremonial and political centre. These characteristics are associated with a social context very close to that of pre-state and pre-literary agrarian societies, such as, for example, the 'hill tribes' of southeast Asia, the analogy going as far as

the existence of a two-class society (nobles and commoners) and the practice of slavery (Testart 1988). There is the same oscillation as in southeast Asia (see Jeunesse 2019) between communities with segmented organisation governed by an egalitarian ethos and stratified communities in which heredity plays a more marked role in the transmission of social status. The conditions of access to the main resources, particularly those linked to the exploitation of aquatic resources (with exclusive rights to fishing zones held by the households), also evoke more agrarian societies than the practices of equitable sharing of and free access to resources conventionally attributed to hunter-gatherers. This social variability is reflected in a marked intra-village architectural variability (size of houses and richness of decoration). The existence, in NWC societies, of sophisticated craftsmanship oriented towards the production of precious goods for living and deceased members (ancestors) of the elite is well known. The most spectacular goods are directly related to the house, whether they are integral parts of its architecture, erected in front of its facade or carefully preserved inside.

The existence of such sophisticated art is a rare feature among hunter-gatherers and the fact that it is a common feature between NWC tribes and PPNA communities is worth noting. In addition to the common characteristics already amply highlighted by many authors, the existence of horticultural practices in some NWC tribes (growing tubers in small gardens for ritual consumption) adds a ‘pre-domestic’ dimension to the overall picture of this cultural complex (Hayden 2014, 137). The two focal points are firstly that the case of NWC shows that all the characteristics listed are perfectly conceivable in a hunter-gatherer economic context and secondly that the very deep structural analogies observed between the Indian tribes of the NWC and the trans-egalitarian societies of southeast Asia make the use of the latter relevant in a comparative analysis targeting the societies of sedentary hunter-gatherers of ancient southwest Asia. The connection between NWC and the Natufian and PPNA has already been made by other authors and there is no need to repeat this path here. One of the convergences pointed out, namely the richness of the artistic achievements, has been confirmed and reinforced recently by the discoveries at the 10th millennium BC settlement of Körtik Tepe. The burials here exhibit differences in the wealth of the grave goods that are hardly conceivable without the existence of marked social differences. This is supported by the existence on the same site of an intensive production of precious objects (among others, polished stone vessels), a characteristic peculiar to societies in which competition between elites plays an important role. The small domestic cemeteries at Körtik (and I am confident that further excavations at Göbekli Tepe will reveal similar ones) also confirm that we have entered into a burial system marked by an attention to the remains of ancestors typical of societies with descent groups, in which genealogical anchoring plays a central political, social and

ritual role. This way of ‘memorialising’ is, contrary to the point of view defended by T. Watkins (Chapter 2), indeed present in PPNA societies. The existence, which it illustrates, of a genuine funerary culture is unknown in nomadic hunter-gatherer societies and in big men societies (Jeunesse 2018), where the main motivation is more to keep the dead away and forget them rather than to reserve them a place of choice in the community.

The question now is how the current tribal societies mentioned behave in terms of architecture. It has been seen that in the NWC tribes the largest and best decorated buildings are all for domestic use and that they house the main lineages of the dominant descent groups. A similar situation is found in the hill tribes of southeast Asia, for example in the well-known cases of the Torajas of Sulawesi or the tribes of Sumba Island (Jeunesse 2016). The origin house, or ‘house of the ancestors’, rebuilt identically and in the same place from generation to generation (and used as a domestic building by the main lineage), embodies the continuity and greatness of the descent group, which is the central organising principle of the social order. It differs from the other houses in the village by its size and the care taken in its construction. As the example of Sumba clearly shows, the importance of the gap between the SB (the ancestors houses) and the ordinary houses is indexed to the degree of social differentiation: relatively discrete in the segmented societies of West-Sumba, somewhat like the differences in size observed in Jerf el Ahmar, it is spectacular, with sharp contrasts reminiscent of those of Göbekli Tepe, in the stratified societies of East- and North-Sumba. The same remark can be made about the richness of the decoration (for both graves and houses) and the sophistication of the artistic productions (Jeunesse 2019). The vast and colourful Austronesian tribes of the Indonesian archipelago include societies whose villages have specialised buildings for ceremonial purposes, but these are never larger and better decorated than the origin houses. This configuration can be considered, and we are of course only talking about pre-state societies, as a rule within the sample of populations mentioned so far.

If one accepts the game of comparison, it quickly becomes clear that for Göbekli Tepe’s specialised buildings, the most plausible hypothesis is the one Banning favoured about 10 years ago. We reach the same conclusion if we look at things from the aspect of anthropomorphic stelae (T-pillars): if a group of stelae gathered in the same building and representing the successive chiefs of the descent group that owns it (the ancestors), it would be quite in line with the logic of the social and ritual functioning of NWC and southeast Asian tribes; conversely the idea of associating the effigies of chiefs belonging to different descent groups within an ostentatious building with a collective vocation is much more difficult to imagine. The problem of the signification of the T-shaped monoliths raises the question of

the internal chronology of Göbekli Tepe's stela complexes. A model favouring diachrony, with stela representing the successive leaders of the descent groups and erected successively generation after generation becomes, in the logic that we are trying to illustrate here, a plausible scenario. This is provided, of course, that one accepts that the architecture in which the stela are engaged in the walls would be devoid of any architectonic function (hence our reluctance to evoke without reservation a 'megalithic architecture' and the necessary and cautious avoidance of the term 'pillar'). The two central pillars could then incarnate the founders of the descent groups, whose prestige, generally linked to divine ancestry or close proximity with the supernatural, is necessarily higher than that of their descendants. This interpretation is perfectly compatible with the new vision of the specialised buildings developed by Kinzel and Clare (Chapter 3), characterised by a long history marked by several phases of renewing. The 'ancestor's house' model also helps to explain the architectural conservatism that characterises the SB in Göbekli Tepe as well as in Jerf el Ahmar. It echoes the need, in societies with descent groups, to faithfully reproduce the house of the founder, a constraint that does not apply with the same rigour to other dwellings.

Conclusion

Experts will of course have noticed the closeness of our model to the one that is now widely accepted for Çatalhöyük (see summary in Banning 2011, 619). One explanation for the reluctance encountered by the 'domestic' explanation after its presentation by Banning in 2011 is perhaps due to the difficulty of conceiving a social configuration similar to that of the 'proto-urban' site of Çatalhöyük in the context of a hunter-gatherers society of the extreme end of the Upper Palaeolithic. Comparisons with the NWC make it possible, as we have seen, to overcome this apparent contradiction. There is every reason to believe, in fact, that the category of 'sedentary descent-group societies', which will play a central role in Eurasia throughout the Neolithic and beyond, already exists, fully formed, in the PPNA in the 10th millennium BC.

As we have seen, this model provides a plausible explanation for intra-village architectural variability. But it also sheds interesting light on inter-village, or regional, variability. Societies with descent groups are characterised by hierarchical networks of villages, taking the form of a pyramid whose summit is occupied by the oldest ones, those who, consequently, house the origin houses of the highest descent groups in the prestige scale. The most important buildings in the other villages correspond to origin houses of secondary groups of descent or lineages and have less ambitious architectures and less marked differences with the other houses of the same settlement. Such structuring provides a plausible explanation for the cohabitation of central places such as Göbekli Tepe with villages with

more modest SB (of the Jerf el Ahmar type) and others that seem to be entirely devoid of SB (of the Körtektepe type). The demographic importance of the descent groups varies according to different parameters, the most important of which being their age, *i.e.* their genealogical depth. They can thus easily number several hundred to several thousand members, all involved in the preservation of the ritual and political centre embodied by the origin house. The importance of the efforts required for the construction and maintenance of the Göbekli Tepe specialised buildings (emphasised earlier by Schmidt but minimised more recently by Kinzel and Clare, see Chapter 3) finds, once again, an easy explanation.

Both in the current societies on which we have relied and in the PPNA, the differences between the buildings in the same village are always limited to differences in degree; the most important are larger, more carefully built and more richly decorated, but show the same basic architectural structure as the others (this is all the more true if we admit that the stela circle could be devoid of any architectonic function). As Kinzel and Clare point out, not all the buildings in Göbekli Tepe are 'special' and the presence of a T-shaped monolith is not sufficient to identify a 'special' – and specialised – building; this is particularly the case for the rectangular buildings with stone pillars of the PPNB level which were 'in most cases domestic structures' (Kinzel and Clare, Chapter 3). They apply the same reasoning to the buildings with monolithic stela at the Middle PPNB site of Shkārāt Msaied (southern Jordan). This fact may lead to two contradictory conclusions: the first, that of Kinzel and Clare, is that objects and installations related to the sacred can *also* exist in non-monumental domestic structures; the second, the one we tend to favour, is that the absence of structural differences between small and large buildings simply shows that *all the buildings shared the same function*. The existence of functional differences is indeed, as in the case of the men's houses in New Guinea or the societies with 'temple' type structures, almost always (and perhaps even always) reflected by very marked architectural contrasts.

Through this brief commentary, we hope to have added a few more bricks to Göbekli Tepe's interpretative building. It would of course be naive of us to imagine that the ethnographic comparisons on which we base our reasoning have any evidential value. We would therefore be satisfied if we had succeeded in showing that the 'domestic' hypothesis that Banning was the first to develop is more convincing than some may have thought and written, and that it would be premature, and imprudent, to consider it as a second-rate hypothesis. The ethnographic 'comparatism' that guided our thinking could also be used to test the reliability of the 'specialised buildings' 'Schmidtian' hypothesis. It would suffice to try to answer the following questions: in which social, economic, political and religious contexts,

accessible through historical and ethnographic sources, are there settlements with specialised buildings for ceremonial purposes that stand out clearly from the mass of domestic dwellings, being larger and more richly decorated than the largest and most decorated of them? And then to consider whether the configuration(s) identified are compatible or not with the characteristics of the Near Eastern PPN? An initial, superficial, evaluation tends rather to reinforce the hypothesis that the interpretation of the Göbekli Tepe's specialised buildings as temples is anachronistic, and is indeed 'just a highly visible symptom of the widespread readiness to interpret PPN ideology and symbolism through the filters of much later Near Eastern religions' (Banning 2011, 637).

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Response to comments by Ian Hodder and Christian Jeunesse

Trevor Watkins

Because I was unable to join the conference workshop from which this publication has come, I wrote my contribution ‘blind’, having no idea what Kinzel and Clare had said at the workshop, and having had no opportunity to discuss questions about their radically new interpretation of Göbekli Tepe. I have read all the publications by members of the Göbekli Tepe team, including the most recently published (Clare *et al.* 2018; 2019a; Dietrich *et al.* 2019; Peters *et al.* 2019). None of those prepared me for the drastic revisions that have clearly impressed both Ian Hodder and Christian Jeunesse. I can only say that I shall look forward to seeing the revised interpretation documented and explained in the conventional manner in forthcoming publications.

What is the appropriate term for the large circular structures of Göbekli Tepe, and those of Jerf el Ahmar and other early PPN settlements? Jeunesse refers to them as ‘special buildings’; but Hodder does not like my calling them ‘communal’, because, he says, they could not have accommodated the whole community. Since I was also talking about the contemporary early PPN settlement of Jerf el Ahmar, I simply translated Danielle Stordeur’s *‘bâtiments communautaires’*. Hodder suggests that they are ‘public’ buildings, but that seems to me to suffer from the same difficulty; was there ever a public library built to accommodate the whole public? There are many enterprises that represent the effort and intent of a community. Monuments involve cultural memory and are means of memorialising at many different levels. The *‘bâtiments communautaires’* of Jerf el Ahmar, especially EA30, the second in the series and the best preserved, and its predecessor, which similarly possessed a series of doorless storage cells, seem to me to memorialise the community in several ways in the one building.

Hodder dismisses the idea that the enclosures at Göbekli Tepe, and, I suppose, the *‘bâtiments communautaires’*

of Jerf el Ahmar and other early PPN settlements, were monuments because they were not large, as though size was the criterion of monumentality. One of the attributes that we want of our monuments is that they are impressive, and that they hold our attention and affect us. Scale may help in those regards, but it is not essential. What monuments do is memorialise, which has connotations of memory and remembering (Watkins 2012; 2014). That said, the communal buildings at settlement sites of the early PPN that I mentioned are conspicuously larger than the domestic buildings. For example, the houses at Jerf el Ahmar range between about 4 and 7.5 m² of floor area; the communal buildings are about 38 m², larger by a factor of 5–10 times. I do not understand how Hodder can say that Enclosures A–D have ‘always seemed to [him] to be *small* and hidden, secretive’ (my italics). Accepting that they were roofed (Kurapkat 2012), they would have accommodated only a small number of people, who descended into the semi-darkness to join the resident population of towering T-monoliths. What went on inside would have been hidden and secretive (and certainly not ‘public’), but the structures themselves cannot be described as small; the enclosed space within the circular enclosures was at least ten times greater than the floor areas of the other buildings at Göbekli Tepe.

That the ‘special buildings’ at Göbekli Tepe had a long and complex history has been established (Piesker 2014) (although we still await the publication of the large series of radiocarbon dates that will calibrate the duration of their life-histories). Jeunesse’s reference to the change in interpretation of the fill of the cluster of Enclosures A–D is puzzling; he writes, presumably on the authority of Kinzel and Clare, that they were not intentionally buried, but were filled with material that had eroded from the uppermost

part of the mound that overlooks the excavated area. If that were so, it requires that, until it was completely removed by erosion, there was a substantial occupation layer on top of Layer II, the surviving rectilinear structures that were among the first to be exposed, immediately below the surface, by Klaus Schmidt's excavations. The fill of Enclosures A–D would then have included cultural material (chipped stone in particular) dating later than the cultural material associated with Layer II. So far as I know, after two decades of excavation of that fill, there has been no mention of material later than the Layer II material. Indeed, recent Göbekli Tepe publications have included a reconstruction drawing of that part of the mound, showing the circular enclosures filled, leaving only the tops of the tallest T-monoliths showing, overlooked by the later, rectilinear buildings above them (for example, Clare *et al.* 2019b, 110, fig. 5.4, whose caption states ‘the enclosures (A–D) had been ritually buried by this time’; and Clare *et al.* 2018, fig. 4.8). No plan that I have seen shows any small, circular domestic structures, and I know of no published account of the identification of circular domestic structures close to the large circular enclosures, dating to the early PPN period. Jeunesse apparently believes that their configuration is comparable to that of Jerf el Ahmar. Either he has seen plans and sections from Göbekli Tepe that are unknown to me, or my scholarship is defective; I have seen no plans from Göbekli Tepe that remotely resemble the settlement layout of Jerf el Ahmar (*e.g.* Stordeur 2015, figs 79–82); at the very simplest level, the buildings at Jerf el Ahmar are spaced out from one another and there is much more open space than enclosed and roofed space, while published plans of Göbekli Tepe show nothing but roofed structures (granting that Enclosures A–D were roofed).

If I misled Ian Hodder with my mention of leaders, I am sorry; I am sure that we are in fact on the same page, but with a somewhat different vocabulary. He references the work of Flannery and Marcus (2012) and their extensive discussion of segmentary societies, in which individuals may acquire prestige and be accorded status in different ways. I also have been impressed by that book and influenced in particular by what they have to say about those societies that are intermediate between simply egalitarian and those that are urban, hierarchically organised, ruled by state-level powers. In a similar vein, Joe Henrich and colleagues have undertaken ethnographic fieldwork and lab-based research (Henrich and Gil-White 2001; Henrich *et al.* 2015) on the functioning of prestige; he and his fellow-researchers distinguish carefully between dominance and the freely conferred deference of prestige. I have used the term trans-egalitarian (and perhaps I should have referenced Brian Hayden's publications, and his research on the indigenous peoples of the Pacific Northwest Coast). I think that Hodder and I are both referring to societies that are no longer small and simply egalitarian, but that are becoming for the first time

large-scale. Such societies would be internally structured horizontally, segmentary both within the population of the single settlement (as at Hodder's Çatalhöyük), and as autonomous, sedentary communities nested within extensive regional and supra-regional networks (Watkins 2008).

Banning's (2011) proposal that the large enclosures were simply big houses muddies the waters; I believe that he was reacting to counter Klaus Schmidt's (dangerous) proposal that they were temples (Schmidt 2000; 2006; 2012). For at least 30 years, some of us working on the early PPN of southwest Asia have been encountering buildings on settlement sites that were domestic in construction but housed pairs of pillars. The examples of Qermez Dere (Watkins 1990) and Nemrik (Kozłowski and Kempisty 1990) in north Iraq have been complemented by a series of equally early PPN settlements in the Tigris valley in southeast Turkey. In short, our intuitive idea that the domestic and the sacred are mutually exclusive is a rare, ethnocentric eccentricity.

By the way, Ian Hodder has suggested that there were ‘small versions of T-shaped pillars that could be held in the hand’ found widely across the region. I believe that he is mistaken on these supposed miniatures; there are sites in the region where T-shaped pillars that are smaller than those of Enclosures A–D at Göbekli Tepe are visible on the surface (see now Çelik 2019); and from several sites in southeast Turkey and northwest Syria there is a small number of flat stone plaquettes, small enough to be held in the hand, that bear incised motifs that echo those carved on the monoliths at Göbekli Tepe.

What this debate around the interpretation of the unique site of Göbekli Tepe demonstrates is that the early Neolithic of southwest Asia was much, much more than simply the period when village-farming replaced mobile hunting and gathering; Epipalaeolithic and early Neolithic societies were, for the first time, becoming large, permanent and complex, whether in social, cultural or economic terms. We may now know a lot about the beginnings of cultivation, the domestication of plants and animals, and the emergence of effective farming: but we are still in the experimental stage in coming to grips with the social, cultural and economic scale and complexity of these extraordinary societies.

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Response to comments by Ian Hodder and Christian Jeunesse with notes on a potential Upper Mesopotamian ‘Late PPNA Hunter-Crisis’

Lee Clare and Moritz Kinzel

Introduction

Recent research at Göbekli Tepe has seen the relativisation of many of the core hypotheses made by Klaus Schmidt (Peters *et al.* 2019). Taking a clear step backwards and sideways from the paradigm of the ‘world’s first temples’, the new evidence from recent fieldwork, together with the reappraisal of earlier results, again invites fruitful discussions revolving around this unique site, including – most importantly – reflections of its broader sociocultural context. We are humbled to have received thought-provoking comments from two distinguished colleagues. Intriguingly, the contributions by Ian Hodder and Christian Jeunesse have presented two quite different interpretations of the Early Holocene archaeological record as relating to the social contexts of the early Pre-Pottery Neolithic (PPN) in what is today southeast Turkey and adjacent parts of Syria and Iraq. Whereas Hodder argues in favour of a ‘societal organisation through balanced segmentation’ with ‘absolutely no evidence of dominant leaders’, Jeunesse prefers a model based on ‘chief’-led ‘sedentary descent-group societies’ (Table 7.1). For this reason, it is safe to say that the archaeological record has thus far provided no more than inconclusive evidence, supporting interpretations of both segmented-egalitarian and stratified systems. It is not our intention here to dissect and evaluate the two models. On the other hand, we believe that a more thorough consideration of absolute chronological contexts will prove beneficial to the matter at hand and hopefully provide a sounder basis for future discussions.

Currently, some 653 absolute radiocarbon dates are available from a total of 20 Late Pleistocene and Early Holocene sites in southeast Turkey, and parts of northern Syria and northern Iraq, an area also referred to as a core formation

area of the Neolithic in the 10th and 9th millennium cal BC (Özdoğan 2014) (Fig. 7.1). Recent years have seen considerable advances in Neolithic research in southeast Turkey as a whole. Excavations in the Tigris Basin in the frame of the Ilisu dam project have culminated in new data from Körtek Tepe (where earliest occupations could be attributed to the Younger Dryas) (Coşkun *et al.* 2012), Hasankeyf Höyük (Miyake *et al.* 2012), Gusir Höyük (Karul 2011), Boncuklu Tarla (Kodaş 2019) and Çemka Höyük (Kodaş and Genç 2019), thus adding to earlier insights from Çayönü (Erim-Özdoğan 2011), Hallan Çemi (Rosenberg 2011a), Demirköy (Rosenberg 2011b), as well as Nemrik 9 (Kozłowski 2002) and Qermez Dere (Watkins 1995) in northern Iraq.

Dam building was also a significant factor contributing to Neolithic research in the upper part of the Syrian Euphrates valley, where reservoirs have meanwhile inundated five of the eight sites to have produced absolute radiocarbon dates, including Abu Hureyra and Mureybet (Tabqa Dam), as well as Jerf el Ahmar, Dja’dé-el-Mughara and Tell ‘Abr 3 (Tishrin Dam). Following the Euphrates upstream into modern day Turkey, passing Mezraa Teleilat and Akarçay Tepe, the landscape is dominated by the reservoir of the Atatürk Dam which now covers the T-pillar site of Nevalı Çori. Notably, only three other sites with T-shaped monoliths have so far been the focus of archaeological fieldwork, most prominently Göbekli Tepe, and more recently Harbetsuvan Tepesi and Karahan Tepe in the Tektek Mountains, though many more are known from surface survey (Çelik 2019a). Although the existence of T-pillars is unconfirmed at Yeni Mahalle, it is very likely that they were a feature of this severely disturbed prehistoric tell located at the heart of the modern city of Şanlıurfa (Çelik 2011).

Table 7.1 Summary of the two sociocultural systems proposed by I. Hodder and C. Jeunesse (see Chapters 4 and 5) for the PPNA in Upper Mesopotamia.

<i>Balanced segmentation (Hodder)</i>	<i>Sedentary descent-group (Jeunesse)</i>
Multiple segments of society that are grounded within historical claims and are seen as balanced or equivalent. Society is held together by tension between segments	Stratified communities with hereditary chiefs from different descent groups whose prestige is generally linked to divine ancestry or close proximity with the supernatural
<i>Indicators</i>	<i>Indicators</i>
1) Multiplication of contemporaneous circles (special buildings)	a) Architectural and intra-village architectural variability
2) Radial division of space in the circular buildings (Jerf el Ahmar, Mureybet, Dja'de, Tell 'Abr 3, Wadi Faynan 16)	b) True megalithic architecture and sophisticated art
3) Radial arrangement of houses around the circles (special buildings)	c) Evidence for leaders: differences in the wealth of grave goods ('memorialising') and production of precious objects, e.g. Körtek Tepe
4) Long-lived special buildings at GT	d) Genealogical anchoring ('ancestor's house model')
5) Göbekli Tepe as focal point producing <i>charged</i> objects	
6) No evidence for dominant leaders	

PPNA (middle of the 10th to early 9th millennium cal BC)

The increase in settlement sites following the onset of the Holocene, for example at Demirköy, Gusir Höyük and Hasankeyf Höyük in the Tigris Basin, and at Jerf el Ahmar, Tell Qaramel, Mureybet and possibly Tell 'Abr 3 along the Upper Euphrates, is plausibly attributable to increased levels of sedentism in response to climatic improvement (Fig. 7.1). Summed radiocarbon probabilities from sites in southwest Asia have recently been used as a population proxy to underline this hypothesis (Roberts *et al.* 2018). Therefore, instead of the ritually motivated foundation proposed for Göbekli Tepe at this time (e.g. Schmidt 2010; Dietrich and Notroff 2015), the availability of natural resources in the catchment of the site, among other factors, certainly appear more compelling.

Notably, Göbekli Tepe is the only T-Pillar settlement with a confirmed PPNA occupation (so far); at Nevalı Çori there is no evidence of activities from the 10th and early 9th millennium cal BC, and initial results from Harbetsuvan also appear to be indicative of a later (EPPNB) occupation only (Çelik 2019b). Remarkably, it is still unclear whether limestone monolithic T-shaped pillars were a feature of the architecture at Göbekli Tepe from the onset. Nevertheless, all PPNA sites in the region were part of a common socio-cultural network, as suggested by the similarity in the decorative motifs found on small finds along the upper Euphrates and Tigris rivers. This observation previously culminated in the proposal that there existed a *common cultic community* at this time (Dietrich *et al.* 2012).

PPNA-PPNB transition (early to mid-9th millennium cal BC)

Subsequent to the population increases in the Younger Dryas and the Early Holocene, the first centuries of the 9th

millennium cal BC saw an apparent decline in settlement activity, the most significant evidence for which comes from the Tigris Basin, where available radiocarbon data indicate the apparent abandonment of all sites at this time. As already noted in a small number of earlier publications (Miyake *et al.* 2012; Borrell *et al.* 2015; Peters *et al.* 2017), this development heralds the onset of a hiatus in this area that persists until the onset of the Pottery Neolithic in the 7th millennium cal BC. The only site with a continuous occupation is Çayönü, located on the western periphery of the Tigris basin.

Remarkably, just a short time (no more than a couple of centuries) later, some of the settlements along the Upper Euphrates (northern Syria) also appear to fall into decline. At Jerf el Ahmar this time window corresponds with its *phase récente* (level II/W; 9200–8740 cal BC at 68% probability) and *Phase de Transition* (level moins II/E; 9120–8650 cal BC at 68% probability). Notably, the *phase récente* witnesses the appearance of rectangular houses (Stordeur 2000; 2015, 26) and segmented communal buildings, the latter building type also observed at Tell 'Abr 3 (Yartah 2016). At Tell Qaramel the early centuries of the 9th millennium cal BC coincide with the final occupation period (Horizon 4) when the spatial extent of the village changed, moving to the west and south of the excavated areas; best preserved architectural remains from this phase are two rectangular buildings, one of which was a multi-cell structure, and a platform with a central hearth (Mazurowski 2012, 30–32). Only at Mureybet and at Dja'dé-el-Mughara does occupation appear to continue; whereas at the former (Mureybet) the early 9th millennium cal BC corresponds to the transition from Phase III (Mureybetien) to Phase IV (PPNB), at the latter (Dja'dé) settlement spans the late PPNA to the Middle PPNB (MPPNB) with the early 9th millennium cal BC corresponding to Period II, a transitional EPPNB phase (Pichon 2017). This development

could suggest that settlements along the Upper Euphrates decreased in number, instead focusing on fewer sites (where sociocultural changes are observed), and with population movements into previously unoccupied (or less densely occupied) landscapes to the north, *i.e.* around modern day Şanlıurfa. Certainly, the hilly landscapes surrounding the

Harran plain appear to have seen an increase in settlement activity at this time, at least if we consider Göbekli Tepe with its potentially dense PPNB settlement, the contemporaneous occupations at Nevalı Çori and Harbetsuvan Tepesi, as well as the many unexcavated (EPPNB?) T-pillar type sites known from surface survey.

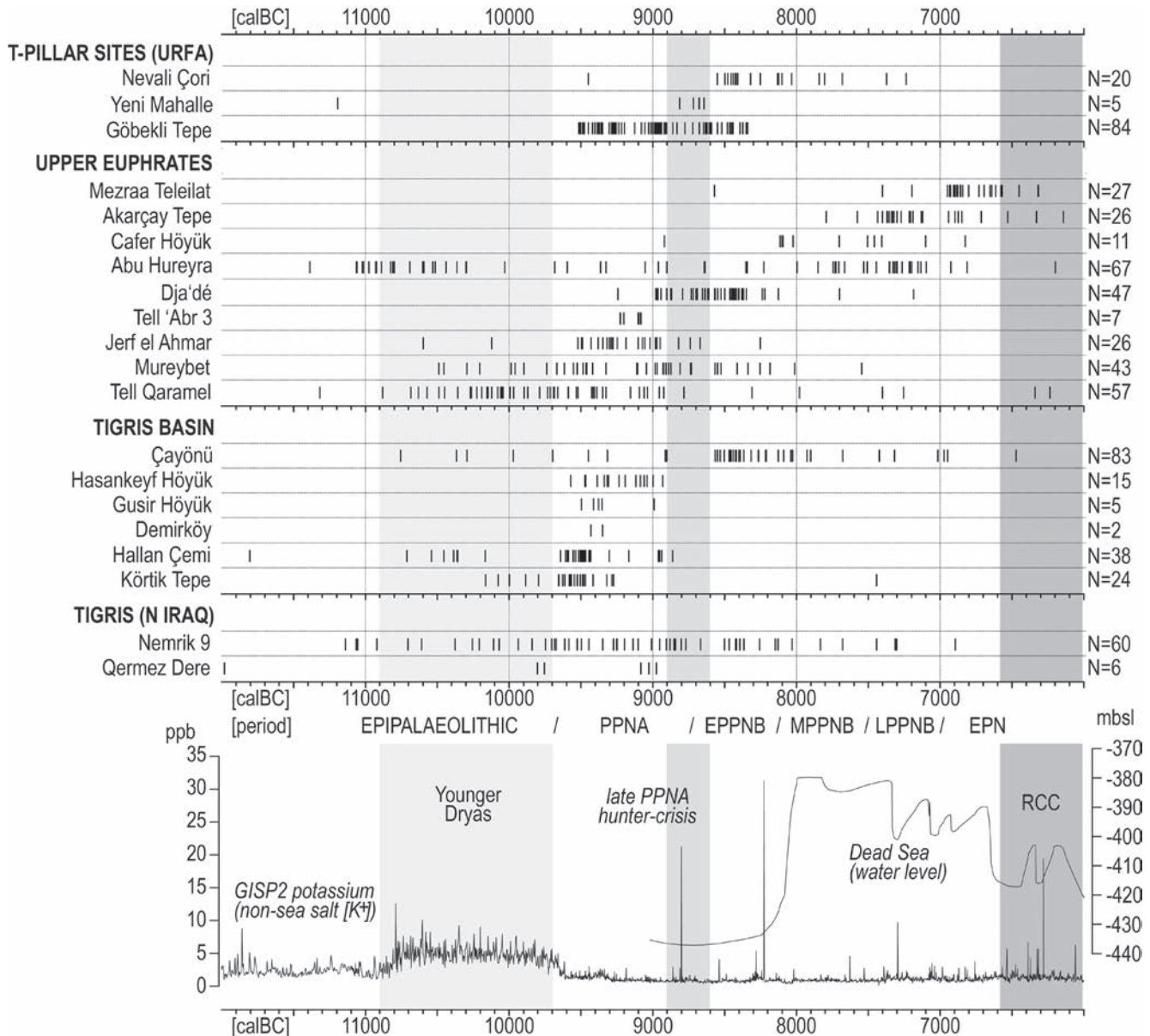


Fig. 7.1 Barcode calibration of ^{14}C -dates (total $N=653$) from 20 Late Pleistocene and Early Holocene archaeological sites in the study area. In the Barcode Method each vertical line represents the calibrated median value of one ^{14}C age using INTCAL13 calibration data (Reimer et al. 2013). All radiocarbon dates are unfiltered (all published data are included) except for Göbekli Tepe where measurements made on pedogenic carbonate, animal bone/tooth and humic acids from buried humus are excluded ($N=52$) and where a total of 68 dates of the 84 data are unpublished. Bottom: GISP2 potassium (terrestrial $[\text{K}^+]$) ion proxy for Siberian High Pressure (as used previously to identify rapid climate change/RCC events (cf. Mayewski et al. 1997; Rohling et al. 2019). The light-grey vertical bar denotes the duration of the Younger Dryas; the medium-grey vertical bar highlights the centuries assigned to the proposed late PPNA 'hunter crisis'; and the dark-grey vertical bar marks the RCC event (8600–8000 cal BP) which saw a marked drop in the water level of the Dead Sea (Migowski et al. 2006). Graph compiled using CalPal 2020.3 (Weninger and Jöris 2008). Bibliographic references for the radiocarbon data in this figure can be found in Table 7.2.

Table 7.2 Sources of radiocarbon data used in Figure 7.1.

Archaeological site	Total ^{14}C -data	References for published ^{14}C -data
<i>T-pillar sites (Urfa)</i>		
Nevalı Çori	20	Schmidt 1996; Lösch <i>et al.</i> 2006; PPND Database
Yeni Mahalle	5	Çelik 2011; 2014
Göbekli Tepe*	84	Dietrich and Schmidt 2010; Dietrich 2011; Dietrich <i>et al.</i> 2013; 2016; Kinzel and Clare (this volume)
*Radiocarbon ages from Göbekli Tepe have been filtered, excluding all data (N=52) made on pedogenic carbonates, animal bone/tooth and humic acid from buried humus horizons. A total of 68 of the 84 data included in Fig. 7.1 are unpublished.		
<i>Upper Euphrates</i>		
Mezraa Teleilat	27	Özdoğan 2011
Akarçay Tepe	26	Balkan-Atlı <i>et al.</i> 2002; Özbaşaran and Duru 2011
Cafer Höyük	11	Cauvin and Aurenche 1982; Molist and Cauvin 1991; PPND Database
Abu Hureyra	67	Moore <i>et al.</i> 2000; PPND Database
Dja'dé-el-Mughara	47	PPND Database
Tell 'Abr 3	7	Yartah 2016
Jerf el Ahmar	26	Stordeur 2015; PPND Database
Mureybet	43	Stuckenrath Jr. and Lawn 1969; Cauvin 1977; Evin and Stordeur 2008; PPND Database
Tell Qaramel	57	Mazurowski <i>et al.</i> 2009
<i>Tigris Basin</i>		
Çayönü	83	PPND Database
Hasankeyf Höyük	15	Miyake <i>et al.</i> 2012
Gusir Höyük	5	Karul 2011
Demirköy	2	Rosenberg 2011b
Hallan Çemi	38	Rosenberg and Davis 1992; Rosenberg 1994; Rosenberg <i>et al.</i> 1995; Higham <i>et al.</i> 2007
Körtik Tepe	24	Benz <i>et al.</i> 2011; 2012; Özkaya and Coşkun 2011; Coşkun <i>et al.</i> 2012; PPND Database
<i>Tigris (N Iraq)</i>		
Nemrik 9	60	Kozłowski 1994
Qermez Dere	6	Watkins 1995

Discussion

In the absence of more and higher resolution absolute (radio-carbon) dates, for the moment it seems that the abandonment of settlements along the upper Tigris and parts of the upper Euphrates, the increase in the number of sites in the Urfa region, and the appearance of monolithic limestone T-shaped pillars and rectangular building traditions were more or less contemporaneous developments. Therefore, we propose that the early 9th-millennium cal BC could mark the onset of a period of social upheaval in Upper Mesopotamia, tentatively referred to here as the *late PPNA hunter crisis*¹.

For the time being, the processes behind site abandonment in the Tigris basin remain unclear. Explanations might

be sought, for example, in the challenges connected with the ongoing transition from hunter-gatherer to Neolithic lifeways at this time (*cf.* Clare *et al.* 2019, 99–101). A lack of effective mitigation mechanisms needed to cope with emerging and growing levels of social hierarchisation and disintegrating group cohesion could have led to a breakdown of hunter-gatherer values. As pointed out by Jeunesse, an emerging inequality at PPNA sites is expressed, for example, in the varying wealth of grave goods and through the production of precious objects at Körtik Tepe. At the same time, there is also a statistically significant difference between the sexes in relation to the proportion of protein derived from animal sources at this site (Benz *et al.* 2016),

while at Hasankeyf Höyük, new studies have found that food resources were not always shared equally in the community (Itahashi *et al.* 2017). Finally, returning to Körtik Tepe, the documentation of an increasing number of skeletal trauma, including cranial and post-cranial injuries (Erdal 2015), could even be suggestive of heightened levels of violence and internal fighting (Clare *et al.* 2019).

Climate and environmental change must also feature in any discussion around population movement and localised settlement discontinuity. Figure 7.1 (bottom) shows two palaeoclimate proxies previously used to identify and study periods of climate instability in the eastern Mediterranean during the Holocene, referred to elsewhere as rapid climate change (RCC) intervals (*e.g.* Weninger and Clare 2011; Clare 2016; Rohling *et al.* 2019). Notably, the spike in the GISP2 potassium (non-sea salt K⁺) data, a proxy for the strength of Siberian High Pressure, could be indicative of a short and punctuated episode of climate instability at ~8800 cal BC. Notably, however, this event was likely embedded in a wider period of climate variability in the centuries leading up to plant and animal domestication in the second half of the 9th millennium cal BC when there was a switch to higher precipitation levels, as demonstrated by an abrupt increase in the water level of the Dead Sea (Weninger 2017). Although more local palaeoclimate proxy data is still not abundant for Upper Mesopotamia for the early 9th millennium cal BC (*cf.* Knitter *et al.* 2019), future studies will hopefully illuminate the climatic and environmental conditions during the proposed ‘hunter-crisis’ and their contribution to parallel sociocultural developments.

If the late PPNA ‘hunter-crisis’ indeed culminated in the agglomeration of people from abandoned settlements at Göbekli Tepe and at adjacent sites in the Urfa region, might this explain the segments of society mentioned by Hodder? Was there also an attempt to actively preserve Palaeolithic traditions in the light of changing social cultural values? In this context, might the limestone T-pillars (which seem to appear no earlier than the late 10th and early 9th millennium cal BC) have been used to promote dying hunter-gatherer identities and values, including foundation myths and beliefs. This being the case, instead of being a centre of Neolithic innovation, one might argue that the Urfa region had become a *refugium* for age-old (conservative) ideals. Indeed, the continuous repair and maintenance of the special buildings, and the incorporation of T-pillars into newly constructed rectangular edifices in the EPPNB, could be interpreted in this way. In this context, it is of interest to note comments made recently by Thomas Zimmermann (2020, 14–15) who referred to the construction of the special buildings at Göbekli Tepe as a last mustering of strength by a proud hunter-gatherer culture whose zenith had already eclipsed; Göbekli Tepe was not necessarily the start of a new epoch but rather signalled the demise of a complex Late Pleistocene culture (Zimmermann 2020, 1415).

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Note

- 1 Certainly, future studies must consider the contexts and reliability of the available radiocarbon data from sites included in Figure 7.1.

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Monuments and social change

Monuments and social stratification within the early Funnel Beaker culture in south Scandinavia

Lasse Sørensen

Abstract

Based upon recent research, this article examines the increase in the construction of monuments and emergence of social stratification within the agricultural societies of the early Funnel Beaker culture (4000 to 3300 BC). The monuments in question are earthen long barrows and causewayed enclosures from the early 4th millennium BC in south Scandinavia. It is argued that these monuments are manifestations of competition, wealth, status and power, which are interpreted as signs of the initial formation of archaic chiefdoms within these agrarian societies. Parallels are drawn with similar monumental construction activities amongst prehistoric European societies and contemporary farming communities in southeast Asia, which are an important source of inspiration when discussing the emergence of social stratification within early Funnel Beaker societies in northern Europe.

Introduction

Social stratification varies in terms of its complexity and structure, but the emergence and diversity of hierarchy is often associated with the production of surpluses and control of people's labour (Earle 1989, 85; Beliaev *et al.* 2001, 374; Miller 2007, 244; Price and Gebauer 2017, 137). During the transition from hunter-gatherer to agrarian communities, reduced mobility and increased sedentism provided the labour required to exploit the full potential of the agrarian practices, leading to population growth (Shennan *et al.* 2013, 4; Rueden *et al.* 2014, 538; Sørensen 2014, 44). The population growth during the Neolithic suggests that certain individuals had a better understanding than others of the processes and timing of agrarian activities, which resulted in higher yields and surpluses (Gregg 1988, 127; Lave and Wenger 1991, 98). A number of these individual farmers would also have been

able to motivate other people to work harder and longer towards a common productive goal, thus creating followers, as observed in several ethnographic examples (Smith 1976; Ember and Ember 1994, 146; Stanish 2004, 8; Miller 2007, 77). In Neolithic societies, monumental construction may have helped affirm the role of leaders and create social cohesion amongst greater numbers of individuals, as well as marking their territorial rights in the landscape (Nielsen and Sørensen 2018, 16). Monuments created a visual link between the past, present and future, functioning as markers of the genealogical origins of those responsible for the construction, whilst also signalling the ability of this group to produce a significant surplus and mobilise a substantial workforce (Earle 2011, 35). Monument construction may therefore also be a competitive measure of the capabilities of a social group and the individual leader. The differences in the production of surpluses would have enabled some groups to flourish, thus creating the foundation for a permanent degree of social stratification, in which chiefdoms or more archaic forms of chiefdoms could emerge (Kosse 1990, 284; Ember and Ember 1994, 236; Miller 2007, 263; Earle 2011, 27). Chiefdom societies are characterised by a level of redistribution which leads to increased inequality in consumption and access to goods. The degree of social stratification is dependent upon the chief's success and ability to plan, organise and deploy labour, thus creating a constant surplus. A failure to produce a surplus could lead to constant conflicts and negotiations over power relations within these societies, where chiefs could be replaced with other individuals belonging to the elite of these societies (Beliaev *et al.* 2001, 379). In the following text, some of these signs of social stratification will be investigated and discussed within the context of the early Funnel Beaker culture in south Scandinavia.

Previous interpretations of social stratification

Increased social stratification within the Neolithic societies in south Scandinavia has often been associated with the construction of 20–30,000 megalithic graves during the late Early and Middle Neolithic Funnel Beaker culture (3500 to 3000 BC) (Randsborg 1975, 105). In addition, Randsborg (1978, 303) concluded, based upon the distribution of hoards of amber beads and thin-butted flint axes, that a large surplus production of these objects was used for both ritual depositions and exchange with neighbouring regions during the early Neolithic (4000 to 3300 BC). Similarly, early Neolithic copper objects, as exotic items and symbols of status and wealth, supported the presence of an elite with connections to European networks and regional exchange systems in these early agrarian societies. Discussions during the 1980s regarding the degree of social stratification in Early and Middle Neolithic societies in south Scandinavia ranged from proposing an egalitarian society to a partially ranked society with an elite (Madsen 1982, 197; Nielsen 1984, 376). The construction of passage graves was, however, associated with leadership at chiefdom level emerging during the early Middle Neolithic in accordance with the interpretation initially proposed by Randsborg (Kristiansen 1982, 241; 1984, 72; Skaarup 1990, 73). Nevertheless, the idea of significant social stratification was questioned throughout the 1990s in relation to the transition between the Mesolithic and Neolithic, with early Neolithic long barrows (3800 to 3300 cal BC) interpreted as the result of a collective practice of the society rather than individual expressions of power (Madsen 1991, 495; 1997, 78; Tilley 1996, 80). Furthermore, the lack of high-status grave goods accompanying individuals buried in the earthen long barrows, combined with a pattern of small, dispersed settlements, suggested that these early agrarian societies were segmented tribal communities without any major hierarchy (Andersen 1997, 311). This interpretation of the early Neolithic societies influenced the view of megalithic burials and causewayed enclosures. The causewayed enclosures in particular were interpreted as gathering places for political, social and religious activities (Madsen 1997, 77). In subsequent contributions, the possibility of hierarchical stratification has been considered in relation to the importance of exchange in prestige objects, even though earthen long barrows are not regarded as evidence of clear social stratification (Earle 2004, 117; Klassen 2004, 334). However, a change towards collective burials in passage graves intended for ‘one prevailing group within society’ may have been the result of a more stratified society in the early Middle Neolithic (Müller 2010).

Social stratification within agrarian practices

The present re-examination of social structures in the early Neolithic is based upon recognition that the increased social stratification resulted from the introduction of agrarian

practices, not only in northern Europe, but in many parts of the world, as agriculture and ownership of domestic animals and land made it possible to create a surplus (Price 1995, 129; Price and Bar-Yosef 2010, 147; Price and Gebauer 2017, 147; Nielsen and Sørensen 2018, 25; Nielsen and Nielsen 2020, 202). Clear evidence of farming is broadly seen from c. 4000 BC, as is documented by compiled radiocarbon dates of charred cereals and domesticated animals (Sørensen and Karg 2014, 98). From as early as 4000–3700 cal BC, the pioneering farmers in south Scandinavia were engaged in complex agrarian practices (Gron and Sørensen 2018, 968). Pollen diagrams from c. 4000 cal BC show higher pollen concentrations of ribwort plantain (*Plantago lanceolata*) and birch (*Betula* sp.), which may reflect long-term or short-term fallow strategies (Andersen 1993, 153; Sørensen 2014, 41). Manuring of the fields from the early Neolithic can be observed from the increased nitrogen values of charred cereal remains (Gron *et al.* 2017, 575). Recent investigations of enamel in cattle teeth and oxygen isotope results indicate that cattle were born throughout the year, supporting the idea of continual dairy production (Gron *et al.* 2015, 1). Strontium isotope analyses have also been undertaken on cattle teeth, which suggest that early Neolithic cattle were transported over considerable distances by boat (Gron *et al.* 2016, 248). The complexity and extent of the planning of agrarian practices suggest division of labour, in which the timing of the activities may have been controlled by skilled individual farmers, who exchanged cattle and material culture at a regional level.

Learning about agrarian practices is a social process, which requires years and perhaps decades of active participation, in order to implement the agrarian technologies and achieve consecutive years of positive yields. Prehistoric people who wanted to learn about farming had to engage in social relations with certain individuals or groups, who had the right competences and knowledge to teach other individuals. Such dynamic and active participation in exchanges of knowledge could have flourished in what Lave and Wenger (1991, 98) have defined as a community of practice. It can be characterised as a system of relationships between people, activities and the world, which develops over time and in relation to other overlapping communities of practice, in which exchange of knowledge and experiences can be developed. Within the communities of practice, knowledge is acquired through a process of participation and reification, and thus they are important places of learning, meaning, identity and especially power (Wenger 1998, 58). If a specific agrarian group had more success with their practices in producing a surplus, then the individuals in power in the group would gain more influence within their community of practice, which with continuous success over time could consist of several groups or tribes, thus laying the foundation for increased social stratification. The agrarian societies that were the first to clear the forest and cultivate the land

in south Scandinavia had to learn new practices and adapt new strategies in order to learn how to produce a continuous surplus, which may be one of the reasons why there is a lack of burial monuments during the first two centuries of the early Neolithic in south Scandinavia (Hansen 2010, 9; Rzepecki 2011, 171; Sørensen 2014, 213). An almost total lack of monuments can also be observed in eastern Sweden during the Early and Middle Funnel Beaker culture, which could be explained as a Neolithisation process involving a larger part of the indigenous hunter-gatherer population, thus resulting in a possible slower population growth, limited competition and fewer signs of social stratification (Bellwood and Oxenham 2008; Hallgren 2008, 109; Gruber *et al.* 2016, 81).

The earliest evidence of social stratification in south Scandinavia

Prior to the construction of long barrows, the inhumation grave of the Dragsholm man may provide an important piece of evidence in the discussion of the emergence of social stratification and adoption of a new ideology. One of the earliest farmers in south Scandinavia, the Dragsholm man is associated with terrestrial ^{13}C values and has been dated to 4000–3800 cal BC (5102±37 BP, 3973–3798 cal BC, AAR-7416) (5090±65 BP, 4035–3712 cal BC, AAR-7418) (Brinch Petersen 1974, 112; Price *et al.* 2007, 193). The grave goods indicate high status and power. They include a short-necked funnel beaker (Oxie/type 1) (Koch 1998, 81), a polygonal battle axe of type F III (Zápotocký 1992, 158), teardrop-shaped amber beads, flint blades, a pointed antler weapon and a wrist guard. The Dragsholm man may have been a ‘powerful individual’ with the competences and ability to disseminate information about agrarian practices within his community of practice, and was therefore celebrated upon his death as a warrior, farmer and hunter by the pioneering farmers who buried him (Brinch Petersen 2008, 33; Nielsen and Nielsen 2020, 171).

The introduction of farming was neither a gradual process nor was it undertaken by indigenous hunter-gatherers alone as a possible alternative to their previous lifestyle. Agriculture was introduced by migrating farmers from central Europe, who possessed the knowledge and had the experience necessary in cultivating cereals and managing livestock. In advance of such migrations towards south Scandinavia, these central European agrarian societies sent out scouting expeditions to find suitable areas to settle in (Sørensen 2016, 222). The logistical challenges of transporting people, animals and other goods were probably organised by powerful individuals within the agrarian society, who decided when to migrate and where the final destination would be. When these pioneering agrarian societies resettled, new subsistence and agrarian strategies had to be learned and managed, which could involve both

the migrating and indigenous populations (Sørensen 2020, 309–310). Recent DNA analyses of human remains support arguments for the arrival of fully developed farming communities in south Scandinavia c. 4000 BC and adaptation by some hunter-gatherers (Sørensen 2014, 105; 2015, 32; Fort *et al.* 2018, 1; Mitnik *et al.* 2018, 3; Jensen *et al.* 2019, 2). Examination of the material culture from the first Neolithic societies in both Great Britain and south Scandinavia clearly suggests the direct or indirect influence of the Chasséen and Michelsberg cultures (Klassen 2004, 290–291; Sheridan 2010, 89; see also Chapter 18, this volume; Sørensen 2014, 227).

Monuments as evidence of social stratification

The oldest non-megalithic long barrows, *tertre tumulaires*, from before and around the middle of the 5th millennium BC, have been found in western France, along the south coast of Brittany and around the Gulf of Morbihan. Large standing stones, menhirs, with incised pictures of oxen and pointed-butted stone axes are sometimes associated with these barrows. The very large long barrows, *tumulus carnacéens*, from the middle of the 5th millennium, contained burials placed in stone cists or closed chambers, and furnished with axes of jadeite or fibrolite of foreign origin (Cassen *et al.* 2012, 918). The first passage graves, the oldest in Europe, were constructed in the same area slightly later on, from c. 4300 BC. Thus, a development may be observed in western France from initial social stratification to the formation of a complex social structure, which could gather hundreds of people to move stones weighing over 20 tons and participate in large-scale networks of exchange, as is indicated by the circulation of jadeite axes (Boujot and Cassen 1993, 477; Cassen *et al.* 2000; Pétrequin *et al.* 2012; Boulestin 2016, 57). Coeval with the first earthen long barrows in western France, people of the Cerny culture constructed trapezoidal or keyhole-shaped long barrows up to 230 m long in central France (Duhamel 1997, 397). These long barrows of Passy type tend to cluster in large groups; 24 long barrows have, for example, been recorded at Passy-sur-Yonne (Fig. 8.1A). A nearby causewayed enclosure at Balloy is of a similar date to the long barrows, of 4500–4200 BC (Fig. 8.1A) (Mordant 1997, 449). The long barrows at Balloy were built directly on top of *epi-Bandkeramik* long houses of the Villeneuve-Saint-Germain culture. While both men, women and children were buried in the barrows, certain males were apparently associated with special status (Chambon and Thomas 2010). At four of the cemeteries, the equipment in one male burial stood out as it included a curious bone object associated with hunting. Males of special status were always the first individuals to be interred, followed by repeated burials in the barrow. Unlike in western France, the Passy-type long barrows were not succeeded by megalithic tombs, nor did the subsequent Michelsberg and Chasséen

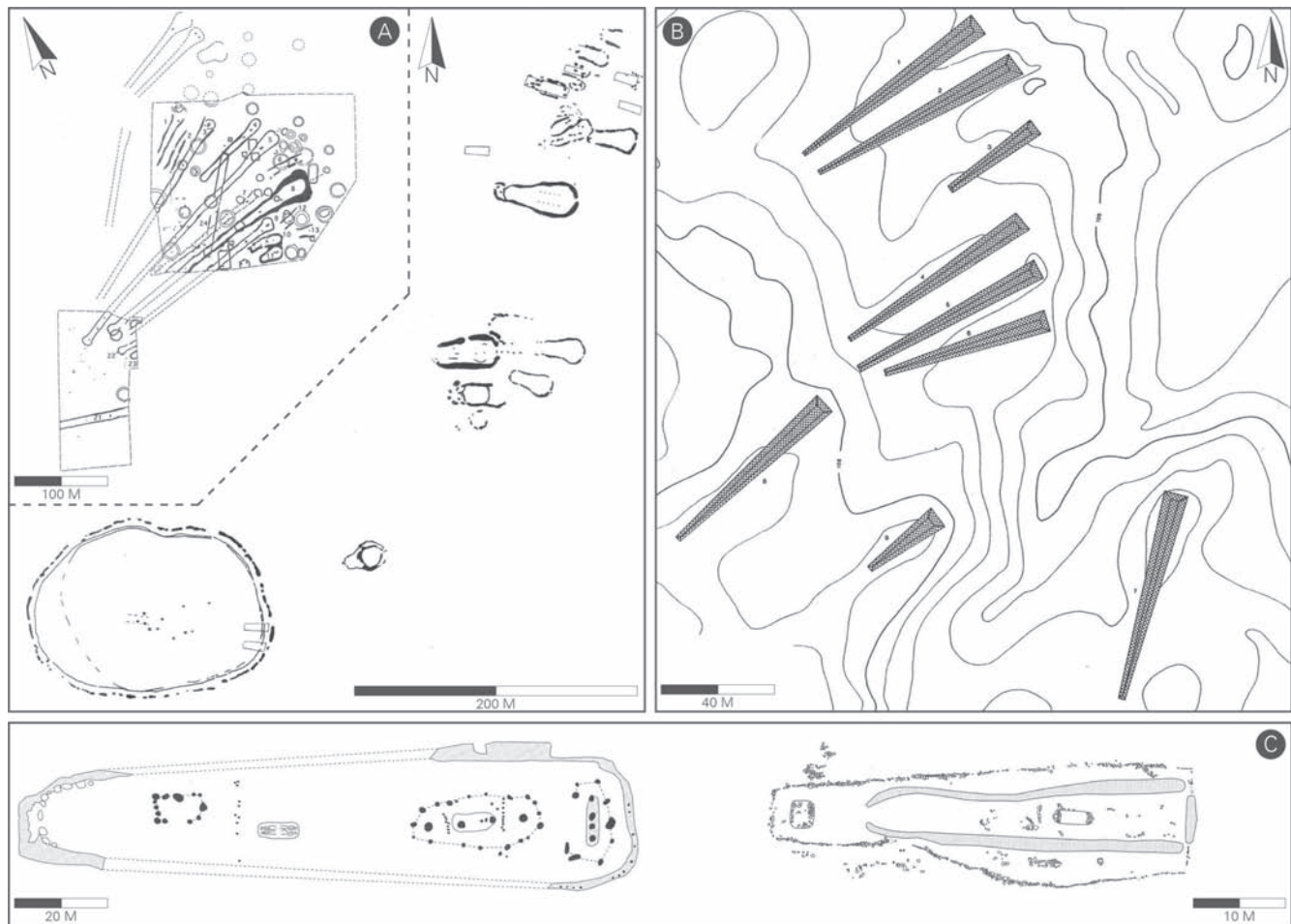


Fig. 8.1 A. Two groups of long barrows in central France at Passy and Balloy (after Duhamel 1997 and Mordant 1997); B. Long barrows at Sarnowo in Kujawia, Poland (after Midgley 1997); C. Two long barrows at Bygholm Nørremark and Storgård IV, Jutland (after Rzepecki 2011).

cultures continue to construct long barrows (Rzepecki 2011, 171–172; Colas *et al.* 2007, 329).

Monumentality in the Michelsberg culture

Neither long barrows nor other forms of regular cemeteries are a common feature of the Michelsberg culture. One or more human skeletons have been found in silo-shaped pits, in which the body interred last is sometimes carelessly placed and lacks any grave goods, suggesting that subordinate people were buried along with their masters, perhaps indicating the existence of slavery (Jeunesse 2010a, 95; 2010b, 37). The Michelsberg culture is also associated with mass graves containing the skeletons of men, women and children, which have been interpreted as evidence of attacks and massacres (Wahl 2010, 96; Gronenborn *et al.* 2017, 54). The instability within the Michelsberg culture could also explain the construction of causewayed enclosures as defensive features, which could function as protective structures for goods and

cattle, as well as political, social and ritual gathering places (Tabaczyński 1972, 49–50; Andersen 1997, 307; Christensen 2004, 129; Klassen 2014, 239; Nielsen and Nielsen 2020, 164). The different size of such large-scale causewayed enclosures within the Michelsberg culture indicates that these structures, like the monumental burial structures, were symbols of wealth and power for each individual society and their elite (Bertemes 1991, 456). Planning of the causewayed enclosures was probably initiated by the elite within these societies, who competed with one another for land and territories, and at times of continuous conflict and stress, marginal communities in central Europe may have been encouraged to migrate towards the British Isles and the plains of northern Europe (Sheridan 2010, 89 and Chapter 18, this volume; Sørensen 2014, 267). It was these pioneering farmers in south Scandinavia, who had to clear the forest and learn how to implement productive agrarian practices on the moraine landscape, instead of the soil types which they originally settled on, such as loess (Sørensen

2014, 266). This pioneering learning behaviour, combined with a lack of more large-scale organisation, may be some of the reasons why monumental structures first appeared a few centuries after the introduction of farming in south Scandinavia (Nielsen and Sørensen 2018, 25).

The emergence of long barrows in northern Europe

It was during the centuries after 4000 BC when long barrows were once again constructed in Great Britain, central Germany, Poland and south Scandinavia. The barrows appeared in areas that were affected by the expansion of the Michelsberg and Chasséen cultures, but only during the time

of their expansion. A few hundred years after the beginning of the Funnel Beaker culture, long barrows of very similar shape, construction and chronology began to be constructed in Poland and Denmark. The Polish long barrows at Sarnowo in Kujawia are reminiscent in their shape and clustering to the Passy-type long barrows (Fig. 8.1B); the trapezoidal shape is similar to the longhouses belonging to the preceding Brześć Kujawski Group of the late Lengyel culture (Chmielewski 1952, 35; Midgley 2000, 255; Rzepecki 2011, 150; Chapters 16 and 17, this volume). In central Germany, in the *Mittelelbe-Saale Gebiet*, trapezoidal long barrows, as well as richly furnished inhumation graves, appeared together with causewayed enclosures during the second phase of the Funnel Beaker culture, Baalberge, 3800–3500 BC

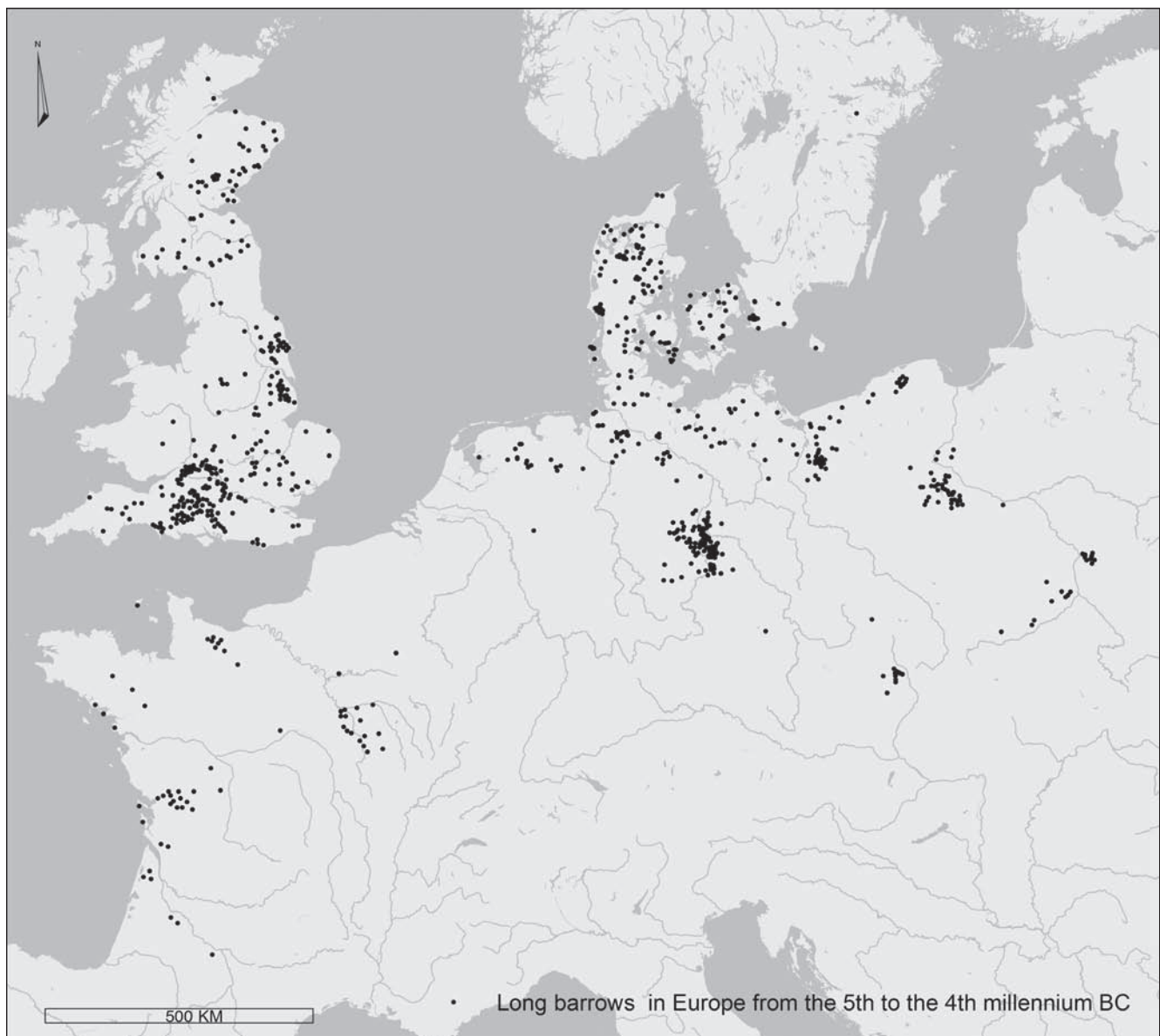


Fig. 8.2 The distribution of earthen long barrows (after Sørensen 2014, 217).

(Müller 2001; Schwarz 2013, 156). In the United Kingdom, the earliest long barrows are found in southeast England and may date to before 3900 BC, but elsewhere they began to be constructed c. 3800 BC (Bayliss *et al.* 2011, 833) (Fig. 8.2).

In south Scandinavia, the earliest long barrows are dated to c. 3800/3750 BC (Hansen 2010, 9; Beck 2013, 33; Eriksen and Andersen 2014, 113; Sørensen 2014, 213) (Fig. 8.1C). As mentioned above, the lack of prestigious grave goods in most of the earthen long barrows has been used to support the argument that there was a lack of social stratification and hierarchy in the early Funnel Beaker culture. However, other evidence must be taken into consideration, such as the human effort that was used to build these large-scale monuments. Long barrows in northern Europe are often over 50 m long and 10 m wide, and their construction must have involved a considerable workforce (Rudebeck 2002, 119; Sørensen 2014, 213). They were not constructed in a single event, but in successive construction phases lasting several hundreds of years, often stratigraphically beginning above the site of an old settlement of the first pioneering farmers, in some of the first areas of dense forest to be cleared (Sørensen 2014, 213). Some long barrows began with the building of a two-aisled house, and between the roof-bearing posts, a chamber of wooden planks or stones is constructed (Eriksen and Andersen 2014, 114). The burial chambers are located within a trapezoidal monument marked with a line of planks, with parts of the inner structure covered by a lower earthen mound. The mounds may subsequently be extended and surrounded by a stone boundary, when one or more megalithic tombs are added, thus indicating that earthen long barrows could be located below many of the long dolmens in south Scandinavia (Andersen 2009, 25; 2015, 117; Ebbesen 2011; Nielsen and Nielsen 2020, 189). The various phases of construction may have been organised by the society's elite, when more high-ranking individuals required a monumental burial to commemorate the deceased and the inheritance rights of the living. The chamber often contained one individual, but there are also examples of burials consisting of several individuals in the long barrows, such as Bygholm Nørremark and Skibshøj (Rønne 1979, 3; Kristensen 1991, 84; Jensen 2001, 355; Hansen 2010, 9). Most of the individuals in the long barrows were young and some were not accompanied by burial gifts (Hansen 2010, 9).

The lack or low status of the burial goods in the long barrows may raise the question whether these individuals actually belonged to the elite of the agrarian societies. It could also be argued that the long barrows were erected by agrarian societies competing with one another, in a communal effort that lacked the control of an elite (Wunderlich 2017, 154; 2019, 1133). Evidence of social stratification is, however, not necessarily expressed by prestigious goods, although some of the burials are apparently quite well furnished, as is reflected by the production of thin-butted flint axes at

the same time as the construction period of long barrows began, c. 3800 BC. Thin-butted flint axes can be as long as 50 cm, surpassing any of the jade axes in length, and were often deposited as hoards in wetland areas (Klassen 2004, 208). But thin-butted axes of 'normal' length were used as burial gifts in the long barrows (Nielsen 1977, 61; Kristensen 1991, 72; Ebbesen 1994, 47; Kristensen 2000, 44; Rudebeck 2002, 119; Rassmann 2011; Nielsen and Nielsen 2020, 113). Thin-butted axes may, depending upon their length, have had two different functions, with the ceremonial examples used in ritualised deposits and the working axes accompanying the dead into the afterlife as burial gifts. In addition, rare examples of copper objects, flint halberds and polygonal battle axes deposited as grave goods in some of the long barrows are evidence of the far-reaching networks that these individuals had, pointing towards the formation of an elite within these societies (Ebbesen 1998, 77; Klassen 2000, 245; 2004, 290; Sørensen 2014, 266; Price and Gebauer 2017, 147; Nielsen and Sørensen 2018, 25; Gebauer *et al.* 2020; Nielsen and Nielsen 2020, 184). Within the agrarian societies that constructed the long barrows, there was probably a variation in wealth and how more high-ranking individuals displayed their power, with burial goods or the size of the long barrow perhaps constituting ways of visualising social stratification.

Variation in wealth

There are also other ways in which variation in wealth can be observed within the Early Funnel Beaker in south Scandinavia. Recent studies of the two-aisled houses of the early Funnel Beaker culture show clear differences in size. In terms of dating, the houses are often attributed to the early Funnel Beaker culture, although many of them have been radiocarbon dated by organic remains found in the postholes (Sørensen 2014, 204; Nielsen 2019, 22). They can be placed in three groups according to size: large houses covering an area of 90–150 m², medium-sized houses of 50–80 m² and small houses covering 15–45 m² (Fig. 8.3). Some of the houses were constructed for ritual purposes, as houses for the dead, like those located below the long barrows at Bygholm Nørremark and Alstedgaard, and a long dolmen at Damsbo (Rønne 1979, 3; Lindblom 2004, 51; Andersen 2009, 25; Nielsen 2019, 22). The majority of the houses were, however, used for domestic purposes and their sizes could represent different mobility strategies. Smaller houses below 80 m² may represent individual farms moving around within a specific area as part of a short-term fallow strategy, whereas the larger houses covering an area of over 80 m² may be evidence of more permanent habitation and a long-term fallow strategy. These size differences between the two-aisled houses could be interpreted as reflecting variations within these agrarian societies and their ability to store and secure surpluses of different sizes, such as cereals and winter fodder,

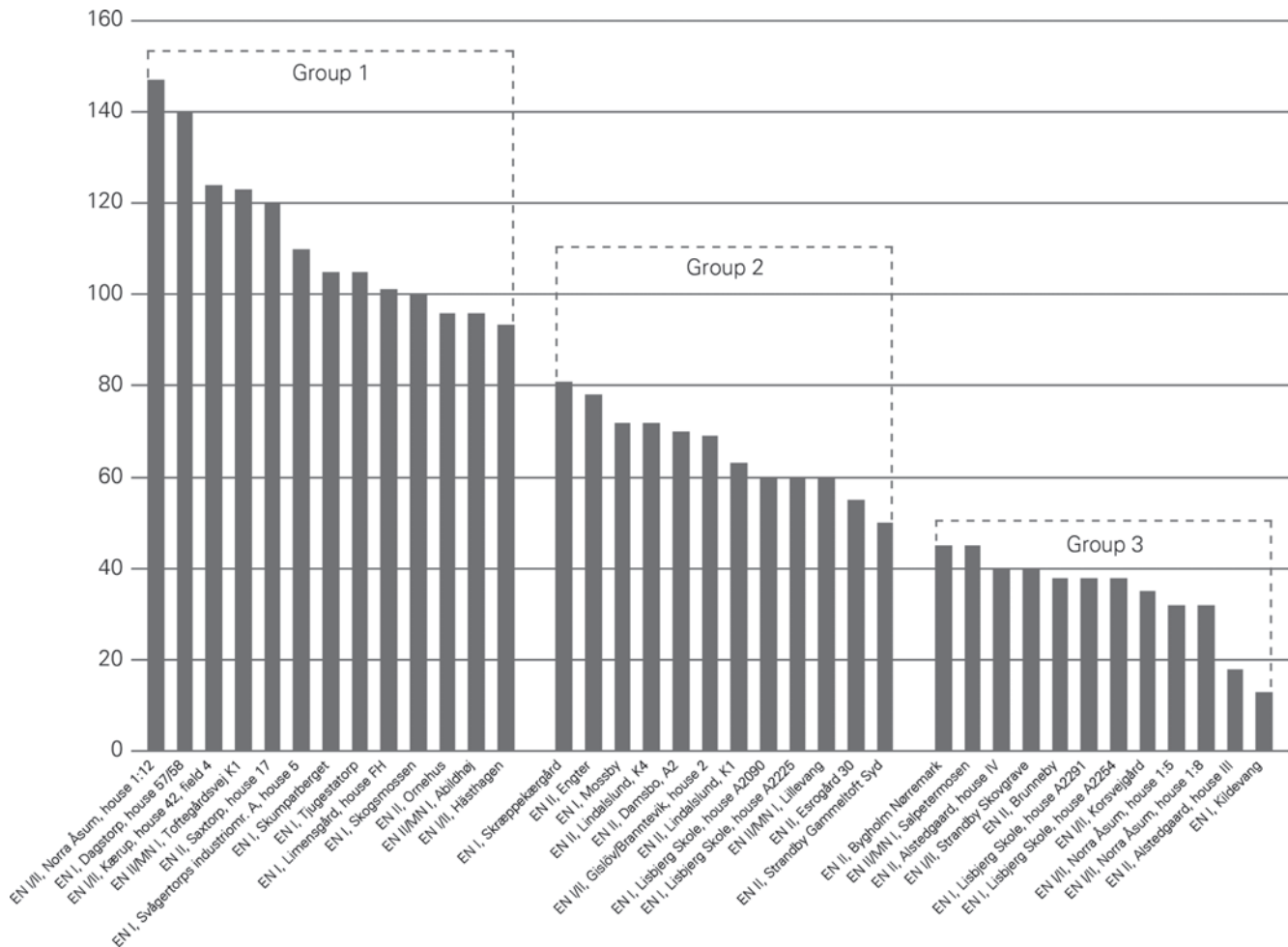


Fig. 8.3 The three groups according to sizes in m² of two-aisled houses dating to the early Funnel Beaker culture in South Scandinavia: large houses covering an area of 90–150 m², medium-sized houses of 50–80 m² and small houses covering 15–45 m² (after Sørensen 2014, 204; Nielsen 2019, 22; Sparrevojn et al. 2019).

and therefore indicating how successful these farmers were compared to each other. Moreover, several settlements dating to around 3800 cal BC, which are contemporary with the construction of long barrows, do demonstrate more permanent habitation at the same location, which has resulted in the accumulation of more substantial cultural layers. Such sites include Lisbjerg Skole in Jutland (Skousen 2008, 126), Smedegade on Bornholm (Nielsen and Nielsen 2020, 79) and Almhov in Scania (Rudebeck 2010, 89), whilst the site of Ullerødgård on Zealand contains cultural layers and several contemporary houses (Rosenberg 2006). Such sites can be categorised as central locations within a hierarchy of settlements and are therefore evidence of wealth variation within a stratified society.

Other variations in wealth can be observed from burial traditions, with some individuals buried in labour-intensive long barrows, whilst others were sacrificed and deposited in bogs, suggesting that there were major differences in

the amount of time that was spent on the way people were buried. The earliest evidence of human sacrifice is found in bogs, which are contemporary with the construction of long barrows and causewayed enclosures (Bennike *et al.* 1986, 199; Bennike and Ebbesen 1987, 85; Fischer *et al.* 2007, 2125; Sjögren *et al.* 2017, 295; Nielsen and Sørensen 2018, 24). The bodies dating to the Early and Middle Neolithic are distributed across areas with numerous megalithic tombs: Als, Langeland, Zealand, coastal areas of southern Sweden and Falbygden in Västergötland (Skaarup 1985; Sjögren 2003; Ebbesen 2011). Young people of an estimated age of 15–20 are frequently found as bog bodies and often display signs of violence; both sexes are represented almost equally and the age of the individuals varies from infants to adults (Bennike *et al.* 1986, 199). The most well-known examples are two men from Boelkilde on Als, southern Jutland (Bennike *et al.* 1986), two young women from Sigersdal Mose on Zealand (Bennike and Ebbesen 1987, 85) and a

skull with an axe fracture from Salpetermosen (Jørgensen and Hagedorn 2015, 118). Individuals from both Boelkilde and Sigersdal had a rope fixed around their neck, indicating that those being sacrificed were captives. Strontium analysis of a young female, ‘Hallonflickan’, from the Falbygden area of Västergötland, western Sweden, suggests that she might have come from southern Sweden (Sjögren *et al.* 2017). Movement of captured people over long distances may have been part of a ritualised practice but is also evidence of increasing levels of conflict in society. The bog bodies most likely reflect increasing violence amongst groups competing over territorial rights, which resulted in the taking of captives for use as labour. Ritual sacrifice of captured people is, however, also a sign of a social stratification, in which certain people control the lives of others.

The construction of causewayed enclosures

Almost at the same time as the construction of the long barrows and deposition of bog bodies occurred, these agrarian societies also began to construct causewayed enclosures from approximately 3700 BC onwards in south Scandinavia (Nielsen 2004, 19; Klassen 2014, 202; Torfing 2016, 109) (Fig. 8.4). The causewayed enclosures of the early Neolithic also display considerable differences in size, with these structures covering areas ranging from 2 ha to up to 20 ha (Nielsen 2004, 31; Klassen 2014, 45). Such large constructions must have required a sizeable workforce and social organisation similar to that found in the agrarian societies of central Europe. Calculations of the labour involved indicate that a group of 20 people would have required 50 days to

construct a long barrow, depending on its size (Bahn 2012, 64). At causewayed enclosures such as Sarup I, covering approximately 9.5 ha, 170 people would have been required for 90 days (Andersen 1988, 26). The larger causewayed enclosures would therefore have involved an even larger workforce of perhaps 150–400 people working for three months (Torfing 2019, 454), although the use of cattle for traction of stones or wood could have reduced the workforce considerably (Rosenstock *et al.* 2019, 1104). Causewayed enclosures are obviously more labour consuming and require greater social organisation than the construction of earthen long barrows. While the workforce to construct a long barrow may have been mobilised in a more egalitarian society, ethnographic studies indicate that the aim of monument building is primarily to mobilise as many people as possible rather than simply efficiency (Adams 2016, 97; Boulestin 2016, 58; Gallay 2016, 21; Jeunesse *et al.* 2016; Sellato 2016, 117). A series of social gatherings are usually associated with the construction of these monuments. The economic wealth and social status of the monument builders is demonstrated by their capability to mobilise a surplus of resources and command a large workforce, both for the construction itself but also for the feasts that were required. Monument construction and the associated feasting therefore create a political arena for powerful individuals to display their patronage of kin and non-kin, legitimising their power, and creating narratives and myths for the future (Holten 2000, 287; Jeunesse *et al.* 2016; Adams 2019, 1124). The archaeological data can be discussed in new ways when ethnographic perspectives are brought into the discussion, which can provide new perspectives on and insights into the

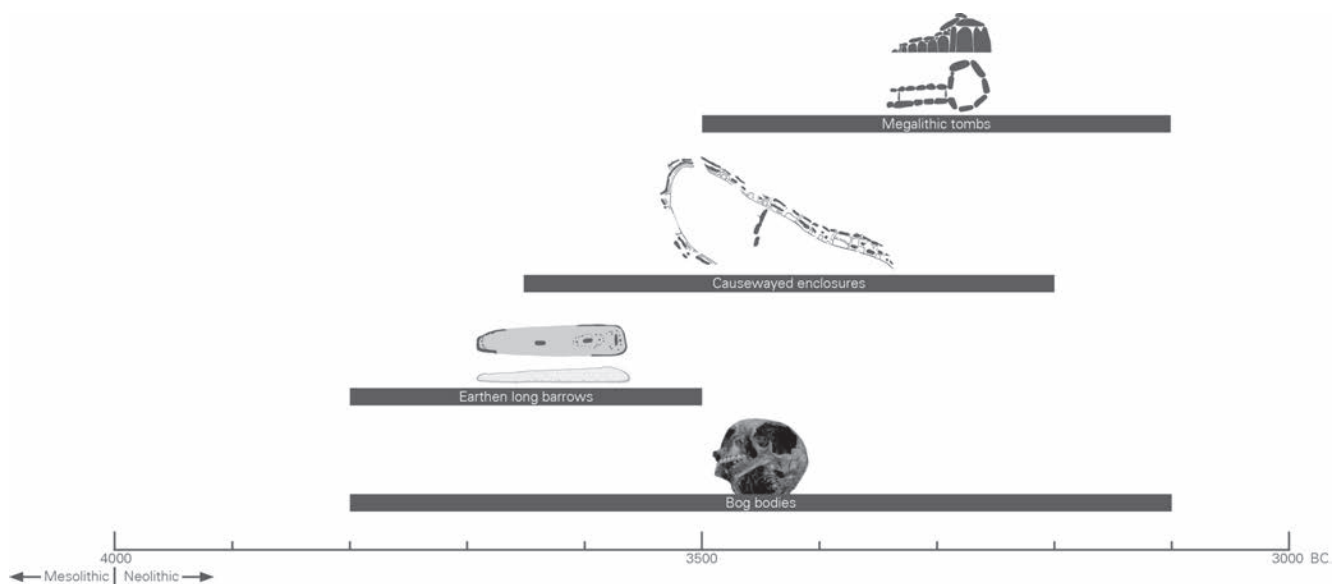


Fig. 8.4 The dates of the construction period of long barrows, causewayed enclosures and megalithic tombs and depositions of bog bodies in south Scandinavia (after Andersen 1997; Rønne 1979; Bennike and Ebbesen 1987; Nielsen and Sørensen 2018, 24).

ongoing discussion of the emergence of social stratification during the Neolithic (see Chapter 13).

The construction of monuments from the ethnographic records

The tradition of erecting megalithic monuments amongst peoples living in parts of Indonesia and Malaysia has been documented by ethno-archaeological research and inspired ideas about the organisation of monument building in the European Neolithic (Heine-Geldern 1928, 276; Jeunesse *et al.* 2016). Various traditions of building megalithic monuments are found in Sumba, Flores, Nias, and parts of Borneo and Celebes. The people living in these traditional societies do not share exactly the same social organisation. In eastern Sumba, for example, the society is highly stratified compared to that in western Sumba. But most of these societies can be categorised as middle range, possessing many characteristics of simple chiefdoms, in which rank can be both inherited and achieved (Bellwood 1997, 145; Adams 2016, 112; Gally 2016, 40) (Fig. 8.5). The construction of megalithic tombs in the Kelabit Highlands of the Malaysian part of Borneo is associated with specific rituals. The *irau* ritual was performed by young people in honour of their parents, either in their old age or after their deaths and the preparations could take up to two years. The ritual constantly occupied peoples' minds and culminated in an enormous feast, which lasted for days and involved hundreds of people. During this feast, young people of higher rank participated in the construction of a megalithic tomb. Normally, only members of the upper class could undertake the work and *had to* do so to maintain their position according to Kelabit standards. Only then could they command respect and obtain assistance in terms of labour, which preserved their status and had both practical and spiritual advantages (Harrison 1958, 697). In western Sumba, Indonesia, a traditional ranked society, constructing a megalithic tomb is always associated with a large social gathering lasting as long as it takes to transport the stones to the construction site and build the tomb, sometimes over a month. Several hundred participants are fed with meat from slaughtered livestock. When the work is completed, a lavish feast is often held, requiring an additional supply of meat.

Here, megalithic tombs reflect the power and renown of the persons they are built for, as well as the power and solidarity of the clan group (Adams 2016, 108). On the island of Nias, off the southwest coast of Sumatra, menhirs are erected to commemorate dead people, and benches, called *daro daro*, intended for the ghosts of the dead, are made from large stone slabs. The transportation of the stones (Fig. 8.6A) and erection of both kinds of megalithic monument form part of a feast for many people, during which a large number of pigs are slaughtered, and the meat is distributed amongst the participants according to certain rules (Loeb 1974, 138) (Fig. 8.6B). These ethnographic records clearly indicate that participation in feasts associated with the construction of monumental structures might be the key motivation for the involvement of both kin and non-kin.

Feasting as an indication of social stratification

Amongst traditional farming communities, livestock is not primarily kept to provide meat for daily subsistence (Hayden 2014, 125). The slaughtering of domestic animals is instead reserved for occasions when large groups of people are gathered, such as feasts on the scale mentioned above. Similar rules may have applied to the Neolithic farmers during the 5th and 4th millennia, when earthen long barrows and megalithic tombs were constructed in western and northern Europe. In south Scandinavia, feasting has been recognised as part of the ritual customs of the Funnel Beaker culture people. Most of the evidence comes from bog finds, including different types of animal bones, as well as pottery and valuable objects like flint axes, and sometimes even human sacrifices (Bennike and Ebbesen 1987, 85; Koch 1998, 132; Fischer 2002, 343). Communal celebrations also took place on dry land at special locations prior to the construction of causewayed enclosures. At Almhov, a large early Neolithic site in southwest Scania with several earthen long barrows, 42 kg of animal bones were distributed throughout a large number of pits. The majority of the bones were from cattle, whilst pig, sheep/goat and wild game were less common. Almhov is interpreted as an assembly site that was used for feasting from the beginning of the early Neolithic until the first part of the Middle Neolithic period (Welinder *et al.*

Societies	Organization	Social ranking	Megalithic societies in South-east Asia
Societies without any significant wealth	Hunter-gatherers	Age, gender, skills	-
Wealthy societies	Societies with ostentatious wealth	With Hierarchy	Vanuatu North
Wealthy societies	Societies with ostentatious wealth	With titles	Vanuatu South
Wealthy societies (semi-state)	Organized in lineages	Not hierarhized	Naga
Wealthy societies (semi-state)	Organized in lineages	Hierarhized with ranks	Nias, Batak
Wealthy societies (semi-state)	Organized in lineages	Hierarhized	Toradja, Easter island, Tahiti, Fidji
Wealthy societies (semi-state)	Primitive democracies	With age classes	Arussi, Konso
State formed societies	Royal societies	With titles	Betsileo, Merinas, Japan, Madagascar
State formed societies	Class devided societies	City states	-
State formed societies	Class devided societies	Feudal states	-
State formed societies	Class devided societies	Industrial state	-

Fig. 8.5 Megalithic monument-constructing societies and their social organisation in southeast Asia (after Gally 2016, 40).



Fig. 8.6 A. Large stone to be used for a *daro daro* in the village of Bawemataloeo, Nias. It apparently took three days for 525 people to transport the stone. Photo taken c. 1915 (after Tropenmuseum, Amsterdam). B. The arrival of the large stone at Bawemataloeo. In the background are the pigs that have been slaughtered for the feast (after Tropenmuseum, Amsterdam; Schröder 1917).

2009, 137; Rudebeck 2010, 94; Macheridis 2011). Studies of the human diet during the early Neolithic indicate that terrestrial, plant-based food was dominant, suggesting that meat was only consumed on specific occasions, such as the construction of monuments, as observed at Almhov and in the ethnographical examples (Harrisson 1958, 694; Loeb 1974; Fischer *et al.* 2007, 2125; Rudebeck 2010, 94; Adams 2016, 97). Feasting also provided an opportunity to acquire followers with displays of generosity towards potential supporters, which is a starting mechanism for leadership, according to Sahlins (1974, 208).

Conclusion

The first Funnel Beaker farmers competed with one another to accumulate surpluses and obtain the support of enough people to achieve a dominant position, in order to initiate the formation of archaic chiefdoms. These capable individuals maintained their claim to power by marking their ancestral history in the landscape. Initially, between 4000 to 3800 cal BC, the forest clearances undertaken by the first generations of pioneering farmers functioned as indicators of territory. Control of the land was necessitated by an agrarian economy that was based upon delayed returns, with ancestral rights to the territory founded upon the labour invested in clearing the land, creating fields and building houses. From 3800 BC onwards, large-scale monumental constructions, such as long barrows and causewayed enclosures, created a common ancestral connection and chronological aspect in the landscape, which was also accepted by neighbouring groups. The large construction projects, with their associated feasts and ritual sacrifices, required a level of leadership that could mobilise a workforce extending beyond kinship,

and may have involved hundreds of people. The elite individuals' ability to accumulate substantial surpluses is also demonstrated by the acquisition of prestigious objects through supra-regional exchange networks. A degree of social stratification is certainly revealed within these societies, that became more hierarchical and socially divided, and this may have been associated with the formation of 'archaic chiefdoms'. Ethnographic studies show that modern societies which construct megalithic monuments are likewise characterised by a degree of social stratification. Construction of the monuments is often initiated by members of the elite, who build the structures in honour of a parent or former chief, but who, at the same time, gain power and increase their own support amongst both kin and non-kin. The social organisation of these societies that construct megalithic monuments is therefore an important source of inspiration when interpreting social stratification within European Neolithic monumental cultures.

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Do hundreds of megalithic monuments signify a full Neolithic way of life? Investigating the establishment of Neolithic societies on Rügen Island, Germany

Anja Behrens

Abstract

The south-western Baltic coast is known for its long Mesolithic traditions that continued into the Neolithic period. In this region, the full transition to the Neolithic way of life began in the middle early Neolithic, *c.* 3600 cal BC. On the island of Rügen this change is attested to by the presence of hundreds of megalithic graves. Recent excavations and research revealed that around that time, large groups of megalithic monuments were constructed thus forming a new type of mortuary landscape. Most of the monuments remained in use until the end of the Funnel Beaker Period around 2800 cal BC. However, early Neolithic radiocarbon dates on cereals and settlements evidence that sites were occupied throughout the Mesolithic into the early Neolithic suggest that there was a far earlier arrival of the Neolithic way of life than megalithic dates imply. In this article the establishment of Neolithic societies on Rügen will be discussed by presenting the current archaeological record of the period from the late Mesolithic to middle Neolithic, and through considering new data and research results which are derived from the author's ongoing PhD thesis project.

Introduction

The first Neolithic societies on the island of Rügen (located in the north-eastern most part of Germany), are commonly associated with the Funnel Beaker culture (FBC – 4100–2800 cal BC; Midgley 1992). The once massive number of megalithic graves are mostly destroyed but they are still traceable in the modern landscape. There has been enduring scientific interest in these burial structures since the 19th century which is still ongoing as seen in the recent examination of three graves within the framework of the priority programme

1400 funded by the German Research Foundation (DFG) (Behrens and Reichler 2012; Behrens 2014). So far over 350 monuments are known, mainly located in the south and the east of the island (Fig. 9.1). In contrast to the nearby regions of Western Mecklenburg and Schleswig-Holstein, there is no recognisable typological development of megalithic architecture through time. Aside from a few Urdolmen and extended dolmens, great dolmens dominate the archaeological record (approx. 80%). The construction of the graves can be dated to approx. 3600/3550 cal BC based on the results of the priority programme (Fig. 9.2, Table 9.1). However, the excavation of a long barrow in the Pastitz/Forst (central Rügen) indicates an even earlier start to the building activities (Behrens 2016) as its mound could be dated to approx. 3675 cal BC (Fig. 9.2, Poz-92793, 1st sigma: 3712–3627 cal BC (79.3% probability)).

This result raises some questions: What kind of society did the people building these monuments belong to? Were they farmers arriving from regions further west or should a longer, earlier process of Neolithisation be considered, as recently assumed by Terberger *et al.* (2018)? In order to investigate this, the earliest evidence of Neolithic life on Rügen, regarding material culture, food strategies as well as settlement and burial habits, will be reviewed below and discussed with reference to the development of the Neolithic society of the FBC.

The end of the 5th millennium BC – the introduction of new subsistence strategies

In the course of modern infrastructural building activities and research projects, several Final Mesolithic, and Early and Middle Neolithic sites have been detected and investigated in

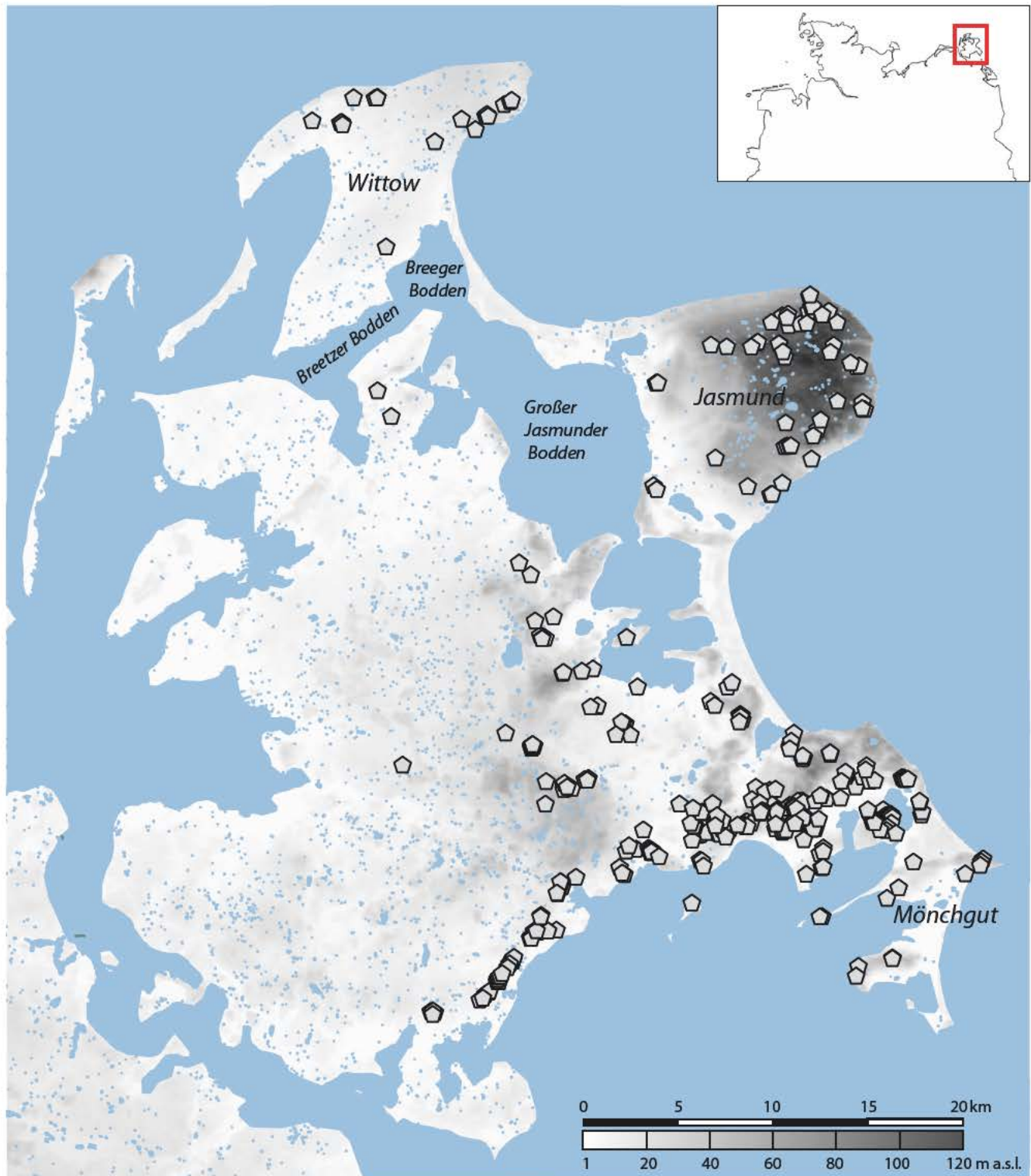


Fig. 9.1 Distribution of known Neolithic monument graves on Rügen.

the past decades (e.g. SINCOS – Harff and Lüth 2007; 2011). In addition to the excavations, an interdisciplinary approach to gathering evidence that included archaeobotany, ^{14}C analysis, geophysics etc. was also given priority. As a result,

prehistoric settlement developments were identified spanning from the Final Mesolithic up until the early Neolithic, for instance at the site of Baabe, which provided new insights into the change of subsistence strategies.

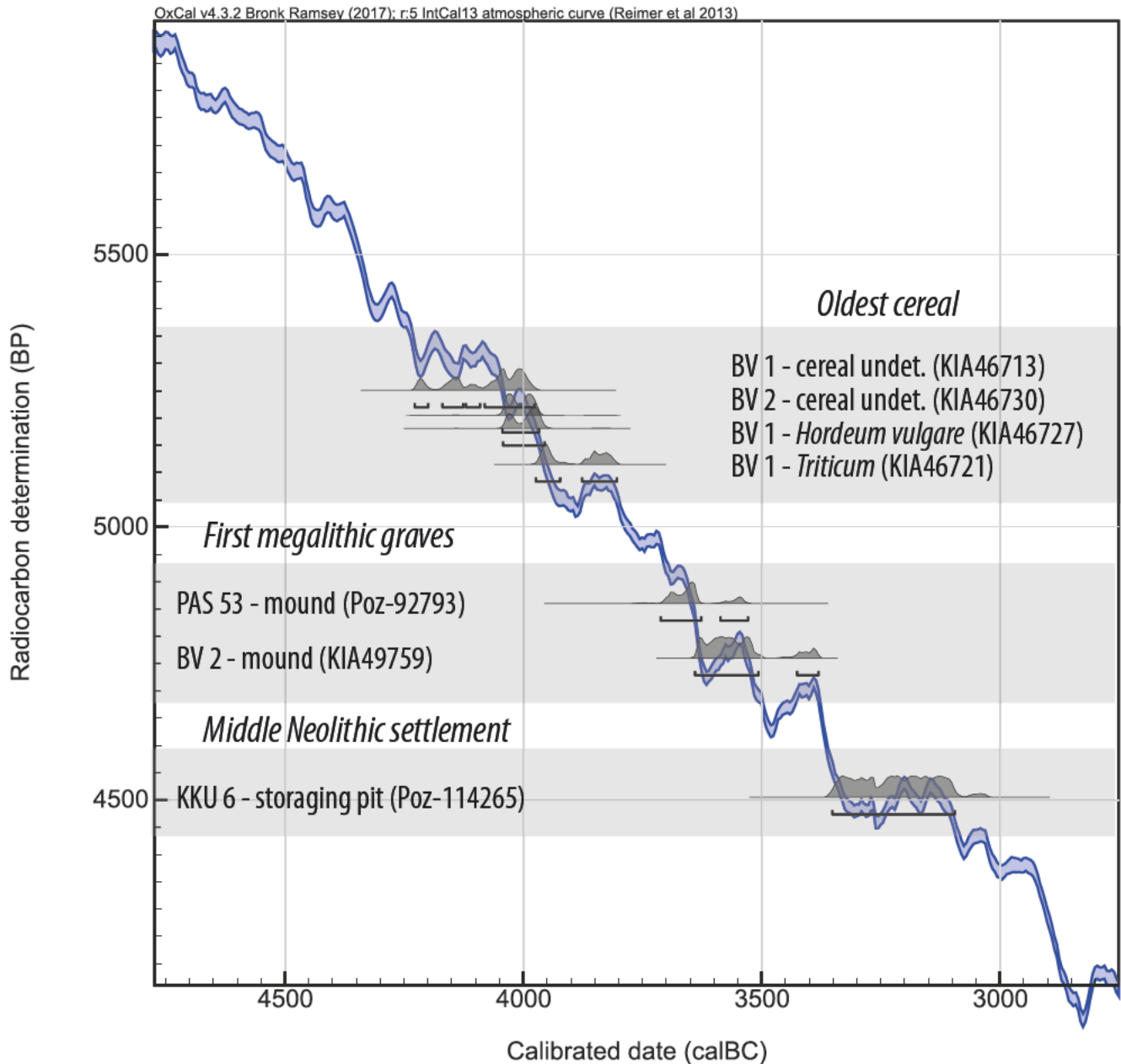


Fig. 9.2 Calibrated ^{14}C dates of cereal grains from the megalithic sites of Burtevit 1 and 2 (BV 1/2). Further calibrated ^{14}C dates from megalithic grave mounds of Pastitz Forst 53 (PAS 53) and BV 1 as well as the settlement site of Klein Kubbekow 6 (KKU 6; see list 1). The analyses of KIA46721, 46730 and KIA 49759 were conducted by the Leibniz Laboratory in Kiel in summer 2012 and 2013, the analysis of KIA 46713 and KIA46727 by the Oxford Radiocarbon Accelerator Unit in Oct. 2018.

Cereals and more

Rügen pollen data and archaeobotanical macro remains dating to the early Neolithic are, in general, quite sparse. The recently re-examined pollen profile of Herthamoor, Jasmund, confirmed the assumption of an opening of the landscape through tree clearance during this period, but also suggested that this process had started already in the Final Mesolithic period (Endtmann 2004, 39). This proposed early start is supported by the pollen-profile sampled from the Late-Final Mesolithic settlement site of Lietzow-Buddelin (Saiser 1)

where the profile exhibits the first appearance of *plantago lanceolata* at 4128 ± 70 cal BC that is likely indicating the beginning of a pastoral economy (Endtmann 2005, 202; Terberger and Seiler 2005, 178).

Recent finds of charred grains on megalithic monuments have also evidenced early crop growing activities. Two great dolmens, located in the area of Burtevit 1 in the southeast of Rügen, were excavated in 2010/2011 (Behrens and Reichler 2012) and revealed the oldest known domestic cereals for the region of northeast Germany, being dated to around

Table 9.1 List of ^{14}C dates mentioned in this article (see Fig. 9.2).

Site/nr.	Lab-nr.	BP	\pm
Burtevitz 1	KIA46713	5251	31
Burtevitz 1	KIA46721	5115	25
Burtevitz 1	KIA46727	5181	31
Burtevitz 2	KIA46730	5205	25
Burtevitz 1	KIA49759	4795	30
Klein Kubbelkow 6	Poz-114265	4505	35
Pastitz/Forst 53	Poz-92793	4860	40

4000 cal BC (Fig. 9.2, Table 9.1). The grains of *hordeum vulgare* and *Triticum* sp. were found in the palaeosol and in the soil layers of the burial mounds. The plant types correspond with those of the first crops known to occur in the early Neolithic of northern Germany (Kirleß *et al.* 2012). Based on these dates an introduction of agriculture already at approx. 4000 cal BC can be assumed. Pollen remains, which were embedded in the buried mound layers, and in particular the traces of *rumex* and *corylus*, point to the preparation of the landscape for agricultural activities.

In summary, anthropogenic impacts on the landscape are perceptible in the archaeological record which may have been caused by economic changes starting at the end of the Final Mesolithic period. This can further be evidenced by the results from the settlement site of Baabe 2.

The settlement of Baabe 2

The lake shore site of Baabe is located in the southeast of Rügen and was investigated by the Heritage Department of Mecklenburg-Western Pomerania in 2005. The settlement comprised up to 20 stratigraphic layers, measuring altogether 2 m in thickness, and which, in terms of chronology, covered the time span of 4300 to 3800 cal BC (Hirsch *et al.* 2008). During the Mesolithic period the settlement was situated in a natural bay with open access to the Baltic Sea. Around 4000 cal BC, the bay was progressively closed due to natural silting processes, which resulted in the formation of Lake Sellin (Selliner See). The site is commonly known for its excellent wood and bone preservation and this has allowed for high precision radiocarbon dating of different cultural layers.

A clear change of subsistence strategies is perceptible at the transition from the Mesolithic to the Neolithic. In the Mesolithic layers, bones of fish and wild animals dominate. Although the investigation of archaeobotanical macro remains was limited, the few analysed samples give an idea of the significant role of gathered plants (*corylus avellana*, *rubus idaeus*) in this period (Hirsch *et al.* 2008, 44–45). Around 4000 cal BC fishing appears to continue to have been an important subsistence practice as several wooden weir fragments and eel spears were recovered (Hirsch *et al.*

2008, 38–39). However, at the same time, the proportion of wild animal species among the faunal remains had decreased considerably, and was now accompanied by bones of domestic pig and sheep/goat (6%) (Hartz *et al.* 2011, 149). The introduction of animal husbandry seems to have come with the beginning of crop production in the region, as querns and hand stones, and small amounts of cereal grains (*hordeum vulgare* and *triticum dicoccon*) were excavated, in addition to an increase in pottery and polished thin-butted flint axes (Hirsch *et al.* 2008, 45).

To summarise, the archaeological, archaeozoological and archaeobotanical data from Baabe clearly indicate a significant change of subsistence strategies at the beginning of the northern German early Neolithic period. Similar developments have been recorded at the site of Saiser 1, where *e.g.* three animal bones of sheep/goat and cow within the early Neolithic layer were found (Hegge 2010, 119; Kotula 2011).

Settlement patterns from the Final Mesolithic to the Middle Neolithic periods

At the settlement site of Baabe, continuous occupation has been evidenced from the Final Mesolithic to the early Neolithic period, as well as significant cultural changes, by people affiliated with the Ertebølle culture who progressively became part of the FBC. The settlement patterns from the Final Mesolithic to the early Neolithic period shall be examined in order to evaluate these changes as a process of either adaptation or migration, as was argued for example, for the sites in Southern Scandinavia by Sørensen and Karg (2014). Further, to consider the impact of the new food production strategies, Middle Neolithic sites were also included in these analyses.

Method

Initially, all Final Mesolithic and Early/Middle Neolithic sites registered by the State Authority for Culture and Preservation of Monuments of Mecklenburg and Western Pomerania were compiled in a database. Due to frequent surface collection prospections, the number of Mesolithic and Neolithic sites is considerable ($n > 2000$). Only a few, however, are associated with excavated features. Within the parameters of this article, it was not possible to examine every site collection in detail and to verify their cultural and/or chronological attribution, or yet to distinguish long and short-term settlement sites from specialised hunting camps or other production sites. Nonetheless, as already mentioned, a number of excavations on Mesolithic and Neolithic sites were carried out over recent decades, which have provided both new insights into the settlement habits of late Ertebølle and FBC societies and a number of radiocarbon dates (Jöns *et al.* 2007, 172). Since the question of the temporal development was essential, the following specifications were applied to the data as shown in Table 9.2.

By applying these selection criteria to the collected data, the number of Final Mesolithic and Neolithic settlements was reduced to 25 sites (Table 9.3). While Final Mesolithic and early Neolithic sites mostly have well stratified available data, for the Middle Neolithic sites no detailed classification is possible so far, as radiocarbon dates are nearly completely absent. In four cases the settlement classification remains uncertain, since only single features with very limited information with regard to the sites' chronological attribution

were documented (Fig. 9.3). In view of the broad selection criteria for the data, this analysis should be considered a preliminary assessment.

Settlement sites of the Final Mesolithic and early Neolithic (4500–3800 cal BC)

The distribution of the known settlement sites on Rügen confirms the observation that Ertebølle people commonly preferred to settle at sheltered coast locations (Hart 2010, 134)

Table 9.2 Selection criteria on analysed settlement sites on Rügen within the time span of Late Mesolithic until Middle Neolithic.

<i>Final Mesolithic sites</i>	<i>Neolithic sites</i>
Secure context (excavated features, layers) and/or	Secure context (excavated features, layers) and/or
Classified sites (in literature, Heritage Department data base – in combination with classified flint tools) and/or	Significant pottery at the Neolithic sites and/or
¹⁴ C-dates	¹⁴ C-dates

Table 9.3 Analysed settlement sites on Rügen within the time span of Late Mesolithic until Middle Neolithic.

<i>ID</i>	<i>Site</i>	<i>Site number</i>	<i>Literature</i>
1	Altefähre	14	Kuhlmann 2005, 607; Schmidt and Saalow 2009, 52
2	Baabe	2	Hirsch <i>et al.</i> 2007
3	Breetzer Ort	(Ostsee VI, Bergen 24)	Hartz <i>et al.</i> 2011, 140
4	Drammendorf	6	Saalow 2008; Schmidt and Saalow 2009, 52
5	Garftitz	71	Jantzen 2004, 503
6	Gelmer Ort	(Ostsee VI, Wittow 97)	Lübke <i>et al.</i> 2000, 440
7	Göhren	19	Jantzen 2004, 504
8	Gustrowerhöfen	2	Duchniewski 2004; Schmidt and Saalow 2009, 52
9	Insel Pulitz	2	Lübke <i>et al.</i> 2000, 440
10	Kamminer Ort	(Ostsee IV, Wittow 100)	Lübke 2009, 326
11	Kasselwitz	9	Kuhlmann 2005, 615; Schmidt and Saalow 2009, 52
12	Klein Kubbelkow	6	Kuhlmann and Wietrzichowski 2017, 169–170
13	Kleiner Ort	(Ostsee VI, Wittow 103)	Lübke <i>et al.</i> 2000, 440
14	Kloster	8	Lübke <i>et al.</i> 2000, 440
15	Lancken/Sassnitz	242	Ruchhöft 2008, 263; Kuhlmann 2009, 335
16	Liddow	7	Lübke <i>et al.</i> 2000, 440
17	Lietzow	1	Lübke <i>et al.</i> 2000, 440
18	Ralswiek	8	Kotula 2011, 289
19	Saiser	1	Kotula 2011, 289
20	Sellin	2	Lampe 1999, 558
21	Sellin	35	Lampe 1999, 558
22	Spycker	5	Lübke <i>et al.</i> 2000, 440
23	Streu b. Schaprade	8	Jantzen 2004, 518
24	Vitt/Arkona	11	Lampe and Stange 1983, 289–290
25	Vorwerk/Sagard	10	Archive of State Authority for Culture and Preservation of Monuments of Mecklenburg and Western Pomerania, Schwerin

(Fig. 9.4). Several sites are located to the north, in the area of the Breetzer, Breeger and Großer Jasmunder Bodden, and another cluster of settlements lie in the area of the Kleiner Jasmunder Bodden, which had no access to the sea during the Late Mesolithic period (Terberger and Seilter 2005, 178). A third settlement cluster with the above-mentioned sites of Baabe and Sellin is located at a sheltered bay in the south and one further site is known from the isle of Hiddensee. At five of these sites there is evidence of settlement continuity until the early Neolithic (Baabe, Ralswiek, Saiser, Sellin 2 and 35), while activities ceased at the end of the Mesolithic period at the other sites. It is notable that the Mesolithic sites in the northern area of Rügen seem to have been abandoned, but this phenomenon is likely to be explained by the Littorina Transgression. According to the results of the SINCOS project, the water level was approx. 2.2 m below its present state in 5000 cal BC and it rose by a few decimetres within the next centuries (Lübke and Terberger 2005, 245). Although such a water rise could be perceived as moderate, it was sufficient to flood sites that were situated on low elevations. This was the unfortunate case for Breetzer Ort during the Final Mesolithic. Today, most of the Final Mesolithic sites within the northern Bodden area are submerged (Breetzer Ort, Gelmer Ort, Kamminer Ort, Kleiner Ort), now lying between 0.8 m and 2.2 m below the present sea level (Hartz *et al.* 2014, 161). The site of Baabe was also affected by this natural process, as the inhabitants had to react to a 1 m sea level rise between

4300–3800 (Hartz *et al.* 2014, 161) and did so by staying at Baabe but moving to higher shore levels.

With regard to the sites with settlement continuity through to the Neolithic, it is notable that they are primarily located on lake shores and only presently known in the southern and eastern regions of the island. The sites of Baabe, Ralswiek and Saiser unveiled preserved stratigraphies, while in the case of Sellin 2 and 35, only finds of lithic artefacts (*e.g.* core axes) would support a Mesolithic occupation of the site. Several FBC features were further brought to light at Sellin 35 in 1998, revealing that the site had potentially been occupied until the Middle Neolithic (Lampe 1999).

Further at the site of Burtevitz as discussed above, proto-Neolithic activities in this region can be inferred from the excavated cereal grains, dated to long before the megalithic burial structures were erected.

Settlement sites of the Middle Neolithic (3300–2800 cal BC)

The distribution of known Middle Neolithic sites suggests a clear change in the settlement pattern. While the southeast of Rügen seems to have been a region of persistent activity for the Funnel Beaker people since the beginning of the Neolithic, a shift of settlements becomes apparent to the central and western areas of the island (Fig. 9.4). Also, in comparison to the eastern sites, those in the west and in the centre are neither located at the sea, nor at lake shores. This, however,

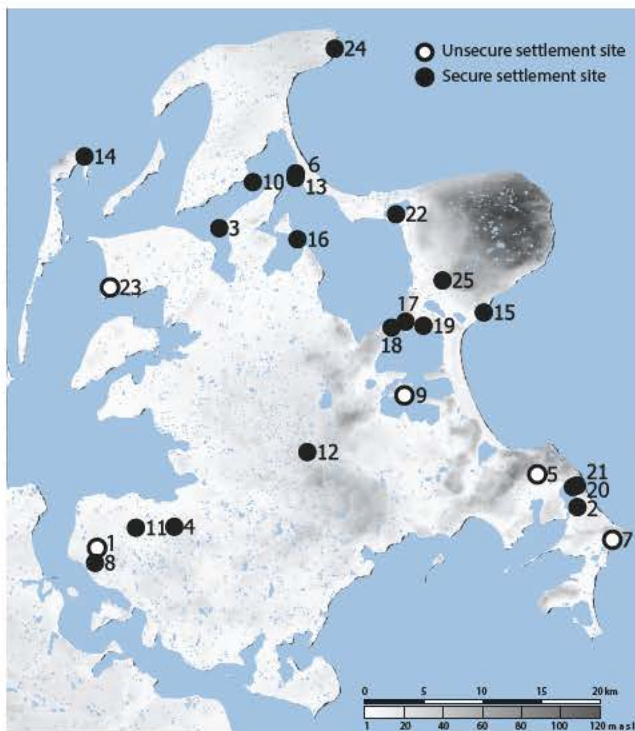


Fig. 9.3 Settlement sites from Late Mesolithic till Middle Neolithic. Numbers refer to Table 9.3.

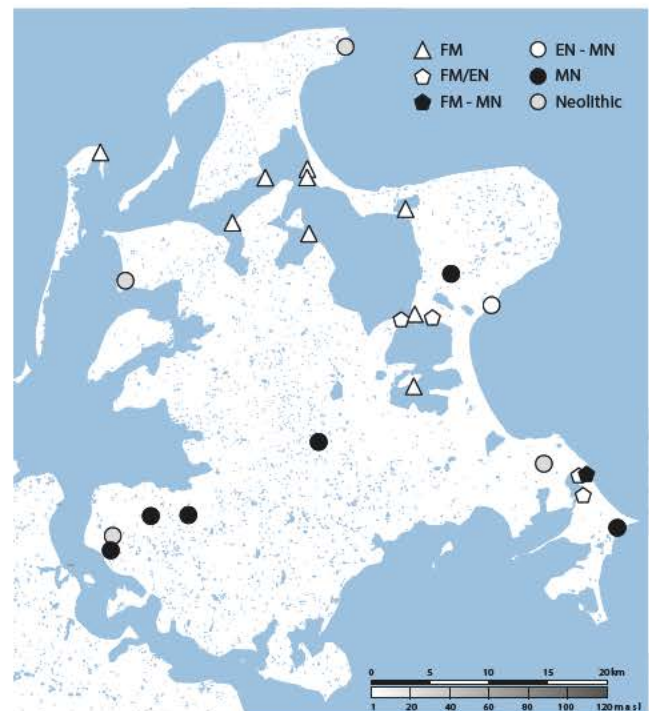


Fig. 9.4 Classification of settlement.



Fig. 9.5 Decorated Funnel Beaker from a settlement pit at Klein Kubbelkow 6 (Kuhlmann and Wietzichowski 2017, 169, fig. 21-1).

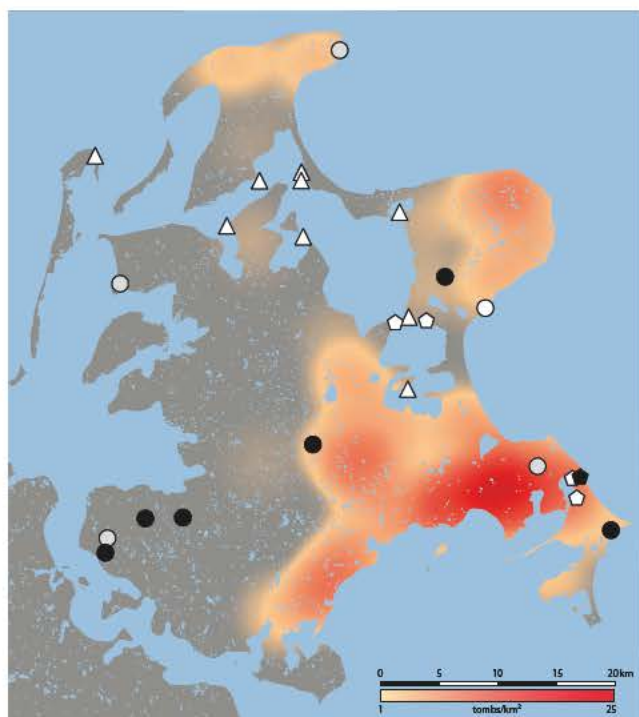


Fig. 9.6 Classified settlement sites combined with a heat map showing the number of megalithic monuments.

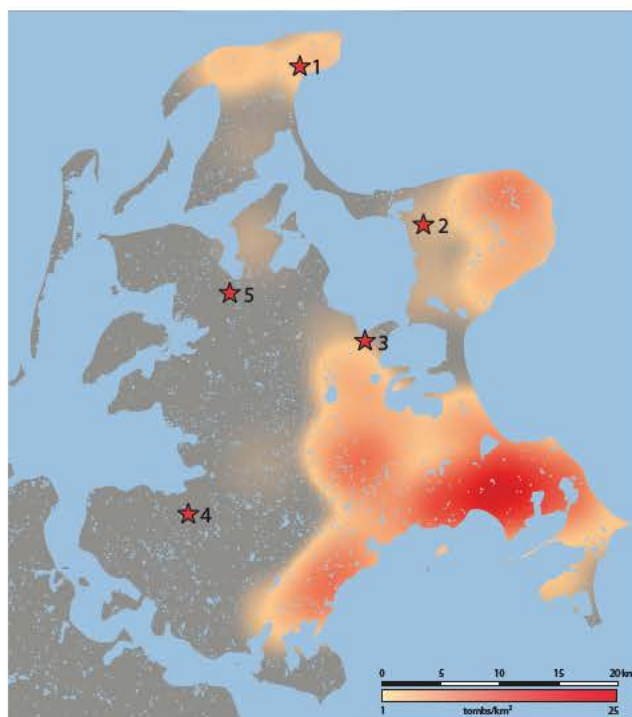


Fig. 9.7 Distribution of Neolithic flat graves (stars) and megalithic monuments (heat map).

comes with an unfortunate lack of archaeological material as due to erosion processes, the sandy soil at these sites does not favour the preservation of cultural layers. Nonetheless, features like pits, postholes and fireplaces were revealed (Drammendorf 6, Gustrowerhöfen 2, Kasselwitz 9; Schmidt and Saalow 2009, 52) allowing for at least a few, tentative conclusions regarding settlement structures and duration. Currently the best documented site is Klein Kubbelkow 6. Next to a foraging pit with surrounding postholes, which likely represented a wooden shelter construction, two more pits and a possible well were identifiable (Kuhlmann 2017). A funnel beaker, which was ornamented with chevron bands covering most of the vessel body (Fig. 9.5), and found in one of the pits, is similar to funerary pottery from the megalithic tombs of Nadelitz and Lancken-Granitz, as well as with the Gingster Moor vessels. L. Lorenz has assigned this decoration type to the Middle Neolithic II/III period (Lorenz 2018, 140). However, food residue from a pottery sherd from the foraging pit was recently dated to approx. 3200 cal BC (Poz-114265; Fig. 9.2; Table 9.1) and imply activity already in the Middle Neolithic I period. Finally, the northernmost known Middle Neolithic sites are Lancken/Sassnitz 242, on Jasmund, where a pit with pottery of the FBC was investigated in 2007 (Ruchhöft 2008; Kuhlmann 2009), and at Vorwerk/Sagard 10 where another excavated pit contained Funnel Beaker rim sherds and a thick butted axe.

Considering the shift from coastal to inland sites in this time period, it seems plausible that the people living at a distance from the coast and lakes were likely no longer as dependent on aquatic resources for their food supply as they had been at the time of the initial early Neolithic period. Thus, full farming communities can be assumed, which can be underlined by several excavated storage pits at the sites of Drammendorf 6 and Klein Kubbelkow 6.

Great dolmens and flat graves (3600–2800 cal BC)

As the reliability of this picture of settlement patterns is rather limited due to the patchy archaeological record, a look at the burial landscape of the FBC is helpful. Cemeteries are commonly connected to settlement areas (e.g. Brozio 2016), and even where they cannot be confirmed, burial structures could still serve as indicators for nearby areas of the living. On the island of Rügen, the construction of megalithic tombs began around 3600 cal BC and most of the graves were in use until the end of FBC (Behrens 2014). Hence, the distribution of these graves may suggest settlement areas for this specific time period.

The density plot of megalithic graves shows that there are clear concentrations of structures in the southern and eastern regions of Rügen (Fig. 9.6). A high number of megalithic graves seem to have been built particularly along the southern coastline. Larger clusters are also known from within and around the Pastitz Forst, which is located

close to the site of Klein Kubbelkow. On the Mönchgut-peninsula in southeast Rügen, as well as in the areas of Prora and Buschvitz (central east of Rügen), megalithic grave structures are less frequent, but still prominent. Thus, based on the geographical distribution of sites, it is possible that there was an intensive settlement activity area reaching from the centre to the south and east of Rügen, though only three well-documented settlement sites are currently known in this region. Further ‘hot spots’ were also detected in the northern region of Rügen, i.e. on the Jasmund and Wittow peninsulas. Thus, the distribution of megalithic tombs could also indicate a settled Neolithic community in these areas.

Moreover, while the east of Rügen can be considered an intensively used settlement and burial region during the later Funnel Beaker period, the west seemingly constitutes a *terra incognita*. Apart from the few known settlement sites, the lack of burials connected to this group of people is quite puzzling. Possibly the absence of megalithic graves could be explained with geological conditions, as in the east of the island pushed moraines with large erratics are present, while the west is covered with fluvial and eroded sand. Hence, building material was much more difficult to access in western Rügen, so that other burial practices seem to have been predominant here – flat graves. At present seven FBC flat graves are known so far, of which two must be considered with caution due to disturbances (Nobbin and Ralswiek; Kossian 2005, 277; Fig. 9.7, Table 9.4)

Despite the fact that the number of currently known flat graves is very low, an entire island-wide distribution and variations in the construction of the graves is visible. For example, graves I and II from Venz featured a compact clay floor (Kossian 2005, 279), while the grave floor of the structure in Polchow consisted of a layer of red sandstone slabs. The grave of Venz III bore a stone covering. Unfortunately, for the Rothenkirchen burial no further description is available as the grave was mostly destroyed.

The chronological-cultural affiliation of these graves is mainly based on the typology of ceramic vessels. The pottery found in Venz corresponds to those of the Early Neolithic II/Middle Neolithic Ia phase (Kossian 2005, 280), as well as the remains of the funnel beaker with vertical groove ornamentation on the vessel body found at Rothenkirchen (Hirsch 2007, 189). A lone small undecorated bowl from Polchow allows no further classification. However, based on these insights in typochronology, a parallel use of different burial types on Rügen (at least at the transition from Early to Middle Neolithic) seems likely.

In conclusion, although settlement patterns in western Rügen are less intensively reflected by the available data (perhaps due to preservation issues and a lack of research), a moderate settlement activity can nonetheless be assumed due to flat graves from this region.

Table 9.4 List of known Neolithic flat graves on Rügen.

ID	Site	Site number	Literature
1	Nobbin	7001	Kossian 2005, 277
2	Polchow	10	Archive State Authority for Culture and Preservation of Monuments of Mecklenburg and Western Pomerania, Schwerin
3	Ralswiek	38	Kossian 2005, 278
4	Rothenkirchen	11	Hirsch 2007, 189
5	Venz I-III	7006	Kossian 2005, 279

The gaps in the record – the change of subsistence strategies

The presented archaeological record of the FBC on Rügen reveals a gap for the period between 3800 cal BC and 3600 cal BC. Megalithic monuments were first built 200 years after the end of the occupation at Baabe. As the Funnel Beaker period lasted for 1200 years this small gap might seem irrelevant, but it is crucial to the understanding of the Neolithisation processes. So, while an early introduction of Neolithic lifestyle is clearly traceable, further development is very difficult to reconstruct. Recent isotopic analyses on human individuals from megalithic tombs in Prora/Tribberatzer Berge, however, revealed ongoing diverse food strategies, ‘a mosaic of subsistence strategies’, for the time around 3600/3400 cal BC (Terberger *et al.* 2018, 82). This correlates with the general distribution of stable isotope values for the northern Early and Middle Neolithic, which the authors suggest corresponds with the varied landscape of the North European Plain where different types of resources were exploited by FBC communities. A full farming economy can first be recognised in the Middle Neolithic, referring to settlement sites in central and western Rügen, revealing another critical gap in the record (3400–3200 cal BC).

When and how did the Neolithic become Neolithic? Summary and discussion

To conclude, the first traces of Neolithic lifestyle on Rügen were introduced very early in the Neolithic as indicated by the first domestic cereal grains (*hordeum* and *triticum*) that date to 4000/3900 cal BC; tools used for the processing of cereals are present in the early Neolithic layer (layer C/D; 4000–3800 cal BC) of the settlement site of Baabe, the first domestic livestock to be represented in small quantities (*i.e.* layer C of Baabe; upper layer of Saiser 1; 4100–3800 cal BC); an increasing amount of pottery finds throughout time and an increase of the intensity of landscape clearing starting from approx. 4200/4100 cal BC.

In view of the evidence suggesting a continuous use of several Mesolithic settlement sites until the early Neolithic, it seems likely that people preferred to remain in their

familiar environment during the transition period from the 5th to the 4th millennium BC. Yet, the first farming activities seem to have taken place in new areas, such as that of Burtevitze. The rapid increase of pottery finds within the early Neolithic settlement layers of Baabe and Saiser, as well as early cereal dates from Burtevitze implies a quick integration of the ‘Neolithic lifestyle’. With regard to the low numbers of domestic animal bones in the early Neolithic layers of the sites of Saiser and Baabe, as well as the small number of cereal processing tools, the process appears to have been rather slow. This would point towards a gradual adaptation of the new lifestyle, as suggested by Terberger *et al.* (2018), rather than to ‘a large-scale migration of Neolithic farmers from Southern Europe’ emphasised by Sørensen and Karg (2014, 111).

The next perceptible traces of the FBC on Rügen appear along with the construction of megalithic tombs around 3600 cal BC. The analyses show that the presence of numerous megalithic graves on Rügen suggests intensive activities of the FBC primarily in the eastern part of the island until the end of the Middle Neolithic period. Scattered settlement features and flat graves in the western part of Rügen, also indicate FBC communities in this area. While diverse food strategies were evidently employed during the early Neolithic, a change towards established farming communities is visible in the Middle Neolithic along with a shift from coastal to inland sites.

Our understanding of the implications of the Neolithic is limited by the available record on subsistence strategies, material culture and archaeological features. Furthermore, the metaphoric level, the transformation and implementation of ideas need to be considered, too. According to Müller (2014, 75) creating monuments is commonly understood as an expression of new ideologies as well as a transformation of the landscape associated with the Neolithic. This analysis suggests that acculturation and a gradual adoption of agrarian practices was evident on Rügen, prior to the intensive megalithic construction. Thus, a change in subsistence practices may be correlated with the new funerary rites, marking the point when we can speak of full Neolithic communities on Rügen.

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From hierarchies in balance to social imbalance – transformation processes in the later Funnel Beaker north societies in the western Baltic Sea region (3100–2900 BC)

Jan Piet Brozio

Abstract

The Neolithic period in the western Baltic Region is intensely characterised by the phenomenon of different forms of monumental structures. Monuments like long barrows, enclosures, megalithic graves and burial mounds can be linked to transformation processes like new subsistence strategies, different organised domestic locations, demographic changes or the introduction of new technologies like the ard, new flint technologies or early metallurgy. The focus of this paper is transformations of social practices, such as changes from cooperative to individualised social behaviour or the change of prestige equipment as an indicator for changes of ideologies in Neolithic societies. Therefore, the collective construction, the ritual use and secondary use of monuments in different Neolithic periods but also settlement patterns, subsistence practices, tool production and social impressions through shapes and decoration of ceramics play an important role in the relationship between the Neolithic way of life and monumentality. New research in a microregion in northern Germany suggest that the transformation of social practices is the important driver in developed Neolithic societies in the western Baltic Region rather than economic practices. In comparison with quantifying methods alone, we can document the different functions of monuments like organisation, representation or the expression of identities for the Neolithic communities.

Introduction

Long barrows, megalithic tombs and enclosures shaped the landscapes of northern central Europe from the 4th millennium BC. In the western Baltic Sea area, the first forms of monumentality were established around 3850 BC (Müller

et al. 2014). The number of monuments continued to increase in number until the 35th century BC when a significant boom in megalithic tombs building around 3400 BC led to a six-fold increase within four to five generations. This boom was followed by a decline in the intensity of monument building until 3100 BC (Brozio *et al.* 2019a), when by 2800 BC, the construction of megalithic tombs by the late Funnel Beaker (TRB) north groups almost vanishes. In its place, the tombs of the Single Grave Culture (SGC) societies begin to reshape the previous cultural landscape (Hübner 2005; Schultrich 2018).

This outlined phase of the monumentality of the TRB societies can be characterised as an economy focused on ritual activities, a so-called ritual economy (Kristiansen 1984; 2006; Müller 2019), in addition to different regional characteristics such as the expressing of economic inequalities between groups through different sizes and clusters of megalithic tombs (Gebauer 2014; Wunderlich 2018). This is probably rooted in a social system in which individuals and groups were in positions of political power to mobilise labour and to unite groups into larger communities, as known from ethnographic studies of ‘big man’ societies. This term describes societies in which individuals as managers and organisers controlled the exchange of material goods and had the capability of the collection of wealth and the distribution of conspicuous promotional gifts through feasting (Sahlin 1972; Roscoe 2012).

If the end of the tradition of collective building of monuments around 3100 BC is indicative of a new development in social dynamics in TRB societies, what are the social processes related to it? In order to identify social processes, this study defines, describes and compares quantitative proxies for the degree of individualisation, the relationship between

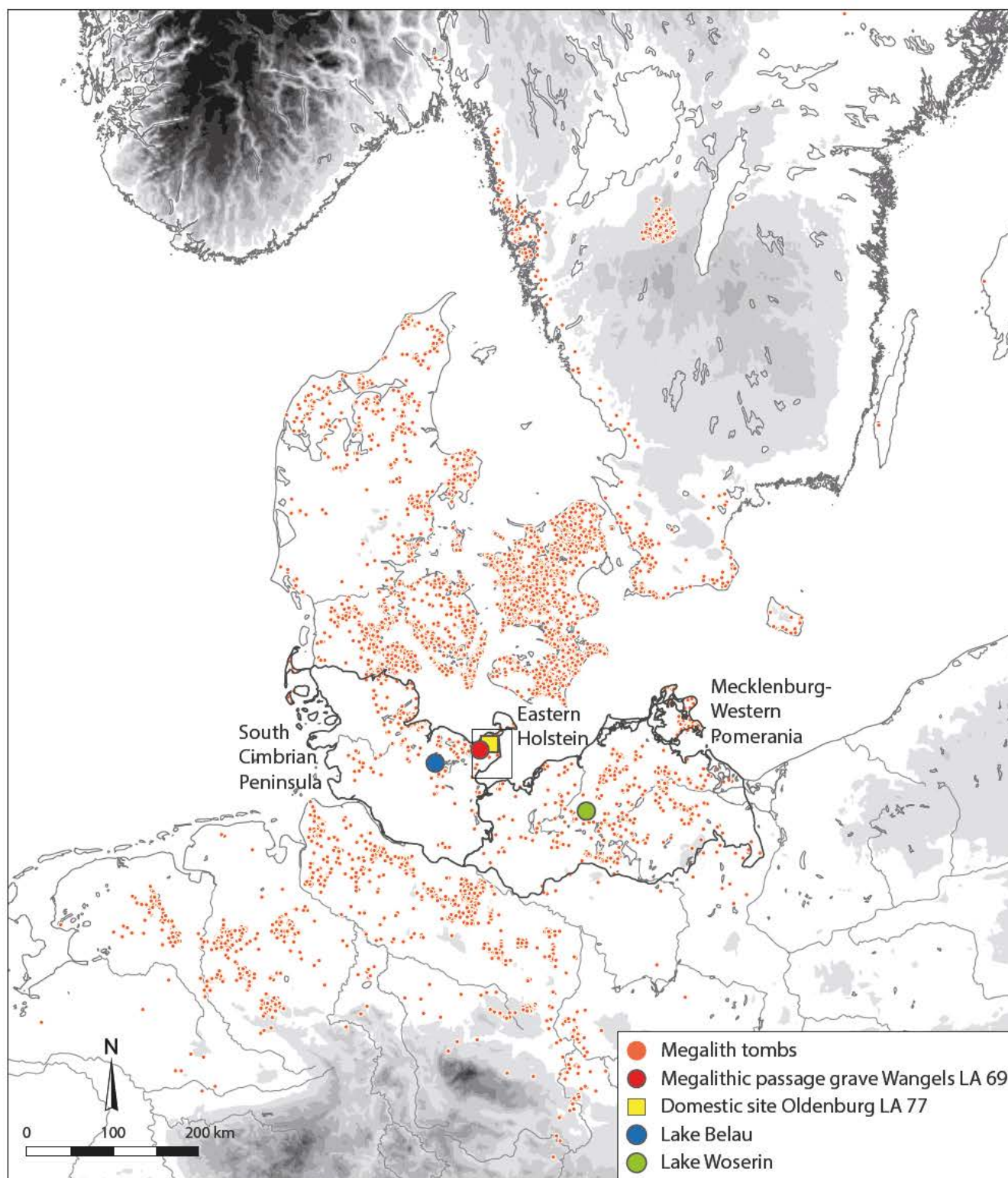


Fig. 10.1 Distribution of megalith tombs in northern central Europe and southern Scandinavia in the 4th millennium BC (after Fritsch et al. 2010, fig. 1). The main laminated pollen records that are used in the study are visible as well as the boundaries of the main research regions (after Brozio et al. 2019a, fig. 1).

groups as well as the intensity of manifestation of power as different supra-regional phenomena in Schleswig-Holstein and Mecklenburg-Western Pomerania, the southern distribution area of the TRB north group in the south-western Baltic Sea region (Fig. 10.1).

State of the art: the Funnel Beaker north group in the western Baltic region

Intensive research into TRB societies in Schleswig-Holstein and Mecklenburg-Western Pomerania (Nilius 1971; Hoika 1987; 1999; Schirren 1997; Schülke 2008; Steffens 2009), and more recently through the Priority Programme 1400 ‘Monumentality and Social Differentiation’ of the German Research Foundation (Hinz and Müller 2012; Müller and Staude 2012; Brozio 2016; Dibbern 2016; Hage 2016; Müller *et al.* 2019), form the background for this study. A précis of the results for the period between 3200 and 2900 BC is outlined below.

Domestic sites

Around 3200 BC there was an increase in population (Müller and Diachenko 2019) and in the number of domestic sites (Hinz *et al.* 2012). Furthermore, these sites were variable with a development of villages, and a neighbourhood structure of domestic sites of different sizes. For example, the domestic site Oldenburg LA 77 in eastern Holstein reached the peak of its growth in population between 3100 and 3000 BC and included houses, huts, wells and burials (Brozio 2016; 2019). At the same time, a fence acting as an additional demarcation of the settlement was built around the village Oldenburg LA 77, which is located on a peninsula or island in a lagoon, and further fences at domestic sites are known at sites 100 m away (Hoika 1972; Brozio *et al.* 2019b; Filipović *et al.* 2019). Between 3000 and 2900 BC a decline of the rate of TRB domestic sites can be observed, but domestic sites still occupied the same locations as in the centuries before (Knitter *et al.* 2019a).

Monuments

The phase of the cooperative construction of monuments that lasted several centuries declined significantly after 3400 BC and ended around 3100 BC (Fig. 10.2). Concurrently, the building of enclosures stopped (Müller 2011a) and intensive depositions took place in the passage graves (Lorenz 2018). For example, the most intensive ritual activities of the passage grave Wangels LA 69 in eastern Holstein, built around 3360 BC, occurred between 3100 and 3000 BC, when the most vessels were deposited that show the highest diversity in decoration (Brozio 2016; 2019a).

Economy

Between 3200 and 3100 BC, a boom in the production and deposition of artefacts occurs (Brozio *et al.* 2019a), whereas

the subsistence economy (Kirleis *et al.* 2012) and the human influence in the pollen records, which is associated with a partial reforestation of some areas, decreased (Feeser and Dörfler 2015). Around 3000 BC, the total production of artefacts and depositions of adzes decreased (Breske 2017), whereas human influence in pollen records is beginning to increase again (*cf.* Fig. 10.2).

External impacts

From 3000 BC, new phenomena suggesting different social factors were at play such as the Globular Amphora groups (Pleuger 2014; Woidich 2014), the Store Valby style (Hartz 2005; Klooß 2008) or the SGC societies, appear in the archaeological record. There is a second phase of a boom in building monuments beginning around 2800/2700 BC. Therefore, there is a period of *c.* 200 years from 3000 BC to 2800 BC when there were no monuments built apart from the SGC burial mounds (Schultrich 2018), as for example in the cemetery of Flintbek (Zich 1992), so that a period of *c.* 200 years can be observed without the building of new monuments (Brozio *et al.* 2019a).

Defining proxies

Single graves, battle axes, the decoration and forms of ceramics can be argued to be indirect indicators for the reconstruction of social changes. By quantifying this material, it can be grouped as proxies to suggest ways in which we can determine the intensity of individualisation, the relationship between groups, and the manifestation of power in the societies. The quantification of single flat graves has been used as a proxy to reflect changed perceptions of the relationship between the individual and the groups (Wason 1994; Iversen 2015). In the TRB societies, despite different grave forms, such as stone packing graves or Konens Høj graves (Hage 2016), the level of individualisation within single burials when contrasted to the predominant character of the collective burials in the passage graves, suggests that different social priorities informed this change in practice. The quantification of battle axes has been used as a proxy for authority and power in societies. In contrast to adzes, they do not have a tool function, but represent weapons and at the same time power as a threat of the use of force (Zápotocký 1992; Iversen 2015; Price and Gebauer 2017). Their supra-regional significance is also emphasised by double axe-shaped amber pendants from the early Middle Neolithic onwards (Ebbesen 1995; Heuer 2019), which implies that the form of the artefact had social meaning and relevance beyond the artefact itself. The diversity of ceramic shapes and ornamental designs has been used as a proxy for the intensity of the internal/external relationships of the groups, and thus the differentiation of the groups from one another via symbols (Zeeb-Lanz 2006; Worchel 2010).

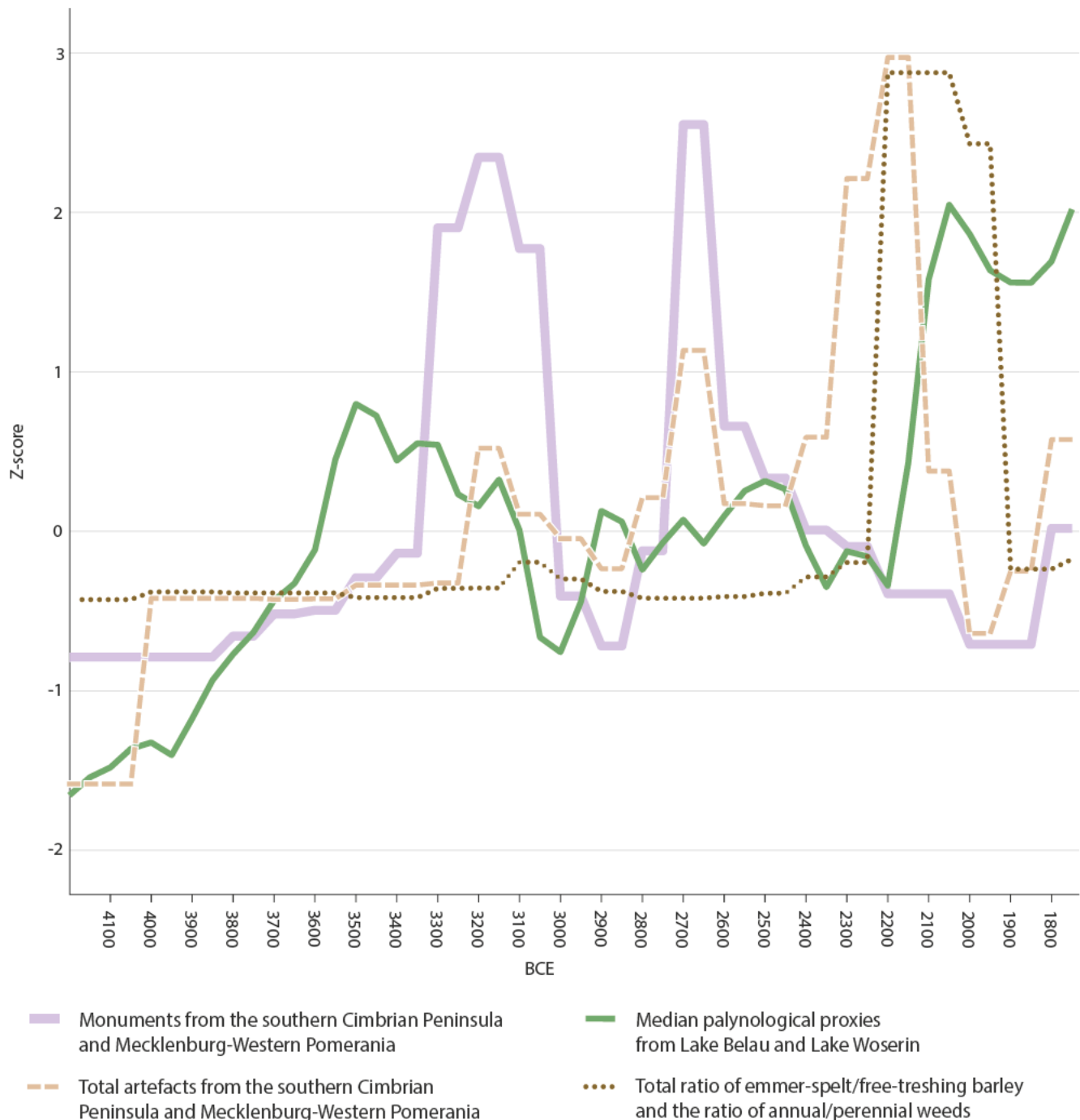


Fig. 10.2 Compilation graph of the records of monumentality, artefacts, subsistence economy and the palynological proxy records for the regions southern Cimbrian Peninsula and Mecklenburg-Western Pomerania 4100–1750 BC (after Brozio *et al.* 2019a, fig. 6).

Quantitative methods

For a quantitative analysis, the aoristic (a) method was used to achieve a comparable chronological resolution and a reduction in potential typo-chronological uncertainty. This is a statistical procedure that is successfully used in criminological studies to calculate the probability that an event took place in a certain

period (Ratcliffe and McCullagh 1998; Ratcliffe 2000; 2002) and has already been successfully applied in several archaeological studies (Mischka 2007; Müller and Peterson 2015; Brozio *et al.* 2019a). In this study, evidence that suggests possibly long periods of time, for example the occupancy of sites, are divided into 100-year steps and therefore create

Table 10.1 Used data set of the categories: single flat graves, battle axes, ceramic ornamentation and vessel shapes from the southern Cimbrian Peninsula and Mecklenburg-Western Pomerania.

BCE	Single flat graves – Southern Cimbrian Peninsula	Single flat graves – Western Pomerania (a)	Battleaxes from single depositions – Southern Cimbrian Peninsula and Western Pomerania (a)	Battleaxes from burials Southern – Cimbrian Peninsula and Western Pomerania (a)	Ceramic decoration – Southern Cimbrian Peninsula and Western Pomerania (H)	Vessel shapes – Southern Cimbrian Peninsula and Western Pomerania (H)
4300	0 00	0 00	0 00	0 00	0 00	0 00
4250	0 00	0 00	0 00	0 00	0 00	0 00
4200	0 00	0 00	0 00	0 00	0 00	0 00
4150	0 00	0 00	0 00	0 00	0 00	0 00
4100	0 00	0 22	0 00	0 00	0 00	0 00
4050	0 00	0 22	0 00	0 00	0 00	0 00
4000	2 42	1 79	0 09	0 00	0 00	5 16
3950	2 42	1 79	0 09	0 00	0 00	5 16
3900	2 42	1 79	0 09	0 00	0 00	4 92
3850	2 42	1 79	0 09	0 00	0 00	4 92
3800	2 42	1 79	0 09	0 00	0 00	4 89
3750	2 42	1 79	0 09	0 00	0 00	4 89
3700	2 42	1 79	0 09	0 00	0 00	4 66
3650	2 42	1 79	0 09	0 00	0 00	4 66
3600	2 42	1 79	0 09	0 00	2 09	4 63
3550	2 42	1 79	0 09	0 00	2 09	4 63
3500	13 18	9 82	0 17	0 00	2 09	5 33
3450	13 18	9 82	0 17	0 00	2 09	5 33
3400	11 02	8 68	0 17	0 00	2 45	4 60
3350	11 02	8 68	0 17	0 00	2 45	4 60
3300	23 50	15 96	0 20	0 01	5 71	4 99
3250	23 50	15 96	0 20	0 01	5 71	4 99
3200	16 92	16 84	0 20	0 01	7 27	4 39
3150	16 92	16 84	0 20	0 01	7 27	4 39
3100	18 08	20 39	0 55	0 05	9 28	5 94
3050	18 08	20 39	0 55	0 05	9 28	5 94
3000	27 98	18 86	0 31	0 04	8 97	5 91
2950	27 98	18 86	0 31	0 04	8 97	5 91
2900	20 40	14 28	0 43	0 08	13 34	5 84
2850	20 40	14 28	0 43	0 08	13 34	5 84
2800	0 83	0 00	0 96	0 29	10 53	4 76
2750	0 83	0 00	0 96	0 29	10 53	4 76
2700	5 90	0 00	2 31	0 47	9 39	4 51
2650	5 90	0 00	2 31	0 47	9 39	4 51
2600	5 90	0 00	1 11	0 19	3 30	4 61
2550	5 90	0 00	1 11	0 19	3 30	4 61
2500	0 40	0 00	1 14	0 14	2 42	3 48
2450	0 40	0 00	1 14	0 14	2 42	3 48
2400	2 90	0 00	1 69	0 24	2 42	4 28
2350	2 90	0 00	1 69	0 24	2 42	4 28
2300	2 90	0 00	2 33	0 33	2 42	4 54
2250	2 90	0 00	2 33	0 33	2 42	4 54
2200	1 50	0 00	3 09	0 33	2 42	4 70
2150	1 50	0 00	3 09	0 33	2 42	4 70
2100	1 50	0 00	0 00	0 00	0 00	4 80
2050	1 50	0 00	0 00	0 00	0 00	4 80
2000	1 67	0 00	0 00	0 00	0 00	4 82
1950	1 67	0 00	0 00	0 00	0 00	4 82
1900	1 67	0 00	0 00	0 00	0 00	2 73
1850	1 67	0 00	0 00	0 00	0 00	2 73
1800	1 67	0 00	0 00	0 00	0 00	2 21
1750	1 67	0 00	0 00	0 00	0 00	2 21

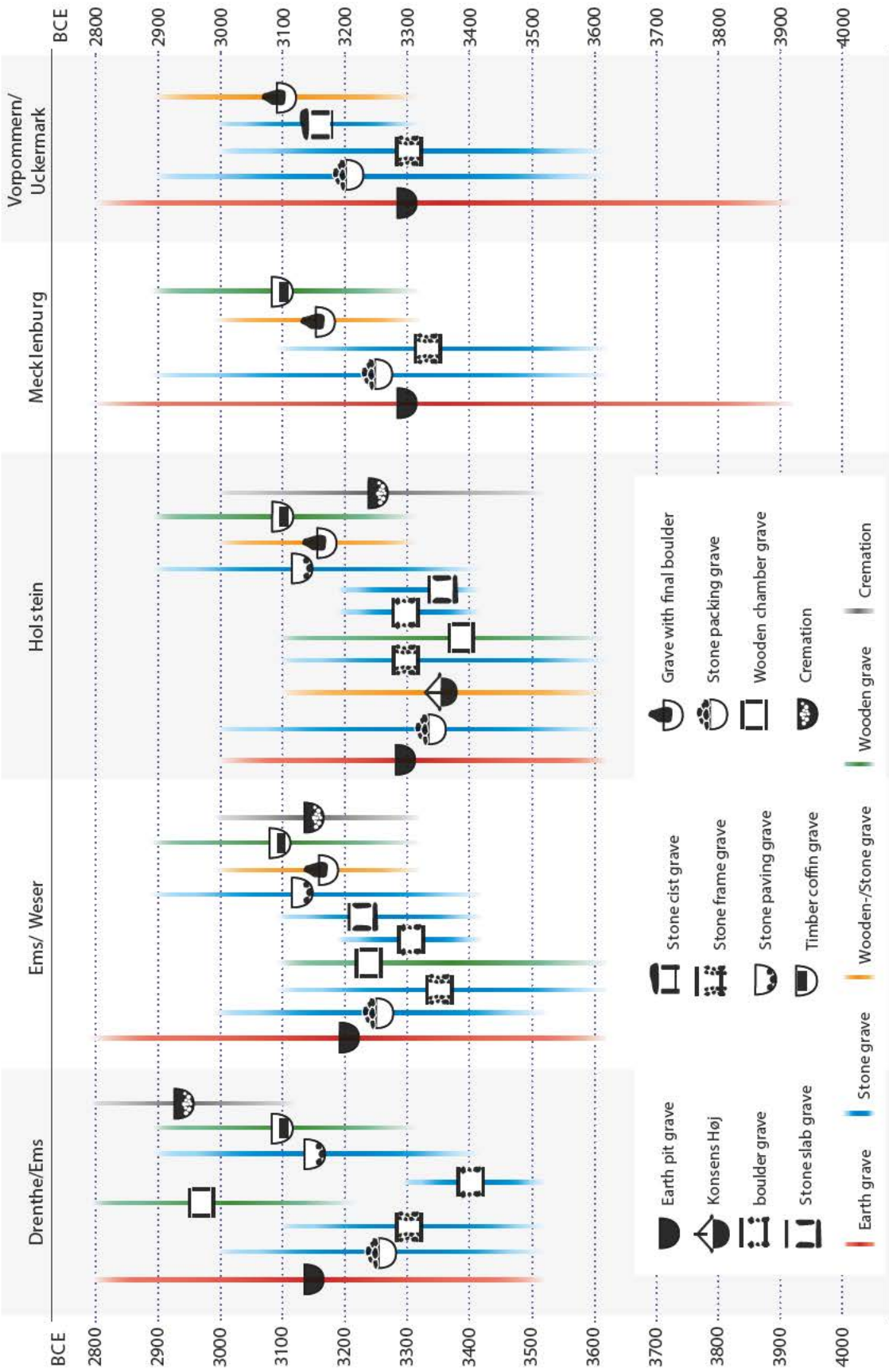


Fig. 10.3 The chronological appearance of flat graves in northern central European TRB regions. The contemporaneity of most burial types between around 3400 and 3100 BC is followed by a reduction in diversity after 3100 BC (after Müller 2019).

a uniform statistical distribution of the probabilities of the individual objects and findings (Mischka 2004; Müller 2005). The diversity of decoration and shapes of ceramic vessels was calculated by applying the Shannon index (H) (Conkey 1989; Saev 2015). A standardisation of the values through a z-transformation (z) was carried out in order to compare the proxies (Shennan 2004). Table 10.1 summarises the data for

single flat graves, battle axes, ceramic decoration and vessel shape based on research by Jacobs (1991), Kossian (2005) and Schultrich (2018) for single graves; Jacobs (1991), Zápotocký (1992) and Schultrich (2018) for battle axes and Saev (2015) for the variation of vessel shapes.

Single flat graves of the TRB societies appear individually or in smaller cemetery-like sites (Kossian 2005). From



Fig. 10.6 Highly decorated vessels were deposited in the chamber of the passage grave Wangels LA 69. The most intensive phase of the deposition took place between 3100 and 3000 BC. Scale 1:3.

3800 BC an increase of the single flat grave rate took place whereas between 4300 and 3800 BC only few are known (Müller 2019). A large variance can be observed in the design of the sites, from around 3600 BC which continues to increase until around 3400/3300 BC (Fig. 10.3). These include, for example, simple flat graves without structures, known during the whole TRB period, such as the burial of a c. 40-year-old female from the domestic site Oldenburg LA 77 (Fig. 10.4) (Brozio 2012), groups of stone packing graves in Putlos (Hoika 1987), which is 1 km away, or

graves of the type Konens Høj from the Flintbek cemetery (Mischka 2011) or Borgsted (Hage 2016). A decrease in the diversity of grave types can be observed around 3100 BC (Müller 2019).

The deposition of battle axes is a widespread phenomenon on the North German Plain, predominantly represented by single finds (Nilius 1971) and to a minor extent by depositions in burial contexts, as in the passage grave Wangels LA 69 in eastern Holstein, for example (Fig. 10.5). With their distribution ranging from southern Scandinavia to the

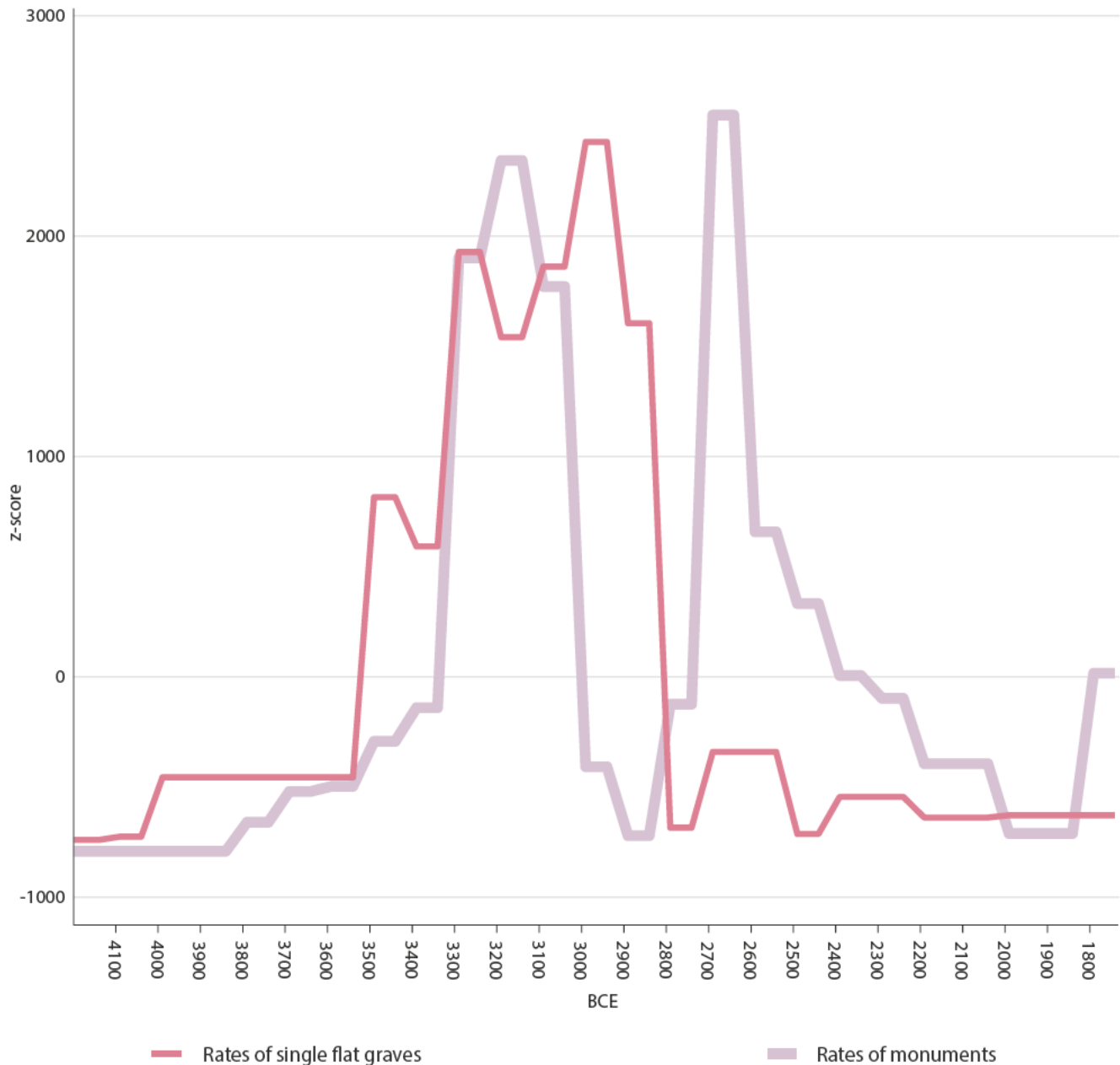


Fig. 10.7 Graph of the relative frequency values of single flat graves on the southern Cimbrian Peninsula and Mecklenburg-Western Pomerania 4100–1750 BC (z-scores based on absolute numbers of projected artefacts per 50 years).

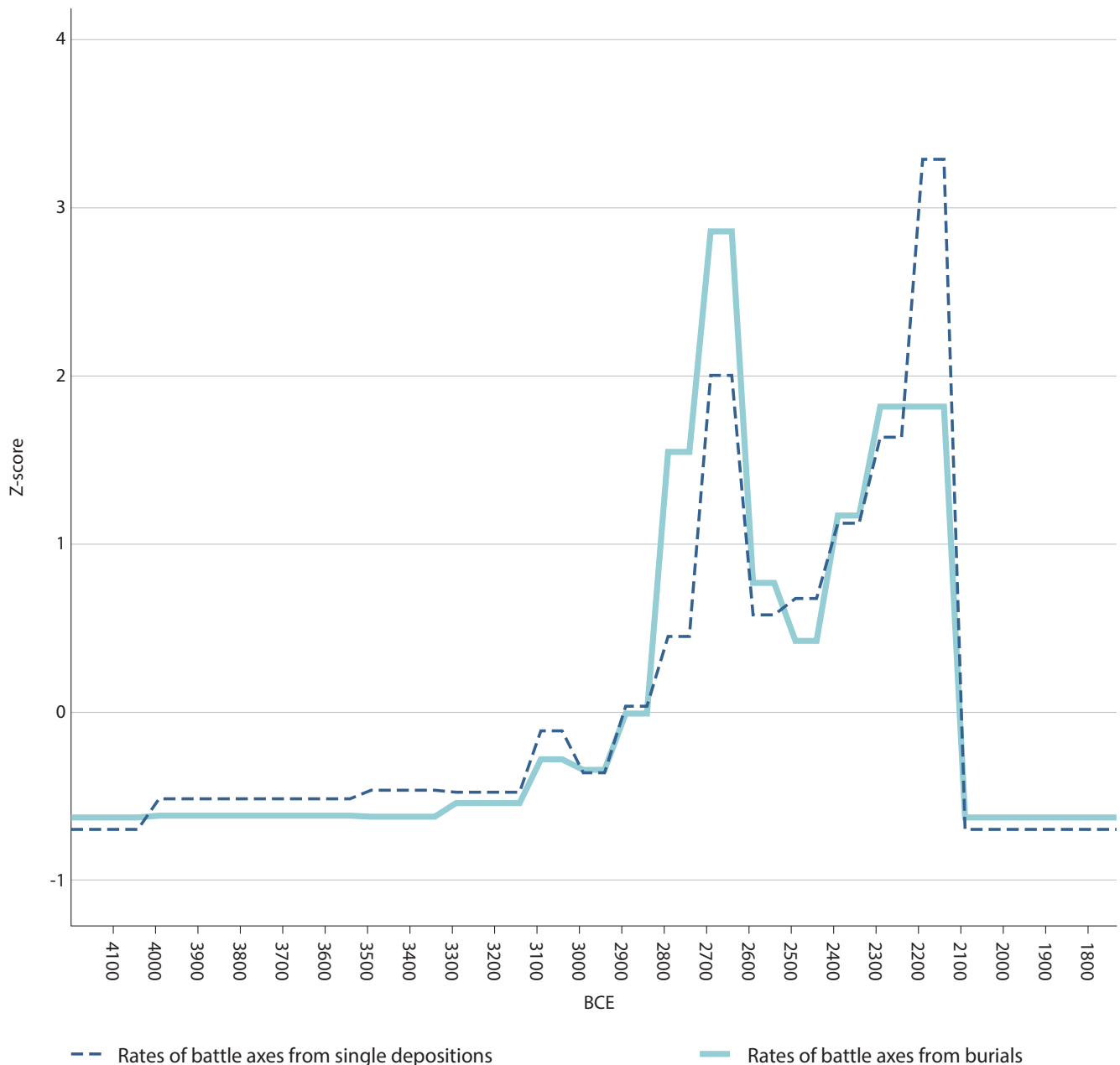


Fig. 10.8 Graph of the relative frequency values of battle axes on the southern Cimbrian Peninsula and Mecklenburg-Western Pomerania 4100–1750 BC (z-scores based on absolute numbers of projected artefacts per 50 years).

German low mountain, the battle axes appear to reflect a supra-regional communication network (Rinne 2012).

The pottery of the TRB, especially of the north group, has long been a focus of archaeological research due to its characteristic forms and decorations that has resulted in findings that suggest typo-chronologically based periods and local groups (Midgley 1992; Müller and Peterson 2015). The diversity of the decoration of deposited ceramics in the research region was analysed to encompass vessels deposited in megalithic tombs (Lorenz 2018) like in the

passage grave Wangels LA 69 (Fig. 10.6), and those within single grave burials (Brozio 2019a). Diachronic studies in the research area of diversity of vessel shape are already available in Saev (2015) (*cf.* Table 10.1).

Data results

The aoristic distribution of the single flat graves of the TRB period indicates a continuous increase from around 3500 BC which continues to increase until around 3300 BC,

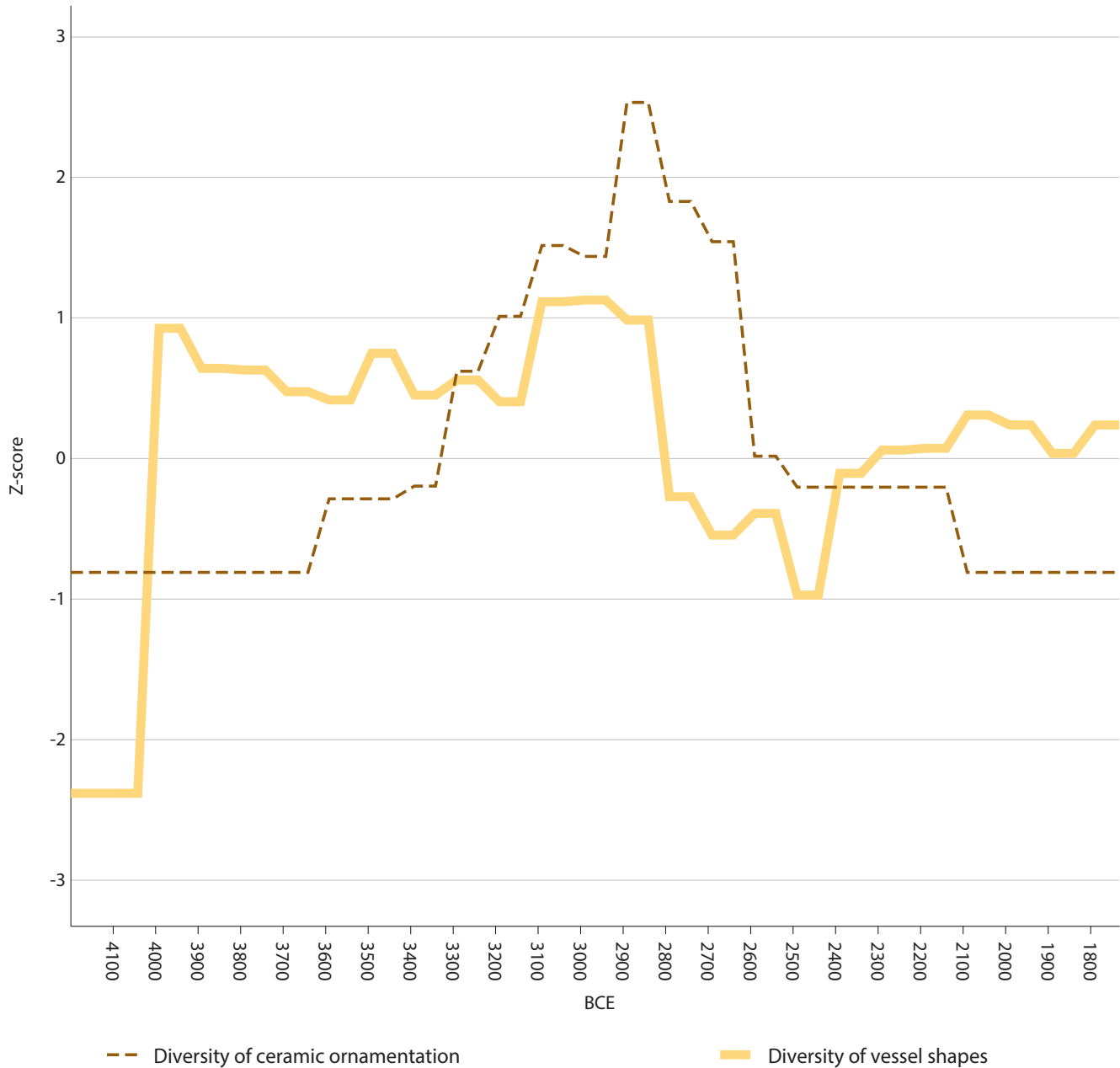


Fig. 10.9 Graph of the relative diversity values of ceramic ornamentation and vessel shapes on the southern Cimbrian Peninsula and Mecklenburg-Western Pomerania 4100–1750 BC (z-scores based on absolute numbers of projected artefacts per 50 years).

characterised by slight relative decline around 3400 BC and also at around 3200 BC. A noticeable increase took place in the period between 3100 and 2900 BC. From 2900 BC, there is a sharp decline in the number of individual graves in non-monumental contexts. The comparison with the erection of tomb monuments with TRB collective burials and the single flat graves shows an analogous development up to 3100 BC. Yet, from this point on, the erection of megalithic sites decreases, whereas the number of single flat graves strongly increases. This development only changes

around 2800/2700 BC when new monuments in the form of burial mounds with single graves of the SGC societies are erected (Fig. 10.7).

The aoristic distribution of the battle axes was carried out separately for single depositions and grave finds, with largely similar results. The incidence of axes from TRB contexts rises abruptly from 3200 BC, and axes have their quantitative climax between 3100 and 3000 BC before they begin to decrease. Then, a general trend after 2900 BC towards more battle axes begins, with two

significant peaks around 2800/2700 BC and between 2400 and 2200 BC in the context of the SGC societies (Fig. 10.8).

The analysis of the diversity of ceramic decoration indicates an increase from 3600 BC, with the highest diversity between 3100 and 2800 BC. Analogously, the greatest variety of pottery shapes can be observed between 3200 and 2900 BC (Saev 2015). From 2800/2700 BC onwards,

the diversity of ornamentation and vessel shapes decreases significantly (Fig. 10.9).

Interpretation of social phenomena

If we compare the quantitative rate and transfer the increases and decreases in the three material studies over time to the proxies, we come to the following results. After a relatively

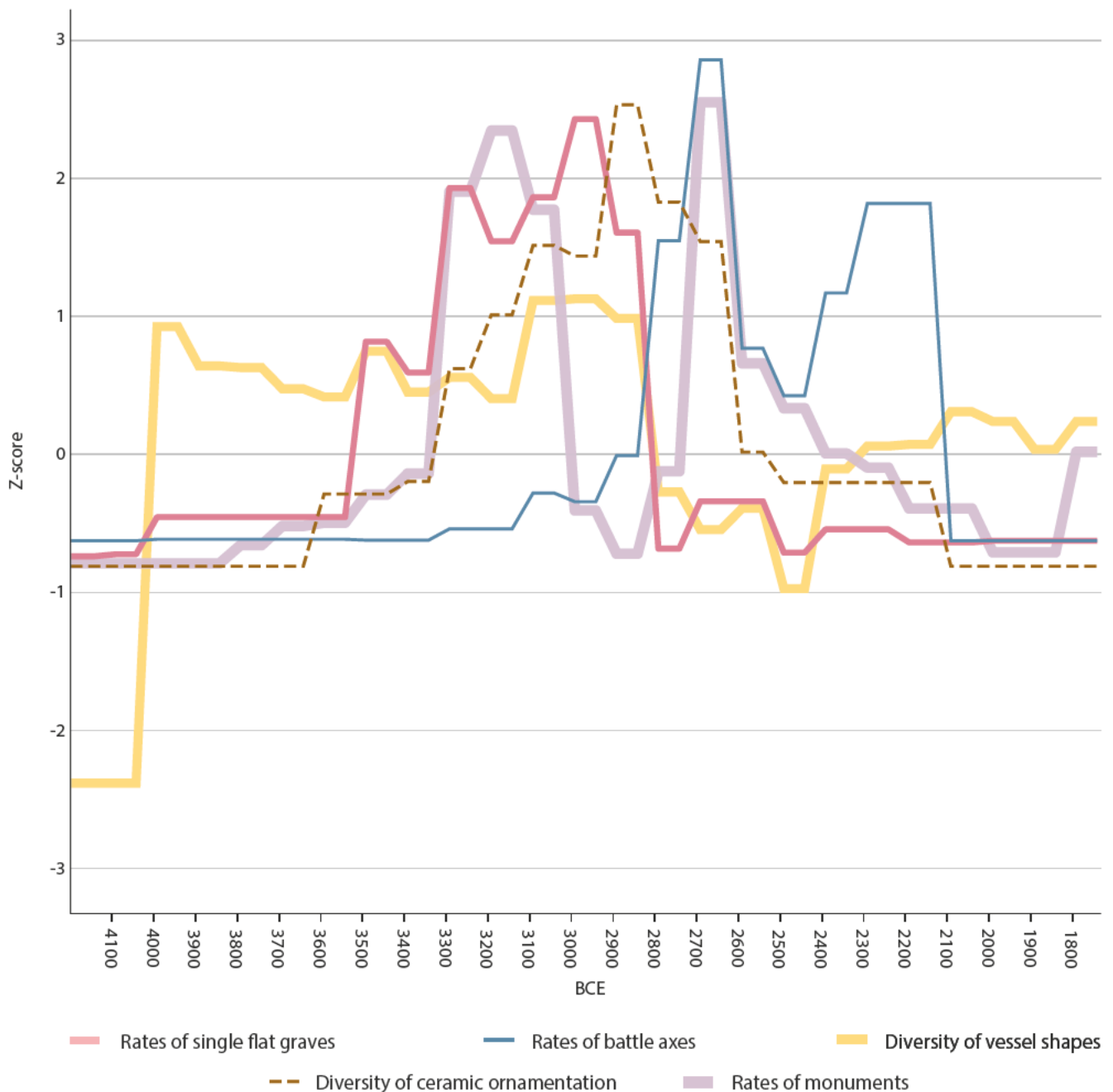


Fig. 10.10 Compilation graph of the records of monumentality, single flat graves, battle axes, ceramic ornamentation and vessel shapes for the regions southern Cimbrian Peninsula and Mecklenburg-Western Pomerania 4100–1800 BC (z-scores based on absolute numbers of projected artefacts per 50 years).

analogous development in monumentality at the beginning of the study period, the degree of individuality derived from the single flat graves begins, to increase with the interruption of the building of monuments. This contrasts with the collective burials practised in passage graves at the same time (Fig. 10.10). The intensification of the collective burials around 3100 BC is contemporaneous with an increased diversity of vessel forms and decoration. This process which may relate to a changed perception of the relationship between the individual and the social group and, at the same time, suggest an increasing demarcation between groups. In addition, there is a continuous increase in battle axes which could be interpreted as an increase in the meaning of weapons as status symbols and thus at the same time as a sign of power. In summary, it can be observed that there is an increasing individualisation within the groups, an increasing demarcation between the groups and an increase in the representation of power in the groups around 3100 BC. This study has shown that there are various phenomena of social processes that can be observed and described at the end of the first monumental boom in the late southern TRB north group.

From agglomeration to disorganisation – the number of domestic sites as well as domestic sites with village character begins to decrease around 3100/3000 BC and the number of people claiming power increase suggesting processes can be noted from an agglomeration to a disorganisation.

From collective to individual behaviour – the development of a collectively oriented ideology into a more individually focused form, in which it was possible for people to increasingly escape the collectively represented frames of collective burials, and thus the transmission of memories, norms and values of a community through monumental tombs.

From uniform to diverse – individual pottery that becomes more and more diverse suggests a social process from uniform to increasingly diverse concepts of representation between the groups. At the same time an intentional differentiation from other groups is thereby represented.

From social balance to social imbalance – the increase in battle axes, interpreted as symbols of power, indicates an increasing formation of authorities where individuals begin to visually present their status. In contrast to the system described as holding balance of power (Müller 2019), a social imbalance emerged within the societies between 3100 and 2900 BC.

Discussion

After 3100 BC, with the end of the collective building of monuments, an increasing separation from other groups began. Yet at the same time, societal rules were transmitted within the group by the society and the monuments suggest intensive ritual acts of ancestor worship (Müller

2018). This change can be understood as an attempt to stabilise the old TRB relations through ritual. Analogously, a highlighting of the individual and a clear separation from the collective rituals in which all members are involved, took place. Furthermore, the maximum density of people in settlements is reached; there is notable elaboration in architecture through adding fences, that created a physical separate inside and outside, and the productivity of the economy falls (cf. Fig. 10.2). Despite an apparent increased display of authority within the groups through weaponry, hierarchies are kept in balance within the groups (Price and Gebauer 2017; Müller 2019).

While a critical limit of resources like building materials, raw materials for the production of tools, forest pasture for livestock or potential arable land had not been achieved (Knitter *et al.* 2019b), the increasing population (Müller 2011b; Hinz *et al.* 2012; Rassmann and Schafferer 2012; Schiesberg 2012; Müller and Diachenko 2019) had potentially reached a critical mass in which infrastructure problems in large settlements began. Intra-group conflicts can arise with only minor social stratification that may have impacted on producing a surplus and investment in monumentality at agglomerations such as Oldenburg LA 77 with up to 120 inhabitants. Cold summer temperatures from 3350 BC onwards that did not recover until around 2950 BC could also have had a boosting effect for an increasing of conflicts in TRB societies (Dreibrodt *et al.* 2012).

There are also indications of an increase in violent conflicts from the later phases of the TRB (Lidke 2005). However, a peak in young male human remains is not present in the osteological collections, which could indicate that they were not destroyed as much in conflicts as in other Neolithic societies of central Europe (Petrash 2014; Müller 2019). However, the observation goes hand in hand with the erection of fences, such as those in Oldenburg LA 77 around 3000 BC (Brozio 2016).

After 3000 BC, the TRB population begins to reorganise into smaller groups. The groups increasingly separate symbolically and spatially from each other, with the individual receiving their maximum distinction in the ritual (mortuary) arena. The number of authorities in power as well as evidence of violent conflicts rises (Müller 2019). At the same time, there is an increasing symbolic separation from the ancestors and rule systems of previous generations. In addition, new ideologies are now proceeding from the southeast. The cultural phenomenon of the Globular Amphora societies stresses an ideology towards the individual (Woidich 2014; Brozio 2016), particularly in existing ritual monumental contexts (cf. Fig. 10.5). Furthermore, the first influences of the warrior ideology of the SGC societies begin to become visible (Furholt 2003; Brozio 2019a). The dynamics of increasing individualisation of the groups, intensified by new cultural impulses, appear to result in an increased power claim of individuals.

Conclusion

In conclusion, from 3100 BC an increasing fragmentation in the southern group of Funnel Beakers societies took place. Groups increasingly symbolically separated from each other and at the same time authorities begin appearing through symbols of power. At the same time, individuality became pronounced through an increase in individual burials, which are contrary to collective burials. In summary, we can define between 3100 and 2900 BC as a transformation phase of dissolution, social disintegration and imbalance; there is tension to hold on to the centuries-old TRB symbolism in the face of the increasing impact of the Globular Amphora phenomenon, and the Single Grave societies, that began to influence in the following generations. A system in which hierarchies were kept in balance for generations had reached its end.

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Narratives of 3rd-millennium transformations: new biographies of Neolithic societies, landscapes and monuments

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Abstract

Societal transformations of the 3rd millennium BC concern the relationship of the northern central European and southern Scandinavian societies with their landscapes and role of monumentality. The end of the construction of megaliths around 3100 BC is explained with a general disintegration and the dissolution of cooperative social approaches within the late TRB communities, followed by a time of diversity and new orientations. While the first northern boom on monumentality was driven for cooperative purposes, the second monumental boom around 2850–2650 BC was motivated by new ideologies about individual representation. After this second boom, around 2600 BC, a re-use of megaliths and a kind of megalithic renaissance took place. But at around 2200 BC, further economic and political transformations no longer incorporated monumental approaches into the differently developing new societies. In conclusion, landscape histories and monument biographies reflect different cultural and ideological constitutions, which loosely correspond to the northern later Early/Middle Neolithic, the Younger Neolithic, and the Late Neolithic.

Introduction

In southern Scandinavia and northern central Europe megaliths were erected by cooperative societies mainly in a relative short period of time spanning approximately 20 generations c. 3600–3100 BC (Fig. 11.1–11.2). The environment was changed into a ritual landscape in a wave of intense building activity particularly from c. 3400 BC (Müller 2019). In some regions like the southern Cimbrian Peninsula, the distance between the construction sites of megaliths was less than a day's walk, with groups of megalithic tombs at many places. The creation of these ritual landscapes was originally linked

to economic changes: the introduction of the animal-driven plough (Johannsen 2006; Mischka 2013) and of wheel and waggon (Mischka 2011) that enabled an increasing agricultural output with high productivity, that in turn supplemented the already established horticultural practices (Kirleis 2019a; Kirleis 2019b; Knitter *et al.* 2019). Beside the first boom of monumental activities in the northern European landscape, the steep decline of building activities in the 31st century BC is also obvious (cp. Brozio *et al.* 2019).

Why did the erection of megaliths cease around 3100 BC?

While the reasons for the erection of megaliths were often debated and their appearance associated with economic changes (*e.g.* Randsborg 1975; Furholt 2011; Müller 2014; Soerensen 2014), the decline of their construction has seldom been a matter for discussion. What happened to, or within these TRB societies, to make monumentalisation of their social practices irrelevant after c. 3100 BC?

From a descriptive point of view, four arguments might help to understand the processes. Firstly, the overall evidence both on a typo-chronological as well as a purely data-orientated compilation of remains within megalithic chambers evidently illustrate the disappearance of megalithic practices in the 31st century BC (Müller 2011; Hinz *et al.* 2012). In contrast to the richly decorated MN I/II ceramic styles, MN III with the reduced variation in pottery is not known from the oldest assemblages within megaliths of the TRB-North Group (Lorenz 2018). Secondly, the decline in monumental activities is associated with the appearance of new stylistic types and Globular Amphorae are known in the southern parts of the distribution area of megaliths (Woidich 2014). The shift in ceramic styles – the decline of

the typical TRB-MN pottery and the new incoming Globular Amphorae styles does not seem to be associated with any shift in aDNA patterns (cp. Schroeder *et al.* 2019). Mobility

patterns appear to have been restricted to the usual local and regional variabilities. Thirdly, some megalithic tombs were elongated with long mounds that were erected to receive

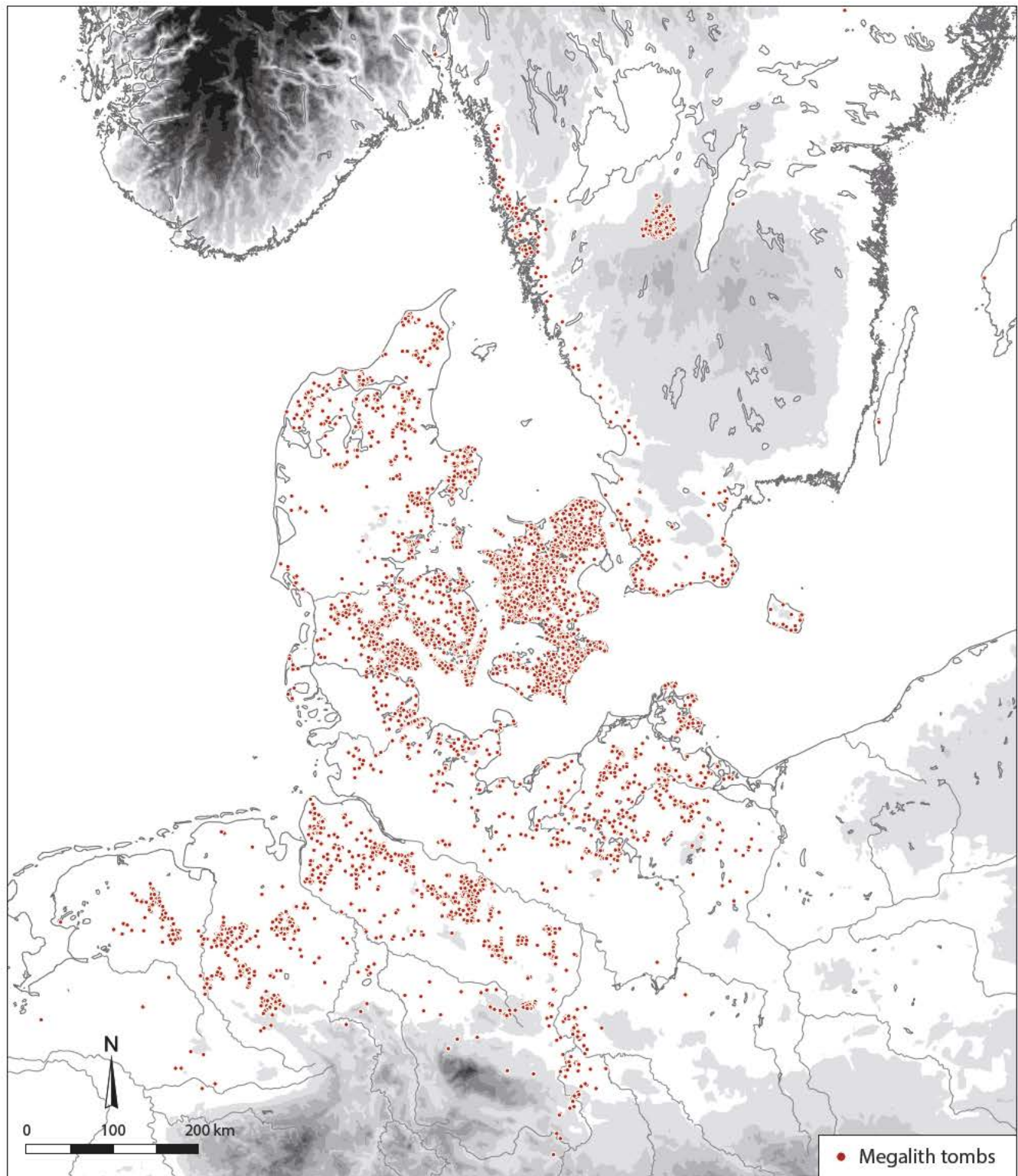


Fig. 11.1 Distribution of megalith tombs in northern central Europe and southern Scandinavia in the 4th millennium BC (after Fritsch *et al.*, 2010, fig. 1).

additional single burials, like stone packing graves (Müller 2019). In contrast, other megalithic tombs were deliberately destroyed, the chamber emptied, and the dry masonry broken down (Demnick *et al.* 2008 (2011)). Fourthly, after a phase during which domestic sites display a kind of population agglomeration in villages at least on the southern Cimbrian Peninsula, some transformative elements also become visible in the domestic sphere: *e.g.* the ritual infilling of wells (Brozio *et al.* 2014; Brozio 2016) or the transition of sites from domestic to sites of ritual purpose (Hage 2016).

The northern central European societies were in crisis in the 31st century BC, if we accept the reduced human impact on the environment as a proxy (Feeser and Dörfler 2015), and it was also a period of change elsewhere. In many parts of the central European Middle Mountain Range, the collective burial practice in gallery graves ceased and the appearance of hilltop settlements in Hesse might indicate ‘unsettled’ times (Raetz-Fabian 2000). The increase of hilltop settlements at the beginning of Jeřišovice III and Řivnáč (Pleinerová and Zápotocký 1999; Szmyt 2004) could indicate similar processes. In other core areas of Neolithic developments, the pattern remained different. Within the Middle-Elbe-Saale Region a continuation of the previous practices is evident (Müller 2001), and the continuation of traditional practices is also visible on the Danish Isles (Iversen 2015; 2016).

In summary, we describe the end of the megalithic period in northern Germany as determined by the cessation of megalithic construction, as a period of intensive changes with different local expressions of a new evolving *zeitgeist*. The disintegration of TRB communities appears to be reflected in this change from expanding monumentalisation of the landscape (*c.* 3650–3100 BC).

The observations indicate an opposite dynamic to the process that originally led to the megalithic boom. While the spread of new agrarian production techniques from the 37th century onwards led to a general restructuring of the landscape and the integration of many communities into supra-regional ‘sign-systems’ (like the Fuchsberg style), at the latest the disintegration took place in the 31st century, by the loss of a generally accepted ‘sign-system’ (Lorenz 2018). We suggest that this happened after population agglomeration processes had reduced the necessity of supra-local marriage practices between small hamlets and farmsteads. Interestingly, the disintegrations also appear linked to a decline in the use of causewayed enclosures as temporary, perhaps ritual assembly places (Dibbern 2016).

The disintegration of TRB-societies seems to have been a result of their own successes. For about 20 generations the creation of the first northern European cultural landscapes, the implementation of new agrarian technologies, and the development of megalithic burial practices had enabled local and regional groups to act more independently and

to create their ‘own’ worlds. We suggest that trans-local practices could have been reduced, because the demographic and economic independence and the established ideological practices of communal cooperation do not indicate supra-regional dependencies at least on the southern Cimbrian Peninsula, but probably for the whole TRB-North Group. The monumentalisation of the landscape was triggered both by newly developed sharing practices of local communities (Müller 2019) as well as the ritual competition between them (Gebauer 2014).

Both aspects were no longer valid in a world in which the reproduction of social relations was already possible within a local framework. The agglomeration of sites and strong local networks reduced the value of supra-regional ‘support’, *e.g.* in the form of manpower or marriage-networks. Thus, the erection of megaliths became a tradition, perhaps a memorisation of the mystical ancestors, but not a necessity for the consciousness of the societies.

But why did it all cease in the 31st century BC? Either the duration of social and cultural processes that might have led to a separation within societies, or a common influence from the outside was responsible. Both might have occurred. At least in the south Cimbrian Peninsula the reduction in landscape openness, a reforestation and possibly a population decline reflect the described disintegration and the bust of the first period of monuments in northern Europe (Hinz *et al.* 2012; Feeser *et al.* 2019).

What happened during the monument-less phase (3100–2800 BC)?

The social motivations and power to erect megalithic tombs disappeared at the end of the 31st century in many areas of northern Germany and southern Scandinavia (Fig. 11.2). The communities still used the existing tombs and mounds for secondary burials, but not in a cooperative and collective manner anymore (Laux 1979; 2002; Fritsch and Müller 2012; Woidich 2014; Andersson *et al.* 2016; Schütz 2017). At some sites, local pollen profiles suggest cattle herding and less cereal growing, while in others the opposite is the case (*cp.* Hildebrandt-Radke *et al.* 2011; Dörfler *et al.* 2012; Diers *et al.* 2013 (2014); Feeser and Dörfler 2015; Diers 2018; Diers and Fritsch 2019; Knitter *et al.* 2019; Sjöegren 2019). This variation is also visible in the nutritional information gained from stable isotope analyses on human bones (Sjöegren 2017; Terberger *et al.* 2018; Blank 2019).

With respect to subsistence practices, in addition to social and ritual behaviour, differences appear. There are megalithic chambered tombs where the older depositions within the still accessible chamber were respected and Globular Amphorae (GA) were added (Hirsch 2011; Brozio 2016). There are others, like Lüdelsen 3 and 6 (in the Altmark region), where the described destruction of the monuments took place (Demnick *et al.* 2008 (2011)). This indicates the



Fig. 11.2 Compilation graph of the normalised records monumentality, artefacts, subsistence economy and the palynological proxy records for the region southern Cimbrian Peninsula and Mecklenburg-Western Pomerania 4100–1750 BC (Brozio et al. 2019). The palynological proxy represents the 1st eigenvector of a PCA, which is interpreted as land opening (Feeser et al. 2019). Monuments were especially erected between c. 3400–3100 BC and 2800–2600 BC. After 3050 BC, almost no new megaliths were erected. Two more or less non-monumental centuries followed (before the boom of early single grave mounds). The data represent the number of monuments and artefacts transferred to 50-year steps by the aoristic analysis (copyright: Jan Piet Brozio, UFG Kiel).

abolishment of the physical remains of an old ideology. Even memorisation practices of communities with their past differ in that some are visible e.g. in different degrees of integration of new symbols into regional and local lifestyles,

like that of the Globular Amphora, a new shape of vessel. Yet, even if they appear with different regional decoration patterns (the local styles that already existed), the new vessel form might be associated with a new functional practice or

even a new special content. At least at one megalithic tomb, where both GAs and TRB vessels were analysed (Fig. 11.3), GAs had different content: sea buckthorn oils instead of cattle meat and milk in the other pots (Weber *et al.* 2020). An association of Globular Amphorae with certain liquids of extraordinary importance like these special oils shows that

gathered plants were still deemed valuable. This inclusion of older traditions supplemented by new technologies in the subsistence economy indicate a diversification of the subsistence strategies present in the 31st century BC (Kirleis 2019b). Furthermore, the shape of the vessel is – from ethnographic reports – much more suitable for long distance



Fig. 11.3 In the megalithic tomb Wangels in Eastern Holstein, sea buckthorn oil was detected in the Globular Amphorae vessels (Weber *et al.* 2020). Scale 2:3.

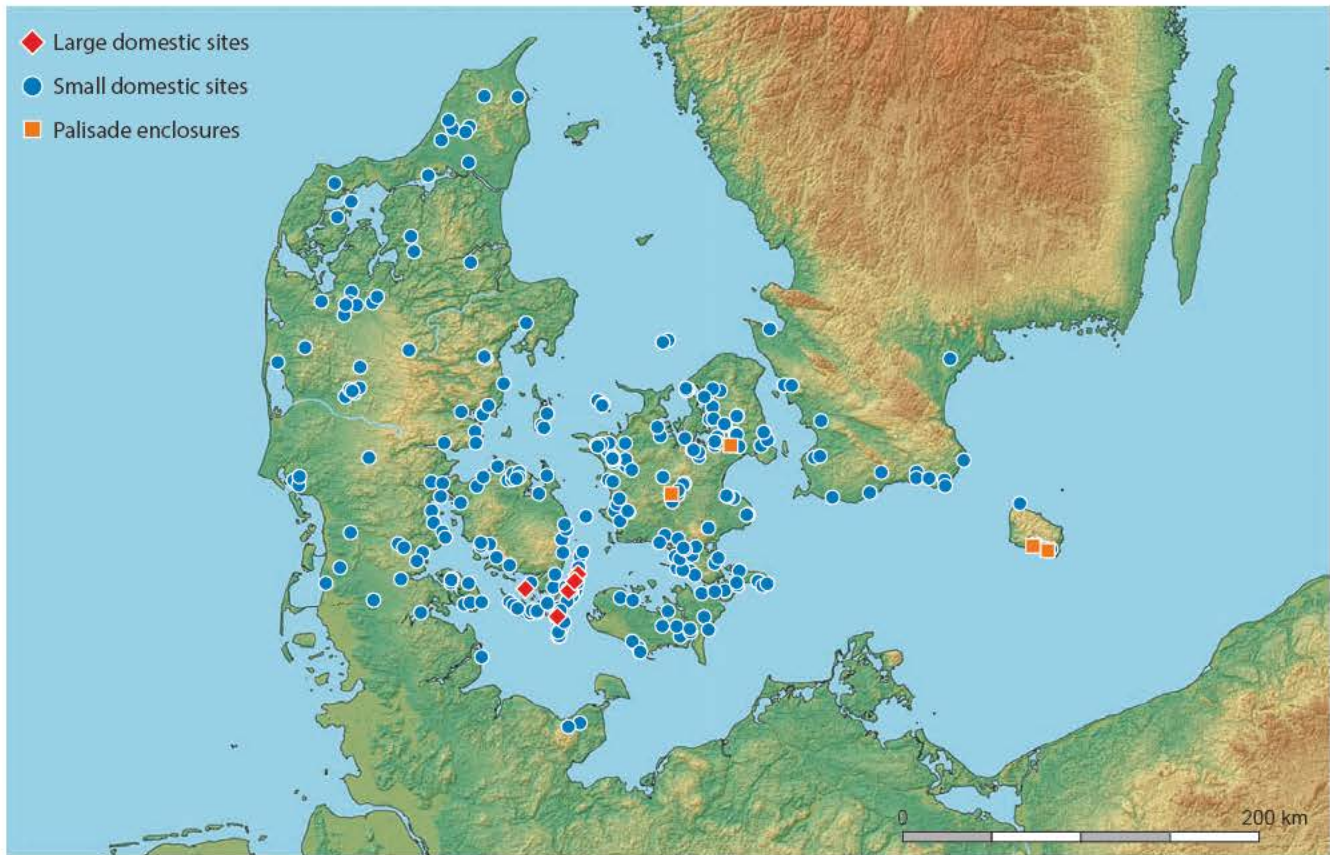


Fig. 11.4 Within a few generations MN V sites of immense areas up to 30 ha developed for a short period of occupation in the Middle Eastern Cimbrian coast and the western Danish Isles (Brozio et al. 2019b).

transport than the usual bowls and cups. Thus, new values seem to have developed.

Around 3000 BC in northern Germany, areas with and without Globular Amphorae existed. In southern Scandinavia further extraordinary developments appeared that were not bound to former megalithic spatial distribution patterns. On most of the western and southern Cimbrian Peninsula, a dispersed settlement pattern and the appearance of two parallel stone heap graves in front of a rectangular larger pit is usually interpreted as the appearance of cattle burials (Johannsen and Laursen 2010; Pollex 1999). Both might indicate a reduction in sedentary subsistence activities, and a higher degree of trans-local communication activities. Pottery design is more restricted to 'pure' Store Valby bowls, which represent mostly undecorated vessel types that were probably for local daily purposes; absolutely different from the preceding TRB styles and the GAs, but not the coarse GA pottery (Davidsen 1978).

This western dispersed settlement area of trans-local activities stayed in contrast to the development on the Middle Eastern Cimbrian coast and the western Danish Isles (Fig. 11.4). Here, in the rich aquatic environments of the Danish south, within a few generations MN V sites of

immense areas up to 30 ha developed for a short period of occupation (Skaarup 1985; Sørensen 1998). Many activities took place on site, and until now nothing contradicts the interpretation as a special agglomerated settlement pattern within this 'middle' northern zone. From a structural point of view the reasons and processes leading to these agglomerations are still unclear. Further to the east, on Scania and on Bornholm, the palisade enclosures might represent 'assembly institutions' (Svensson 2002; Nielsen et al. 2014), which are not known from the other areas, and which are again linked to a mainly dispersed settlement pattern.

In all three regions burials and depositions in older megalithic tombs and their mounds were still practiced. Astonishingly, the older content of the megalithic chambers and of the votive offerings in front of entrances and passages was still respected (Wunderlich 2014; Brozio 2016; Dibbern 2016). To the south, in northeast Germany this seems also to be the case, but with Globular Amphorae within the megalithic tombs. Quite interestingly, in Mecklenburg-Vorpommern Globular Amphorae do not appear in burial types other than megalithic graves (Nagel 1985; Woidich 2014).

In conclusion, the centuries we are dealing with are centuries of a huge transition – from the first phase of northern monumentality, the cooperative one, to the second phase afterwards, with the individual representation of the dead. Nevertheless, between c. 3100–2800 BC the power of the ideologies of the local groups and of the regionality was not strong enough to develop a viable new ideology and social pattern, as it had existed for centuries before.

New monuments and new taboos

The situation changed rapidly around 2800 BC (cp. Hübner 2005; Heyd 2017; Kristiansen *et al.* 2017; Schultrich 2019). The erection of burial mounds for individuals with Corded Ware (CW) vessels and new types of hammer axes in some areas and the destruction of these hammer axes in other areas, implied ideological differences and tension within and probably between different parts of the population (Müller and Vandkilde forthcoming; Schultrich 2019). We have distinguished three patterns:

- Region 1 (e.g. West Holstein), where around 2800 BC new mounds for individual burials were constructed within a new ideology that would last for about 25 generations, and that rapidly dominated the landscape and society (Dibbern 2016);
- Region 2 (e.g. East Holstein), where around 2800 BC hammer axes of the new type were destroyed and deposited in the landscape, while only rarely other elements of the Corded Ware phenomenon were recognised before c. 2600 BC (Schultrich 2019);
- Region 3 (e.g. Zealand), where around 2800 BC the new types of material culture were integrated in the traditional way within the local, still Middle Neolithic burial rites, without any changes in depositional practices (Iversen 2015).

Successful occupation, successful resistance against, and successful integration of the new elements, are visible in these three scenarios. Both internal developments based on the changes described, in addition to external developments probably triggered the new ideologies, which resulted in these mosaic-like transformations. Almost no Corded Ware elements are known from megaliths (Hübner 2005; Schultrich 2019), except for the regions that integrate the new Corded Ware types by using them for the older TRB ‘grammar’ of depositional practices (Iversen 2015; 2016) between 2850–2600/2500 BC. There seems to have been a taboo to use these older monuments for the new ideology or for any *rite de passage* for these ‘new’ individuals, who had contradicted (or challenged?) the original cooperative ideology.

Interestingly, ritual formations changed around 2600 BC with the middle Corded Ware/single grave communities. Then, secondary burials of individuals took place in megalithic monuments. At this time, some of the older megaliths

were modified into single graves with new mounds and thus, new types of monuments. For example, Lüdelsen 3 was elongated by a second mound that’s doubled the original TRB size of the monument (Demnick *et al.* 2008 (2011)). In the Limfjord area, a new renaissance of building stone cist graves to the size of megaliths is observed (Vandkilde 1996; Hübner 2005).

This renaissance of using megaliths for burials and in some areas in building monuments that are megalith-like, was contemporary with the collapse of the second phase of monumentalisation. Mounds for individuals, which were built in the early Corded Ware phase, were no longer constructed in such a quantity (Holst and Rasmussen 2013; Brozio *et al.* 2019). This is the moment when the taboo to use megaliths for the *rite de passage* is – as we saw – no longer current. Astonishingly, in most of the documented occasions, the new burials respect the TRB remains within the chambers (see Kühn 1979). This contrasts with the Globular Amphorae influence in some areas around 3000 BC, and also the Late Neolithic handling of megaliths around 2200 BC, which in many cases destroyed the TRB remains (Kühn 1979; Dibbern 2016). There are two explanations: first, the new Corded Ware phenomenon was, after about 10 generations, established in a non-endangered status, so that a taboo on old ideological remains was no longer necessary. Second, this allowed the described renaissance of megaliths and their integration into the new social pattern.

The post-ludium: lost in translation

Late Neolithic communities on the Cimbrian Peninsula appear to be ‘monument-free’. From c. 2300/2200 BC, the Late Neolithic in southern Scandinavia and on the North European Plain represented an apparent new quality of economic and social life. Agriculture changed from mainly extensive into increasingly intensive cultivation and the production of certain items like flint daggers appear almost industrialised (Rassmann 2000; Apel 2001; Kirleis *et al.* 2012; Brozio *et al.* 2019; Kirleis 2019a), and the amount of deposited objects, which we might use as a proxy for the productivity of the economy, increased (Müller 2015; Brozio *et al.* 2019). Palynological records indicate increasing open land (Feaser *et al.* 2019). At the same time, we observe a division of the Late Neolithic south Baltic world. While in northern Denmark and mainly in southern Sweden, Late Neolithic megaliths are erected as a new type of monument (probably as a continuation of the megalithic renaissance of the middle Corded Ware), in the southern distribution areas they are quite non-megalithic and non-monumental orientated. In contrast to the ‘CW behaviour’, older remains within megalithic chambers are not respected when Late Neolithic burials are introduced – even megaliths were sometimes destroyed or finally closed (Kühn 1979; Dibbern 2016). There seems to have been a lack of mythical or other

symbolic/esoteric association with respect to these megalithic monuments, except for the fact that those Late Neolithic communities dealt with them as quarries or as convenient places for ritual or other activities. Times changed and new ideologies developed (or dominated?).

Conclusion

Transformative processes are visible in the different handling and continued or discontinued biographies of places. In the last century of the 4th and the 3rd millennium BC, different trajectories of continuities and discontinuities are visible in different spheres of daily practices. These are influenced by the degree of networks of mobility within the society, and with the others, which live on different coasts, different plains or behind topographic barriers such as the mountain ranges. Firstly, the practice of ‘megalithism’ ceased, when around 3100 BC the cooperative meaning of the collectively erected monuments and the discarded individuality of the deaths in the chambers (which made them ancestors) contradicted the increasing disintegration of the communities. Secondly, liquids that were stored and transported in Globular Amphorae (representing different general meanings) attracted people and furthered a changing symbolism within the social and ritual practices. Thirdly, increasing mobility and openness within social networks made the intrusion of new practices of individual representation, new symbolism and new pattern of trans-local communication around 2800 BC possible. A taboo on most megaliths for some generations helped in the stabilisation of the new ‘status’ accumulation of individuals and groups, which acted in an economically diverse manner with quite different impacts on the environment. The second Nordic boom in monuments during the first generations of Corded Ware was transforming the first cultural landscape into a stable new world of meaning, a renewed cultural landscape that underlined the new ideological background with a new reception of sites and landscapes, and monuments and their meaning. The ‘megalithic taboo’ was broken, when the established system was stabilised and a kind of renaissance with a different meaning on megaliths appeared. In spite of these transformations that were linked to social and cultural issues, the change around 2200 BC seems to be clearly associated with economic changes: now megaliths fell out of use, at least within the south Baltic regions.

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Settling the monumental issue in the Dutch Wetlands

Gary R. Nobles

Abstract

Early monumentality is often associated with the beginning of the Neolithic. In contrast, this paper investigates recent evidence from the Dutch wetlands which shifts this perception, providing an example of a later adoption of monumentality relative to the broader European narrative. By doing so, this paper continues a recent debate regarding the presence of monumentality in the Dutch wetlands, an area well-known for its high preservation of Neolithic settlement remains. The evidence for monuments is reviewed and contrasted with the domestic structures that have been claimed by some authors to be comparable. Recent discoveries are included and brought into the discussion to contextualise the spatial and temporal issues that have been raised regarding the distribution of early monumentality. By treating the Neolithic as a series of developing models, the paper queries the traditional views that have been applied to the Dutch wetlands, questions are asked regarding its relative isolation from the European narratives and how a juxtaposition of these narratives could help explain cross-cultural societal aspects. It raises questions regarding the broader social aspects of the European Neolithic.

Introduction: modelling the Neolithic

The development of the Dutch Neolithic in the wetlands is very different to the rest of mainland Europe. The Dutch model views the Neolithic transition as beginning with the Swifterbant period (5000 to 3400 BC), a process that is complete by the end of the Vlaardingen period (3400–2500 BC). It is during this time that the Funnel Beaker culture or *Trechterbekercultuur* (in Dutch) (TRB, 3400–3000 BC) and the proceeding Corded Ware culture (2900–2300 BC) ceramic styles are directly on the geo-cultural ‘doorstep’ and enter the wetlands (see Bakker 2009; Raemaekers 1999, 161;

Louwe Kooijmans 2007). See Figure 12.1 for the main periods for this region.

The cultural models for this region have seen continued refinement. The ceramic styles are unique to this area, forming a microcosm broadly unaffected and stylistically distinct from the surrounding cultural developments. The lifeways that are seen in the wetlands continue the hunter-gatherer traditions; there is the change in lithic technology, the introduction of animal domestication and cereal production, sat alongside the continuing traditions of hunting, fishing, foraging and gathering. These traditional lifeways are not superficial but indicate a significant part of what has been dubbed as an extended broad spectrum economy (Hogestijn 1992; Louwe Kooijmans 1993, 133; 2010, 27; Cappers and Raemaekers 2008). This creates inconsistencies when compared to other European implementations of a Neolithic model, which sees the partial or complete replacement of hunter-gatherer tradition with one focused primarily on agriculture.

It is unclear why the end of Vlaardingen ceramic styles defines a moment where a fully Neolithic way of life had apparently been adopted in the wetlands, particularly since the arrival of Corded Ware ceramics sees no significant change in the daily way of life (Nobles 2016). This paper explores the settlement and mortuary evidence for the Neolithic in the Dutch wetlands. Contemporary views from academic and commercial archaeology are presented alongside the argument for the emergence of conventional monumentality, an aspect that has long been absent from the Dutch Neolithic in the wetlands. With these revelations, questions are raised regarding the cultural and social dynamics of the time.

Settlements and houses

The approach taken to Neolithic dwelling in the Dutch wetlands has resulted in researchers perhaps creating their own

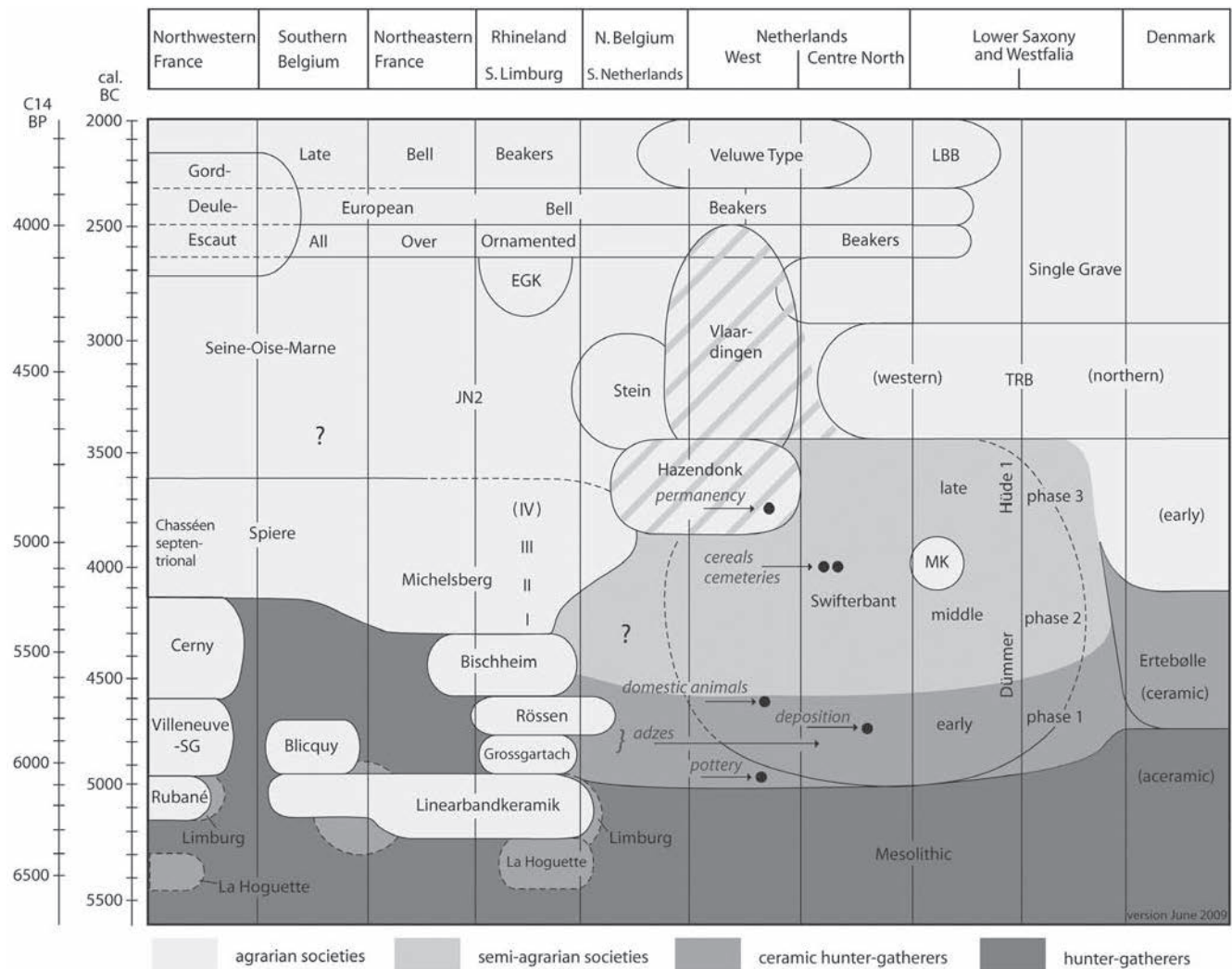


Fig. 12.1 Cultural definitions within the Netherlands and their contemporary counterparts in neighbouring countries (after Louwe Kooijmans 2007).

problems within the archaeological literature that may be more an issue of perception than interpretation. The spatial definition and illustration of house plans from historic and prehistoric settings has led archaeologists in the Netherlands to search for typological sequences for dwelling structures (Fig. 12.2). Investigating the chronology and evolution of house design has raised the postulation of various forms, and the partial fabrication of geometrically symmetrical house plans that are characteristic of later periods. In these cases, so-called 'missing postholes' are represented in the published plans (Waterbolk and Harsema 1979; Verlinde 1984; Waterbolk 2009; Anscher 2012; van Kampen and van den Brink 2013; Stokkel and Bulten 2017; Waterbolk 2018). The assumption of an underlying typology and related symmetry distracts from the possibility that in some regions the 'typology' could be based on variability, whereby there are no standard forms. This certainly appears to be the case for some of the Neolithic cultural groups in the wetlands, for

comparison see the various overviews of the Dutch Neolithic dwellings (Hogestijn *et al.* 2000/2001; Raemaekers 2013; Drenth *et al.* 2014; Nobles 2016).

Mortuary practice in the wetlands

A very brief overview of mortuary practice in this region demonstrates much variation as well as similarity. Single Human burials are evident from the Mesolithic sites such as at Dronten, Hardinxveld-Polderweg and Hardinxveld-De Bruin (Louwe Kooijmans and Nokkert 2001, 101; Smits and Louwe Kooijmans 2001, 421). The early Neolithic Swifterbant sites (Swifterbant-S2, (potentially) S4, S11, S21 and S22-23, Urk- E4 and P14 (Raemaekers 2006, 8-9; also see Louwe Kooijmans 2007)) contain burials in groups of mostly three to ten individuals, yet human bones, including skulls, are also present in the settlement debris. With the exception of the Zoelen burials, all have a spatial association with settlement sites (Raemaekers *et al.* 2009, 540). This

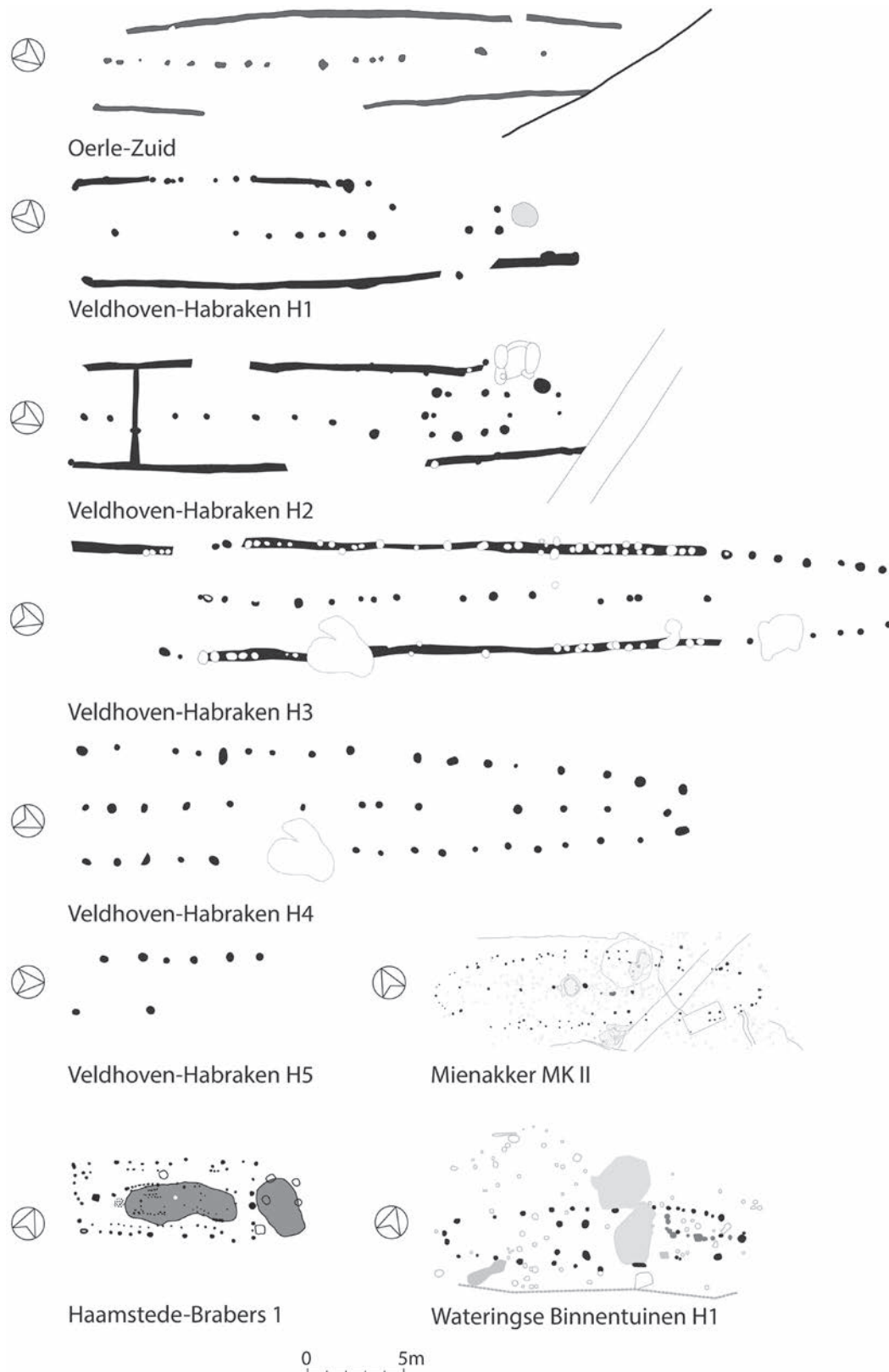


Fig. 12.2 Selected Neolithic house plans from the Netherlands. Oerle-Zuid (after Hissel 2012); Veldhoven-Habraken (after van Kampen and van den Brink 2013); Mienakker (after Nobles 2016); Haamstede-Brabers (after Verhart 1992); Wateringse Binnentuinen (after Stokkel and Bulten 2017). (Postulated post holes have been removed from the plans, see relevant references for the interpretations.)

trend continues into the 4th millennium BC. The Hazendonk settlement sites of Schipluiden and Ypenberg (Jongste and Louwe Kooijmans 2006; Koot *et al.* 2008) both contain burials; seven at Schipluiden and 42 at Ypenberg with most of the individuals in a flexed position. Both sites also have human remains intermingled within the settlement debris. At Hekelingen in the Vlaardingen period, the burned remains of a male in a seated position as well as several human bones were contained within a 5-post arrangement, possibly representing an excarnation platform (Verhart 2010, 170–171). As noted by Louwe Kooijmans (2007, 455), although burial evidence for this period is limited, skulls and long bones have been retrieved following non-archaeological dredging activities in riverine areas. The burials at Schokland-P14 (Anscher 2012) cover multiple periods but are in keeping with the general trends.

The TRB period is witness to the megalithic constructions in the northeast of the Netherlands and also flat graves. Raemaekers (2018, 494) identifies a general trend towards a crouched position, in earlier periods grave goods have been limited, the TRB graves stand in contrast containing vessels and axes. Raemaekers (2018, 496) also questions the presence and absence of monumentality and the changes in mortuary practice as being defining elements of these communities. Moving into the Late Neolithic Corded Ware culture, the single flat grave tradition ('Single Grave culture') continues across the Netherlands. Within the wetlands only two burials are currently known, at De Veken and Mienakker, a female and a male respectively. Both are within the context of a settlement with no grave goods, a continuation of the earlier trends (Pasveer and Uytterschaut 1992; Plomp 2013).

It is worth noting that the vast majority of these burials share a spatial association with settlement sites. Amkreutz (2013) views these spatial associations as more than mere coincidence, a view I would agree with. However, Raemaekers *et al.* (2009, 540) rightly raises the issues around archaeological visibility, a topic that will be returned to, yet focus is placed on the temporal association between the burial event and the dwelling event. Ultimately they concluded that the similarity in location was coincidental because the choices for settlement and burial location on relatively high ground were similar and did not necessarily involve consideration of the longer-term social meaning between these places of the living and the places of the dead (Raemaekers *et al.* 2009, 540).

Further aspects to be taken under consideration are the dynamics of this wetland landscape. The Holocene soils were created through a combination of cross-channel tidal transportation and riverine sedimentation, inversely the same processes facilitated the erosion of parts of the coastline and river banks (Beets and Spek 2000; Vos 2011, 14–15). These processes, which continued through the Neolithic and beyond, resulted in the covering and water-logging of sites

ultimately resulting in on the one hand site preservation, and on the other hand the destruction or partial destruction of sites through erosion. Beyond the wetlands, sites located on the acidic sandy Pleistocene soils would not have been subjected to the same level of preservation, and such sites would have been lost or damaged through the erosion of the cover sands.

These biases are highly significant in this region and as a result, wetland settlements are highly visible, detectable by the preserved and often waterlogged dark humic surface habitation layers (van Heeringen and Theunissen 2001). Settlements on the Pleistocene cover sands are more challenging to detect. In the northeast of the Netherlands, TRB megalithic distribution is mainly isolated to a Saalien glacial ridge, the *Hondsrug*. These megalithic tombs mark the edge of the monumental Neolithic influence from the east (the TRB-West Group). The large boulders used in their construction were deposited before the formation of the cover sands (Bakker 2005, 309), therefore such materials are not locally accessible beyond the vicinity of this geological ridge. On the assumption that there was a limited concerted effort to move stone materials from this ridge (or elsewhere), monumental practice away from this area would have been physically manifested using earth and wood. With the erosion of the cover sands and the development in the wetlands, any monuments would be unlikely to be observed in a modern landscape or through coring campaigns.

Monumentality in the Dutch Wetlands?

The Neolithic in the Netherlands sits alongside the broader developments on the European continent. On the one hand it incorporates international developments while on the other it presents its own Neolithic character. In this sense it has been largely positioned outside the international narratives of monument building and monumentality, being left out of discussions of general European trends. One such trend is the long barrow phenomenon, evidence for which is distributed across Scandinavia, Germany, Poland, France and the British Isles. The first long barrows appear *c.* 4500 BC (Midgley 2005, 78) with the last wooden constructions dating to *c.* 3400 BC (Rassmann 2011, 3), and the last megalithic constructions *c.* 3000 BC (Furholt and Müller 2011, 20 fig. 2, Müller 2014, 207–208). Absolute end dates for the long barrow phenomenon are difficult to determine since such monuments saw continual use. This is particularly the case for the Dutch megalithic monuments, which were used well into the late Neolithic Corded Ware culture (Bakker 2010, 15).

In 2009 an international multidisciplinary team turned their attention to previously unpublished excavations at the late Neolithic Corded Ware settlement sites of Keinsmerbrug, Mienakker and Zeewijk (Smit *et al.* 2012; Kleijne *et al.* 2013; Theunissen *et al.* 2014a; Beckerman 2015; Nobles 2016; Garcia-Diaz 2017). The Mienakker site (excavated

in 1990) was located on a discrete elevation bounded by two gullies. The majority of the archaeological remains were contained within the habitation layers. The application of the spit excavation method in 0.5 m squares enabled a detailed spatial statistical analysis of the distributions. The results supported the interpretation of a previously partially identified dwelling structure (Fig. 12.3). Inside the structure flint knapping was confined to the area surrounding the hearth and amber working to one end, although no entrance could be discerned. Juxtaposed with the dwelling was an outdoor activity area with evidence of animal processing, a potential storage and/or discard area, and cereal processing

in and around feature S120 (Oudemans and Kubiak-Martens 2013; Nobles 2016).

In addition, a small ‘hut’ had been identified directly beyond one of the gullies. It was published based on the assumption that the terminus of the structure was located in the homogeneous fill of the silted up gully (Hogestijn 1997; 1998; Hogestijn and Drenth 2000), a situation where any postholes would be indistinguishable from the natural sedimentation. Within this ‘hut’ a U-shaped arrangement of posts was observed as well as a central post line. Since the site had not been published the site plan had remained distributed over four adjoining hand drawn sheets and never



Fig. 12.3 The site of Mienakker with key features indicated (Nobles 2016).

fully incorporated together. With the four sheets digitised into a single site plan the site could be appreciated in its entirety as pictured in Figure 12.3. In an attempt to search for a terminus for this proposed 'hut' structure the axis of the central post line was projected across the entire site. This line coincided with two larger post holes, upon further investigation the structure MK I, as pictured, was postulated. This structure is 22 m in length and trapezoidal in plan with an entrance in the broader end (6 m at its widest to 3 m).

Unfortunately, the previous dwelling structure overlapped in the middle of the two elements, therefore at this point the interpretation was questionable.

Spatial analyses of the animal bones demonstrated a reduction in mammal bones within the footprint of this proposed structure, whereas the bird and fish remains appeared unaffected (see Fig. 12.4 where the yellow area gives way to orange/red). The reduction in mammal bones began at the location of the proposed wall line that also cut through the

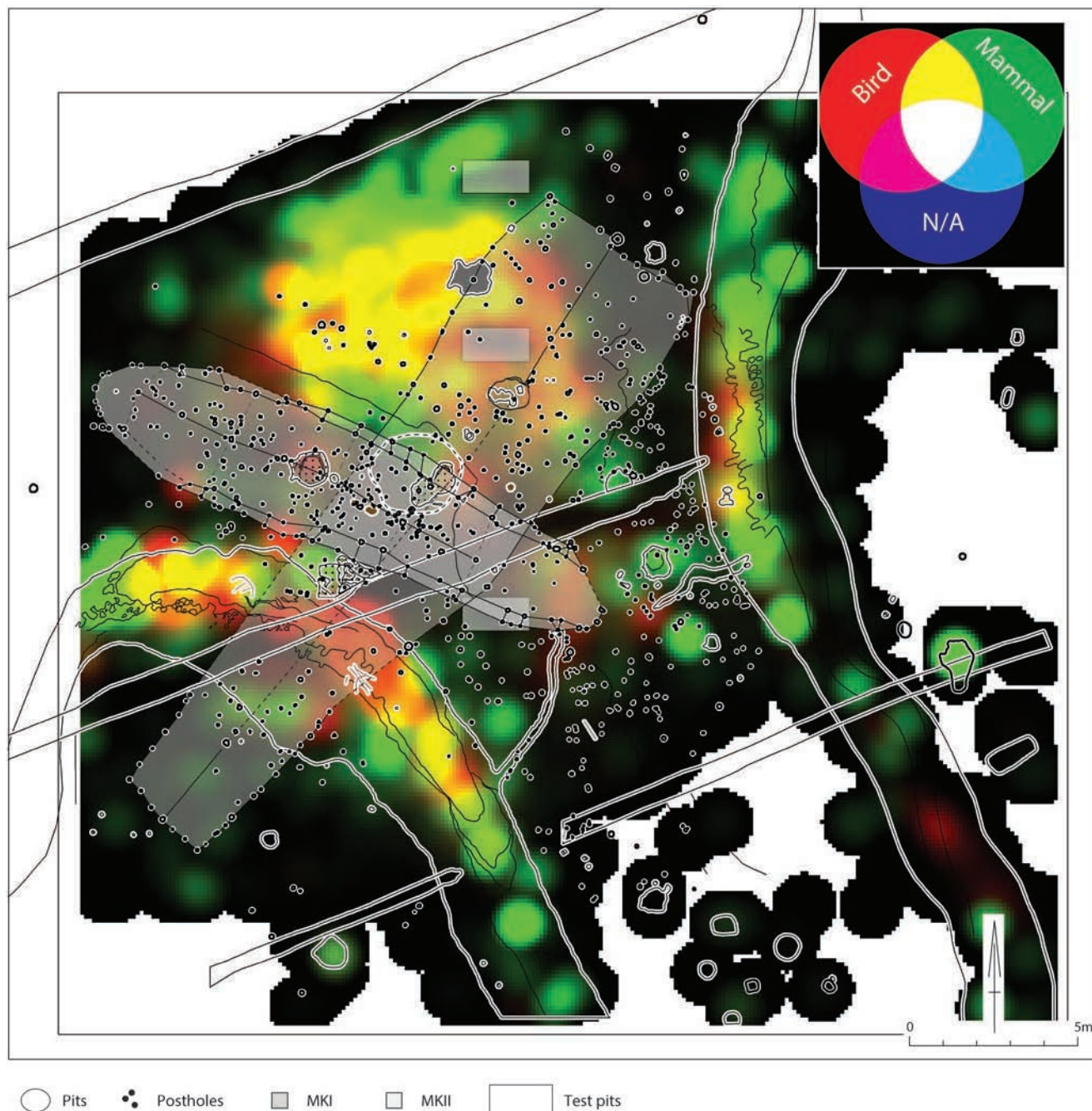


Fig. 12.4 Multivariate visualisation of bird (red) and mammal (green) remains (Nobles 2016, fig. 4.22, p1. 56).

aforementioned cereal processing area (S120). Generally, mammal remains are more susceptible to erosion than fish or bird remains, therefore they must have been subject to different taphonomic processes within the footprint of MK I. This proposed wall line continued across the gully. Given that the gully was open at the time of the dwelling MK II, it is assumed that it would have been silted up prior to the traversing of any new structures. No discernible spatial patterns were found within the footprint of the structure MK I unlike the clear structuring of space associated with MK II. All of these indicators suggest that the structure MK I belongs to a later phase of the site. Another key feature is the location of a human burial in the wider end of this structure, stratigraphically related to the last phase of the locations use.

Together, these factors support the presence of a differentiation of space, however they do not conform with expectations of wetland dwelling, as indicated through MK II, and from other sites (Nobles 2016). These proxies indicate a use in this area different to that of a dwelling structure; the late phasing of the construction MK I in combination with its form and the relationship of the burial indicates it was an addition to a former settlement.

At Zeewijk (excavated 1991–1992), another structure was identified during the excavation, it was so well preserved that the central post line was initially thought to be an old fence. The evidence of flint axe working, which was clearly observable on the rounded base of the posts, caused the excavators to quickly rethink their interpretation. In addition to the central post line was a configuration of posts forming a square or a U-shape. Located on

the edge of the settlements' habitation layers the 22 m long bowed yet trapezoidal structure (5.5–7 m wide) with central post line and an entrance in the broader end could be interpreted as a ceremonial structure. Indeed, the posts themselves were unusual for the wetlands, made of oak, a resource that would not grow to the observed widths in the local wetland area, but from the surrounding peatlands or beyond (Brinkkemper and van den Hoff 2013, 173). The external posts were absent from their settings and were most likely forcibly removed, and perhaps reused elsewhere. The construction of the exterior walls followed a distinct pattern. Located between each of the large posts were two smaller postholes, such a pattern could indicate a wattle and daub construction. The external posts follow a geometric symmetrical patterning; this is completely out of character for Neolithic wetland dwelling. While lacking a burial, the monumentality of such a construction is particularly clear.

This story takes an even more interesting turn when the Mienakker and Zeewijk structures are compared directly (Fig. 12.5). While there are variations in terms of construction material and various components, the central post lines and entrance posts are practically identical in terms of spatial configuration. When the two structures are overlain the entrance posts and the last post of the central post line fit exactly. With only a five-degree misalignment these structural footprints are identical. The structures are clearly different from anything else discovered so far in this area. The Mienakker MKI structure having a trapezoidal form with an entrance and burial in the broader end signifies all the hall marks of the long barrow structures that spanned the

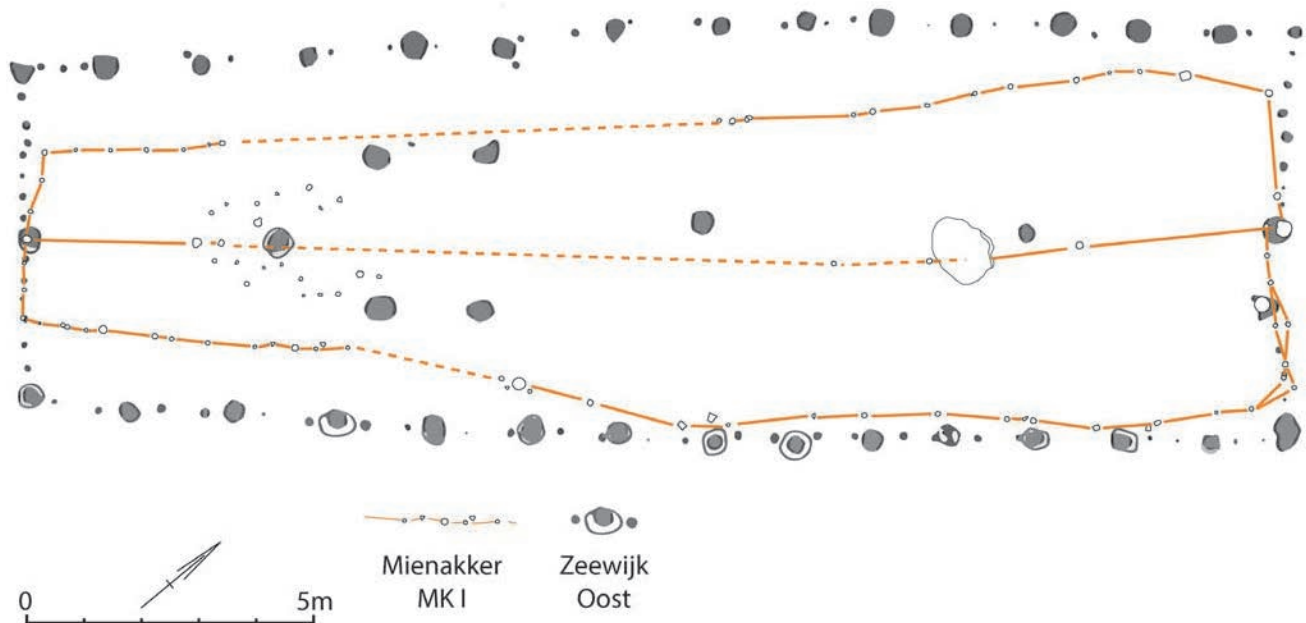


Fig. 12.5 Mienakker MKI overlain on the plan of Zeewijk-Oost.

broader European area beyond the wetlands. The Zeewijk structure, with again no clear evidence of a domestic use alongside the monumentality of the construction, would also conform to the long barrow phenomena. If this is the case, which I present, then it represents the first identified indication for conventional monumentality in the Dutch wetlands.

Settling the monumental issue

Presented above is a summary of the results from the broader study. The interpretation of these two structures as monuments has been verbally questioned by colleagues within the Netherlands and internationally. The main opposing view is that they are house plans – indeed, this was also a comment I received when presenting this paper in the associated EAA session. However, such views fail to account for all of the evidence from the spatial analysis and the nuanced proxy information. Despite these comments, only Fokkens *et al.* (2016) have attempted to grapple with the points raised. This is very much welcomed and presents the opportunity to clarify their points and to move the discussion forward. However, before moving to their specific points I will discuss the parallels that have been suggested, in particular, to the Zeewijk structure as a structure of dwelling.

The concept that the structure at Zeewijk-Oost is a house has been exacerbated in part due to the unpublished nature of the site with elements of it appearing across several publications (Whittle 1996; Hogestijn 1997; 1998; Hogestijn and Drenth 2000). Most recently the site of Veldhoven-Habraken in the southern Dutch province of Noord Brabant presented a structure that dates to c. 2900–2400 BC (van Kampen and van den Brink 2013, 29, H2; see Fig. 12.2). The authors have not been able to link the site to any single Neolithic culture, in part due to the broadness of the dating as well as finds of artefact traits in keeping with the Michelsberg, Stein group, Corded Ware and Bell Beaker cultures (van Kampen and van den Brink 2013, 130). As noted by Fokkens *et al.* (2016), there is a comparable structure a short distance away at Oerle-Zuid (Hissel 2012, 166).

Within this context the Zeewijk-Oost structure is presented as a comparative parallel based purely on the post hole configuration, despite the differences in biotope, preservation conditions and cultural associations. Their conclusion is that Zeewijk-Oost is a comparable structure with a domestic purpose rather than one with a more ritualised use (van Kampen and van den Brink 2013, 43).

This comparison hinges on the layouts of the structures, particularly an internal collection of posts in a rectangular arrangement. The report goes further to bring in the houses of Haamstede-Brabers (van Kampen and van den Brink 2013, 49–50). There is an argument for cattle stalling within the house structure, if the comparison holds then by inference this could suggest that the Zeewijk-Oost

structure also served such a function. However, and by their own admission, their excavation yielded no evidence for cattle stalling within the structures, phosphate results were inconclusive, no cow hoof marks were present, and no evidence of stalls (van Kampen and van den Brink 2013, 47). Despite the archaeological evidence, or lack thereof, there is an insistence by the authors to argue around the evidence to maintain the primary interpretation that cattle were stalled in the houses. This extends to the use of archaeological illustration to support the interpretation (van Kampen and van den Brink 2013, 47, fig. 5.6), one which is also dismantled by Fokkens *et al.* (2016, 259–262). The housing of livestock is counter to the evidence demonstrated by Fokkens who puts cattle stalling not before 1400 BC (Fokkens 1999, 36). I must acknowledge that the Zeewijk monograph was not available at the time of the publication of the Veldhoven-Habraken report. However, the site of Zeewijk now demonstrates conclusively that cows were kept outside of built structures. Substantial quantities of recorded cow hoof marks (n=13,650) support the interpretation that cattle were brought into the settlement area, perhaps en route to a water gully, but crucially cattle did not enter the areas where habitation structures are suspected to be (Nobles 2016, 258–259). There are, however, cow hoof marks within and beyond the footprint of the Zeewijk-Oost structure and this is also the case for the extensive ardmaks, which represent at least two phases of agricultural practice. Zeewijk-Oost was excavated in 1 cm spits. This gives a clear indication that we are dealing with a cumulative palimpsest – these cow hoof marks and ardmaks represent activities associated with the nearby habitation and not the structure itself. There are no indications that the Zeewijk-Oost structure stalled cattle.

In spite of these shortcomings, the Veldhoven-Habraken report is used in a study by Stokkel and Bulten (2017, 61) regarding structure 1 at Wateringse Binnentuinen to add credence to the idea that Zeewijk-Oost is a domestic structure. Fokkens *et al.* (2016), in their part of the evaluation of Dutch development-led archaeology (*Oogst van Malta*), attribute the Veldhoven-Habraken sites to the Vlaardingen Culture and state ‘the Zeewijk-Oost and Veldhoven-Habraken houses are very much comparable and date to the same period’ (Fokkens *et al.* 2016, 284), even though Zeewijk-Oost is built upon a Corded Ware settlement site and the radiocarbon dates from the preserved oak posts put the felling of the trees in the Late Neolithic, 2500 and 2200 BC, beyond the time of the Vlaardingen period (Theunissen *et al.* 2014b, 259). Fokkens *et al.* (2016, 294) clearly perceive the Zeewijk-Oost structure as a normal house, but may be trying to infer some kind of typological distinction: ‘The Zeewijk-Oost, Veldhoven-Habraken and Oerle-Zuid houses have the same structure as the Vlaardingen houses that we already knew, although they are larger’ (Fokkens *et al.* 2016, 293).

However, Fokkens *et al.*'s (2016) arguments against a monumental interpretation can be reduced to two specific points:

- In reference to Mienakker: with so many post holes present any configuration is possible,
- And with reference to the Zeewijk-Oost structure: it is not comparable to that of Mienakker, and in their opinion it is a house.

These are some important points that require a considered rebuttal when trying to settle this most monumental of issues. While the first point has some validity, it comes undone when the evidence is presented. The high number of post holes is in keeping with the palimpsest nature of these kinds of settlements, however the rear of the structure is not obscured and the front facade appears to be fairly clear. Given the complexity of these sites it appears justified to allow this form of interpretation when there is supporting evidence beyond the feature distribution, particularly from the spatial analysis of the artefact distribution, as presented above. In addition, independent analysis of Mienakker from the soil micromorphological analysis, within MK I, does not support a domestic function (Colenberg 2014, 22, 26).

The second point is countered by repeating the construction steps of such a structure. The central post line is taken as the baseline from which the structure is orientated, following this the opposing entrance post is positioned to one side and set backwards slightly into the footprint of the structure. How the structures developed from this supposed 'skeleton blueprint' was subject to interpretation by the builders. In this regard the comparison between the Zeewijk-Oost and Mienakker MKI appears clear, other than the external variation and the negligible misalignment, these configurations are identical in plan. On the one hand this gives the Mienakker structure validity, on the other hand it could presuppose that the reasons for building both structures were the same and therefore they were likely to function in similar ways.

The monumental nature of the Zeewijk-Oost structure relative to the vernacular architecture of the surrounding sites adds credence to its interpretation as a structure of cultural significance and not a typical house. Its symmetrical geometrical pattern strongly indicates a planned construction. The original excavators interpreted Zeewijk-Oost as a ceremonial structure (Hogestijn 1997; Hogestijn and Drenth 2000), and as I set out above, I concur. The inclusion of a burial within the Mienakker structure would typically suggest a mortuary function, although it could be argued to be some kind of domestic ritual, and may not have a bearing on the structures function. However, when compared to mortuary tradition, and specifically monumentality on the European scale the pattern and arrangement of the structure is significant (see Nobles 2019). With a trapezoidal form, an entrance in the wider end, and a burial located centrally in

the wider area it is justified to compare the structure to that of many of the European long barrows (see Nobles 2019). Given the comparability in form, and spatial evidence, it is defensible to infer a similar functionality for these structures. Additionally, both are comparable in their life-histories, being situated on former settlements, an aspect I have previously gone into in great detail (Nobles 2016). This reiterates the possible association of mortuary practices with places of habitation as set out in the introduction.

The wrong place at the wrong time?

To the most astute reader it would be clear that these two monuments date to a time beyond that of the *c.* 4500–3000 BC date range for megalith or earthen long barrow construction. The dating of the Zeewijk structure is in the range of 2500–2200 cal BC, which presents a 500–800 years separation. Further, they are located in an area far removed from the currently accepted distribution. However, a recent excavation at Oosterdalfsen (van der Velde *et al.* 2019) revealed an earthen structure at a TRB burial site, which on the basis of the ceramics and the Brindley typology (1986) dates to 3200–2700 BC (Fig. 12.6). The site consisted of 137 grave cuts yielding 123 vessels, a knob-butted axe, an amber necklace consisting of 66 beads, and an amber bead bracelet. While the bodies were absent due to the acidic sandy soils their shadows could still be observed.

An oval-shaped ditch, 30 m × 4 m, cut 2 burial pits and was cut by 3 burial pits securing it in a TRB-dated stratigraphic sequence (Brindley phase 5 and phase 7, dating to horizon 5 or 6). Lacking a central grave, the structure is interpreted as an earthen monument being visible for at least 2,000 years on the basis of a spatial demarcation of a later Late Bronze Age/Iron Age cremation burial ground (*c.* 1200–500 cal BC) (van der Velde *et al.* 2019). While absolute dating is not available, its attribution to 3400–3000 BC alters the European distribution map of monumental constructions (Müller *et al.* 2014, fig. 1). In addition, a structure from the very last phase of the Schipluiden site, *c.* 3500 cal BC, may also be a barrow (Fig. 12.6). The explanation for the current 'hiatus' in the dating of the barrows is unclear. However, it is essential that Schipluiden be revisited with monumentality as an open interpretive option, free from the established narrative.

Conclusion: (un)answering the role of society in and out of the wetlands

Sometimes we may overlook that, in its purest sense, the interpretations of the Neolithic are based on diverse theoretical socio-technological models. The conclusion we must come to is that no one model, no one package, can account for the diversity that is portrayed through the archaeological record, be it in a specific space or at a particular time (see

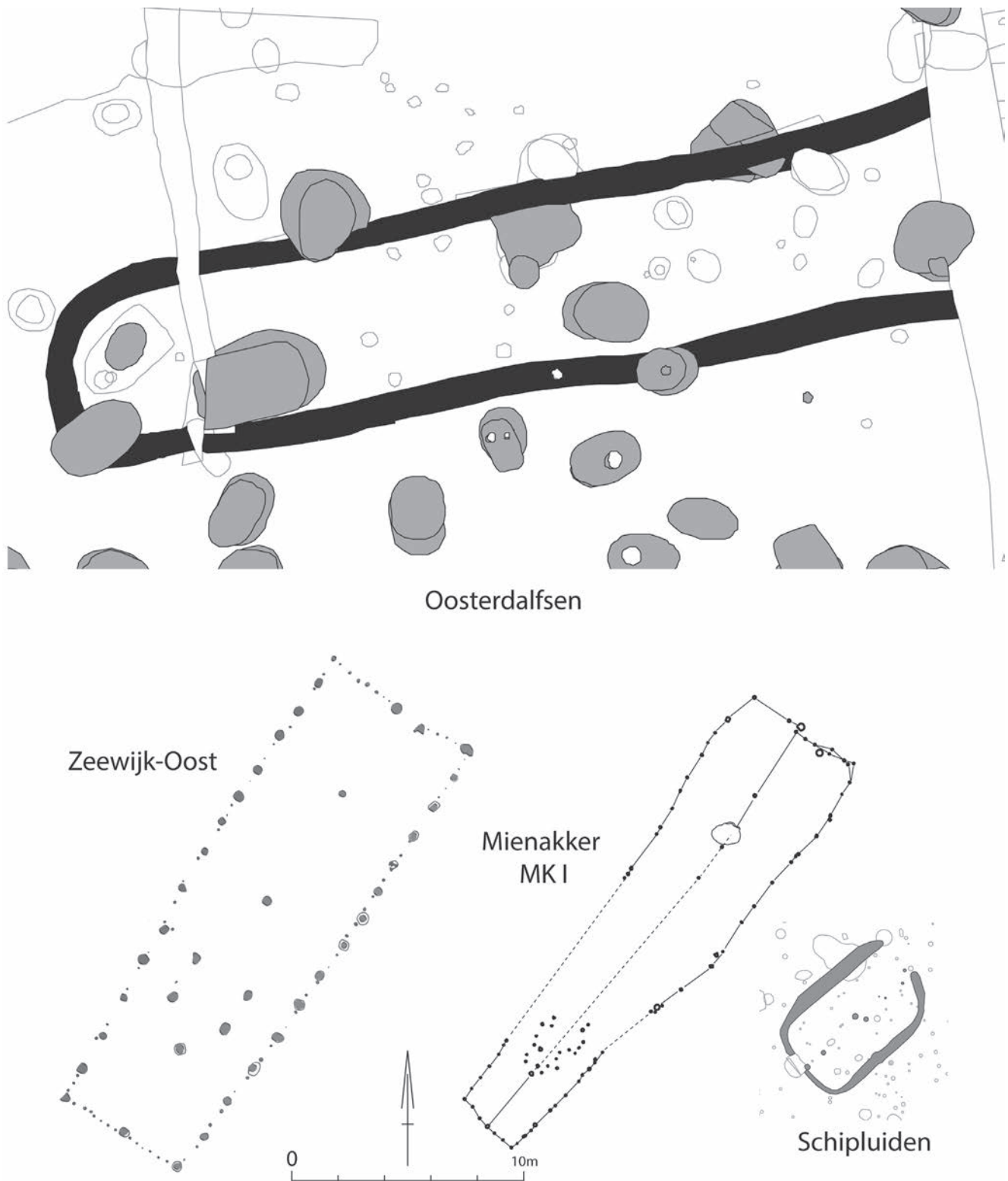


Fig. 12.6 The earthen monument of Oosterdalfsen (after van der Velde et al. 2019); the wood-built structures of Zeewijk-Oost and Mienakker (after Nobles 2016); the ditched feature from Schipluiden (after Hamburg 2006).

for discussions, Childe 1925; 1936; Sherratt 1990, 147–167; 2005, 144–145; Whittle 1996, 9; Bradley 1998, 20–35; Thomas 2002; Shennan 2018). Models, by definition, are imperfect generalisations and require continual revisiting and appraisal. The narratives that are drawn from them form the basis of our academic discussion and although they can represent the best of our thinking and agree at times, they often contradict each other.

Cultural models are building blocks, a foundation upon which ideas and narratives are contextualised. However, the concept that a cultural group was a self-identifying population would be a broad oversimplification. Rather, it is usually a region where the archaeological evidence follows a certain pattern and is formed of various traits that create a commonality. Within these approaches, material culture is taken as a simple proxy for a generalised group, this is often taken to represent an actual population, for instance the case of the ‘Beaker Folk’.

This culture-history perspective is a useful modelling tool to create a platform for discussion and to avoid theoretical stagnation due to the limitations of the datasets. While we tend to focus on these common traits, the diversity and nuance can sometimes become lost or under appreciated. Cultural models are inherently associated with a geographical location. However, as I have stated previously, it would be ill-advised to draw directly from models situated in different environments and apply them to different situations. Models, such as those presented by Bogaard (2004), while indicative for the areas they evaluate should not be directly translated to different regions, which vary in their ecological and cultural settings without sufficient supporting research (Nobles 2016, 296). While models are useful abstractions that facilitate the development of archaeological narratives, they can have a detrimental effect if they become deterministic to our thinking. In such a case evidence can become labelled as outlying from the model, consequently labelled as of low significance. It is only when such information becomes a regular occurrence that a realisation emerges that the model is inaccurate and requires amending. The point I am trying to make is that generalisations, whilst useful, can become distractions and ignore the nuances and complexities that exist on the local level. Broad sweeping narratives can portray past societies in a light that cannot be justified from the evidence situated in the archaeological record. As van der Velde *et al.* warn, in reference to the discoveries at Oosterdalsen, and as discussed in this article, ‘our knowledge of European prehistory is by definition based on what we know and that one new site might have a profound impact on our reconstructions of our past’ (2019, 327). This is particularly relevant in areas and regions where very little is known about the archaeological record.

The cultural and social dynamics that are at play in this region are vastly under researched, in no small part due to the limited scale of excavations. How the dryland farming

populations and the ‘hunter-gather-farmer-fisher-herders’ interacted with those beyond the wetlands is unknown. We use the definition between Holocene and Pleistocene soils as a division between wetland and dryland populations, but were the populations really restricted by such a definition? How much of this is a matter of archaeological preservation bias and convenience? This raises a number of questions: Ecology would seem to be an unlikely factor, particularly due to the presence of non-local oak posts at Zeewijk-Oost. Did ‘farmers’ enter the wetlands, did the wetland populations also occupy the drylands, are our own definitions over simplified? Was the interaction a long-established tradition developed over millennia or were the people socially isolated from each other? Was it really a cultural backwater as questioned by Raemaekers (2018)? How does this type of Neolithic emerge? If other areas had such a diverse ecology would the Neolithic in different regions have developed in a similar way? How can we contextualise local and regional development within grand narratives of population mobility and cultural change? On the European scale why has the Dutch situation been largely bypassed and not incorporated or juxtaposed with general trends and models? Why has the focus been placed on the archaeology of comparability when constructing the models, rather than the archaeology of difference? Have we circumvented the complexity?

It is clear that the archaeological richness, high levels of preservation and diversity provide a wealth of information for those seeking to investigate social processes and the social mechanisms that facilitated cultural change as well as socio-environmental adaptation. The research presented here begins to highlight these issues and opens up the broader questions, particularly in relation to the generalised international narratives. The Dutch Neolithic certainly provides ample material to contrast with what on the European scale would be viewed as a more conventional Neolithic.

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Celebrating stones – megalith building traditions among Angami-Naga, northeast India

Maria Wunderlich

Abstract

Nagaland is an area of northeast India that contains examples of diverse and multifaceted megalithic building activities, some of which ended only very recently. Ethnoarchaeological field work was conducted in 2016 in the southern areas of Nagaland in cooperation with Nagaland University. Within the traditional social organisation of Angami societies, megalith building formed an important materialisation of different mechanisms, choices and social factors. The monuments are a result of complex and competitive feasting activities and economic inequality within the communities concerned. However, they are also indicative of recursive relations of mutual aid and solidarity; wide networks of social relatedness and kinship are highly influential within megalith building. An analysis of the entanglement of these very different factors shows the complexity of phenomena, such as megalith building practices. The diversity of the involved social mechanism and their materialisation constitutes a potential aid for interpretations of archaeological case studies.

Introduction

Among the most controversially discussed topics among prehistoric archaeologists is the social significance and context of the emergence, and subsequent spread, of monumentality and megalithic structures (*e.g.* Müller 2011; Gebauer 2014; Artursson *et al.* 2016; Schulz Paulsson 2017). Of substantial importance is the organisation of, and socioeconomic mechanisms involved in different case studies of megalith building. Although different models of social organisation were assumed for societies with megalith building activities, it remains rather unquestioned that many of the monuments constitute collective building efforts due to their size and complexity. Different ethnoarchaeological case studies show

that indeed megalith building can be characterised as a result of collective action, although the societal background of these efforts may range from more egalitarian to highly hierarchical societies (*e.g.* Adams 2007; Jeunesse 2016; Jamir 2019). Similarly, influential choices and mechanisms may vary greatly (Osborne 2014).

Within this framework, the case study presented here addresses two primary questions: How precisely are cooperative megalith building efforts organised and to what degree are they connected to kinship structures? Which social mechanism and choices are meaningful within megalith building traditions in Nagaland? To answer these questions, fieldwork was conducted in cooperation with Nagaland University in 2016 in one of the last remaining areas of recent megalith building activities. Although megalith building traditions in Nagaland were abandoned during the last few decades, there are still living witnesses who experienced megalithic constructions during their childhood or adolescence. During the fieldwork, interviews were conducted with a focus on southern Naga groups, including the Angami and Chakhesang-Naga, and the existing megalithic monuments were documented within archaeological standards (including metric, spatial and type-related documentation). The results derived from these analyses were used to evaluate different possible scenarios of megalith building and their potential to be recognised within archaeological data sets (Wunderlich 2019).

Nagaland: a brief introduction

Nagaland, located in the north-eastern part of India, constitutes one of the seven so called sister states of northeast India (Fig. 13.1). While India provides a rich account of megalith building activities in prehistoric (Iron Age) and historic, as

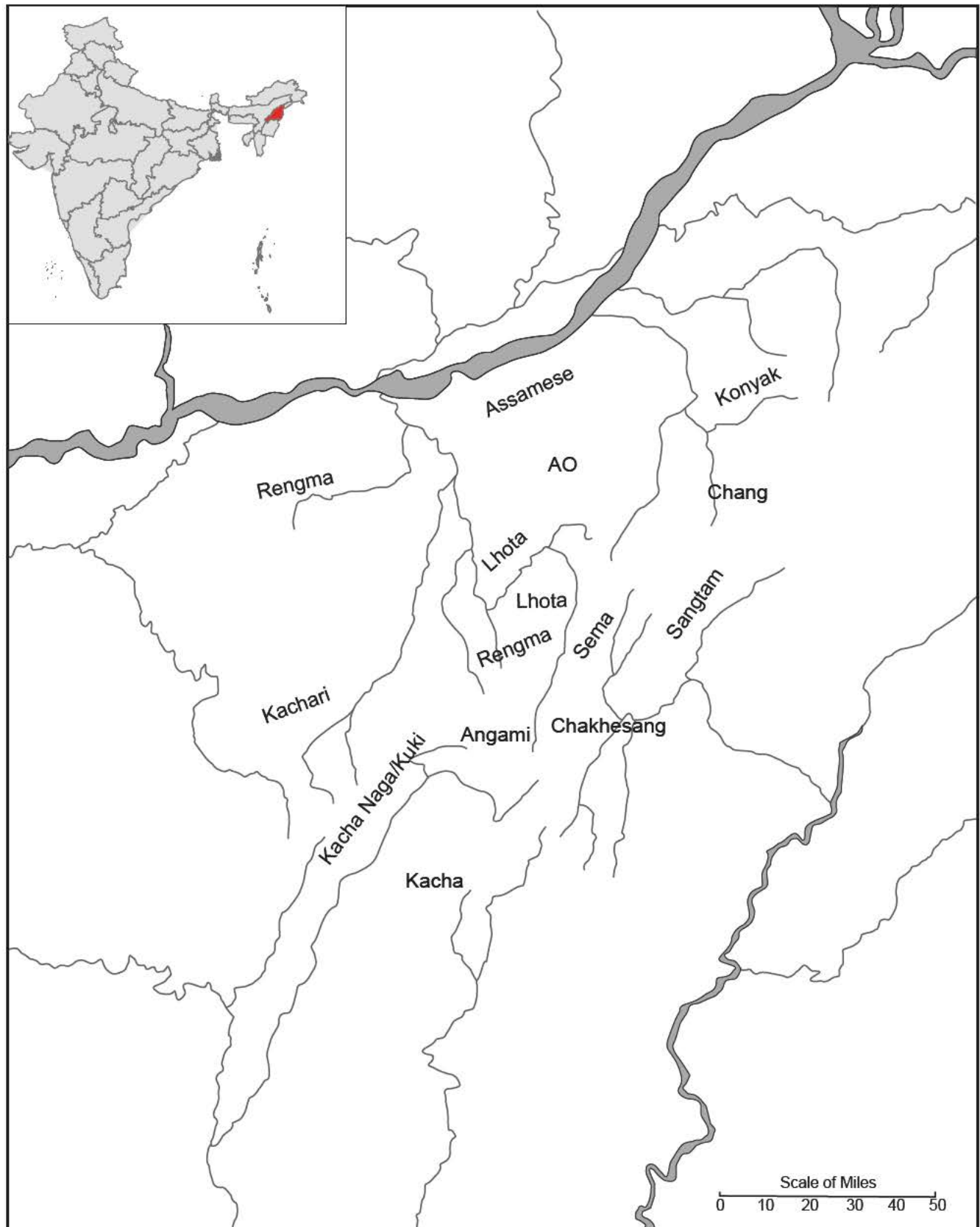


Fig. 13.1 The different Naga-groups within Nagaland (changed after Hutton 1969).

well as in modern periods, the density of recent megalith building activities is exceptionally high in the north-eastern states (*e.g.* Mawlong 2004; Basa *et al.* 2015; Marak 2019). Earliest records on megalith building and feasting activities in Nagaland can be found within the ethnographic monographies written by English colonial officials (*e.g.* Hutton 1921; 1969; Mills 1922). Within the decades following the independence of the Indian state, an independent research tradition also evolved in Nagaland, which frequently combines anthropological and archaeological perspectives and methods (Jamir 2019), thus offering insightful and diverse data on Naga societies. Naga communities underwent profound changes following the Christianisation of the area (1850/70), the integration into the English colonial government (1840), as well as the integration into the Indian national state in 1947 (Channa 1992; Joshi 2008, 43–45; Ovung 2012, 21). During these changes, many of the traditional social structures, mechanisms and specific traditions disappeared, among them the Feasts of Merit and megalith building, which will be the focus of this article.

Social and political organisation among Naga societies

The basic social organisation among Angami-Naga above the level of household and core families comprises of two social units, clans and Khels. Despite providing an ancestral framework, members of the patrilinear clans cooperated for agricultural activities (such as harvesting), provided social security and were responsible for administrative tasks. The members of a clan also participated in feasting activities of their fellow clan members by providing resources. Khels were usually organised within age groups, which held responsibility for different tasks, such as the maintenance of the village gates. Khels also hold communal houses, the so-called Morung, where education and childcare was provided for the different clans residing in them (Lohe 2011, 90; Venuh 2014, 136). Both the clans and the Khels provide important referential frames, in which the construction and maintenance of relatedness take place through cooperative activities and mutual aid. This kind of active negotiation and perception of kinship can be summarised under the term social relatedness, including both biological kinship as well as other important relations within social groups (compare Carsten 2000; Alber *et al.* 2010).

With regard to political organisation, communities were characterised by non-institutionalised and flexible hierarchies, especially the Angami-Naga, thus exhibiting a broad range of egalitarian principles. Social hierarchies were mainly achievement-based, with the only inherited social positions being represented by priests of the animistic religion. Within the village, most decisions were made either by smaller collectives, such as parts of the clan or the Khel, or by a village council. This council was taking care of matters that affected the village as a whole and consequently had a

high degree of political and social influence. Being a part of this council required special achievements, such as special skills as a hunter or warrior, or being a successful feast giver (Jamir 2004; Ovung 2012; Venuh 2014).

Feasts of Merit

Within the more egalitarian contexts of the aforementioned Naga-groups, the social meaning behind the Feasts of Merit cannot be overemphasised. The organisation of Feasts of Merit as a feast giver was one of the very few ways for an individual to gain political influence (and access to the village-council) and renown within the broader village community (Jamir 2004; Mawlong 2004). While feasting activities among more egalitarian Naga-groups were open to any community member and through the collective allocation of resources by fellow clan members an activity of cooperative character, they were still highly influenced by economic inequality. Each form of the Feasts of Merit consisted of several stages of feasting activities, with each of these stages requiring a high, and increasing, amount of resources. Thus, the organisation of feasts was not possible for every household, despite the regular aid by clan and family members (*e.g.* Mills 1922; Hutton 1969; Jamir 2004; Venuh 2014).

Specific accounts on Feasts of Merit among Angami-Naga were already presented within Hutton's (1921; 1969) ethnographic accounts on Angami-Naga. Hutton gives an estimation of the resources needed for the different stages of feasting (Table 13.1), deriving from a series of a total of seven feasts, of which two feasts (no. 4 and 5) had to be repeated twice, respectively. In his monograph, Hutton (1969, 231–232) describes a uniform feasting series among Angami-Naga. In contrast to this, the interviews conducted in Nagaland in 2016 clearly showed that the concrete adoption of the number of feasts, the amount of resources and the duration of the single feasts varied significantly between single villages. It became clear that, although the underlying practice of feasting and the social importance of them were shared, the execution was a unique characteristic of each and every village community (Wunderlich 2019).

Megalith building activities

Once a person among Angami-Naga communities completed certain stages of the Feasts of Merit, the feast giver (and the accompanying household) could erect a megalithic monument. Most of the monuments among Angami communities have to be seen as a direct materialisation of intensive feasting activities of an individual. These monuments usually comprised different types of standing stones but may also include sitting platforms. Other types of megalithic monuments present in these communities may include communal sitting platforms, memorial stones of specific events, table or altar stones, burial chambers and skull cists. Graves involving stone architecture (stone slabs used for the walls and

Table 13.1 The series of Feasts of Merit, as it was documented by J.H. Hutton (1969). The feasts no. 1–3 represents preliminary activities and do not count among the four great feasts, which follow afterwards.

Feast no.	Name	Rice	Cattle/Mithun	Pigs
1–3	<i>Kregghaghi; Kinoghe; Pichiprele</i>	low amount	1	
4 (2x)	<i>Thesa</i>	2 baskets (<i>dhulis</i>)	4	2
5 (2x)	<i>Zhato</i>	3 baskets (<i>dhulis</i>)	8	4
6	<i>Lishe/Lesü</i>	6 baskets (<i>dhulis</i>)	10	5
7	<i>Ketseshe</i>	8 baskets (<i>dhulis</i>)	12	8

as capstones; stone platforms above the grave) were quite common among Angami-Naga and could comprise either single or multiple burials. Yet, this type of stone architecture used for burials was in general not necessarily connected to the practice of feasting, as well as the erection of standing stones (Jamir 2019, 123–125; Venuh 2014, 187–188). In general, burial customs were characterised by a high degree of variability. The burial rites of the Angami-Naga were differentiated with regard to specific social roles or status of the deceased (such as warriors, priests, feast givers, etc.) and differed according to the location of the tomb (Jamir 2015, 622–624). Since megalith building activities vary greatly among the different Naga-groups and between different villages, a detailed account on megalithic monuments will be given below with reference to an Angami-village; Khonoma.

Khonoma: an Angami village

As a place of high cultural and historical importance among the western Angami-Groups, Khonoma constitutes an outstanding example of intensive and numerous megalith building activities in this area (Joshi 2008, 40–41). Khonoma reflects the typical location of an Angami village, located on an elevation of 1530 m on top of the foothills of a mountain ridge, covering an area of c. 20 ha (Fig. 13.2). The village is surrounded by different economic areas. The most prominent features are the terrace fields used for wet-rice cultivation. These highly valuable and individual owned and inherited fields stretch across the valley west of Khonoma from south to north. Within these fields, the different standing stones are also to be found.

Less impressive, but equally important especially within the traditional economic system, are the forest areas, which are surrounding Khonoma in the west, east and south. These areas are used for different purposes; the most important among them being *Jhum*-cultivation. After clearing the plots by slash-and-burn techniques, small plots are installed in the forest areas, used for one or two years and then abandoned. The cultivation of these fields includes dry rice and vegetables such as Job's tears and millet (Hutton 1969, 72–80; Nienu 2015, 220). The forest areas are further used for the exploitation of wood and as wood pasture for cattle

and *Mithun* (*bos frontalis*). Although the *Jhum*-fields within the forest areas are usually used by one specific household, the preparation and maintenance of the areas used for cultivation is a collective undertaking involving Khel and clan members (Lohe 2011, 87–90; Venuh 2014, 135–136). The size of the village is reflected in the high number of clans occupying Khonoma. Spatially, the village may be divided into three distinct Khels, or districts. Each of these Khels is inhabited by several clans, with the biggest Khel being inhabited by 15 different clans. The second-biggest Khel has 12 to 13 affiliated clans, while 10 clans are living in the smallest district.

Feasts of Merit in Khonoma

During the interviews conducted in Khonoma in February and March 2016, information was given on the specific execution of the Feasts of Merit in Khonoma. Although the exact number of feasts, as well as a fixed number of required resources was not remembered by the informants, the principles of this specific tradition were described. Feasts of Merit were in their function and sense of twofold character. Firstly, they were used to memorise deceased relatives and secondly, they served the reputation and social prestige of the feast giver himself. The resources required for the feasts were rice (especially for rice-beer) as well as pigs and *Mithun* to be slaughtered. The rice beer would be prepared and after the animals were slaughtered, the individual feasts would begin and last for 10 days. During these 10 days, different groups of people were invited; the duration of attendance thereby reflecting the closeness and social relatedness between the feast donor and guests.

The allocation of resources in Khonoma involved different parties, including the feast-giving household, friends and close relatives, as well as fellow clan members. It was described as one of the obligations of fellow clan members to contribute resources needed for feasting, including appropriation of *Mithun*. This obligation was part of a recursive exchange system, in which resources had to be given back at occasions of feasting, as well as marriages. This system was described as being based on capacities and an understanding of the integrity of recursive exchanges of resources. The recursive allocation of resources was hence linked to

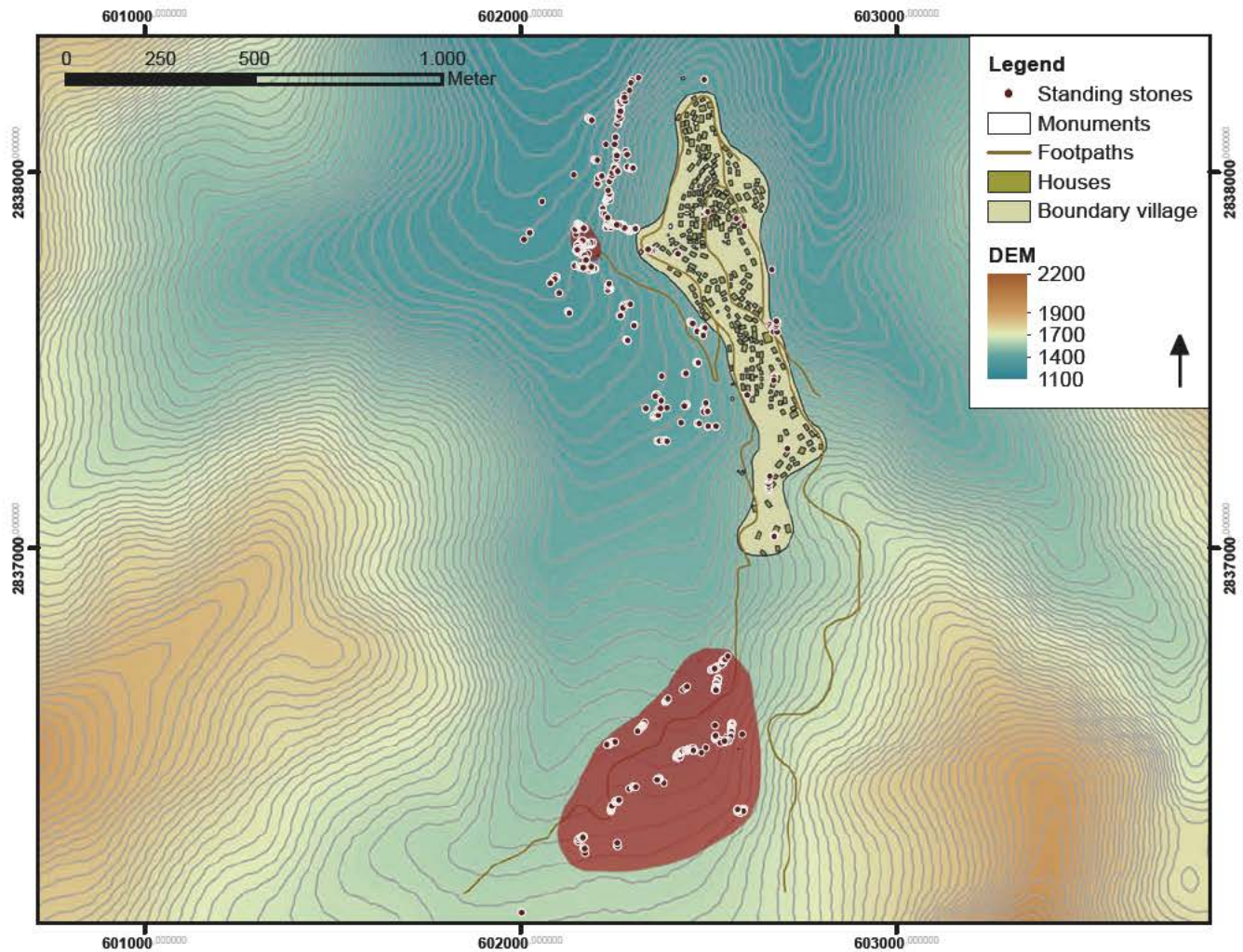


Fig. 13.2 The Angami village of Khonoma. The areas with a complete documentation of all megalithic monuments is marked in red. Within the valley, the terrace fields are located, while the elevated areas around the village are used, among others, for Jhum-cultivation.

the economic situation of the person who formerly received resources from others, but also a sense of the importance of mutual aid.

The importance of clan members was reflected in the duration of their attendance to the feasts themselves. While fellow Khel members only joined the feasting for one or two days, fellow clan members stayed the whole 10 days that were required to finish each feasting stage. Despite this differentiation, all the clan and Khel members were invited, regardless of possible contributions of resources needed for the feasts. Still, these rules were limited by the capacities of the feast giver, hence the number of people joining the feasts could be reduced due to the economic capability of the feast giver. This also includes the invitation of members of the neighbouring village communities. The presence of one and the same clan in several villages was described as a rather common phenomenon in southern Naga communities

(Lohe 2011, 92–99), hence invitations could and should be expanded to groups living in other villages.

The process of Feasts of Merit could be started with very small feasts within the close family after a man completed his first harvest. Only the third feast was described as involving more resources and persons attending. After some feasts were executed by the feast giver, wooden house horns were attached to his house. The erection of a megalith always represented one of the later feasts in this process. The number varied between the third and fourth feast and it was not known anymore whether more feasts took place after the megalithic monument was erected.

Monumentality in Khonoma: single standing stones and stone rows

Megalithic monuments in Khonoma appear in two main types; standing stones and sitting platforms. The vast majority

of megalithic monuments in Khonoma, as in every Angami and Chakhesang village, is represented by single standing stones and stone rows, both types representing feasting activities of an individual household. In Khonoma, 96 out of 120 of the recorded monuments can be assigned to these two types, while many more couldn't be documented due to the high number of monuments. For the documentation, two representative areas were chosen for complete documentation; one of them at the footpaths south of Khonoma, and the other one located in the terrace field northwest of Khonoma (compare Fig. 13.2).

The subdivision of single standing stones and stone rows is, except their basic distinction, not depending on the number of stones per monument, but on additional architectural features. Single standing stones can be subdivided into exemplars without any further architectural features (type 1) and such standing on a small or large stone platform (type 6). The same could be documented for stone rows; besides exemplars at ground level without further features (type 4) and such ones with a platform (type 3), also ground-level stone rows with an attached stone frame (type 2) and stone rows integrated into a wall

(type 7) are present. Within the data collected in Khonoma, both single standing stones and stone rows without any further architectural features are among the most common subtypes (Fig. 13.3 and 13.4). Features such as stone walls or stone platforms attached to the standing stones are the most influential factor regarding the size distribution of the megalithic monuments (Fig. 13.5). The insignificance of the single stones' size explains the low degree of size variation among monuments without further architectural features. Only attached platforms or walling enhance the overall size of the monuments.

The location of the standing stones can be divided in two main respects. A high amount of stones can be found at the footpaths leading from the village area to the forests and terrace fields outside of Khonoma. These paths are leading in the southern direction, with the megalithic monuments being present only outside of the inhabited village area (compare Fig. 13.2). In this southern concentration of megalithic monuments, single standing stones and stone rows are mixed and occur in smaller clusters with some empty space between the individual groups of monuments. The clusters contain both monuments, which are placed



Fig. 13.3 A monument of type 7. The standing stones were erected by a feast giver after the Feasts of Merit were completed (photo: M. Wunderlich).



Fig. 13.4 A stone row without further architectural features (type 4) in the terrace fields. In the background, further monuments can be seen. Due to the high degree of visibility, the majority of standing stones is to be found within the terrace fields (photo: M. Wunderlich).

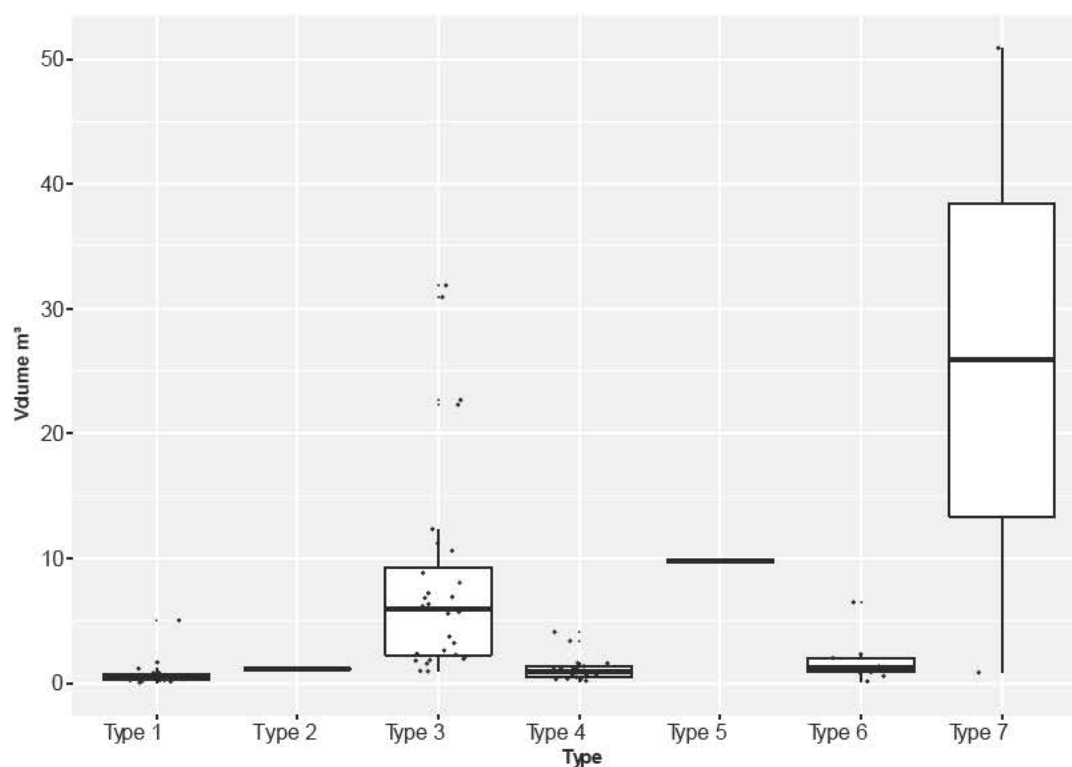


Fig. 13.5 The boxplot of the size distribution (m^3) of the different types of standing stone monuments. The impact of further architectural features, such as platforms or walling (type 3 and 7) clearly influences the data distribution.

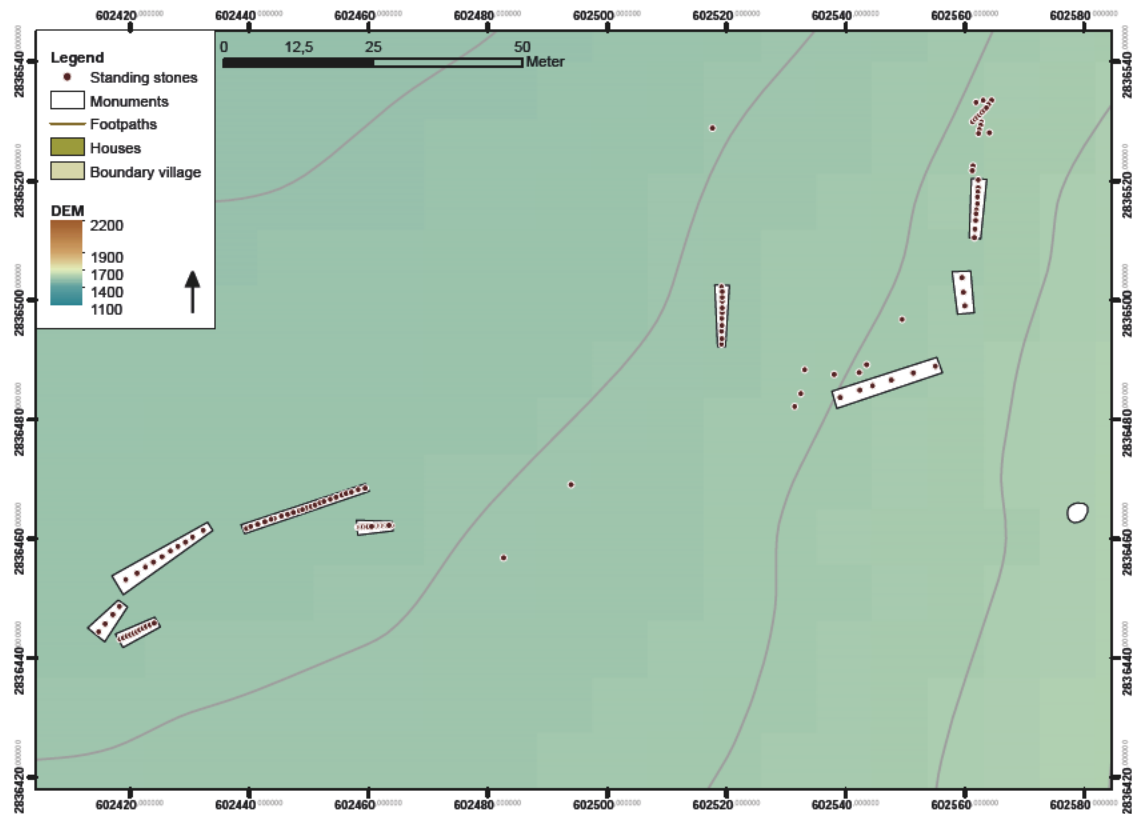


Fig. 13.6 An example of smaller clusters of megalithic monuments along the foot path leading in the southern direction from Khonoma towards the terrace fields.

very close to each other, as well as ones which are standing alone (Fig. 13.6). Whether this arrangement is dependent on the relatedness of the monument builders or not cannot be answered, since the builders themselves or their affiliation with Khels or clans were not remembered anymore in most of the cases. A high number of standing stones is not located directly at the footpaths though, but within the terrace fields themselves. The orientation and placement of the monuments in these cases are adapted to the surroundings. Partly, smaller clusters of standing stones surround sitting platforms, which are placed at elevated spots nearby the terrace fields. The distribution of the standing stones follows the spread of the fields in the northern, southern and western direction, while being restricted in the part of terrace fields nearby the village.

An interesting and unique feature of the stone rows in Khonoma is the shape of the attached platforms and stone frames. Both are mostly held in a trapezoidal and not, as usual in other villages, in a rectangular shape (cp. Jamir 2004; Wunderlich 2019). This special characteristic was explained by the interview partners as a reflection of the chronological order of the deceased persons commemorated by the single stones. The broader side of the trapeze represented the relatives who died a longer time ago, with the bigger stones usually representing male relatives. The

smaller stones on the narrow side on the contrary memorised relatives who died a shorter time ago.

Monumentality in Khonoma: sitting platforms

Due to its size and high number of inhabitants, Khonoma exhibits an extraordinarily high number of sitting platforms (*Tehuba*) in comparison to other Angami-villages. All of the sitting platforms ($n=24$) in Khonoma were documented during the fieldwork. Spatially, they are concentrated in the northern part of the village area, as well as in the areas near the terrace fields west to Khonoma (compare Fig. 13.2).

The different *Tehubas* are rather similar to each other; they are of round shape and are provided with circular arranged smaller stones used as seating for assemblies (Fig. 13.7). Most of the *Tehubas* reach a size of up to 100 m³ ($n=19$); only five exemplars in Khonoma are bigger, with the largest measuring 328 m³ (Fig. 13.8). While at least eight of the *Tehubas* can be assigned to groups such as the different Khels and clans within Khonoma and therefore represent communal building activities, the rest of the sitting platforms belong to single families or households. In the case of an individual erection by households, the sitting platforms represent stages of feasting activities in a similar way as the individual standing stones. Despite their prominent position within the village area itself, the



Fig. 13.7 A Tehuba within the village area of Khonoma. The Tehuba was built by an individual household in the course of feasting activities (photo: M. Wunderlich).

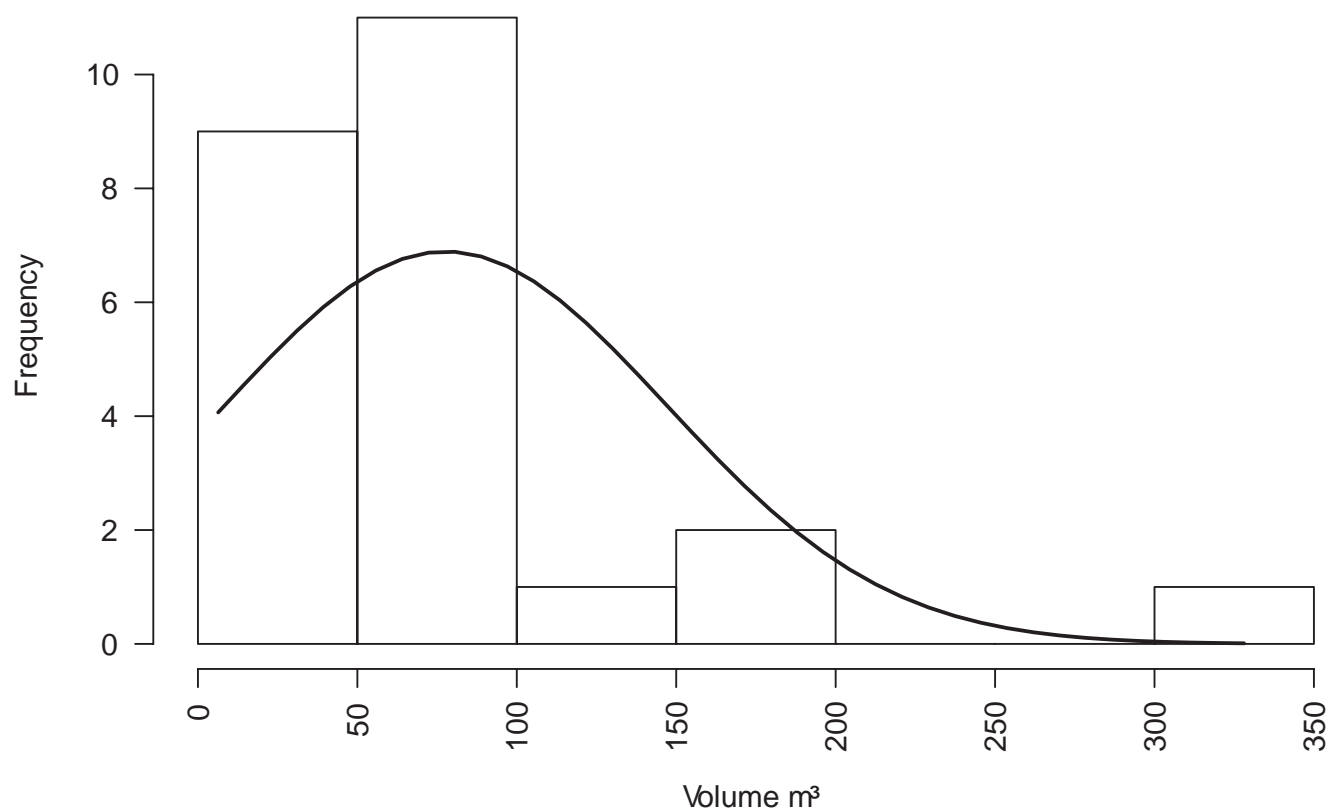


Fig. 13.8 The histogram of the volume (m^3) of the different Tehubas present in Khonoma.

builders of many of the monuments could not be remembered anymore in Khonoma.

Discussion: megalith building among Angami-Naga as a multifaceted phenomenon

Without doubt the most important aspect of megalith building is its embeddedness in highly structured and formalised feasting activities, the Feasts of Merit. While Angami communities were clearly characterised by a rather high degree of economic inequality, as one of the foundations of feasting activities, they did not exhibit institutionalised and inherited social hierarchies. To participate in the mainly achievement-based institutions, such as the village councils, feasting activities were one of the main ways to gain access (Jamir 2004, 111).

Since megalith building is a materialisation of the last stages of these Feasts of Merit, neither phenomena can be described as disconnected from the other. Despite being organised by, and serving the goals of one individual household or feast giver, feasting and with that megalith building constitutes a cooperative practice. Fellow clan members were obliged to participate in other persons' feasting activities by contributing resources (mostly *Mithun*, pigs and rice). These structures of mutual aid were connecting different spheres of life. The allocation of resources for fellow clan members must be described as an important element of the maintenance of group structures, being characterised by what was described as key elements of cooperative behaviour; reciprocity, reputation and reward systems (cp. Carballo 2013). The individual execution of these feasting activities in Khonoma was reflecting structures and intensities of relatedness within the village community. The frequency and duration of attendances by clan and Khel members, family members and friends were described as reflecting intensities of closeness and the importance of recursive relations of mutual aid. Therefore, these occasions must be seen as highly representative and important for the maintenance of basic group structures.

The megalithic monuments themselves represent a manifestation of different aspects. The placing of the monuments within the structured landscape around the village area is driven both by practical (as resting places) and commemorative functions (cp. Jamir 2019). A closer look into the distribution of standing stones within the areas destined for building activities shows that the monuments often stand together in smaller clusters. Whether the megalithic monuments grouped together also reflect a close relatedness between the different monument builder or not, could not be reconstructed due to the fading or already missing memory of the feast givers. This is a general problem occurring within Naga villages; the memory connected to the individual monuments has already faded or disappeared.

The size of the stones was repeatedly described as being of minor importance; more important though was the number of stones, since this reflected the number of feasts held to erect the monument as a whole. Since one of the main focuses of the monuments is a reflection and materialisation of feasting activities, this is not surprising. The main purpose and meaning of the standing stones are their reflection as memorial sites, for both deceased relatives (in the case of Khonoma) and the individual capabilities of the monuments' builder. By this, the placement of the monuments creates an arena of social representation that connects both the communal spheres (represented by the village area) with the economic sphere within the field systems. This arena is a marker of the constant re-negotiation of social influence and prestige (cp. Rosenswig and Burger 2012; Grier 2014), which is maintained by the commemorative function of the standing stones. The possibility of a close connection between different forms of monumentality, *e.g.* enclosures or megaliths, has previously been stressed by archaeologists (*e.g.* Whittle *et al.* 2011; Müller 2018).

The different aspects and social mechanism involved in feasting activities and megalith building among Angami-Naga can only be explained by a complex interdependency of individual and cooperative interests. The participation in the allocation of resources for feasting activities constitutes an important part of social networks and the maintenance of social relatedness. Important factors within these cooperative efforts are reciprocity, reward systems and reputation (cp. Carballo *et al.* 2014), all of them being of high importance within the system of Feasts of Merit.

Conclusion

The case study of Khonoma, within the wider context of megalith building traditions among Angami-Naga, demonstrates how the erection of monuments is rooted in different aspects of the communities involved. Megalith building as a manifold phenomenon of deeply intertwined factors cannot be described with a singular explanatory model. Examples of recent megalith building societies show that the precise reception and translation of this tradition is very much dependant on societal conditions and changes, as well as specific social mechanisms interconnected with monumentality (Wunderlich 2019). In Khonoma, megalith building is a materialisation of different aspects; firstly, a strong competition for social prestige and influence within a society characterised by non-institutionalised and flat hierarchies. This competition is based on and driven by a high degree of economic inequality, which in turn is fostered and represented through feasting activities. Secondly though, these very same feasting activities serve as a redistribution and social levelling mechanism. They are only realised through a high degree of cooperative behaviour, which serves to strengthen relations of mutual aid and the continuous (re)assessment of social

relatedness among the most important social units in Naga communities (clans and Khels). Thirdly, megalith building serves as a materialisation of a collective and individual memory, by acknowledging the memory of deceased relatives and the capabilities of individual feast givers. Social ties and interdependencies among the members of the associated communities strongly influence cooperation, reciprocal ties and megalith building. Consequently, megalith building must be seen as a manifold phenomenon deeply rooted in the basic needs of the associated society, which is in the case of Angami-Naga the provision of a framework serving both the individual promotion of individuals as well as the enforcement of social cohesion and shared responsibilities.

From this summary, some implication may be derived for the interpretation of archaeological case studies. While any direct transfer of these results into the archaeological record must be avoided, it still can be used to give us some ideas of possible mechanisms behind megalith building. As it was stated by many researchers, a drastic increase of megalith and monumental constructions (*e.g.* enclosures) within the early Neolithic and the 5th millennium BC is visible (Schulz Paulsson 2017; Wunderlich *et al.* 2019). Early farming communities spent a significant amount of time and effort in the construction of these monuments, partly over several centuries (*e.g.* Mischka 2014). If we assume that these communities adopted to changing lifeways through the establishment of networks and stronger ties among groups of social relatedness, the erection of megalithic monuments is a suitable strategy to establish a cooperative framework. The diversity among Neolithic collective graves (*e.g.* Meyer *et al.* 2008; Lee *et al.* 2014) may indicate the importance of both biological and widened forms of kinship (compare Carsten 2000). An interpretative framework that is open to concepts of the interrelatedness of mechanisms and social influences, which are on first sight divergent (such as competitive and cooperative behaviour; economic inequality and redistribution of wealth), can broaden our understanding of the processes and conditions that led to the rise of monumentality within Neolithic societies.

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Megalithic structures and settlements in the Valley of Posic, Amazonas, northern Peru

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‘The Inka framed, carved, sat on, built with, revered, fed, clothed, and talked to certain rocks’ – Carolyn Dean 2010

Abstract

In the outskirts of the Amazonas jungle situated in northern Peru close to the province of Chachapoyas, a large complex consisting of ruins and megalithic structures is located. The prehistoric city of Posic is known from Spanish sources where it is mentioned as Posic, a city rich in gold among other things. The site contains remains from possibly three different cultures including the Incas (who came to the region around AD 1470 and fell to the Spaniards around 1535), the Chachapoyans (c. AD 800–1470) and an even earlier culture (around the first centuries AD), which has not yet been properly defined archaeologically. In 2018 and 2019 a Danish-Peruvian team explored megalithic structures and a shrine (*Huaca Yacu*). Earlier huge concentrations of petroglyphs had also been found surrounding the site, however, it is still a mystery which culture is responsible for these and what they represent. Furthermore the site contains buildings and settlement structures composed of megalithic stones, which suggest that the people who once lived in the valley of Posic placed a significant meaning into the megaliths, so much that they possibly wanted to incorporate these huge stones into their living houses and their everyday lives.

Introduction

The archaeological site of Posic is located near the Chachapoyas province in the Amazon region in the north-eastern highlands of Peru (Fig. 14.1). The landscape today, as then, consists of an impassable mix of mountains, dense rainforests, rivers and marshes (Schjellerup 1997, 12). The studies in Posic

have, besides the Inca culture (c. AD 1400–1535) and the Chachapoyas culture (c. AD 800–1470), also confirmed the presence of a third culture (c. first centuries AD), a local rainforest tribe, which has not yet been defined historically or archaeologically.

Archaeological examinations in the Chachapoyas area have been relatively sparse compared to other areas of Peru and began in earnest in the late 1960s (Guengerich 2015, 367). Therefore far more intensive excavations are required to achieve the same results and understanding as seen in amongst others the Cusco area (e.g. Schjellerup 1997, 110; Morris and von Hagen 2011; D’Altroy 2015). Archaeological research in Chachapoyas began with the examinations of Kuelap (a large fortified Chachapoyas settlement site) (Bandelier 1893), which has ever since had an important place in the studies of Chachapoyas (Guengerich 2014, 64). Later the social organisation of the Chachapoyas culture was suggested by Espinoza Soriano (1967) which formed the background for many studies hereafter (e.g. Schjellerup 1997; Church and von Hagen 2008). In the last decades several extensive studies on the Chachapoyas culture has been published shedding some light on this relatively unknown culture (e.g. Schjellerup 1997; von Hagen 2002; Schjellerup *et al.* 2003; 2005; 2009; Bjerregaard 2007; Guengerich 2014). The Chachapoyas people are known from the Spanish sources, in which they are described as being a rebellious people who had been in open rebellions against the supremacy of the Incas several times (Espinoza Soriano 1967, 257; Schjellerup *et al.* 2005, 244).

The prehistoric site Posic consists of at least seven smaller sectors: Posic A is the southernmost site and consists mainly

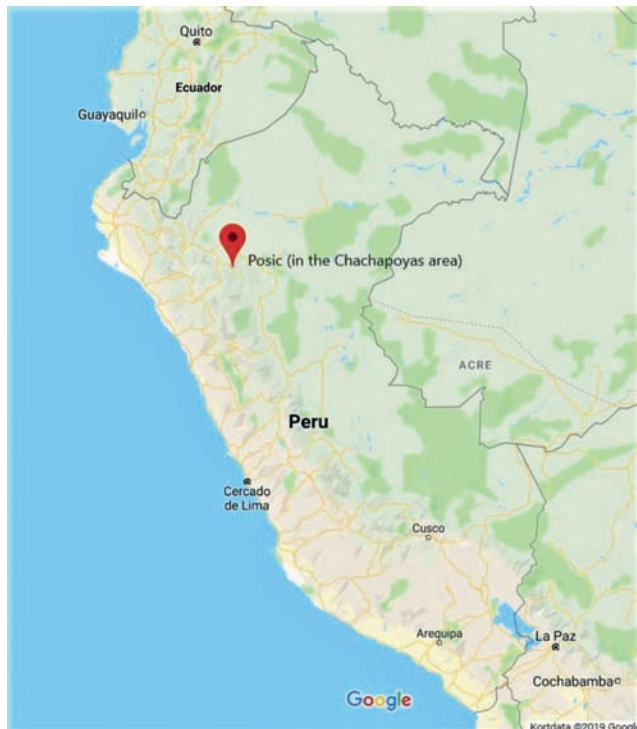


Fig. 14.1 Map of Peru showing Posic in the Chachapoyas area and the Inca capital Cusco further south (Google Maps).

of remains from the Inca culture. Posic A was most likely a regional Inca administration centre, which contained characteristic standard architecture known from almost all Inca sites in the region (Schjellerup *et al.* 2009, 291ff). It consists of a *Kancha* (a structure of rectangular roof-covered houses that opens inward towards a common activity area/courtyard), a *Kallanka* (a large hall for ceremonial activities and/or social gatherings), a bath, terraces, an *Usnu* (ceremonial platform) and two *Inthuatanas* (Sun stones). This relatively large administration centre was located at the edge of the Inca Empire in relation to the Chachapoyas communities. Schjellerup explains such a strong presence of the Incas in an otherwise marginal area as an expression of a strong economic interest and the desire to suppress the Chachapoyas people (Schjellerup *et al.* 2009, 447ff). At Posic there was relatively easy access to valuable jaguar skins, parrot feathers, honey, coca leaves, cotton, gold and salt.

Posic B is the northernmost site and consists mainly of remains from the Chachapoyas culture. Posic B was a settlement situated to the west of a river separating the settlement from Posic A and consists of the characteristic Chachapoyas roundhouses and terraces connected by earth ramps (Schjellerup *et al.* 2009, 292). As part of the fieldwork in 2018, we observed that the architecture at Posic B was virtually no longer preserved (Wadskjær 2019, 18). This is mainly due to the fact that the land's new owners have destroyed almost all the ruins to make room for crops. The

understandable but highly destructive behaviour of local farmers emphasises how important it is that key sites such as this, which can shed light on key elements of Peru's prehistory, should be immediately investigated and documented.

Posic C is located between Posic A and Posic B and probably contains remains from all three aforementioned cultures (Fig. 14.2). The area is highly characterised by megaliths both in connection with structures of practical and non-practical function. Posic C was discovered during a preliminary survey in 2016 and was the primary subject of the archaeological studies conducted in the summer of 2018 and 2019 (see below).

Posic D is located northeast of Posic C and was also discovered as part of the 2016 campaign. The structures between Posic C and D were mapped in the 2019 season, and drone photos containing mapped fixed points of Posic D were shot, so that this sector can be incorporated into the complete site plan of the Posic complex (Wadskjær, Hjortlund, Forster and Nystad 2019, 25ff).

Posic E, F and G are all located south of the other sectors and were discovered in the 2019 season due to recent deforestation in these areas. Due to the large areas and limited amount of time they have been documented in the same way as Posic D; with drone photos including fixed points.

Megalithic structures

Walking around the Posic C site it is difficult not to notice the many megaliths scattered over the area. The sheer number of megaliths suggests these bore a certain meaning and importance. This strong megalithic culture in Posic C is expressed by large erect megaliths with and without rock carvings, megaliths that form parts of various buildings and actual monuments constructed solely from megaliths. These structures amongst others include stone circles, a *huaca*, wall elements and more. This way of building could be seen as a clear monumental manifestation in this conflict-afflicted area, to demonstrate to outsiders what this people could perform and organise, in order to prevent or discourage the attempts of rival cultures to take over the dominance in the area.

A megalithic complex was located within Posic C comprising of many scattered stone structures, erected megaliths and many smaller stones. Several of the great megaliths were apparently overturned in antiquity, and the area is now characterised by a south-facing semicircle of 8 m in diameter, consisting of large erected and overturned megaliths. In addition, a long east–west oriented stone wall delineates the northern edge of the area (Fig. 14.3). Some of the large megaliths have incised petroglyphs on the flat, downward long sides consisting of cup marks and elongated furrows, which supports the theory that these megaliths are overturned resulting in a perfect preservation of the incisions. Fortunately, the megaliths rest on smaller stones, and it was possible for the team to discover the

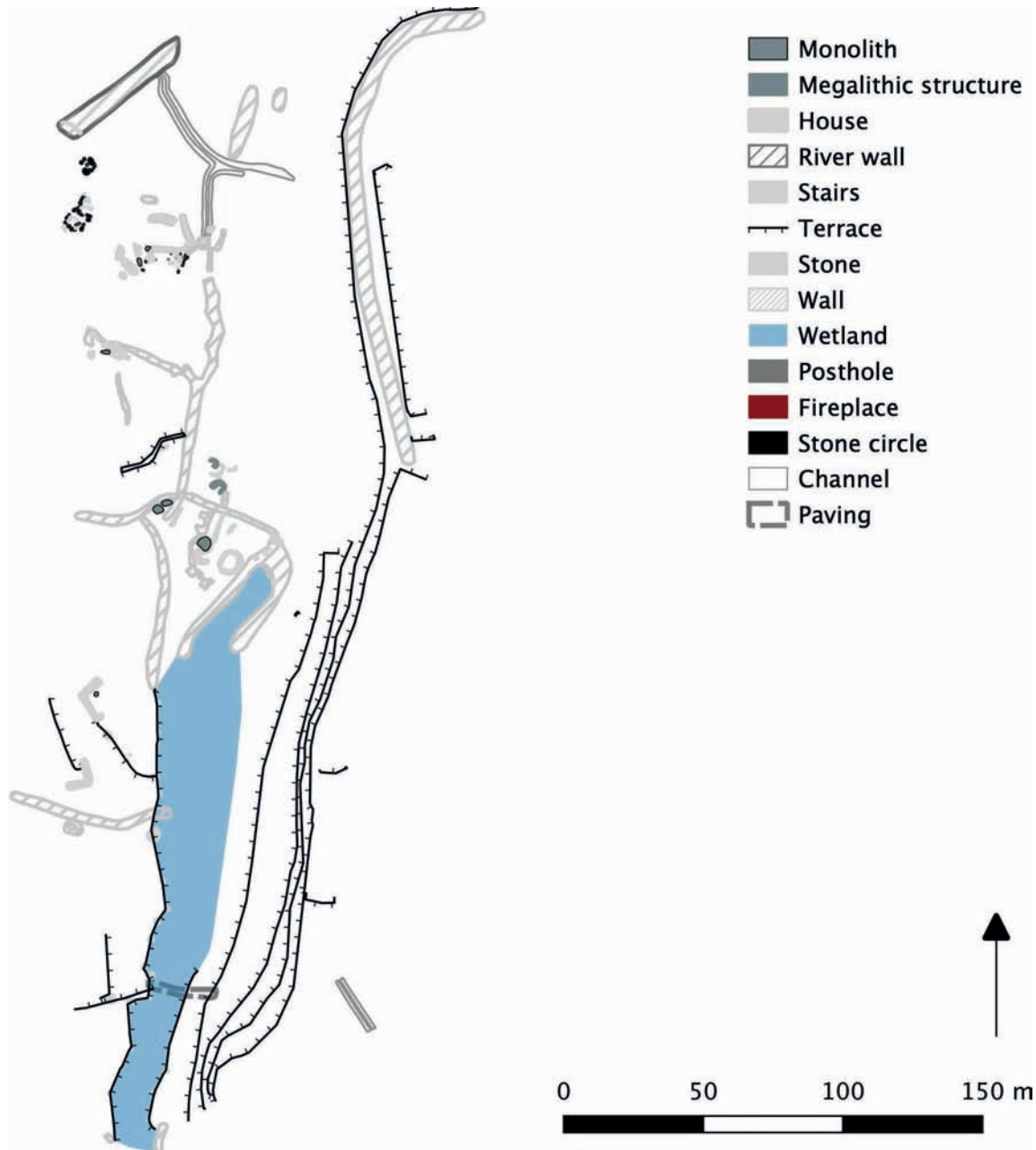


Fig. 14.2 Site plan of Posic C.

carvings, but photography or drawing documentation was not possible at this time. The nature of the carvings was mainly cup/ring marks as well as various furrows and lines. These types of rock carvings are not uncommon in Posic, where more than 25 examples of rock carved stones have been found. The cultural affiliation of these stones is still uncertain. Neither the Incas nor the Chachapoyans used to create such rock carvings, but they are known from local rainforest tribes (Schjellerup 2016, 75ff). In the 1550s, the Augustinians recorded that the people who lived there worshipped a special zodiac sign shaped like a jaguar. They

conducted different sacrifices in honour of the zodiac sign in order to prevent jaguars from attacking them. It seems very likely, as Schjellerup (2016, 75ff) has suggested, that the rock carvings and stone installations in Posic probably depict astronomical observations made in certain rituals and ceremonies. Art generally plays a fundamental role in religious life, but it is also likely that some of the symbols carved in certain rocks also had a practical function in the landscape (Schjellerup 1997; Dean 2010). Some rock carvings are thought to be astronomical markers, territory markers, maps and other forms of symbolic communication,



Fig. 14.3 Top: South-facing megalithic semicircle. Bottom: Long east–west oriented stone wall delimiting the northern edge of the area.

including time and distance or as an important element in the performance of religious ceremonies and rituals (Jennings 2002, 374ff; Dean 2010). In other rock art outside Posic, some motifs seem to have portrayed historical events or myths (Dean 2010).

In the north-western part of Posic C two of the stone circles are located with an upright megalith located close to their centres. They are constructed of large stones placed in a circle and measure respectively 7 m and 4.5 m in diameter.

There is no obvious entrance in the circle, nor is there any indication that the structures have had either walls or roof. These stone circles do not have any obvious practical function and they should therefore be seen as a form of communal structure for rituals or assemblies. However, there is a lack of objects at these structures, which would normally be expected at structures with ritualistic functions (Church and Von Hagen 2008; Guengerich 2015). This might be explained by the extreme weather, where heavy rain is not

uncommon, and this might have washed most of the top finds away, which means these structures will have to be further investigated in order to determine their function. It is also worth noticing the location of the stone circles; they are both placed right next to a path that is used today, but seems to originate from pre-Columbian times, possibly Inca times, due to its relation to the north–south going *Camino Inca* (paved Inca road) to the east. Cobblestones on the path and the fact that it moves around different pre-Columbian structures and crosses rock cut stairs support this argument. In addition to the above interpretations, the stone circles also potentially functioned as a power manifestation demonstrating the resources of the dominant culture to build such a megalithic monument without any apparent practical function. Furthermore, the stone circles are among the first structures to catch the eye when one enters the area from the river to the west. In between the stone circles there is a tightly packed row of large stones. This structure is located between various megalithic structures and its function is probably not very unlike the stone circles; this highly defined building complex acts as both symbolic and physical transition element and at the same time manifests the political hierarchy (Yaeger and López 2018). There is also a defined passage between the tightly packed row of large stones and another megalithic monument to the east of it.

Around the centre of what has been termed Posic C, another monumental structure with at least one megalith included in the wall is located (Fig. 14.4). *Huaca Yacu* is a large, semi-circular building surrounding a natural freshwater spring. *Huaca Yacu* means sacred water in the Inca language, Quechua, and is a name assigned to the structure by the project. A *huaca* is a place or an object

from where the gods could be reached (Cobo 1653, 44ff), such as a sacred building (e.g. a shrine), a prominent feature of the natural landscape (e.g. a cave or a spring) or a sacred object (e.g. water from a sacred lake) (Dean 2010, 2), while *yacu* means water. The water from the spring runs out of the structure's opening to the south and creates a wetland perfect for watering the various terraces created on both sides of the wetland. Preservation of the spring was important for the indigenous people and it is easy to believe that this life-giving source has been worshipped and had a shrine built around it. The walls of *Huaca Yacu* are about 4 m tall and 2 m wide protecting the spring that is situated almost 3–4 m lower than the plateau outside the wall. The circumference of the structure measures at least 45 m, but neither end of the wall has been documented yet because of the dense vegetation towards the south.

Centrally at Posic C, not far from *Huaca Yacu* is another area similar to the *huaca*; two large megaliths, the largest covered with many rock carvings, have been incorporated into an enclosure formed by different wall elements (Fig. 14.5). The two large megaliths seem to have been natural features, which the people have incorporated into their structures. The stone walls start from here and continue in different directions up to about 50 m and become territorial boundaries, terrace edges and the like, while those ends surrounding the rock carving stone form an approximately square shaped closed area. The carved megalith is located centrally in the relatively small enclosure in an area that is situated lower than on the outside. From the middle of the south-going stone wall, another large wall emerges, which goes straight west and continues into the jungle. This wall is documented for at least 43 m in length and has a wall



Fig. 14.4 The great megalith incorporated into the *Huaca Yacu*.



Fig. 14.5 Two large megaliths incorporated into an enclosure formed by different wall elements.

thickness of about 2.5 m. There are some areas on the wall where one can easily cross it to get to the terrace on the opposite side, but whether it is an actual constructed passage or if it is due to the destruction of the current cattle in the area cannot be determined at this time. Phenomena such as these constructions emphasise the monumentality of Posic C and the organisation of labour that it required to build them and the importance of these extraordinary structures. East of the enclosure a dolmen-like structure has been constructed by similarly large megaliths. The dolmen-like structure on the other hand, with megaliths piled on top of each other, does not seem to have been a natural feature in the landscape, but constructed intentionally. However, it is encouraging to believe that some of the foundation stones in this construction could have been there naturally. It is

tempting to suggest that it must have served as a place for rituals or a different kind of communal space, but unfortunately it is not yet possible to determine what exactly it has been used for.

Who occupied Posic C?

Posic C is characterised by a great organisation of structures around the entire site connected by long stone walls and terrace systems leading up to and in some cases delimiting certain areas containing larger concentrations of structures. It is also characterised by monuments that seem to have been built by at least two different people with very different mason skills; one highly skilled and the other quite primitive. One of the main difficulties in determining the culture that

each structure belonged to is that the following cultures in most cases have reused, reconstructed or rebuilt the original structure to suit their need.

The oldest radiocarbon dating from Posic came from the long east–west oriented stone wall delineating the northern edge of the south-facing megalithic semicircle mentioned earlier. This wall and perhaps as well the megalith complex dates to AD 76–320 (with the highest probability at AD 117–230), which predates the Chachapoyas and Incas by several centuries. It is very probable that more structures around Posic C and the periphery belong to this same age. That being said, more charcoal samples for radiocarbon dating have been sampled in the latest field season for confirming this early date.

The next set of radiocarbon determinations from Posic C, date a relatively rectangular construction and the related cultural activity to the 14th century AD, corresponding with the late Chachapoyas culture. The ceramics found in this area of excavation are very similar to the ceramics from the other excavation units around Posic C, and it is likely that Posic C's main occupation was by the Chachapoyas culture. Ritualistic monuments and monoliths with and without rock carvings concentrated within a specific area, is seen at many Chachapoyas sites (*e.g.* Kuelap and Monte Viudo), where sites have been organised by separating domestic structures (*e.g.* Posic B) from communal ones (*e.g.* Posic C) (Guengerich 2015). If Posic C however belonged to the Posic B settlement, then it is indeed well separated from it (by a river and a distance of more than 300 m). There is not a great deal of information about the nature of the Chachapoyans' rituals, or how they were performed. However, because of the many decorations on friezes it is possible to determine which symbols were important to the people of the culture. The mosaics on the friezes show geometric motifs in the form of zigzags, rhombuses, volutes and checkerboards (Schjellerup 1997). It has been proposed that these motifs might represent different animals and natural phenomena (Lerche 1995). At Posic C we have not found any of the mentioned friezes with geometric motifs. The buildings for ritualistic purposes and communal structures at Chachapoyas sites are often relatively similar to the circular residential houses and often share some of the same features. However, they can be slightly larger (only at Kuelap have much larger structures been documented) and they often have distinctive masonry, murals and friezes found on top of the walls or on the platform that the house is built upon (Guengerich 2014, 4ff; 2015, 371). Furthermore, special artefacts found in these buildings show that they have not been used for domestic purposes, but more likely served as a place for rituals. Besides the stone circles and some relatively small circular storage buildings packed with ceramics, a couple of round houses were discovered in the latest field season. Strangely enough, these houses are constructed in a much more primitive way than both the

rectangular house and the residential houses from Posic B, which indicate that the people who constructed these were skilled masons.

Other preserved structures at Posic C indicate that the people who lived there were skilled masons. Furthermore, dug 'channels' and terraces in the area illustrate how skilled they were at manipulating the landscape in order to secure resources. Therefore, the natural megaliths left in the area and incorporated in different constructions stand out, since it was obviously within their powers and abilities to remove them. However, they let them be, which could indicate that they served a different purpose, and a degree of importance was stowed upon these and their presence. The Incas were famous for manipulating the landscape in such a manner (Schjellerup 1997). As mentioned earlier there are two megaliths that have been incorporated into an enclosure and another megalith incorporated into the wall of *Huaca Yacu*. The incorporation of natural features in the form of already existing megaliths into their house walls is another characteristic of the Inca culture (Dean 2010). Adapting to their surroundings by taking advantage of these naturally placed megaliths through constructing buildings around them, the Incas could have ordered the unordered nature and domesticated the untamed land (Dean 2010, 21). However, in the rectangular Chachapoyas building a large megalith is also incorporated in the structure, forming the north-western corner of the house, which shows that the Chachapoyans also took advantage of the features of the landscape (Fig. 14.6). This incorporation furthermore shows a connection to the nature. For both the Chachapoyans and the Incas the landscape was sacred and prominent natural features were believed to be possessed by or in fact to be powerful spirits (Schjellerup 1997, 64ff). In addition, the monumentality of Posic C, does not seem to correspond with most Chachapoyas sites, which do not contain monumental corporate architecture (Guengerich 2014, 4ff). Despite their ability to muster great amounts of human labour the Chachapoyans' priority was in most cases residential buildings, rather than communal or ritualistic ones. Furthermore, when attention was given to non-residential constructions, these buildings usually resembled the residential houses both in shape and size, 'Large-scale spaces and structures were typically not part of Chachapoya built environments' (Guengerich 2014, 4).

When it comes to ritualistic settlements in the Inca Empire different structures and complexes termed as sanctuaries were built (Protzen 2018, 628). These often consisted of one or more structures placed in a special place or landscape or as larger complexes consisting of many different features. However, structures of this kind have also been registered in urban areas, or in remote areas at high altitudes. It would seem that just like in the Chachapoyas culture, these ritualistic settlements have different forms and different placing. These many different forms and tendencies



Fig. 14.6 Rectangular Chachapoyas structure with a megalith incorporated into the north-western corner.

within the ritualistic settlements can help explain why it can be difficult to determine the origin, the character and the function of the sacred monuments. The Incas often used sacred monuments in the conquered areas as one of their main strategies for taking over and maintaining control because of the political potency of sacred monuments and the histories related to these (Acuto 2005; Yaeger and López 2018, 2ff). The conquered inhabitants in the Inca Empire were allowed to worship their traditional sanctuaries and deities as long as they included the gods introduced by the Incas (Schjellerup 1997, 64ff). The Incas reused or altered pre-existing sanctuaries to fit them into their own cosmology and history and at the same time moved the local idols to the Inca capital, Cusco, to ensure loyalty from the newly conquered (Cobo 1653). In this way the Incas as the intruders could legitimise their presence and dominance of the area by taking over already existing sacred monuments or erecting new ones, this could therefore also be an explanation for some of the many supposedly sacred monuments within and around Posic C. As Jason Yaeger and José María López

state ‘the past can be selectively forgotten or reinterpreted to legitimise the authority of dominant groups’ (Yaeger and López 2018, 2ff). In that way the original religion was kept, however, only in a way that legitimated the Inca Empire and its religion.

To summarise, it seems likely that some of the monumental structures within Posic C also should be attributed to the Inca culture. Furthermore, in addition to the aforementioned rectangular house, there are parts of two more rectangular houses further south at Posic C. The Incas most often built rectangular structures (Protzen 2018), while the round form is an important shape of Chachapoyas structures. Their houses were, except from a few rectilinear exceptions, either circular or elliptical (Guengerich 2015). Finally, on the north-western border of Posic C a staircase (Fig. 14.7) has been constructed leading over a great ‘wall’, which has been formed by the ever changing river – this is a very typical Inca feature, which is seen in many places on the many thousands of kilometres of paved Inca road within the empire.



Fig. 14.7 Stairs constructed leading over naturally formed 'wall'.

Conclusions

The first preliminary studies have been conducted at Posic C, which has led to a greater understanding of the spread and exploitation of the landscape in the given area. Almost 100 stone structures have been registered, and three relatively large and three small trenches have been excavated. Because archaeological investigations in the region are generally very sparse, there is still a lack of clear ceramic typologies for the cultures resident here. This of course entails some uncertainty about some of the findings that were made, which is why a wider strategy for radiocarbon dating charcoal samples from closed contexts has been implemented. The monumental architecture, the direct contact to *El Camino Inca*, the incorporation of naturally positioned megaliths into the buildings and the presence of rectangular houses all points to an occupation by the Incas. Furthermore, the current radiocarbon dates clearly point to an occupation in the Chachapoyas culture. Finally, it seems that an even earlier local culture from the first centuries AD occupied Posic C, which probably constructed some of the megalithic structures. We can conclude that Posic C has been governed by one or several well-organised cultures that have been able to mobilise great labour for the construction and erection of the many megalithic structures. This would have been a firm statement to any intruders that it would not be worth attempting an attack. Within Posic C, many ritual actions have been performed, which are manifested by the many complex constructions without any practical function such as the stone circles with the erected megalith in the centre, as well as the various erected megaliths covered by rock carvings. In addition there are other sanctuaries, such as *Huaca Yacu*, which probably served both as a temple, where it has been possible to sacrifice ceramics with various crops, and to preserve the natural spring that formed the great wetland to the south, that has played an essential role in the maintenance of the many terraces and the crops cultivated on these.

Perspectives

Once again it has been proven that working in highly located dense rainforests in isolated and relatively primitive areas is not impossible. Due to the few and relatively small examinations in the area, archaeological research and excavation activity is incredibly important for illuminating South America's mysterious pre- and protohistoric cultures. It is even more important to illustrate how different tribal societies functioned before the creation of the Inca Empire and the arrival of the Europeans. Where did the Amazon people come from and how did they develop? Those are the extremely difficult questions that 'The Forgotten Amazon – an archaeological research project' seeks to elucidate. The ruins have previously been relatively protected by the surrounding jungle, but due to deforestation, the ruins are now threatened, which is why it is extremely important that they be investigated before it is too late.

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Funerary monuments

Stones as boundaries – stones as markers: a megalithic tomb in southern Portugal

Lars Larsson

Abstract

An excavation in several stages examined a megalithic tomb in the form of a passage grave in a mound, located in an area of southern Portugal with a large number of similar monuments. A settlement layer was identified under the monument. A significant part of the chamber was investigated, showing that there was a division by means of stone slabs and grave pits cut into the chamber floor. A layer directly on the chamber floor contained grave goods of various forms. Part of a decorated orthostat was reused to cover the gap between the top of the passage and the cover stone, and perhaps served to enhance the forecourt as a liminal zone between the living and the dead.

During the time of use, the passage had been filled up with soil and had also been used for burials. Finally the passage was deliberately sealed. A forecourt had existed in front of the passage but was filled up over the centuries. On top was a stone-paved section that led from the sealed passage out to the edge of the mound. Burials were found on this paving too. The excavation demonstrated how different transformations inside and outside the tomb made access to the chamber and passage more difficult, because of changes in the social structure.

Introduction

When megalithic tombs are discussed they are commonly perceived as immutable, permanent architectural objects. Once erected, they stood virtually unaltered while they were in use. Only afterwards did the effects of time or human intervention contribute to their decay. It is highly likely that megalithic tombs, when they were built, were regarded as everlasting structures. But changes in norms, rules and perceptions had the result that certain megalithic tombs, especially those that

were used over a long time, were modified to a greater or lesser extent. Naturally, structures made of huge boulders had limited potential for reshaping, but transformations did occur, and the original function may have changed.

It is possible to divide the architectural creation that is a megalithic tomb into different rooms that may have changed in character and function during the time of use. This concerns not only the chamber, the passage, the side chamber and other parts with large boulders as the building material but nearby areas that can be related in different ways to the function of the megalithic tomb should also be incorporated in this spatial division. Vale de Rodrigo 2 is a good example of how this division changed through time. Megalithic tombs along the coastal zone of western Europe exhibit shared general features, as well as distinctive regional and sometimes local features. A collaborative project with the Lisbon office of the German Institute was created to consider how these general aspects relate to specific conditions amongst a group of megalithic tombs in southern Portugal.

During recent years, research on megalithic tombs has been directed to certain aspects such as the shape and function that might be linked to social norms and structures (Calado *et al.* 2010). The hewing of stones from rock may have possessed important symbolic significance, since it was related to the ability to command and change the most resistant part of the landscape: the monuments expressed a society's claim to power over nature. Such awareness could have been incorporated into the conceptual world so as to impart even greater significance to the rock mass.

Social structures are reflected in the relations between the living and the dead. A monument could be more or less accessible depending on the social order (Thomas 1991; Edmonds 1999). If, on the other hand, megalithic tombs represent a symbolically charged role, which changed form

during the time when they were used, this gives us scope to see the stone group as an actor in a changeable conceptual world (Bradley 2002).

The situation of Vale de Rodrigo

The area of Herdade Vale de Rodrigo is located in the northern part of the province of Alentejo in southern Portugal, about 120 km from the coast. Vale de Rodrigo is located in the south-western part of the densest region of megalithic tombs and menhirs in the western part of the Iberian Peninsula, where around 40 tombs are registered within a radius of 5 km from Vale de Rodrigo (Leissner and Leissner 1959; Kalb 2002) (Fig. 15.1a). The area also includes a number of menhirs and clusters of menhirs – cromlechs. Within the valley Vale de Rodrigo at least four megalithic tombs have been registered, of which three are still partly preserved. One megalithic tomb has been destroyed and according to oral tradition a cromlech once existed within the area (Fig. 15.1b).

The hydrological situation in the neighbourhood of the megalithic tomb in question includes a stream, Ribeira de Alcáçovas, with water running for the entire year in the eastern part of the area, and a brook that dries out during the late summer close to the west. The bedrock consists of gneiss and granodiorite, which in places is visible above ground.

The tomb Vale de Rodrigo monument 1, was excavated during 1940 and was revealed to be a mixed structure consisting of an ordinary tomb with orthostats but covered with a false vault (Leissner 1944). The wider survey and documentation of the tombs and the surrounding area was commenced by a German group in the late 1980s (Dehn *et al.* 1991; Kalb and Höck 1995; 1997) who also excavated one of the tombs – monument 3 – during the 1990s (Kalb and Höck 2011).

Vale de Rodrigo monument 2

For several seasons, excavations were conducted at another of the four megalithic tombs, Vale de Rodrigo monument 2 (VDR 2). The tomb, which has the form of a passage grave, is located on a rise in the terrain about 2 m high situated on a southeast slope. It consists of a chamber defined by eight orthostats, which have no capstone preserved (Larsson 1997; 1998). Some stones have been broken off at the present surface and three stones were roughly of human height. Of the passage, two capstones are partly visible above the surface. The two aims of the investigation were to study the method of construction and the use of the megalithic grave. Hence, the excavations concentrated on trenches within the chamber, and also extended outside the standing stone structure.

Immediately outside the chamber, it was revealed that the orthostats were almost 4 m tall (Fig. 15.2) and that the ground where the tomb was built was originally level. The mound around the tomb was of considerable size. The few

remains of a ring of bordering stones, combined with geophysical measurements, led to the conclusion that the mound had a diameter of some 45 m. At the border of the mound closest to the entrance, the ring of stones was transformed into a belt of smaller stones in a packing that included at least a 1 m high standing stone, interpreted as a small menhir.

Trenches more than half a metre deep had been cut in the crumbling bedrock, in which the orthostats were anchored partly with the aid of stone packing. The orthostats were fixed more firmly in position by being slightly overlapped. In some instances the space between was filled with pillar-like stones. There is uncertainty about the height of the mound in relation to the chamber (Kalb and Höck 2011), but the earth filling probably did not cover the tomb all the way up to the capstone.

A darker layer at the bottom outside the chamber, containing fragments of vessels and worked quartz, has been interpreted as a settlement area. This layer was cut through by the trenches for the orthostats. In a trench to the west of the chamber, post-holes as well as a hearth were registered. The occupation layer has been dated using charcoal samples (branches of oak) with the value variations from 5175±70 BP (4172–3797 cal BC, Ua-11347) to 4905±70 BP (3811–3626 cal BC, Ua-10830). These dates provide a *terminus ante quem* dating of the tomb. The remains of the people to be buried were missing, and there is uncertainty as to whether the charcoal that was found beside or in the ditches can be linked to the building phase or the settlement.

The chamber had an inner size of about 6 m × 4 m. In contrast to most chambers, the western, innermost part was constructed with two orthostats. Before the chamber was built, the occupation layer at the bottom of the chamber was removed. The bottom layer of the chamber consisted of a very hard material, which was spread to level the surface. Initially the material was soft as it did not only cover the bottom but reached part of the way up the orthostats as well. Analyses have revealed that the material is made of hydraulic cement – the earliest known in western Europe. It was intentionally mixed with rock fragments to increase stability. Binding was accomplished by components rich in phosphorous, silica, and alumina but not with material including calcium oxide (Kresten and Kalinowski 2005). At a stage after the floor was laid a division was arranged of the chamber by two slabs fixed between orthostats at right angles to the walls. These stones divide the chamber into two cells of roughly equal size (Fig. 15.3).

In two areas farthest into the chamber, the bottom layer had been cut through to insert human burials. Because of the acid mineral soil, all that remained of the interred were the occasional colourings and the impressions in clay left by the bones of the deceased. However, the skull and some extremity bones were clearly identifiable. The finds in the filling of the pits indicate that they were made during a late stage in the use of the chamber. Parts of the chamber

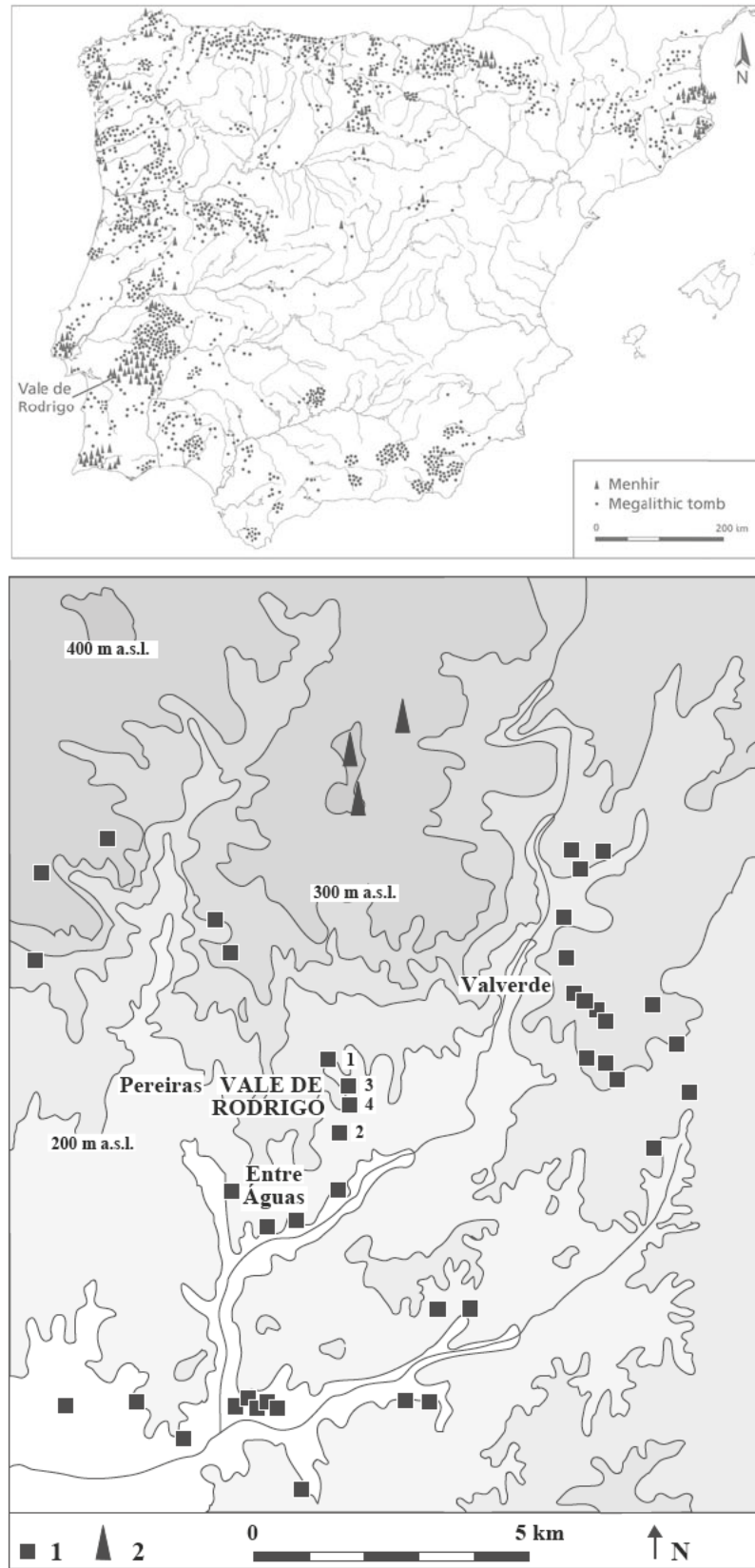


Fig. 15.1 a (top): The Iberian Peninsula with the location of Vale de Rodrigo (from Kalb and Höck 2011); b (bottom): The monuments of Vale de Rodrigo and the neighbourhood. 1: megalithic tomb and 2: menhir.



Fig. 15.2 The northern side of the chamber with the orthostat almost 4 m in height and with pillar-like stone in between. The cut trench in the bedrock is visible. Photo: Arne Sjöström.

had been damaged by later digging although the area just in front of the passage seems to be the best preserved. A number of artefacts such as slate plaques with decoration, vessels, arrowheads, stone axes, pottery and other objects were found in a layer just above the floor (Fig. 15.4).

The entrance

The passage had a length of about 4 m. The building of the passage took place in at least two phases. In the first of these, large orthostats supported three capstones. In a later phase, the passage was extended, with the width simultaneously being reduced. Within the inner part of the passage a threshold of a pair of flat stones raised on edge might mark the position of a door structure.

Assemblages of artefacts similar to those in the chamber were found in the passage and their combination with human dental enamel shows that these are burials. The fine structure of the fill proves that the mound originally covered the

passage and soil filtered down between the capstones. In the final use of the passage people had to crawl to reach inside. In a later stage the small opening was sealed by three slabs.

A stone with decoration

During the excavation of the proximal part of the chamber, a large, trapezoidal stone was found. Like the orthostats, this stone was split from the bedrock and exhibits two flat broad sides. The broad side, oriented to the inner part of the chamber, was decorated with engravings including cup-marks, V- and U-shaped motifs of different size (Fig. 15.5) and two axe-and-shaft-like motifs have been identified (Larsson 2001).

The decoration of the stone differs from the ornaments found on orthostats of megalithic tombs from the Iberian Peninsula (Calado and Rocha 2010) although menhirs in the same region exhibit partly the same motifs or combinations of motifs (Shee Twohig 1981). In addition, the shape of the stone at VDR 2 differs markedly from those of the menhirs with a round or oval cross-section. Judging by the size, shape and position, the most probable original position was as part of an orthostat. The most plausible use is as a shorter orthostat covering the gap between the top of the passage and the cover stone. The easiest way to reopen a sealed chamber was by removing the orthostat above the passage. The stone might have been pushed into the chamber.

The stone from VDR 2 has a combination of motifs that would be regarded as public when found on the menhirs that could be observed by the members of the society. This is in contrast to the paintings and carvings on orthostats in the chambers, where zigzags or wavy lines, geometric motifs, zoomorphic or anthropomorphic motifs are depicted or painted (Shee Twohig 1981) visible only to the dead and the people permitted to enter the chamber during funerals.

If the decorated stone at VDR 2 was an orthostat, it might have been placed in order to show the decoration to the viewer from outside. A decoration with symbolic motifs oriented to the forecourt would also fit well with the architecture and finds that mark the area outside the entrance of the passage as a ceremonial area of special importance. As a focal stone above the passage it could also have enhanced the forecourt as a liminal zone between the living and the dead.

The forecourt

To obtain a better idea of what the area outside the entrance section looked like, trenches were dug outside as well as close to the passage. The three stone slabs that sealed the entrance rested on stone paving (Fig. 15.6). The excavation of the passage showed that the bedrock was almost 2 m



Fig. 15.3 The chamber of the tomb with two large slabs fixed between the orthostats, which divide the chamber into two cells of roughly equal size. Parts of a grave pit, cut through the original floor, are visible in the centre. Photo: Arne Sjöström.



Fig. 15.4 Part of the floor of the chamber with pottery and plaques. Photo: Jonas Paulsson.



Fig. 15.5 The engravings on a stone found in the centre of the chamber. Photo: Lars Larsson.

lower than the base of the slabs covering the entrance. During the initial stage of the tomb visitors were able to enter the chamber straight-backed. This means that significant layer formation had occurred outside the opening of the passage before it was sealed.

Two rows of stones in several layers were identified, which started from the corner of the passage opening and ran obliquely outwards. These rows have been interpreted as the rampart of an originally open court with an almost triangular shape, which led up to the opening of the passage (Fig. 15.6). The court adjoined the edge marking of the mound.

The layer sequence shows that the ramparts originally marked the edge of the mound filling, which was thus delimited down to the original ground surface. For centuries the court was gradually filled with soil sliding down from the surrounding mound and the paving was then added. This filling-in might have been intentional. On the southern side of the forecourt, the stone framing was partly destroyed, and few artefacts were found in that area. It seems that this part of the forecourt was abandoned in a rather early part of the use of the tomb.

In contrast on the northern side, the topmost layers of area in front of the passage proved to have a rich content of both finds and structures. A stone layer in the form of a paved section roughly 1.5 m wide can be followed along the northern part of the forecourt as far out as the edge of the mound. The paved area was laid after the passage had been sealed.



Fig. 15.6 The chamber, the passage and part of the forecourt. In the centre, the stone slabs, three in total, which sealed the entrance to the passage. Two rows of stones mark the edges of a rampart. A paved area runs along the northern side of the forecourt. Photo: Arne Sjöström.



Fig. 15.7 The layer of pottery within the central part of the forecourt. Photo: Arne Sjöström.

With one exception, rather few artefacts were found in the filling-in of the court. In the central part of the forecourt a layer of sherds was documented below the paving. Sherds from at least 200 vessels were found (Fig. 15.7). That entire vessels were placed and deliberately smashed is indicated by the close positions of sherds from one and the same vessel. Depositions of vessels are well-known phenomena from megalithic tombs on the Iberian Peninsula (Kalb 2002), but not in this quantity of vessels.

Find conditions inside the forecourt

A considerable number of artefacts, such as arrowheads, beads, slate artefacts and pots were found on and inside this paving. Assemblages of artefacts combined with dental enamel were recorded more than 9 m outside the entrance to the passage (Larsson 2003). The distribution of finds and occurrences of dental enamel suggest that these are remains of burials. The enamel originates from several children aged between 4 and 12 years (analyses by Dr Verner Alexandersen,

Copenhagen). A charcoal sample (branch of oak) provided the value 3905 ± 75 BP (2577–2196 cal BC, Ua-10831).

The richness of the finds from the area outside the passage may not be due exclusively to a number of burials outside the passage. The distribution of pottery and arrowheads shows that these are also traces of deliberate deposition. As regards the distribution of finds, one cannot avoid drawing parallels with the find conditions outside the entrance to several south Scandinavian megalithic tombs with hundreds of vessels (Strömberg 1968, 1971) where the finds are interpreted as traces of one or more sacrificial acts.

The building material

According to the petrographic analyses of the stone material of VDR 2, most of the stones, which are made up of biotite-tonalite, were cut from the bedrock at a site, Pereiras, about 2 km to the west of the tomb where remains of a quarry are still visible (Dehn *et al.* 1991; Kalb 1996) (Fig. 15.1b). Roughly half-way from the quarry to the tomb, the terrain becomes undulating with elevations of up to 5 m, which means that the route by which the stones were hauled must have been at least 3 km. However, one capstone of the passage is made of porphyritic granodiorite which does not exist in the neighbourhood. It is found either 10 km to the north or at about 8 km to the east of Vale de Rodrigo (Kalb 1996). There does not seem to be a functional reason for using this mineral in certain building structures as it is the only capstone of the passage that has cracked in pieces. The same exotic stone material is found in all the megalithic tombs in Vale de Rodrigo, which highlights the symbolic significance of this type of stone.

The megalithic tomb is located within an area of several monuments. A structure of 90 menhirs – Almendres – is located close to the source of porphyritic granodiorite in the north (Gomes 2002). Close to the source in an easterly direction there is a group of almost 20 tombs including the largest on the Iberian Peninsula, Anta Grade de Zambujeiro, with orthostats 7 m in height (Kalb 2002; Soares and da Silva 2010). The areas to the north or to the east would appear to have been of major significance in the conceptual world of the megalith builders, for example as a marker of origin or a symbol of affinity.

Symbols in stone

A settlement was originally located on the site. The size of this settlement is unknown but as nothing was identified outside the mound it probably consisted of a single farmstead that can be dated to an early part of the 4th millennium. Below VDR 3 remains of a settlement have also been identified (Ambruster 2006; Kalb and Höck 2011) as well as during new excavation of Anta Grade de Zambujeiro (Soares and da Silva 2010). This might be a phenomenon that is still not

well known but probably more common, revealed by excavations below and outside the chamber. There is probably a direct link between the settlement and the construction of the megalithic tomb – based on the frequently recurring dualistic relationship between life and death.

Before the tomb was erected, the occupation layer within the chamber was removed and replaced by a special floor layer. The removal of the settlement site layer suggests that some form of cleansing was performed before the place could be used for burials. However, the time disparity between the abandonment of the site and the building of the tomb is uncertain. Radiocarbon dates show that most of the tombs were built during the first half of the 4th millennium (Boaventura 2011), so there can scarcely have been any great difference in time.

In their construction and their detailed features, it is possible to follow a process in which access and screening for an envisaged division into cells are predominant themes. A megalithic grave is constructed on an earlier site – here the predominantly profane is incorporated in a clearly sacral sphere. The tomb with its chamber, passage and forecourt was easily accessible. Those who built the megalithic tomb seem to have perceived that there was a relatively close link between the living and the dead. The use of building material from a place far removed from the everyday sphere of the settlement is an indication that other settlements might have been involved. The people may have perceived that they shared a common origin.

When slabs were inserted to divide the chamber, a change began in the original function of the burial chamber, which also provided opportunities for a boundary at which light and shade created a further evocative sensation (Bradley 1989). This suggests not just that access to the burial chamber was restricted but also that the division into cells may have manifested distinctions between buried individuals.

When the forecourt was slowly filled up with soil and the passage was made longer and narrower, access to both the passage and the chamber was rendered more difficult. Contrasts between the members of the community and their deceased were heightened. At the end of the period in which the chamber was used, there appears to be an increase in the number of grave goods, with the plaques marking a more distinct individualisation. In other graves these are found lying on the chest of the deceased, as a personal belonging (Gonçalves 1999).

In a still later stage, access to the chamber could only be gained by crawling through the passage. Bodies were also buried in the partly soil-filled passage. It is possible that there was, for a time, some form of sunken cavity with steps immediately outside the passage, to facilitate access to the chamber. The deposition of hundreds of pots reflects acts involving some kind of feasting, which connected the activities of the living outside the chamber with the dead inside.

The conceptual world may also have included a belief that the passage was not solely intended for the living to enter into the space of the dead. It may also have served to allow the dead to travel to a non-material world (Gräslund 1994). The closure of the limited opening of the passage by means of flagstones was a clear stance, a decision to shut the megalithic tomb for good. But this act did not mean the end of mortuary rituals associated with the structure. A paved path was built, and this was to be the foundation for several child burials. Besides burials, there were ritual depositions on a smaller scale of pots and other objects. The assemblage of arrowheads may suggest that people stood outside the tomb and shot arrows into the paved passage. In a final phase, the chamber was broken into by removing the decorated orthostat resting on the inner capstones of the passage. Burials started again, and this involved filling in the chamber with stones. This took place during the Bronze Age.

Conclusion

During an earlier part of the Neolithic, burial in natural caves was a common action (Boaventura 2011). The building of monuments, which resemble natural formations, and which require the ability to split rock for building material, can also be seen as a symbolic act through which to subjugate the environment. By copying nature, people showed how they were able to obtain power over it. When this is done as part of the burial ritual, it shows that the dead are a link between artificial social patterns and natural processes. Humans become a part – but a superior part – of nature.

VDR 2 was built on a previous settlement. Independent of the time gap between the house of the living and the house of the dead, a memory of the location of the settlement was retained. A direct link to the previous settlement was accepted regarding the mound but not the stone chamber where the occupation layer was removed. The initial stage of the building gives an open, almost welcome, appearance with the court leading to a high and wide passage. This feeling was enhanced by including the orthostat above the passage with decoration well-known to everyone from much older menhirs. However, the access to the tomb was somewhat limited by erecting two large slabs in order to divide the chamber into two cells. The filling-in of the court as well as the passage with soil from the mound further reduced the access to the chamber. Sealing the passage with slabs was the final action to prevent access to the stone-built part of the tomb. However, the identification of tooth enamel of young people as well as grave goods showed that the monument continued to be used as a site for burials but in a way that neglected the tomb. A radiocarbon date outside the passage indicates some kind of activity during the second part of the 3rd millennium, documenting almost 2,000 years of human activity at this site.

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Putting earthen long barrows back on the map: remarks about the Middle Neolithic monumentality of northern Poland

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Abstract

Since 2006, systematic research has been carried out in the central part of the Greater Poland region to find the remains of the earthen long barrows left behind by the societies of the Middle Neolithic Funnel Beaker culture. They are known as Kuyavian barrows because of their frequent presence in the Kuyavia region in central Poland. In Greater Poland, they were known from antiquarian records dating back to the 19th century. However, contemporary surveys carried out in open arable fields did not bring positive results. It is likely that the enclosing erratic boulders were removed at the turn of the 19th and 20th centuries by farmers, and the mounds quickly destroyed as a result of ploughing and erosion. A breakthrough in the search for earthen long barrows in Poland was the introduction of airborne LiDAR (Light Detection and Ranging) survey and the public disclosure of the Airborne Laser Scanning (ALS) data collected by the governmental institutions for the purpose of natural disasters modelling. It resulted in the discovery of numerous archaeological sites, including earthen long barrows, preserved in woodlands.

The article discusses the results of previous archaeological research and archive material surveys, and selected case studies of the newly discovered clusters of earthen long barrows on the Szamotuły Plain in the central part of the Greater Poland region, and also on the Kleczew Plain in the eastern part of the region, neighbouring with Kuyavia. The shortcomings of using ALS data in archaeology, and limitations of woodland and fieldwalking surveys, are also reviewed. In conclusion, we argue that the number of earthen long barrows suggest that the construction of them, and the practice of burying the dead in them, was a common practice of the Middle Neolithic Funnel Beaker societies in northern Poland.

Introduction

In 2006, a small research project was completed by archaeologists at the Adam Mickiewicz University in Poznań, financed by the local Provincial Office of Monument Preservation. The goal of the project was to answer the question whether there are any extant earthen long barrows in the Greater Poland (*Wielkopolska*) Province (Pospieszny and Szydlowski 2006). The title of the project was ‘Archaeological Survey of Megalithic Tombs in Greater Poland’, as in Polish archaeology earthen long barrows are usually classified as megalithic. The very idea of undertaking this kind of research resulted from discussions on the wider problem of the funeral rites in the eastern group of the Funnel Beaker (*Trichterbecher*) culture. The most characteristic form of burial were the earthen long barrows, also called Kuyavian barrows due to the fact that their greatest accumulation was in the region of Kuyavia (*Kujawy*) in north-central Poland (Fig. 16.1). These barrows were also the most monumental prehistoric constructions in central Europe, reaching over 100 m and delineated with erratic boulders with an average weight of several tons. Remarkably, no earthen long barrows in Greater Poland were known to archaeologists at that time. However, there were reasons to believe they were once a part of the landscape and some remains of them could still be found.

Firstly, the earthen long barrows in Kuyavia belong to the Middle Neolithic (c. 4000–3450 cal BC) Funnel Beaker culture (Rzepecki 2004). Settlements of the same age are known from Greater Poland (Wierzbicki 2013), in particular the Szamotuły and Kościan plains (Fig. 16.1) that are areas abundant in black earths (a type of *Chernozems*) that attracted farmers from the early Neolithic. Secondly, in Kuyavia most of the barrows cluster in its southern part, the Kujawy Lakeland, which is to a large extent covered by woodlands. In the north of the region, the Inowrocław Plain, almost

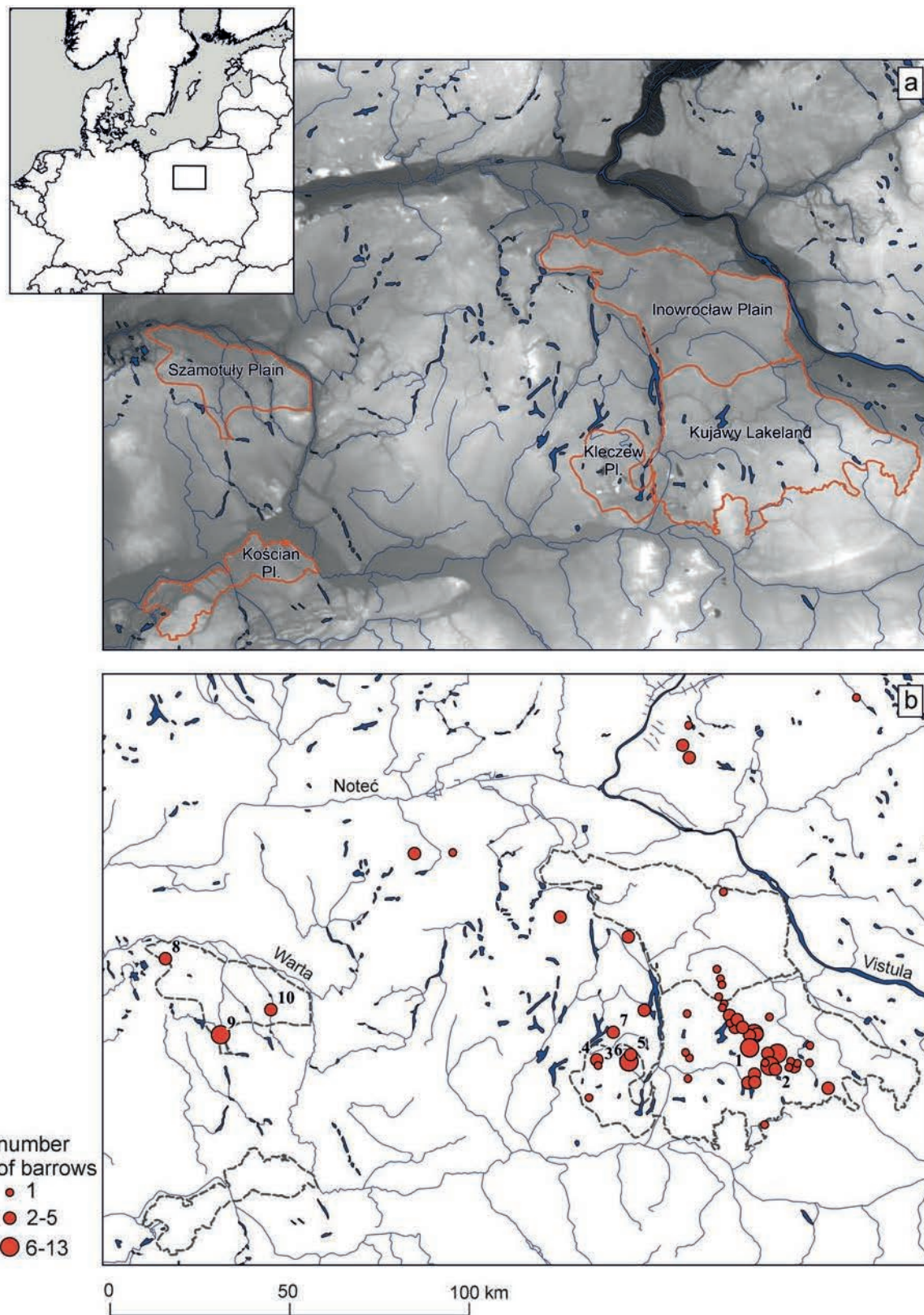


Fig. 16.1 Greater Poland and Kuyavia: (a) location of regions discussed in the text, (b) earthen long barrows registered before the 'LiDAR revolution' (after Zych 2002, updated) and the location of sites described in the text (1-Sarnowo, 2-Wietrzychowice, 3-Zberzynek, 4-Zberzyn, 5-Ościslów, 6-Góry, 7-Kownaty, 8-Wierzchocin, 9-Sierpówko, 10-Sobota).

no barrows were known to archaeologists up to the 1970s. However, systematic surveys and excavations have revealed a few almost completely levelled barrows (Kokowski 1980; Czerniak 1994, 132–132) and more were found thanks to large scale rescue excavations (e.g. Bednarczyk and Koško 2004). It was realised that the once probably numerous barrows were devastated by intensive ploughing and erosion in this area and the same could be true for Greater Poland. It must be noted, however, that the shortage of erratic boulders in the Inowrocław Plain, contrary to morainic landscape of the Kujawy Lakeland, could have forced the builders to use pebbles and wood and as a consequence, these barrows were likely to be much more vulnerable to destruction. Finally, antiquarians surveying Greater Poland back in the 19th century noted a number of monuments, whose descriptions fit well into what we would infer as earthen long barrows. The presence of some ancient tombs was also recorded in the names of villages and fields or imagined and remembered as graveyards of giants or devils. The above-mentioned project covered both archive material surveys (museum records, state archives, libraries) and field surveys (aerial reconnaissance, fieldwalking, geophysics) in the most promising areas. Unfortunately, it did not answer the initial question.

The introduction of airborne LiDAR (Light Detection and Ranging) to Polish archaeology in the beginning of the second decade of 21st century caused not only a discovery of more earthen long barrows in Kuyavia, but also in neighbouring parts of Greater Poland (Gorczyca *et al.* 2019) and eventually in the Szamotuły Plain. These monuments are almost exclusively located in forests, where they remained undetected by fieldwalking. In many cases woodlands were not surveyed at all because of the common assumption that, as today, they cover areas less suitable for settling and this would have been the case in prehistory.

In this paper we briefly present the characteristics of earthen long barrows of Kuyavia and their social interpretations. We also discuss selected discoveries of such monuments outside their core area by using publicly-available airborne LiDAR data. Moreover, we address such issues like the earliest records of barrows in the 19th century, their devastation by intensive land use, and the limitations of modern survey techniques used in the search of last standing barrows.

Kuyavia: the core area of Polish earthen long barrows

The oldest non-megalithic long barrows in Europe, known as the Passy type monuments, are found in France, from where they spread to northern Germany, southern Scandinavia and Britain (Smith and Brickley 2009; Chambon and Thomas 2010; Rassmann 2010). They present variability in form, shape, size and the way in which they were used for social and ritual purposes. In Poland, the largest number of earthen long barrows clusters in the area of the Kujawy Lakeland that

is the southern part of the Kuyavia region itself (Fig. 16.1). Studies predating the introduction of LiDAR to archaeology (e.g. Zych 2002; Król 2015) gave a minimal number of 67 barrows within an area of c. 2660 km². These monuments are specific in a number of ways. They were constructed as elongated triangles and consisted of two parts: the front part (of clearly trapezoidal shape) and an elongated part, called a tail, departing from it. The earthen mound, highest in the front part (probably up to 3 m) and falling towards the tail, was enclosed by an embankment formed of erratic boulders, the largest in the front part and smallest at the end of the mound (Fig. 16.2). Tails were the most vulnerable to destruction, especially after removing the embankment's stones, for instance for construction works, which was common at the turn of the 19th and 20th century. Completely preserved barrows, located primarily in forests, are up to 223 m in length but c. 40% of them range between 61 and 80 m (Rzepecki 2004, 123). Those located in open fields and lacking any large stones are usually much eroded and only the modest remains of front parts are preserved, hardly ever exceeding 50 cm in height. In the case of most cemeteries, a regularity of their layout can be seen and usually the front parts are facing east, northeast or southeast. However, the orientation of individual monuments within a group can range from 21° to 31° (Midgley 1985).

None of the excavated mounds contained any dolmen-like stone cists, so the Kuyavian barrows are also called unchambered or chamberless (e.g. Czerniak 1994, 129). Graves were usually surrounded or paved with stones. In those oriented along the long axis of the barrows, known as central graves, only the remains of males in advanced age were found (Rzepecki 2004, 123). Younger males were buried next to them, in so-called accompanying graves. Burials of women have been found only twice: in an accompanying grave, and in a central grave but with an atypical orientation. Remains of small timber buildings, referred to as cult huts, were documented above some of the burials or in the front part of the barrows (Socha 2015).

The body arrangement of the deceased was uniform with all preserved skeletons lying in supine position. The grave goods were very modest and limited to simple artefacts made of flint, bone and antler. Pottery, mainly collared flasks, is rare. Exceptionally, the deceased were buried with small objects of probable prestigious character, made of exotic raw materials such as imported flint, copper or amber (Domańska and Rzepecki 2004; Papiernik and Płaza 2017). Such graves can hardly be considered wealthy, especially when compared with preceding 'rich burials' of the Lengyel culture, containing numerous grave goods, for instance bows, antler axes, bone daggers and necklaces with pendants made of copper or *Spondylus* shells (Czerniak 2012, 166). Nevertheless, they stand out clearly from the contemporary flat graves, which in most cases did not contain any equipment at all (Rzepecki 2004; Pospieszny 2010; Grygiel 2016). Such poor burial offerings seem to be characteristic for the Funnel Beaker societies in Kuyavia.



Fig. 16.2 Wietrzychowice, Izbica Kujawska commune (Kujawy Lakeland). Excavations of barrow no. 1 in 1967 (photography from the archive of the Museum of Archaeology and Ethnography in Łódź, with the permission of the Museum).

The fact that central graves were reserved for adult males, occasionally equipped with relatively rich offerings, combined with the large amounts of labour required to build a barrow, inevitably caused a discussion on the status of people buried in them. The views range from chiefs of high and likely inherited social power to elders respected because of advanced age and knowledge accumulated over their lifetime (Chmielewski 1952, 34; Pospieszny 2010, 148; Adamczak 2013; Król 2015, 366–371). In the first case, the presence of hierarchical societies led by early elites is proposed. In the second case, egalitarian communities are seen as occasionally integrating through joint effort of building and maintaining a monument. A serious limitation of any social interpretation is the relatively small number of graves containing human remains of identified age and sex. What is more, it is not clear where the remaining members of these communities were buried. Was it in the vicinity of the mounds, as in Sarnowo (Kapica 1986)? The usually small extent of excavations does not allow enough information to answer this question.

Monuments hidden in point clouds

The most famous earthen long barrows of Kuyavia, in Sarnowo and Wietrzychowice, are located in forests. When discovered they were relatively well preserved and clearly visible despite the trees and bushes. However, even if some archaeologists were aware that many more, but less spectacular barrows were left unnoticed, this hypothesis could only be confirmed after a new method was developed to survey the woodlands effectively through the canopy all the way to the ground. In Poland, the airborne LiDAR method was first used in archaeology at the beginning of the second decade of the 21st century (Banaszek 2015). After the floods in 1997 and 2010 the ISOK (abbreviation for ‘Informatyczny System Osłony Kraju przed nadzwyczajnymi zagrożeniami – IT system for protection against extraordinary hazards’) programme was initiated. At first, the airborne laser scanning (ALS) covered the valleys of the main Polish rivers, but over time it was extended to the entire country. The real breakthrough happened when the results of scanning became

available as hillshaded relief, the derivative of digital terrain models (DTMs) for the public on a dedicated website (geoportal.gov.pl). It caused an avalanche of new discoveries of archaeological sites in woodlands, which constitute 29.5% of the surface of the country. However, a number of problems are associated with the use of ISOK as a tool for archaeological research. First of all, the scans were made for flood protection purposes, hence the specificity of the measurements do not fully fit archaeologists' needs. Secondly, the published DTM's derivatives have also not been optimised for the purposes of archaeology. It can be expected that many archaeological sites or single monuments were accidentally removed during the data processing. An example is the cemetery of earthen long barrows at Wietrzychowice (Fig 16.2) (Kiarszys and Szalast 2014, 281–282). Although the monuments were reconstructed after excavations, they are not visible on the published model because of default cloud point classification used in the ISOK project. Finally, the interpretation of land-forms visible on the DTM only on the basis of their shape and size, is subject to a significant risk of error. This is mainly due to the relatively low, 1 m, resolution of the DTM and the inability to modify it online. Therefore, for the needs of archaeological research the raw data or point cloud from the ISOK programme should be obtained and subjected to appropriate processing. This was done for all three cemeteries described below that were discovered on the ISOK's publicly available DTM.

The acquired point clouds were reclassified using the Axelsson algorithm in the LAStools software. Proper implementation of this operation allows for a significant increase in the number of points classified as ground. Work with visualisations is one of the most important steps during the analysis of the DTM and remote sensing of archaeological sites preserved in the terrain relief. Even a change of direction from which the model is illuminated allows for forms of terrain to be seen that are invisible in other lighting settings. For example, linear structures arranged in accordance with the direction of lighting, will be much less visible than in the case of lighting them from the side (Devereux *et al.* 2005). Visualisations and their parameters should be selected not only in terms of the type of sites studied, but also the terrain type of the area under investigation (Kokalj and Hesse 2017, 34–35). In this study, the best results were achieved using DTM derivatives such as the local dominance visualisation (Kokalj and Hesse 2017, 35), and the local relief model (Hesse 2010).

Greater Poland: earthen long barrows (re)discovered

It would not be completely true to say that no long barrows were ever found in Greater Poland. A group of these barrows known as the Kleczew enclave (Gorczyca 2005), is scattered over the fields of Kleczew Plain in the eastern part of the region (Fig 16.1). For years these mounds were thought

to be the only and last remaining earthen long barrows of the Greater Poland Province and they faced a dramatic and intense process of destruction. However, a quick look at a map (Fig. 16.1) shows that the mounds are indeed an enclave of the main cluster of barrows in the Kujawy Lakeland. In the central part of Greater Poland, the earthen long barrows were virtually unknown to modern archaeology and the surveys carried out in 2006 remained inconclusive. In both the Kleczew Plain and the central part of Greater Poland, the situation changed dramatically in 2015 when numerous monuments were spotted by both professional and amateur archaeologists browsing the DTM provided by ISOK.

The Kleczew Plain

Middle Neolithic Funnel Beaker settlements were excavated in Kopydłowo (Marciniak *et al.* 2015; Marciniak *et al.* 2017) and Marianowo (Gorczyca 2015). On both sites small cemeteries consisting of flat graves were unearthed but their attribution to Funnel Beaker culture remains unclear. Earthen long barrows found in fields are usually seriously devastated by 19th- and early 20th-century ploughing and erosion. Possibly many more barrows were destroyed since the 1940s through large scale, open pit lignite mining. Historical sources from the 19th century mention that at least 150 monuments existed in the vicinity of Kleczew (Raczyński 1843) and some located close to the nearby villages of Skulsk and Wilczyn (Kolberg 1964, first published in 1890). Only barrows in Zberzynek (Tetzlaff 1961) and Zberzyn (barrow no. 4; Gorczyca 1981) were systematically excavated (in 1956–1957 and 1979, respectively). Test excavations were carried on five other sites revealing that no traces of mounds were preserved, except for barrow no. 1 in Zberzyn (Gorczyca *et al.* 2016). The documented mound was only 20 cm high and covered a cult hut and a grave without any preserved human bones or offerings. In barrow no. 1 in Ościsłowo, a burial pit covered with stone pavement was revealed by excavations but again with no trace of a skeleton (Wielgus 2016). Charcoal collected from the cult hut in barrow no. 4 in Zberzyn were conventionally radiocarbon dated to 4720±110 BP (Lod-159), while a fragment of charred bark from the floor of a similar building in barrow no. 1 at the same site returned a much more precise AMS date 4620±20 BP (Poz-19747). After calibration (with OxCal 4.3; Bronk Ramsey 2009) these dates yield calendar ages 3711–3106 and 3499–3356 cal BC (95.4%). Although the dates might be aged by the old wood effect, they indicate a significantly late chronology of these barrows. Thanks to LiDAR, two new cemeteries were discovered in the woods near Kleczew, in Góry (sites no. 24 and 25) and Kownaty (site no. 27) (Gorczyca *et al.* 2016; 2019). Site 24 in Góry is of highest importance because it was the first to be verified by excavations.

Góry, Wilczyn commune

The cemetery in Góry lies in a forest covering c. 2.8 km². On this site one can distinguish 14 earthen long barrows, from 30

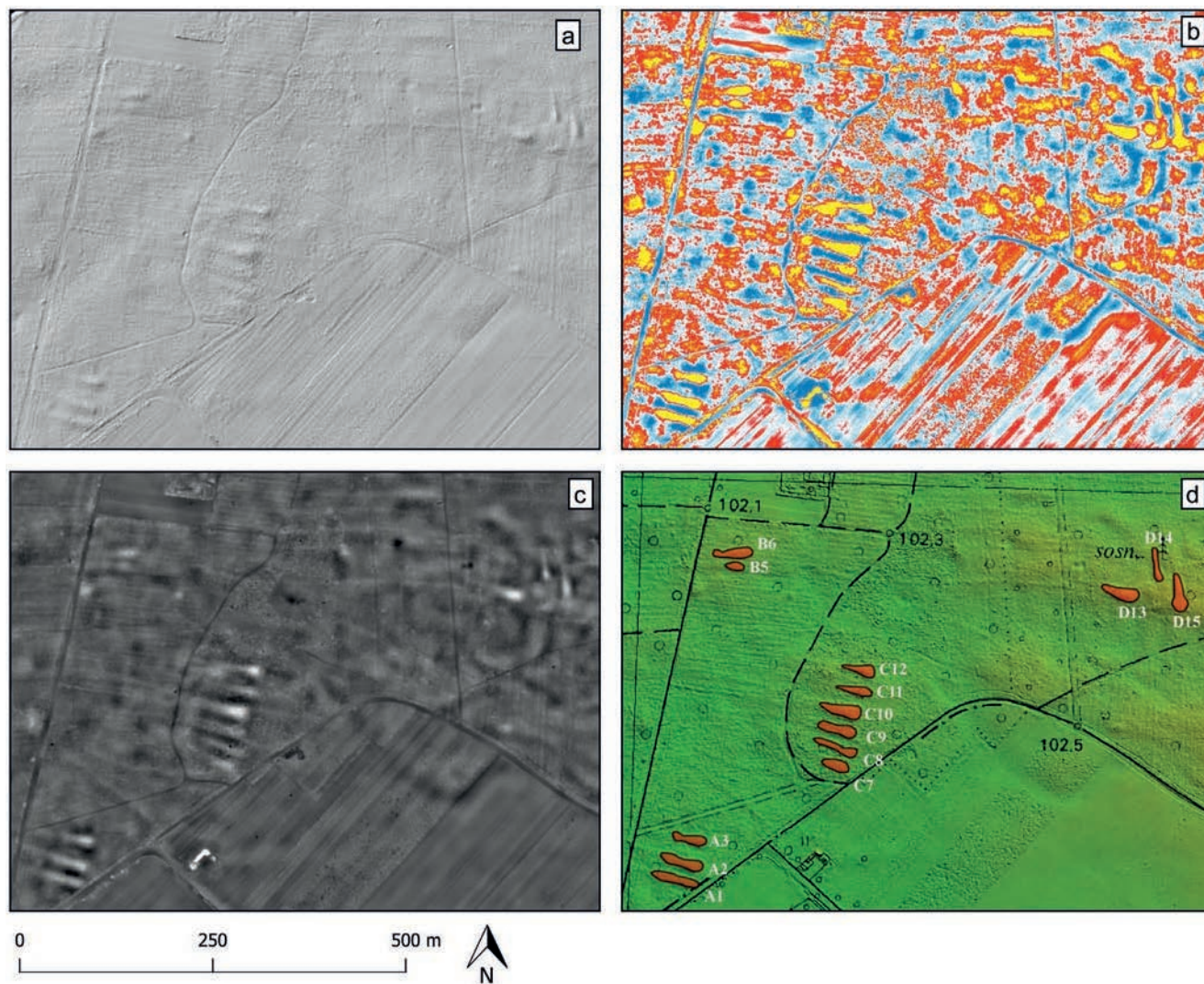


Fig. 16.3 Góry, Wilczyn commune, site no. 24. a) Hill-shading of DTM available as a raster image on geoportal.gov.pl; b) Local Relief Model, radius: 15; c) Local dominance, minimum radius: 5, maximum radius: 15, observer height: 1.7; d) Combination of topographic map in scale 1: 10 000, colour coded hill-shading of DTM and outlines of detected earthen long barrows.

to 96 m long and 9 to 19 m wide (Fig. 16.3). The best-preserved monuments have a maximum height of 1 m. The barrows are grouped in four clusters with a mutual distance of between 150 and 200 m. Most of the barrows lies in parallel, while the two most eastward are almost at right angles to the others.

On the LiDAR maps, remnants of ploughing are visible on the entire site, but on all available historical maps this area is covered by woods beginning with the *Karte von Südplessen* dated at the end of the 18th century (Gorczyca and Schellner 2017, 11). Of course, parts of the ploughed areas visible on the DTM visualisation may be related to forest management. However, the blanks visible around barrows D13–D15 indicate cultivation of this area before the 19th century.

In 2016 and 2017, excavations were carried out on this site by the team of the Regional Museum in Konin. Five

test trenches were opened on monuments A1–3. The fourth feature, initially interpreted as a fragment of a devastated earthen long barrow, turned out to be a probable Bronze Age tumulus, partially destroyed by the road from the west. However, the remaining pits confirmed that features A1, A2 and A3 are earthen long barrows related to Funnel Beaker culture (Gorczyca and Schellner 2017, 11–16).

The Szamotuły Plain

Some of the most spectacular finds of the Funnel Beaker culture copper objects come from the Szamotuły Plain such as the hoard from Rudki, found in 1897 (Kowalski *et al.* 2019), and the famous hoard found in the vicinity of Bytyń, consisting of 6 flat axes and 2 figurines of oxen, discovered in 1873 (Pieczyński 1985). Yet none of the recorded Middle Neolithic sites have been excavated. The

two examined Funnel Beaker settlements in Szczuczyn and Mrowino (Wierzbicki 2013; Szmyt 2018) are dated to the Late Neolithic (c. 3450–2750 BC). Moreover, no earthen long barrows were recorded in modern times by archaeologists, and the presence of these monuments in this area has been in doubt (Wierzbicki 2013). However, barrows were noted in the middle of the 19th century by local antiquarians. The breakthrough took place when the woodlands of Greater Poland were subjected to ALS.

Wierzchocin, Wronki commune

In 1846 F. Wawrowski reported an amateur excavations of cist graves, dating back to either the Late Neolithic or Iron Age (Wiślański 1966, 192). Significantly, Wawrowski noted that nearby there are five barrows that ‘stretch far into the field in the form of triangles’, and in which, in the opinion of the local people, five giant brothers are buried (Wawrowski 1846, 58). Their shape, elongated form and monumentality indicate that the author of the report actually saw the earthen

long barrows. However, the location of the barrows was never marked on any currently available maps, the oldest of which was made at the end of the 19th century. Fieldwalking in this area in the 1980s did not reveal any traces of monuments. Research carried out in 2006, including survey by fieldwalking and aerial reconnaissance, likewise proved ineffective. Later ALS data did not provide any new evidence as there are almost no forests in that area.

Sierpówko, Kaźmierz commune

The site is located in a forest (c. 1.5 km² in size) 3–4 km to the southeast from the place where the hoard from Bytyń was found but its precise location remains unknown (Pieczyński 1985). There are no historical records (known to us) of any barrows in this area. The cemetery occupies a small plateau above a narrow wetland valley of the Sama river (Fig. 16.4). At least 16 mounds were detected by LiDAR, but their dimensions can only be approximated, the largest is about 120 m long and 0.5 m high. Its width in the front

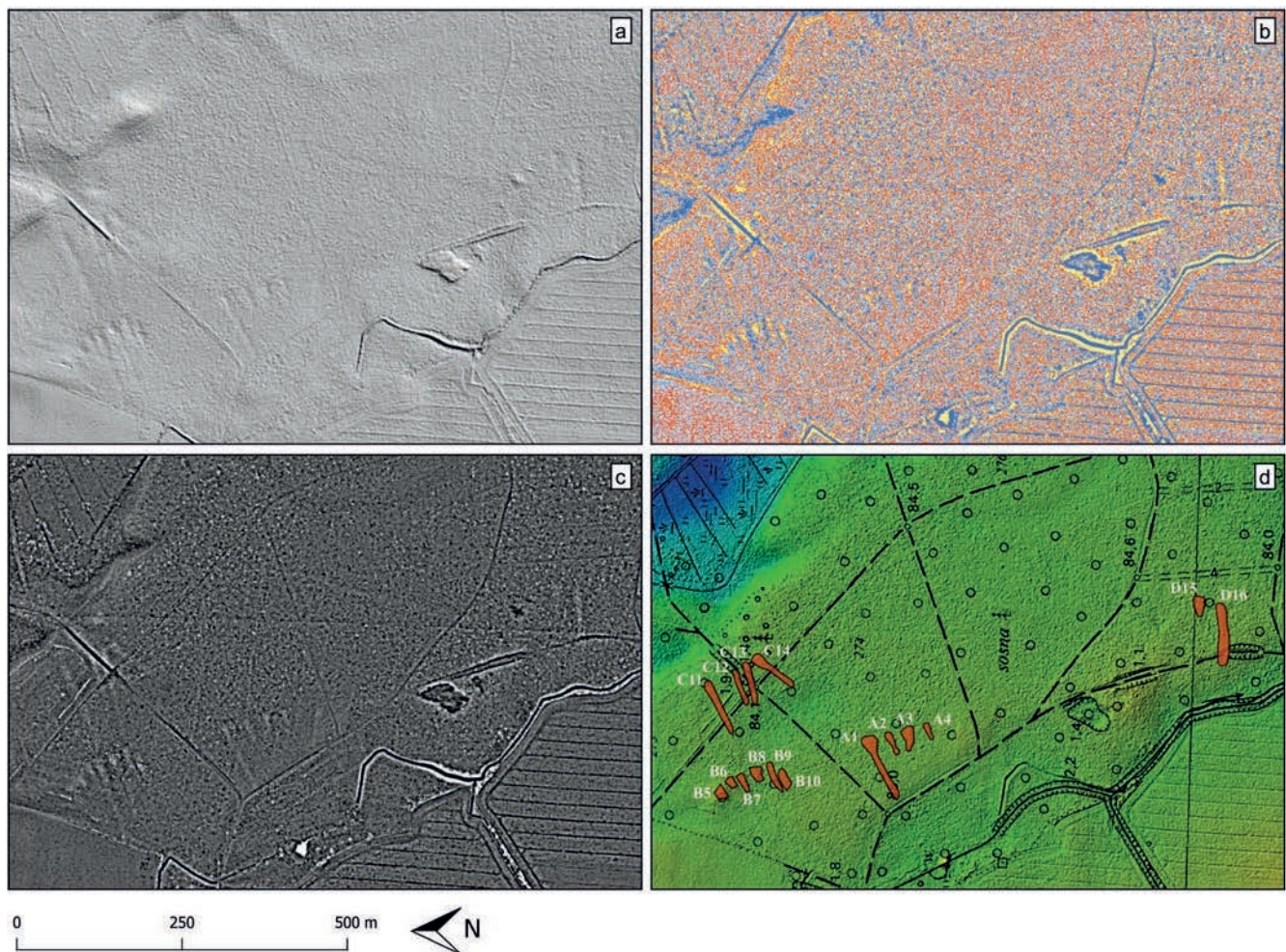


Fig. 16.4 Sierpówko, Kaźmierz commune, site no. 52. a) Hill-shading of DTM available as a raster image on geoportal.gov.pl; b) Local Relief Model, radius: 15; c) Local dominance, minimum radius: 5, maximum radius: 15, observer height: 1.7; d) Combination of topographic map in scale 1: 10 000, colour coded hill-shading of DTM and outlines of detected earthen long barrows.



Fig. 16.5 Sierpówko, Kaźmierz commune. Erratic boulders (colorized) on front part of barrow A1, view from northwest, January 2016 (photo by Ł. Pospieszny).

part is up to 12 m. Most of the barrows are very low and almost impossible to spot when walking through the forest. However, in case of monument A1, large erratic boulders were uncovered in its frontal part due to the almost complete destruction of a mound (Fig. 16.5).

Sobota, Rokietnica commune

The cemetery consisting of five earthen long barrows is located in a woodland covering an area of c. 3 km², on a small elevation 100 m west of a wetland (Fig. 16.6). Two small watercourses flow 200 m to the west (Samica Kierska) and north of the site (unnamed). The length of the mounds ranges from 82 to 111 m, and the width from 10 to 14 m. The best-preserved barrow has a height of 1 m. Distances between the barrows are about 10 m. The mounds are relatively well preserved and stand out clearly above the ground. Mid-size stones can be seen sticking out from the frontal parts of the barrows.

The village of Sobota is known for an accidental discovery of a Funnel Beaker double-blade stone axe of Åberg's type B (Jażdżewski 1936, 111). Since no stone axes are known from Funnel Beaker graves in Kuyavia, either flat graves or graves under earthen long barrows,

there is no reason to believe that this specimen came from a destroyed monument. However, single stone axes were found within the embankments of at least three barrows in Kuyavia and in the central grave of the long barrow at Rybno in Mazovia (Jażdżewski 1936, 191–192), a region neighbouring Kuyavia from the southeast. Moreover, the character of grave offerings linked with the barrows in central Greater Poland remains unknown and might be different than elsewhere.

Discussion

The main problem regarding the scarcity of the evidence about the earthen long barrows in Greater Poland and parts of Kuyavia lies in the history of Polish archaeology. For many years the main (and usually only) field prospection method was fieldwalking, and its importance had grown even larger in 1978 when the state programme AZP (acronym for 'Archeologiczne Zdjęcie Polski – Archaeological Survey of Poland') was launched (Kempisty *et al.* 1981). Fast growth of empirical knowledge about newly discovered archaeological sites led to the conclusion that the method was working very well, however, this was only partly true. The distribution of

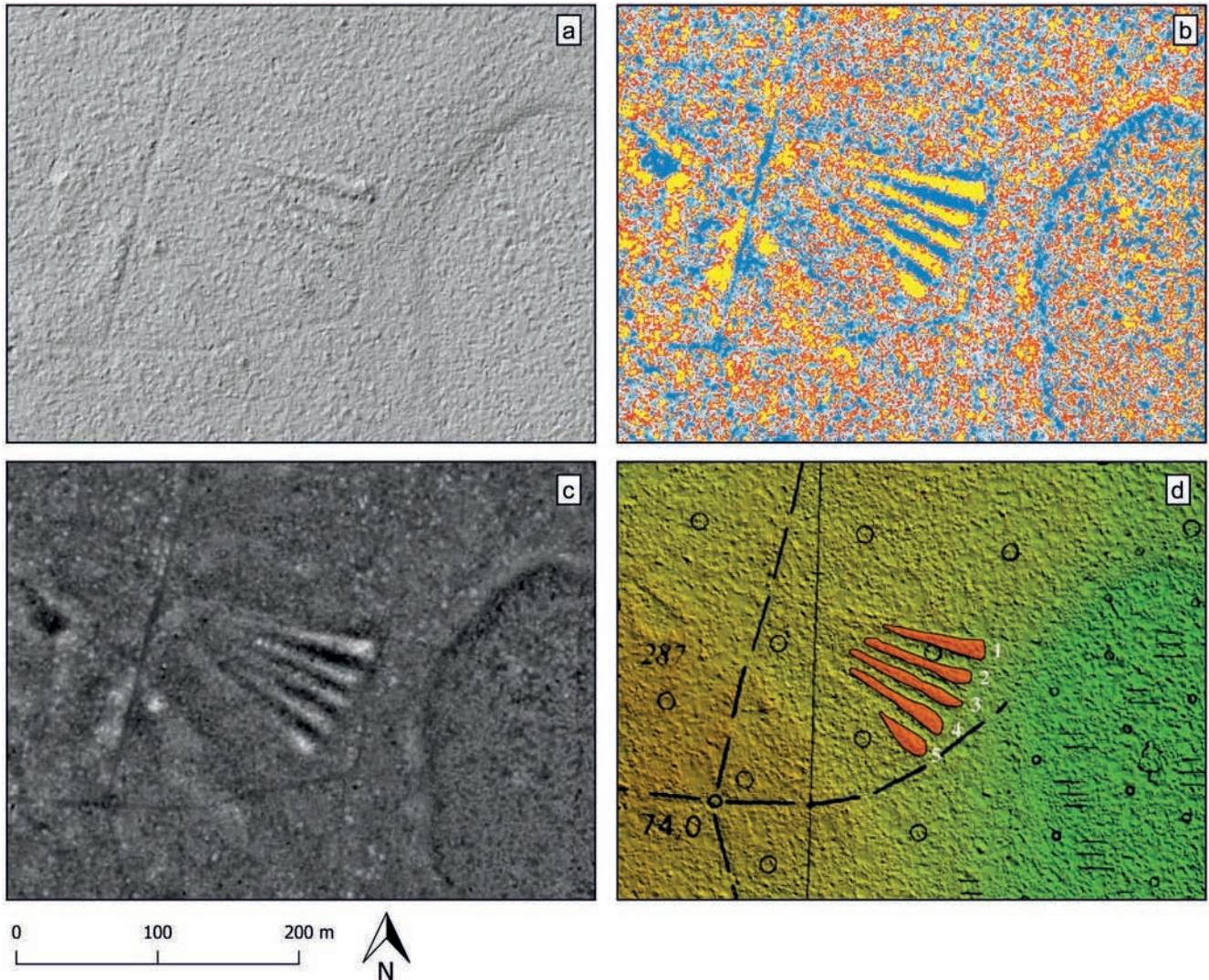


Fig. 16.6 Sobota, Rokielnica commune. a) Hill-shading of DTM available as a raster image on geoportal.gov.pl; b) Local Relief Model, radius: 15; c) Local dominance, minimum radius: 5, maximum radius: 15, observer height: 1.7; d) Combination of topographic map in scale 1: 10 000, colour coded hill-shading of DTM and outlines of detected earthen long barrows.

discovered archaeological sites was believed to be a reflection of true spatial patterns of past human settlement systems. Thus, limitations of fieldwalking impacted the manner in which archaeologists interpreted and thought about the cultural landscape. If a certain type of archaeological feature could not be registered by fieldwalking, it did not exist in archaeological discourse. Activities such as land use, erosion, agriculture and forestry, or vegetation cover that can limit the potential of the fieldwalking were rarely discussed. As a result, large 'empty spaces' appeared on archaeological maps corresponding to contemporary forests (Jaskanis 1996). Recent advancements in the field of airborne remote sensing techniques (especially LiDAR) made archaeologists aware that forests are in fact environments where archaeological monuments are usually much better preserved than in

agricultural areas. The identification of a large number of earthen long barrows in Greater Poland illustrates that the idea of 'empty spaces' within forests was wrong. In addition, erosion accelerated by agricultural activities probably affected perceptions of the barrow distributions as well. Most likely certain types of land use are the cause of the alleged 'disappearance' of the barrows, known only from archival 19th-century sources, and the impact of these occurred over a long period of time.

Yet it is too early to make any comparisons between the earthen long barrows of Kuyavia and Greater Poland. In most cases both the spatial organisation of cemeteries and the size and shape of individual monuments remain unclear. This calls for additional surveys, preferably with the use of geophysics, followed by field verification. Studying

the grave offerings and other details of the burial ritual would require systematic excavations of at least some of the barrows. Currently one of the biggest challenges for archaeologists is to understand the temporal dynamics of the early monumentality not only in Greater Poland but also in Kuyavia. It is, however, hampered by the lack of AMS radiocarbon dating of human remains and the single high precision date made for charcoals from Zberzyn alone is not very helpful here.

Public access to ALS data led to the discovery or rediscovery of a number of earthen long barrows, and this has a number of consequences. First of all, the earlier assumptions that there are no unknown barrows left in areas believed to be well surveyed is false. The forests proved to be exceptionally good protection against the destruction of the mounds, even if the supporting boulders were removed from them. Secondly, it can be assumed that the barrows found in the woods of Greater Poland, a region that witnessed intense human impact on the landscape since Middle Ages, are only a small fraction of their original number. Assessing how many monuments were built by the Funnel Beaker people is virtually impossible and such calculations are presumably affected by a large error. Still, it is tempting to assume that erecting earthen long barrows was not restricted to Kuyavia but was a common practice in all parts of northern Poland where Middle Neolithic Funnel Beaker culture settlements are found.

We do not know who was buried in the newly discovered barrows and this is also true for a large part of the already excavated monuments. However, if we assume that they were built for single individuals then each barrow can represent an entire group of people, like a family or clan. The number of monuments recorded so far gives us an idea of how large human population is standing behind them.

Finally, it is important to keep in mind that identification of the discussed archaeological sites requires not only the ability to process ALS data but also knowledge about landscape processes and a critical approach to the potential of applied method.

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In search of lost heritage: non-invasive exploration of the monumental Funnel Beaker culture long barrows in the region of Wietrzychowice in central Poland

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Joanna Wicha and Piotr Wroniecki*

Abstract

The article presents sample results of research into long barrows from the Funnel Beaker culture, carried out for a decade in southern Kuyavia in central Poland. The works aimed at re-establishing the location of Kuyavian long barrows, described and excavated in the 19th and in the first half of the 20th century. The research is conducted as a part of a long-term programme titled ‘Archaeological Sources in the Region of Wietrzychowice Culture Park’, financed by the Minister of Culture and National Heritage in Poland. The work is mainly devoted to the features currently invisible in the area and faces the risk of complete destruction due to intensive farming. The research is of non-invasive character and it makes use of aerial and geophysical prospection, reconnaissance surveys and detailed cataloguing of archaeological artefacts found on the surface of the sites. In many cases the simultaneous application of the above-mentioned methods enabled us to find the precise location of ‘archive’ cemeteries as well as to establish their spatial layout and the size of particular long barrows.

Introduction

Monumental Funnel Beaker culture long barrows, situated in southern Kuyavia, have been the target of archaeological excavations for 150 years. The first documented archaeological works were conducted by Kicka in 1873. Accounts of her research, published in Polish (1876) and German (*cf.* Koln and Mehliß 1879) inspired other ‘admirers of antiquities’ to follow suit. General R. von Erkert (1880) was among those who conducted excavations in Kuyavia and authored the

commonly used term ‘Kuyavian long barrows’. In 1879 and 1880 he carried out amateur excavations of 30 graves (*cf.* Chmielewski 1952). Before the First World War, Professor Leon Kozłowski (later the Prime Minister of the government in the Second Polish Republic) played a pivotal role in the research of Kuyavian monuments. The results of his research were published in 1921 in the first synthetic work devoted to the problem of Neolithic long barrows in the Polish lands.

Systematic and fully scientific archaeological excavations in the region of Wietrzychowice were begun by Professor Konrad Jążdżewski in the 1930s and continued by him and his students until the mid-1970s. These resulted in the excavation of six cemeteries and examination of 30 Kuyavian long barrows, mainly situated in the area of today’s district of Włocławek (Jążdżewski 1935; 1936a–1936i; Chmielewski 1952; Jadczykowska 1970; 1971; Gabałówna 1968; 1969a; 1969b; Wiklak 1982; 1983; 1986). Thanks to Professor Jążdżewski’s efforts, the megaliths at Wietrzychowice and Sarnowo were reconstructed and protected as part of Archaeological Park and Nature Reserve (Fig. 17.1A). In the 21st century it was transformed into the Wietrzychowice Culture Park at Wietrzychowice and Gaj, and Sarnowo Culture Park (*cf.* Papiernik 2016; Papiernik and Płaza 2017).

The research conducted by Jążdżewski and his students resulted in describing Kuyavian long barrows as forms consisting of three basic parts: the earthen mound – between several dozen to over a hundred metres long, a stone cairn made up of large erratic stones arranged in the shape of an elongated trapezium or a triangle and one or several graves situated underneath the mound (Fig. 17.1B). Notably,

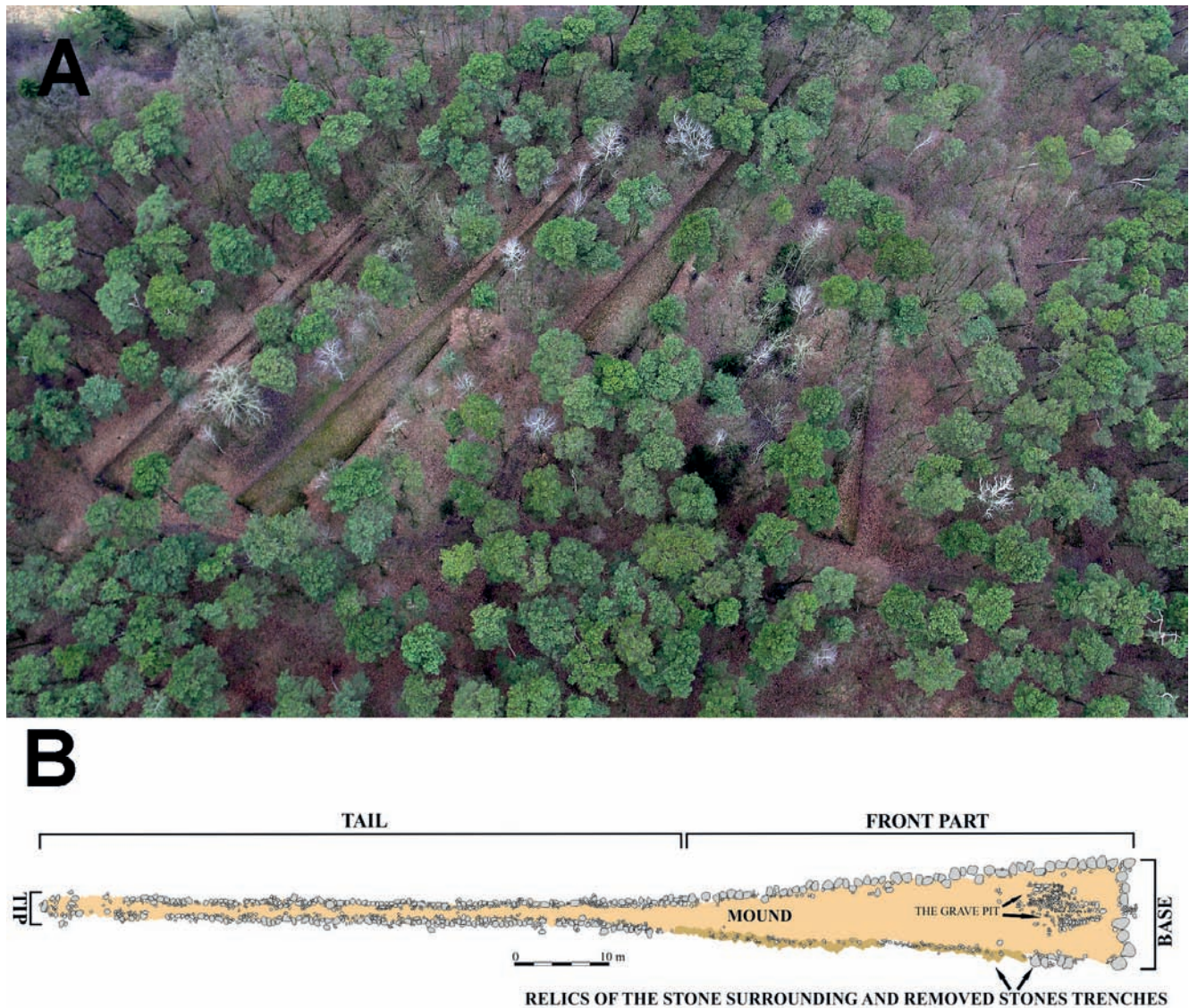


Fig. 17.1 A: Wietrzychowice, site 1. Aerial photograph taken in 2017. B: Outline of the Kuyavian long barrow, prepared on the basis of the research at Wietrzychowice, site 1.

Jażdżewski attributed Kuyavian long barrows to the Funnel Beaker culture and concluded that this was the only community that erected the long barrows in question in Kuyavia (cf. Jażdżewski 1936a; 1970; Chmielewski 1952).

The growing interest in the long barrows was accompanied by their considerable damage, which was reported in the 19th-century accounts (cf. Kolberg 1867; Borucki 1882). On the basis of Jażdżewski's research and descriptions from the 1930s, it can be concluded that most of the described long barrows were already heavily damaged. Some of them were levelled and transformed as a result of agricultural works. As a rule, the long barrows were void of cairns, which had been looted for building and other utility purposes in the 19th and 20th century. Consequently, the

long barrows almost completely vanished from the surface of the Kuyavian land. The situation has recently improved thanks to the analysis of LiDAR data that has allowed the discovery of previously unknown long barrows situated in forested areas on the border of Greater Poland and Kuyavia (cf. Gorczyca *et al.* 2016; 2018).

Archaeological excavations in the region of Wietrzychowice were resumed in 2009. This time, their aim was to gather a comprehensive description of the settlement of the Stone Age community against the background of the natural environment. During a 10-year-long research programme a description of the Funnel Beaker culture settlement network was pursued through excavation of selected settlements and cemeteries, reassessment of old

archival data referring to unexcavated Kuyavian long barrows, and search for more long barrows based on LiDAR data (Papiernik *et al.* 2018). The current state of research allows for a preliminary presentation of selected problems. The current work aims at presenting the results of research conducted in order to reassess data and search for unexcavated long barrows. The works were conducted as part of 'Archaeological Sources in the Region of Wietrzychowice Culture Park' implemented as a wider programme of the Minister of Culture and National Heritage, entitled 'Cultural Heritage', priority 'The Protection of Archaeological Artefacts' in the years 2013–2019.

The works have been conducted in a relatively small area of 160 km² (Fig. 17.2) occupied by young glacial Kuyavian Lakeland, which is a part of Great Poland Lakeland, and more broadly the Middle European Plain (after Kondracki 1994; 2002). Its geological structure and landform were largely built during the last glacial period (the Vistulian) of the Polish lands, which took place in Kuyavia c. 18–20,000 years ago (Roman 2010). The landscape is dominated by moraine forms made of clays, as well as other forms which appeared as a result of the outflow of glacial water and are made up of sands and gravel (Fig. 17.2).

Research methods

There were three research methods used: fieldwalking, archival analyses and aerial survey. Many Funnel Beaker culture sites in the area were registered as a result of archaeological field walking surveys conducted between 2009–2018. It was delivered with the general principles and standards of the 'Polish Archaeological Record' synthetic field-walking programme and adhered to the guidelines issued by the National Heritage Board of Poland. A total of 496 Funnel Beaker culture sites have been recorded (Fig. 17.2) and surface finds from field surveys were marked on 1:10000 topographic maps. Additionally, ortho-photomaps and GPS were used for accurate location assessment.

Analytical surface artefact collection is based on observing, collecting and recording all archaeological artefacts visible on the surface. The location of each artefact was meticulously determined (2 cm precision) and allocated its own separate inventory number. The application of GPS technology in RTK positioning enables the collection of georeferenced data, and the review of the non-invasive research results obtained by means of different methods. On the basis of a detailed, two-dimensional spatial analysis of the excavated artefacts, and after

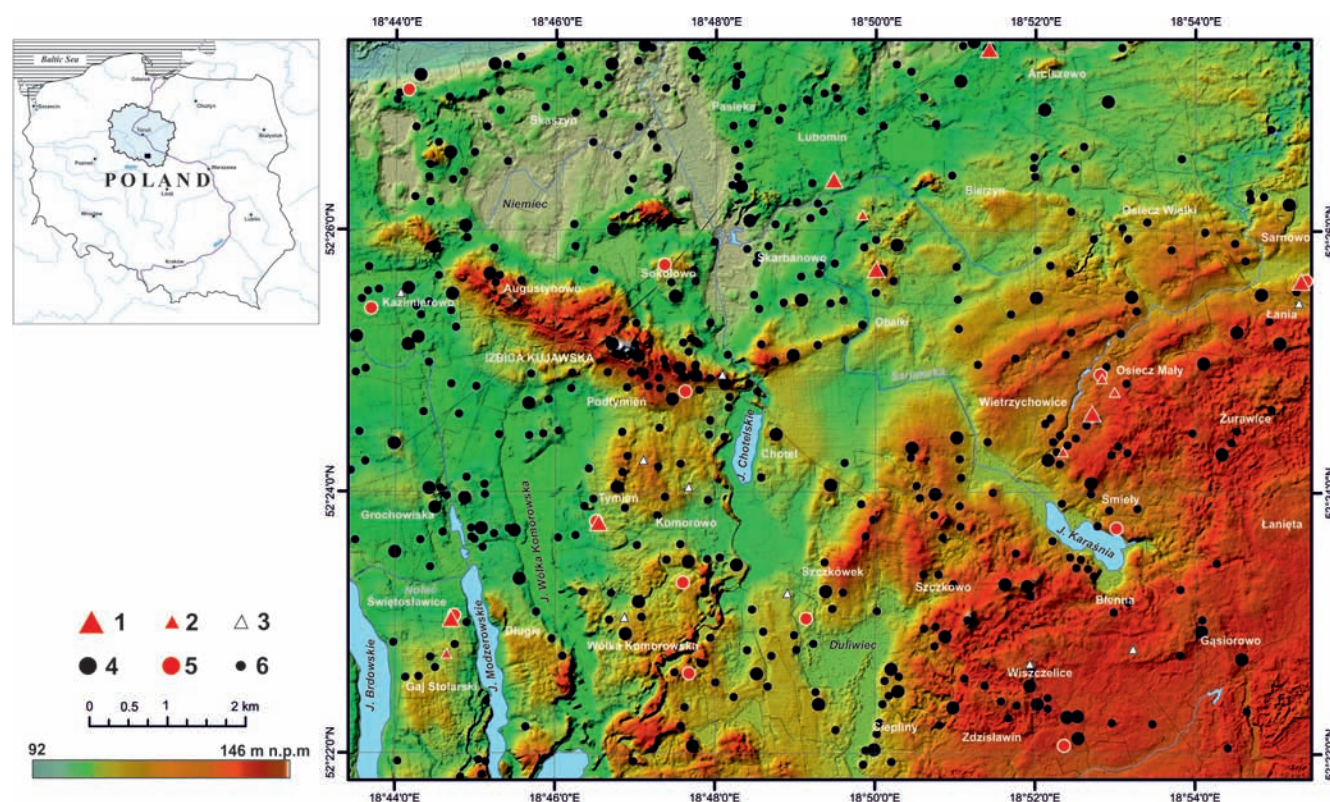


Fig. 17.2 Sites of the Funnel Beaker culture in the investigated area. 1. Cluster of the Kuyavian long barrows; 2. Single Kuyavian long barrows; 3. Apparent Kuyavian long barrows under reassessment; 4. Settlements; 5. Settlements that have been excavated or undergone non-invasive research; 6. Other sites.

determining their chronology, typology and raw material, it has been possible to establish the range and specific (*e.g.* functional) character of the recorded settlement remains for separate cultural levels. This method was used for the exploration of the Funnel Beaker culture sites, including 12 settlements and 6 cemeteries. In the whole research programme, the method is treated as an attempt to verify data obtained from aerial and geophysical prospection with archaeological artefacts.

During the surveys, special attention was paid to sites with Funnel Beaker culture cemeteries (Fig. 17.2). On the basis of the archival research it was established that the necropoli were situated at Gaj (two long barrows, only one of which was excavated (Chmielewski 1952)), Komorowo (one unexcavated long barrow (Jażdżewski 1936f)), Leśniczówka (at present Arciszewo, six or seven long barrows, four of which have been excavated (Jażdżewski 1935; 1936a)), Lubomin (five unexcavated graves (Jażdżewski 1936d)), Obalki (four long barrows, three of which were excavated by K. Jażdżewski and one by W. Kersten (Jażdżewski 1936c; 1936e; Tetzlaff 1961)), Osiecz Mały (one unexcavated long barrow (Jadczyk 1970)), Śmieli (one unexcavated long barrow (Jadczyk 1970)), Tymień (at least five long barrows excavated by R. von Erckert (Chmielewski 1952)), Wietrzychowice (five excavated long barrows (Jażdżewski 1936b; 1936h; Jadczyk 1970; 1971)) and Wólka Komorowska (two unexcavated long barrows (Jażdżewski 1936i)). The list should be supplemented by one or two cemeteries with an undetermined number of long barrows, situated in the village of Żurawice, Łania and Sarnowo (Jażdżewski 1936f; 1936g; Chmielewski 1952), one of which was excavated by N. Kicka (1876).

Archaeological field surveys have indicated that the only discernible landscape form that can be interpreted as the heavily eroded remains of a Kuyavian long barrow is the feature at Lubomin (site 5), apart from the already reconstructed features at Wietrzychowice and Gaj. In all other cases, no indication of a possible feature in the area could be found. On the basis of the archival data it was possible to establish the approximate location of the excavations carried out by Konrad Jażdżewski at Leśniczówka and Obalki.

The main method of detecting archival Kuyavian and new long barrows has been aerial prospection (*cf.* Brzejszczak and Papiernik 2017). Since 2014 Unmanned Aerial Vehicles, or drones, have been used for aerial prospection. The advantages of a drone are the freedom of flight planning and the ability to adjust the height and length of flights. One hundred and fifty-two flights were carried out across an area covering 17 km², during which 28,000 photographs were taken. The photographs were taken in different seasons (from February to October) and aimed at observing crop and soil marks that would point to archaeological features.

As a result of this aerial data it was possible to establish or reliably suggest the location of five archival clusters

(Leśniczówka, site 1; Lubomin, site 5; Łania, site 1; Obalki, site 1; Tymień, site 11) and three single long barrows (Osiecz Mały, site 8A; Skarbanowo, site 12; Śmieli, site 1). We are still verifying the remains of seven further possible long barrows, that were previously unknown in the literature but observed between 2018 and 2019, in the regions of Blenna, Chociszew, Gaj, Kazimierów, Osiecz Mały, Józefów and Wiszczelice.

Geophysical prospection has also been carried out on a large scale. It allows registering areas with a potential presence of archaeological features and determining their various parameters such as depth, size or fill. It has therefore been possible to detect traces of different types of human activity, as well as natural features.

The primary method used in the project was magnetic gradiometry, which allows for the speedy exploration of large areas. Surveys were conducted with the use of a fluxgate instrument, with two sensors that were set at a 1 m horizontal distance. The total area surveyed was 36.5 ha, with 26 ha devoted to the search for Kuyavian long barrow remains where there were no visible earthworks. In addition to the magnetic gradiometry prospection, soil electrical resistance measurements were also used in two areas, and Ground Penetrating Radar in another. Data was recorded by means of Geoscan Research RM-15D Advanced in a Wenner configuration with electrodes set apart at 0.5 m and a 1×1 m data collection grid in the geoelectrical method. The georadar survey made use of an Utsi Electronics unit, equipped with 400 MHz antenna.

Selected results of non-invasive research into Kuyavian long barrows

The geophysical prospection was conducted in areas where earlier accounts suggested that sites may have been extant but subsequently completely levelled with the intention to identify sites to excavate to confirm the survey findings. The research aimed to obtain a set of data which could be treated as comparable data for further work in the future, as this type of research had not been performed in Kuyavia before.

Site 8A at Osiecz Mały

In 2012 magnetic measurements were made on the border of the forest and arable lands, approximately 400 m east of the main cluster of Wietrzychowice long barrows, to reassess a feature recorded by Jażdżewski as site 8A at Osiecz Mały (Jadczyk 1970, fig. 1). On the basis of the measurement analysis of 3 ha of arable lands adjacent to the forest, it has been concluded that one structure can be probably interpreted as the possible remains of the long barrow. In order to avoid doubts, a reconnaissance trench was dug (area of 150 m²). It contained traces of a cairn in the form of holes left after boulders had been looted and the remains of a completely levelled mound (Papiernik *et al.* 2018).

Long barrows nos 1 and 2 at Gaj

Geophysical research was also used to reassess the location of long barrow no. 2 at Gaj. The first recorded account of Kuyavian barrows at the site is from 1936 (Jażdżewski 1936f, 115). In 1949 Chmielewski and Gardawski prepared a hand-made location map of the features and the following year Maria and Waldemar Chmielewski carried out excavations of long barrow no. 1, which had a preserved cairn at its front (Chmielewski 1952, 86). The long barrows were flattened during the construction of the Forest District Office in the late 1920s and early 1930s. Long barrow no. 2 was neither discernible during archaeological survey nor was it visible in aerial photographs from 2013. Consequently, a decision was taken in 2014 to make magnetic measurements of an area of 3 ha and as a result it was possible to determine the location of long barrow no. 2 and, surprisingly, a structure at the rear part of long barrow no. 1 was also discovered. ERT measurements of a designated section of long barrow no. 2 were made at the site. The results fully confirmed the feature's location. The geophysical research resulted in the comprehensive excavations of long barrow no. 2, which was thoroughly explored in the years 2014–2016 (Papiernik *et al.* 2018). In the years 2013–2015 magnetic prospection was performed at Śmieli and Wietrzychowice (total area of c. 8 ha), but it did not bring about desirable results.

Lubomin, site 5

The first account of Kuyavian long barrows at Lubomin in 1936 describes five features discovered in the village of Lubomin Poduchowny, four of which were heavily destroyed by field works (Jażdżewski 1936d). The fifth long barrow measured about 8 by 30 m and was preserved up to 2 m in height. None of the features had cairns, as they had been taken apart during the First World War and used by the German army for building local roads. Jażdżewski documented that he created maps and took photographs, however, these appear to have been lost during the Second World War.

During archaeological surveys conducted in 2013, an earthen embankment was discovered in the fields that currently belong to the village of Lubomin. It was overgrown with trees and shrubs, but the length and shape of the bank resembled a Kuyavian long barrow (Fig. 17.3A). On the basis of the analysis of archival data, it has been concluded that these are probably remains of long barrow no. 1 described by Jażdżewski. During excavations conducted in 1982 in the village of Lubomin, two heavily transformed remains of long barrows were discovered at site 5, with an east–west layout. Unfortunately, no detailed documentation was completed and in 2013 the long barrows were no longer visible on the surface of the site.

In an attempt to confirm that the remains of the long barrow recorded in 2013 are part of the cemetery described by Jażdżewski, a series of works was carried out at the site,

mainly of non-invasive character. First of all, long barrow no. 1 was excavated. It was visible on top of a small terrain elevation. Aerial prospection revealed that the embankment had been damaged by the extraction of sand and gravel (Fig. 17.3B). From the east the photographs depict an outline of a gravel pit, from which material was obtained to rebuild a local road in the 1990s. Consequently, rescue works were completed. They included documentation of the long barrow's layers at the length of 45 m, visible on the slope of the gravel pit. Apart from the damaged part, the excavations revealed the top section of the long barrow. The feature in question was explored by means of the magnetic method and georadar. They helped detect the primary layout of the base and the eastern wall. On the basis of the excavations it can be concluded that the long barrow was 68 m long, 10 m wide and was oriented north–south with 15° deviation westwards.

In the years 2014–2018, aerial prospection of the site was conducted several times in the search of the long barrows described by Jażdżewski. During 12 flights, soil and vegetation indicators were observed which helped determine a possible location of at least four long barrows. It should be noted that during one photo session the features in question looked different. As a rule, only some parts of the archaeology were visible but not always in the same way. The final outcome of the aerial prospection was therefore based on the combined data obtained from a number of flights (Fig. 17.3C–E). The next stage of research involved making a detailed double inventory of all archaeological sources. The works were done on an area of 4.3 ha, which exceeded the expanse with features observed in aerial photographs. The surface of the site has yielded only 125 artefacts, including 90 pottery fragments, 25 flint artefacts, 9 pieces of daub and one of shell. The number of artefacts indicates that the area was not intensively inhabited in the past. It is particularly interesting to observe the spatial distribution of Funnel Beaker culture vessel fragments, most of which were unearthed in the long barrows' embankments (Fig. 17.3C). Other Funnel Beaker culture materials form two clusters, scarce in artefacts, which can be interpreted as the remains of short-lived human activity. These were possibly connected with the functioning of the cemetery. It should be highlighted that the artefacts do not include objects that would belong to Linear Pottery cultures. The fact rules out the presence of a permanent settlement of these cultures at the site. Other data were provided by geophysical prospection made by means of the magnetic method with the use of a georadar (Fig. 17.4 A–D). Both methods confirmed the presence of structures underground in places indicated by aerial archaeology. In three cases the similarities are so great that they rule out any coincidental likeness (Fig. 17.3 and 17.4).

To sum up the research at site 5 at Lubomin, it should be noted that diverse non-invasive methods conducted over the period of 6 years allowed the recognition of the Funnel

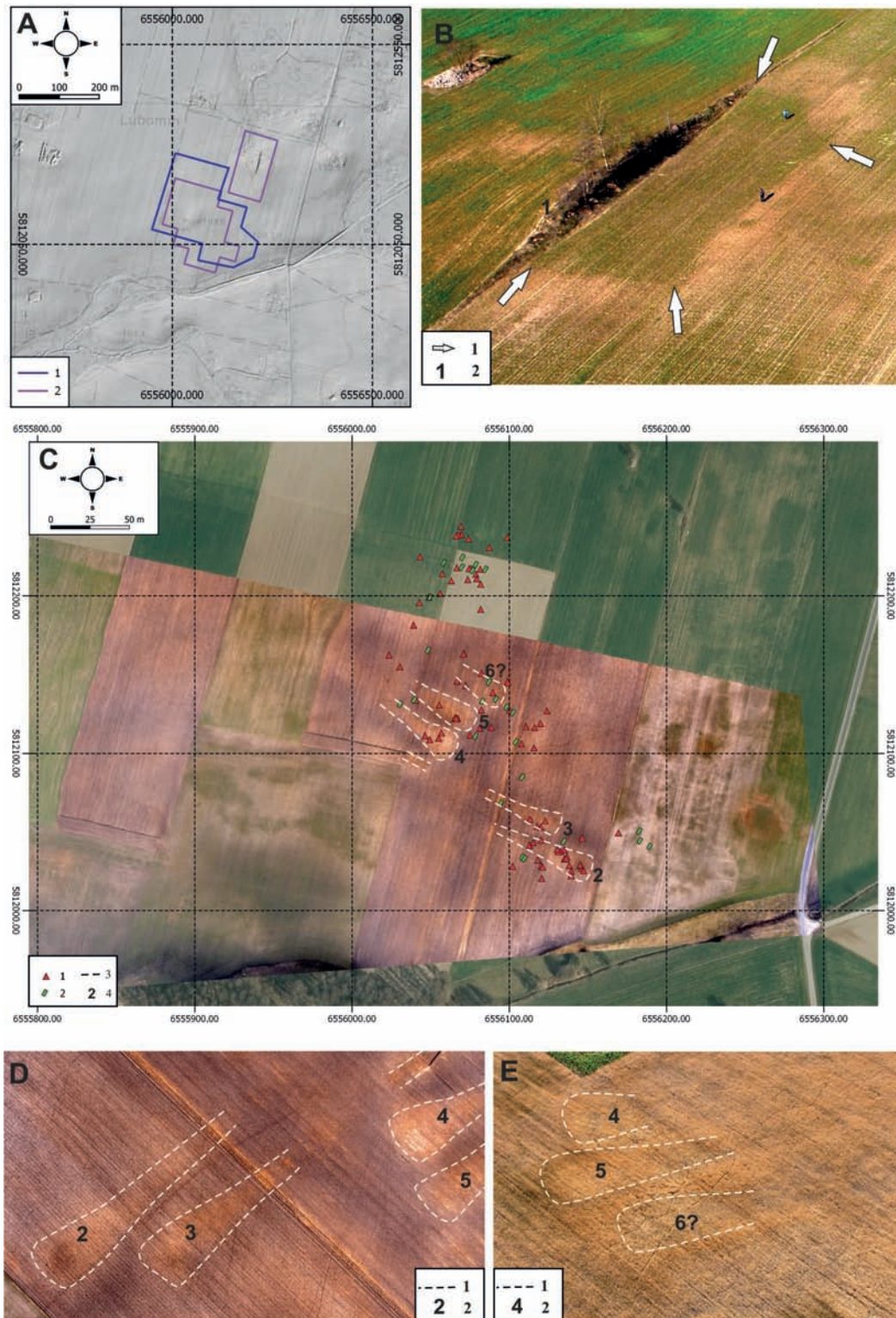


Fig. 17.3 Lubomin, site 5, district of Włocławek, province of Kuyavia-Pomerania. A: Excavated area. 1. Detailed inventory of artefacts, 2. geophysical research. B: Aerial photograph of the Kuyavian long barrow, July 2015. 1. Boundaries of sand quarry, 2. number of the long barrow. C: Distribution of the Funnel Beaker culture pottery and flint objects unearthed during a detailed inventory of artefacts. 1. Funnel Beaker culture pottery, 2. flint objects, 3. possible outline of the long barrows, 4. number of the long barrow. D: Aerial photograph, March 2018. 1. Outline of the long barrows, 2. number of the long barrow. E: Aerial photograph, July 2015. 1. Outline of the long barrows, 2. number of the long barrow.

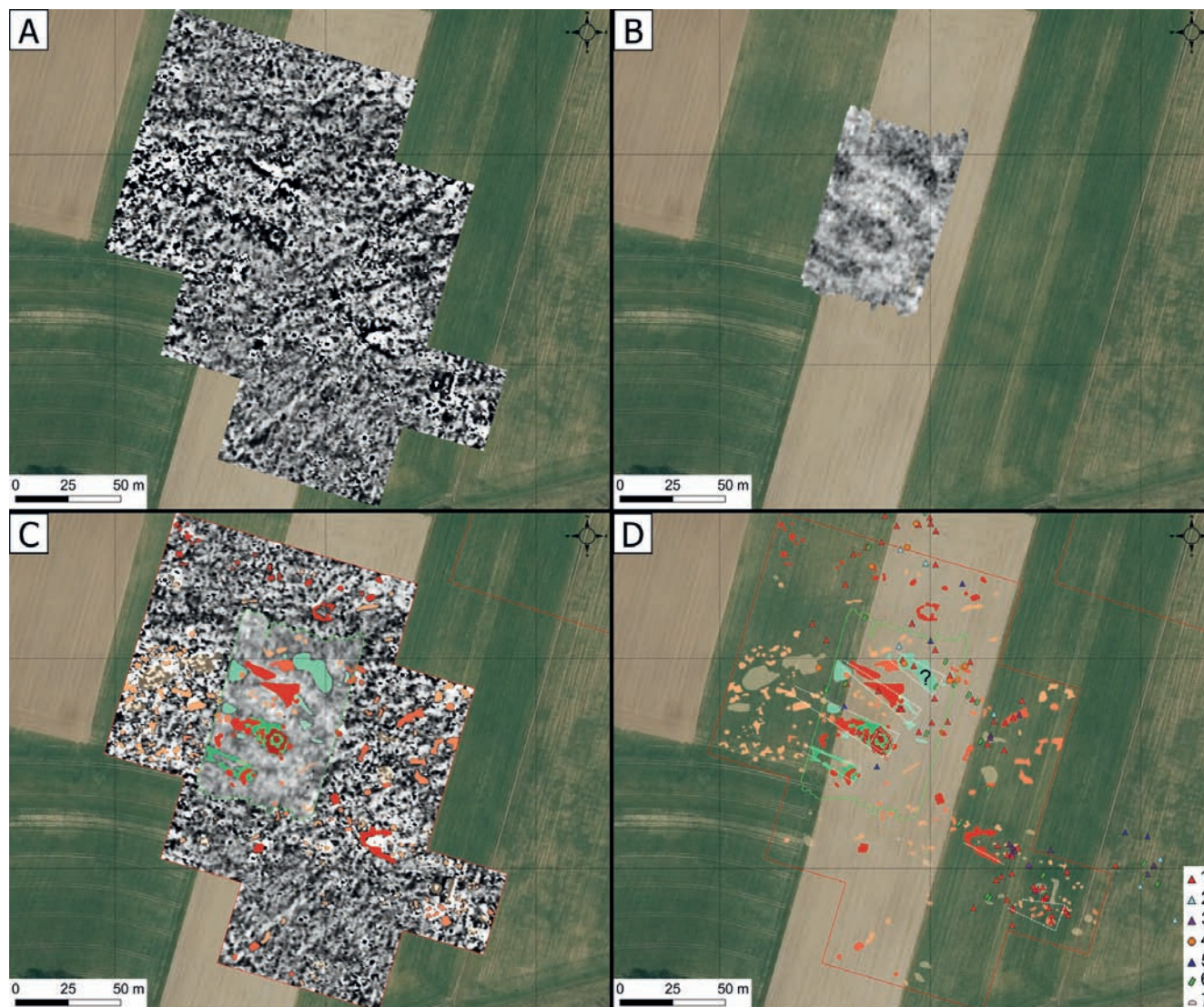


Fig. 17.4 Lubomin, site 5. A. Greyscale plot of magnetic gradiometry survey ($-2/2nT$, white to black); B. Greyscale plot of GPR amplitude time slice plot (0.2 m–0.5 m); C. Archaeological mapping of magnetic (shades of red) and georadar (shades of green) anomalies superimposed on geophysical data; D. Archaeological mapping of magnetic (shades of red) and georadar (shades of green) anomalies along with areas with possible remains of megalithic tomb structures (white dashed lines) and surface finds (1. Funnel Beaker culture, 2. Lusatian culture, 3. prehistoric times, 4. modern times, 5. daub, 6. flint artefacts, 7. shells).

Beaker culture cemetery, which seemed to be completely destroyed. Most probably, the cemetery consisted of five or six graves, four or five of which formed one, quite compact cluster in the southern part of the site. The cluster was oriented east–west with the base from the eastern side. The size of the long barrows is difficult to establish, but their length may have varied. The longest long barrow was approximately 100 m long. It is worth observing the presence of additional structures at the front of the two long barrows, which could be seen in aerial pictures, and in one case in geophysical prospection. It is likely that these are remains of cult buildings, analogous to the ones that were encountered during the excavations at Gaj long

barrow no. 1 (Chmielewski 1952), Gaj long barrow no. 2 (Papiernik *et al* 2018) and Obalki (Jażdżewski 1936e), as well as Leśniczówka (Jażdżewski 1936a).

Śmiety, site 1

Information about the long barrow at Śmiety was provided by Jadczkova (1970), who after Jażdżewski reported that 350 m south of the main cluster of long barrows at Wietrzychowice was one other long barrow situated in the village of Śmiety. The cairn was taken down and the mount was levelled in around 1920. Jadczkova gave information about a possible location of the barrow (1970, fig. 1) on the basis of documentation completed before the Second World

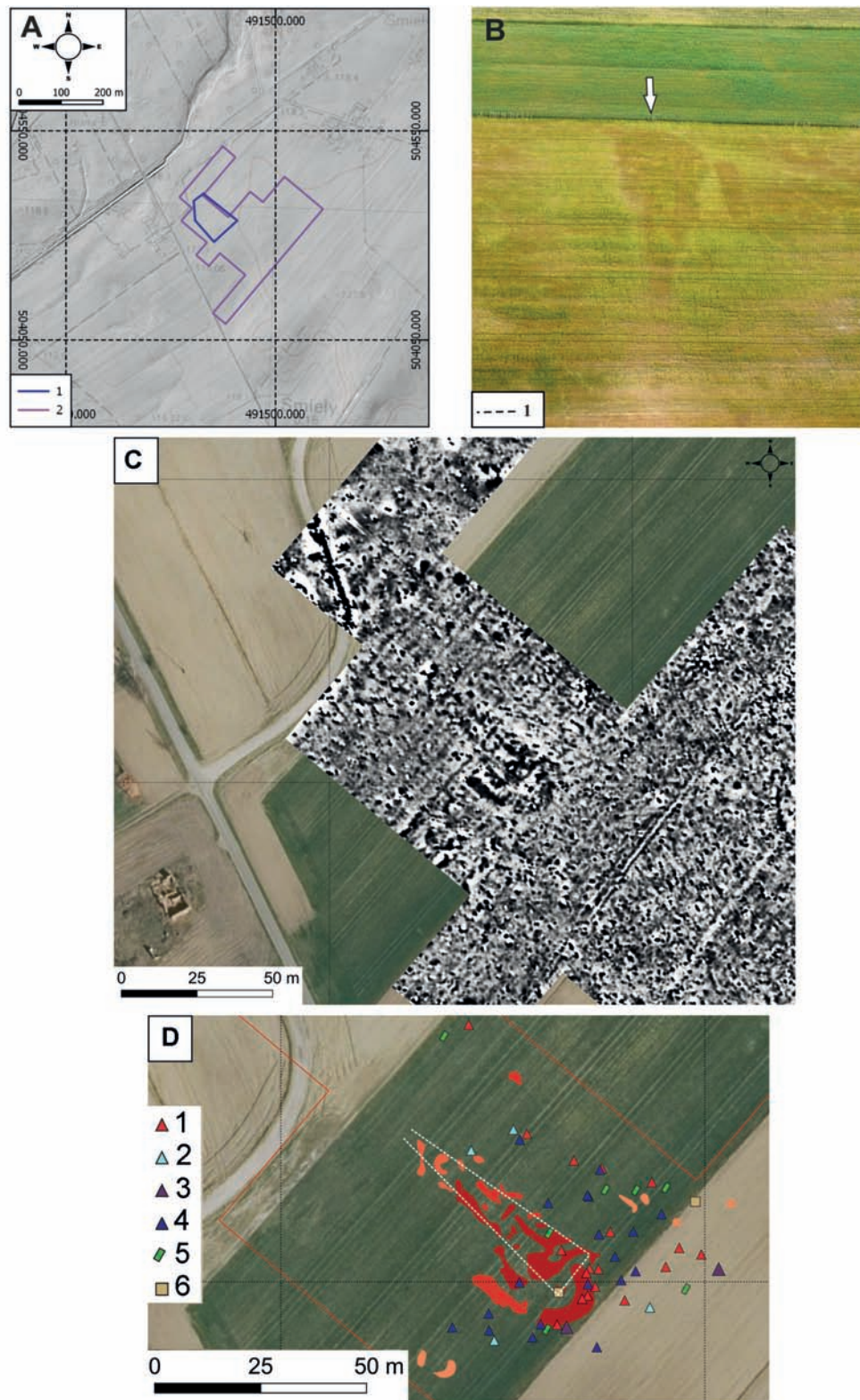


Fig. 17.5 Śmiely, site. 1, district of Włocławek, Province of Kuyavia-Pomerania. A: Excavated area. 1. Detailed inventory of artefacts, 2. geophysical research. B: Aerial photograph of the Kuyavian long barrow, June 2015. C: Greyscale plot of magnetic gradiometry survey ($-2/2nT$, white to black); D: Archaeological mapping of magnetic (shades of red) anomalies along with areas with possible remains of megalithic tomb structures (white dashed lines) and surface finds (1. Funnel Beaker culture, 2. Lusatian culture, 3. prehistoric times, 4. modern times, 5. flint artefacts, 6. stone tools).

War, as well as a futile attempt to discover its whereabouts in 1969 by means of a small reconnaissance trench.

Another attempt to find the location of the long barrow at Śmięły was resumed in 2013 by completing geomagnetic research on the area of 3 ha (Fig. 17.5A). Unfortunately, it did not bring about the expected results, as no structures similar to the feature in question could be found. Further works were conducted in the form of regular aerial explorations. The expected result was achieved in June 2015, when a characteristic vegetation indicator could be observed during a spell of extreme drought (Fig. 17.5B). On the basis of the aerial prospection, in 2017 geomagnetic analyses were resumed. This time, the obtained size and shape resembled one of the Kuyavian long barrows (Fig. 17.5C). It turned out that the previous research was done in the area adjacent to the feature in question from the northern side. Both in aerial pictures and in the image from geophysical prospection, on the eastern side of the long barrow a regular feature can be observed, which may be identified with a reconnaissance trench from 1969 (Fig. 17.5B and C). A detailed inventory of the artefacts was conducted twice. The explored area encompassed 1.5 ha and it brought about relevant information. The site of the long barrow's remains and their vicinity yielded mainly artefacts connected with the Funnel Beaker culture. Other vessel fragments are of modern origin and are connected with field works in this area (Fig. 17.5D).

To conclude, the search for the long barrow at Śmięły that has taken almost 100 years was finally successfully completed. It is also important to note that a much larger area was explored and no similar structures were found. This confirms Jażdżewski's argument that single Kuyavian long barrows could have been built outside the larger necropoli.

Conclusion

While commencing a long-lasting programme of research in the region of the Wietrzychowice Culture Park it was decided that attempts would be made to determine a more precise location of monumental Funnel Beaker culture long barrows, known from the 19th- and 20th-century accounts. This task proved difficult and time-consuming. As a result of many years of work, a decision was taken to combine three non-invasive research methods, *i.e.* aerial prospection, geophysical prospection and a detailed inventory of archaeological artefacts found on the surface of the sites through field walking. On the basis of the conducted works it was possible to attribute the excavated features to the Funnel Beaker culture and thus reject a possibility that they may have been connected with other cultures or chronological periods, *e.g.* with the long houses, typical of the Linear Pottery culture communities.

The presented works should be treated as an essential element in the research of the Funnel Beaker culture settlement in the area representative of the whole Kuyavian

land. The obtained data referring to the number, location and internal diversity of the necropoli are indispensable in order to assess the significance of the long barrows for the organisation of the Funnel Beaker culture communities in Kuyavia. Currently, the intensive analytical works aim to discover the relationships and correlations between cemeteries and settlements in the context of their environmental conditions. Their results will be presented in a forthcoming monograph.

This research has established the location of the remains of Funnel Beaker culture long barrows that were invisible on the surface. It has also helped to assess the state of preservation of particular long barrows, as well as whole sites. The presented research, apart from being a cognitive asset, is also important from the point of view of protecting cultural heritage. It may help prepare a protection plan or instigate measures to conduct rescue excavations that will prevent the complete eradication of long barrows as a result of intensive agricultural works.

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Making sense of Scottish Neolithic funerary monuments: tracing trajectories and understanding their rationale

Alison Sheridan and Rick Schulting

Abstract

This contribution offers an overview of the appearance, spread and regionally specific developmental trajectories of funerary monuments in Neolithic Scotland, setting these within the broader context of the arrival of farming groups from Brittany and northern France in the early centuries of the 4th millennium, and the subsequent expansion of farming to the Northern and Western Isles and the northernmost part of Scotland a few generations later. The monuments are also considered within the broader picture of Scottish Neolithic funerary practices more generally. Possible reasons for the monuments' specific developmental trajectories are offered, with competitive conspicuous consumption argued to be a major driver of developments in northern Scotland and Orkney during the second half of the 4th millennium. Bayesian models are presented for the first time for Clyde cairns and for mainland Scottish Orkney-Cromarty type passage tombs, and a chronological conundrum concerning Maeshowe-type passage tombs is explored.

Introduction

The diversity in Scotland's Neolithic funerary monuments has long been recognised, thanks to the work of Audrey Henshall on documenting the megalithic examples (Henshall 1963; 1972; Davidson and Henshall 1989; 1991; Henshall and Ritchie 1995; 2001) and that of Ian Kinnes on the non-megalithic long and round barrows (1979; 1992). Many attempts have been made in the past to make sense of these monuments, for example by examining their typology (*e.g.* Scott 1969), their spatial distribution (*e.g.* Renfrew 1973), their landscape setting (*e.g.* Cummings and Pannett 2005), their relationship to houses for the living (*e.g.* Hodder 1984) and, most recently, by situating them within a pan-European

review of the origins, spread and development of megalithic monuments (Schulz Paulsson 2019). But none of these studies has succeeded in providing a coherent overview of the origins and regionally specific developmental trajectories of these monuments across Scotland. Nor have they explained how their use spread, why they developed in the ways that they did, or how they fitted within Scottish Neolithic funerary practices and beliefs more generally. This contribution will attempt to lay the foundations for such an overview and narrative, combining information derived from radiocarbon dates with that available from the artefacts and the people in the monuments, and with evidence for multi-period construction and remodelling.

This task has been aided by three significant developments over the last few decades. Firstly, the growing number of AMS radiocarbon dates relating to the use of Scottish Neolithic funerary monuments – thanks largely to funding from Historic Environment Scotland, National Museums Scotland and the GENSCOT aDNA project (Armit *et al.* 2016a) – helps us to discern their changing spatial distribution over time and to trace regional trajectories in their development. We present here, for the first time, Bayesian models for monument types and regional groups that have hitherto not featured among the recent flurry of chronological models (*e.g.* Schulting *et al.* 2010; Whittle *et al.* 2011, 824, 833; Griffiths 2016; Bayliss *et al.* 2017), and we also re-model dates for Orcadian monuments, adding dates obtained since Bayliss *et al.*'s 2017 review of the evidence. In every case we use dates from human remains; dates obtained from other material are excluded from our models. (Modelled dates are presented at 95.4% probability, rounded to the nearest half-decade; individual dates cited below use the same probability level and are unrounded.)

Secondly, the range of monument types that are believed to be related to funerary practices, or to beliefs about the dead in general, has expanded, encompassing for example timber or ditched ‘mortuary enclosures’ (e.g. Inchtuthil, Perth and Kinross: Barclay and Maxwell 1991); cursus monuments (e.g. Holywood, Dumfries and Galloway: Thomas 2007); very long bank barrows and allied monuments (as at Auchenlaich and the Cleaven Dyke, Perth and Kinross: Barclay and Maxwell 1998); and large, Middle Neolithic timber structures which are thought to have been exposure platforms (e.g. at Balfarg Riding School, Fife: Barclay and Russell-White 1993).

Thirdly, it has become clear that Neolithic funerary practices in Scotland, as elsewhere in Britain and Ireland (Chamberlain 1996; Schulting 2007; Dowd 2008; Peterson 2019), also involved a variety of non-monumental ways of dealing with the dead. These include burial in caves and rock shelters; cremation and burial in a simple pit, with or without grave goods; exposure in mortuary enclosures or on platforms, as mentioned above; individual or communal interment in a cist; and, at Skara Brae, burial within a house. There will also have been other practices that have left no archaeological trace.

All these observations make it clear that Scotland’s funerary monuments need to be regarded against a backdrop of a range of funerary practices that varied both chronologically and regionally. This will be borne in mind as the origins and development of the funerary monuments are sketched out below. One other consideration is the wealth of information now available about the people buried in these monuments, thanks to the application of isotopic analysis (e.g. Schulting 2013; Gignoux *et al.* 2017; Schulting and Borić 2017) and ancient DNA analysis (e.g. Brace *et al.* 2019) along with osteological research (e.g. Lawrence 2006; Crozier 2018). In particular, the DNA results demonstrate that the funerary traditions whose trajectories are described below were introduced by incomers from the Continent.

Beginnings, c. 4000 BC–3800/3750 BC

As argued in detail elsewhere (e.g. Sheridan 2010), it is the authors’ firm belief that two discrete monumental funerary traditions – one megalithic, the other non-megalithic – appeared in Scotland over the first quarter of the 4th millennium with the arrival of farming groups from the Continent. Moreover, as discussed below, it appears that a third, non-monumental tradition, featuring burial in caves, was also introduced at this time.

One of the monumental traditions, which appeared on the west coast of Argyll probably around 4000 BC, featured the use of small megalithic polygonal closed chambers and simple passage tombs of designs known from the Morbihan area of Brittany (Fig. 18.1). The associated mounds are generally circular, although the enlargement

of the closed-chamber monument at Achnacreebeag by adding a simple passage tomb made the cairn pear-shaped (Fig. 18.1.1–2; Ritchie 1970). The associated pottery from Achnacreebeag includes a decorated bipartite bowl that is a classic example of Breton Late Castelletic type (Fig. 18.1.3). Only a very few monuments of Breton type are known from western Scotland (Fig. 18.1.4), but others are known from the Atlantic facade in northwest and southwest Wales, and around the northern coast of Ireland (Fig. 18.1.5 and see Lynch 1975).

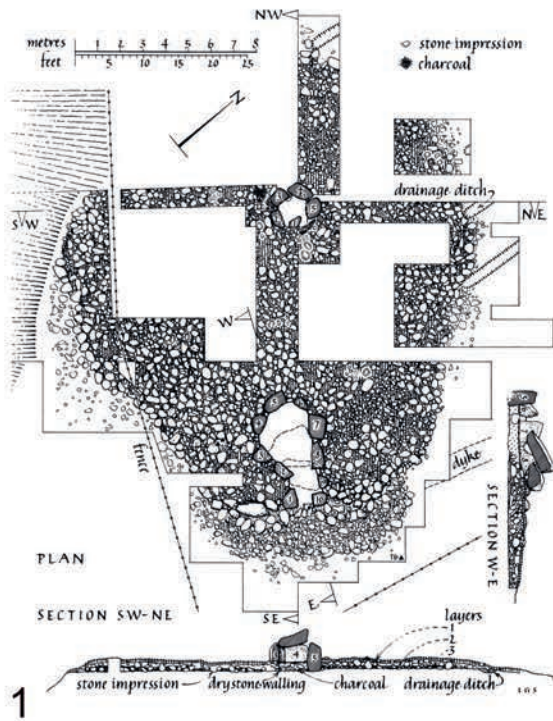
While the dating of these monuments still has to rely on the comparative dating of Late Castelletic monuments and pottery in Armorica – giving a bracket of c. 4300 BC to c. 3900 BC (Cassen *et al.* 2009) – there are several strands of evidence supporting the idea of a pre-c. 3750 BC date for their appearance in Scotland. First, the stylistic evolution of the Late Castelletic bipartite bowl in both Scotland and Ireland (as detailed in Sheridan 2016, 195 and fig. 5, and Sheridan 1995) makes it clear that the Achnacreebeag bowl pre-dates those found in Clyde cairns and in their northern Irish congeners, court tombs, which show a progressive ‘style drift’ away from the Late Castelletic canon. As noted below, the modelled start-dates for the use of those monument types are 3765–3645 BC and 3700–3570 BC respectively.

Secondly, a recent dating programme on bone pins from tombs in the cemetery containing similar, Breton-type monuments at Carrowmore, Co. Sligo, northwest Ireland gives a *terminus ante quem* for the construction of those monuments of 3775–3520 BC (Bergh and Hensey 2013, 355).

Thirdly, one hitherto unrecognised example of a Breton-style closed chamber in a round mound at Moleigh, c. 11 km from Achnacreebeag and similar in shape and size, contained cremated human remains that have produced a combined date of 3715–3645 cal BC (Fig. 18.1.4; Ritchie 1968; Sheridan 2004; 2005). This monument could, theoretically, have been built several generations after the Achnacreebeag example.

Fourthly, as discussed below, there is evidence from Tulach an t’Sionnaich, near the northeast coast of mainland Scotland, that the idea of building simple passage tombs that are arguably the architectural successors to the Achnacreebeag monument had spread to this part of Scotland by the 37th century BC (Fig. 18.4.1).

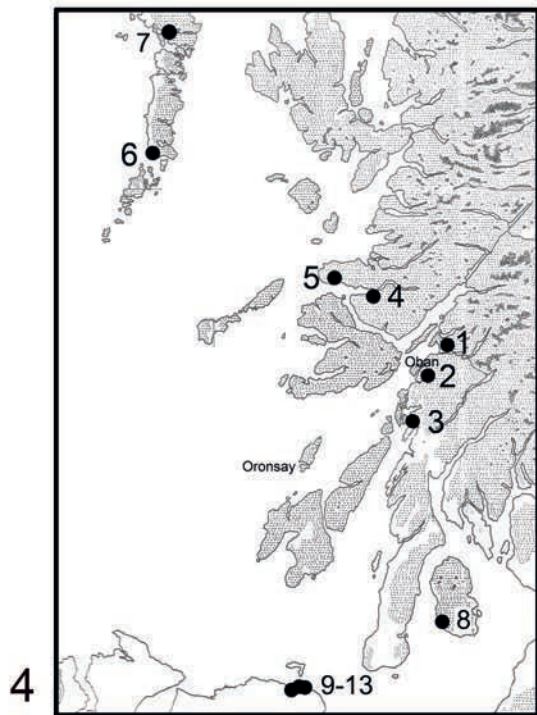
The current authors remain wholly unconvinced by attempts (e.g. by Whittle *et al.* 2011, 850–852) to place Achnacreebeag’s construction later in the 4th millennium. Only fresh excavation, both there and at other similar monuments in Britain and Ireland, can clarify the dating issue. Regarding the distribution of these Breton-style monuments in Scotland, it is unfortunate that Cummings and Sharples’ excavations of a possible candidate for a closed chamber at Leaval, South Uist (Cummings and Sharples 2005) failed to produce any dating evidence or diagnostic artefactual material to show whether the initial appearance of this Breton



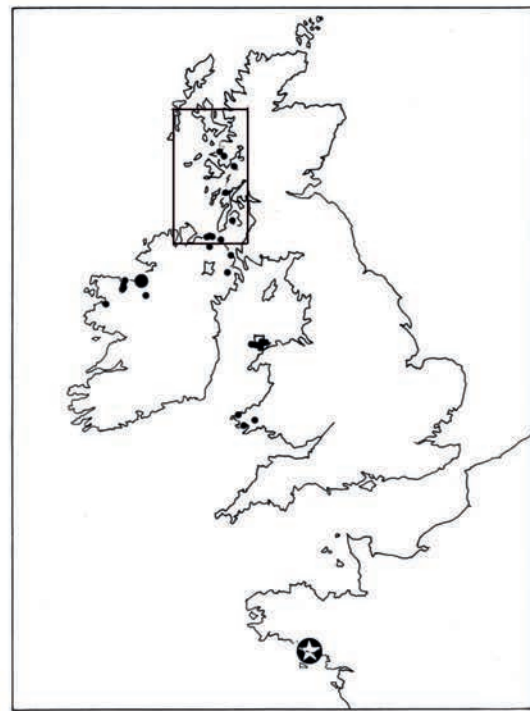
2



3



4



5

Fig. 18.1 Breton-style megalithic funerary monuments: 1–3, Achnacreebeag, Argyll and Bute: 1. Plan of the two-phase monument; 2. View of the closed chamber; 3. The late Castellar bowl found in the passage tomb; 4. Distribution of candidates for this type of monument in western Scotland and on the north Antrim coast; 5. Distribution of Breton-style closed chambers and simple passage tombs in Britain and Ireland, with the area of origin in the Morbihan marked with a star and the area shown in 4 boxed. Key to 4: 1. Achnacreebeag; 2. Moleigh; 3. Clach an t'Sagairt; 4. Rahoy; 5. Greadal Fhinn; 6. Leaval, South Uist; 7. Craonaval, North Uist; 8. Carmahome, Arran; 9–13, North coast of County Antrim, Northern Ireland: 9. Lemnaghbeg; 10. Clegnagh; 11. Ballintoy; 12. Ballyvoy; 13. Cross. Also marked on the map are the positions of Oban (where early Neolithic individuals were buried in caves) and Oronsay (where fisher-hunter-gatherer funerary practice is attested). Images: the late Graham Ritchie; NMS; authors; base map for 4 from Henshall 1972; reproduced with permission.

monumental tradition in western Scotland extended as far as the Outer Hebrides. It could well have done, given the maritime distribution of this tradition in western Scotland (Fig. 18.1.4) and more generally in Britain and Ireland.

It should be remembered that, around the same time that Achnacreebeag and its congeners elsewhere were in use, indigenous communities of hunter-fisher-foragers on Oronsay, just a day or so's sail away to the southwest of Achnacreebeag (Fig. 18.1.4), were probably still dealing with their dead by laying them out on their shell middens (Meiklejohn and Denston 1987; Meiklejohn *et al.* 2005; Charlton *et al.* 2016). Moreover, as noted below, other people – Continental immigrants with predominantly terrestrial diets, in stark contrast to those on Oronsay – were burying their dead in at least one of the Oban caves (Macarthur Cave), within 10 km of Achnacreebeag as the crow flies (Fig. 18.1.4). In this small area of Scotland, therefore, three distinct funerary traditions were practised during the first quarter of the 4th millennium.

The second monumental funerary tradition is associated with the appearance of farming groups belonging to the 'Carinated Bowl (CB) Neolithic'. These groups probably came from Nord-Pas de Calais, as one of a variety of regional groups that developed as a result of population 'overspill' from the Paris Basin towards the end of the 5th millennium, as confirmed by DNA evidence (Beau *et al.* 2017). In Scotland, their presence is attested along the east coast, in the south and in the west, south of the Great Glen (Sheridan 2007, fig. 1). If Whittle *et al.*'s Bayesian modelling for the dates for CB 'things and practices' south of the Great Glen is accepted, these people will have arrived in the decades around 3800 BC (Whittle *et al.* 2011, 833; although note that their model developed for northeast Scotland places it at 3950–3765 BC (Whittle *et al.* 2011, 824), which theoretically allows the possibility that the date of arrival could have been as early as the late 40th century BC).

The funerary monuments associated with the CB Neolithic are non-megalithic and tend to feature the use of rectangular, 'linear zone' timber mortuary structures (Fig. 18.2.1–3), into – or onto – which the dead were placed. It may be that the corpses were left, perhaps open to view, in some cases until they had decomposed (Lelong and MacGregor 2007, 23), whereupon the structures were burnt – a practice noted elsewhere in northern Britain (Kinnes 1992) and Northern Ireland. Some of these structures were accompanied by a timber facade, creating an arena for processions and forecourt ceremonies, and/or were surrounded by a long rectangular or trapezoidal enclosure defined by a ditch or by timber posts; the example from Pencraig Hill, East Lothian, shown in Fig. 18.2.3 was burnt down as part of the extended funerary rites (Lelong and MacGregor 2007, 38–41). Many mortuary structures were subsequently sealed under a long rectangular or trapezoidal mound, of earth and turf (as at Eweford West, East Lothian, where

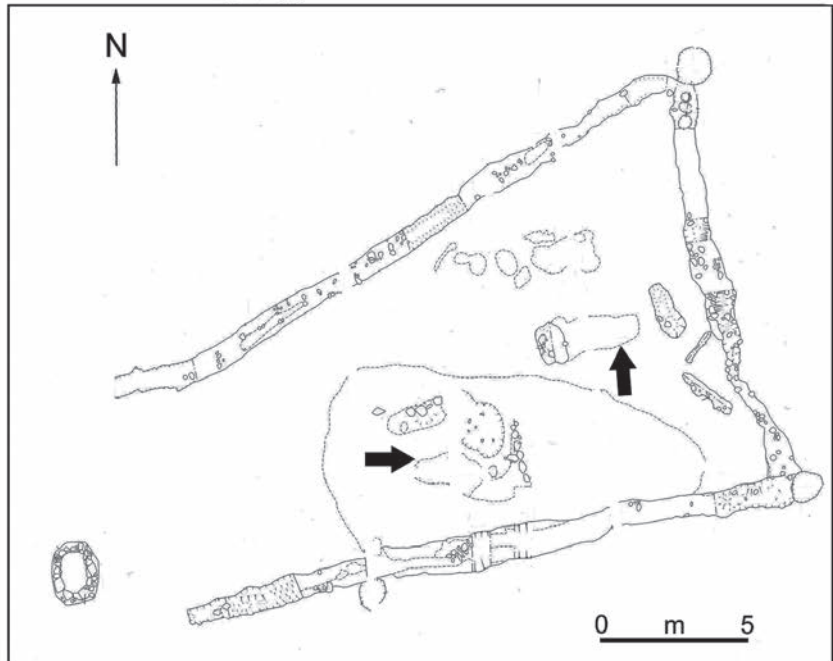
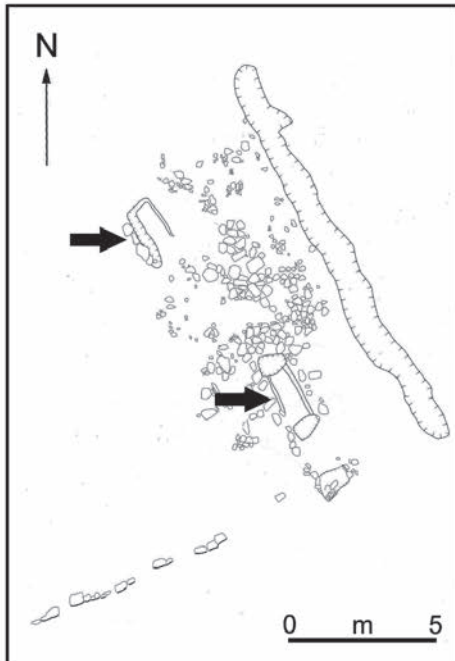
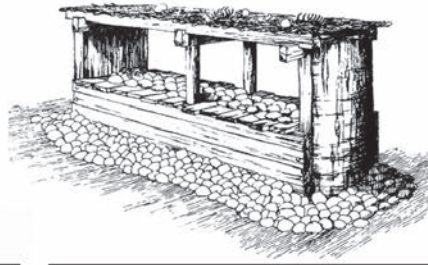
two burnt-down structures were thus sealed: Fig. 18.2.2; Lelong and MacGregor 2007, 21–31), or of stone (as at Dalladies, Aberdeenshire or Slewcairn, Dumfries and Galloway: Kinnes 1992, figs 1D.29–30). The act of sealing the burnt-down structures with a mound both memorialised these selected dead individuals within a prominent landscape marker and rendered their remains – or at least the ones that were not removed – effectively inaccessible. The mounds were not always long: at Pitnacree, Perth and Kinross, a rectangular mortuary structure associated with early, 'traditional CB' pottery was covered by a round mound (Coles and Simpson 1965). While it has proved impossible to date this early Neolithic activity at Pitnacree, it is suspected – on the grounds of the pottery style – that it need not post-date the non-megalithic long mounds by long, if at all.

Other non-megalithic monuments that may well belong to this earliest period of 'CB Neolithic' activity are rectangular 'mortuary enclosures' (Fig. 18.2.4), be they ditch-defined (as at Inchtuthil, Perth and Kinross: Barclay and Maxwell 1991) or post-defined (as at Douglasmuir, Angus: Kendrick 1995). The latter enclosure included a posthole for a large, free-standing post which may have been akin to a totem pole. While no human remains have been found in such sites, they were clearly not domestic structures and it is plausible, given their similarity in shape to the rectangular enclosures surrounding some 'linear zone' mortuary structures, that they could well have been used as places where the dead were laid out for excarnation (Barclay *et al.* 2002).

A development that is likely to have taken place by c. 3750 BC was the translation into stone of the timber 'linear zone' mortuary structure and its accompanying features in southwest Scotland. This process can be seen, for example, at Lochhill in Dumfries and Galloway where a timber mortuary structure and facade were covered over by a stone chamber, megalithic facade and a stone cairn (Masters 1973; Kinnes 1992, fig. 1D.28). At Mid Gleniron and several other sites in southwest Scotland, a stone version of a linear mortuary structure was built as a simple rectangular stone chamber, surrounded by a small, sub-circular cairn; two such structures were subsequently incorporated within a trapezoidal cairn, converting them into a Clyde cairn (Henshall 1972, 535–537 and fig. 2). The first-phase monument at the recently excavated chamber tomb at Blasthill on the Kintyre Peninsula, Argyll and Bute, may well be a further example (Cummings and Robinson 2015, 92, figs 8.19, 8.22). At Cairnholy (monument I), Dumfries and Galloway, a further stone version of a linear mortuary structure – complete with tall stones at the front and back, evoking the split tree trunk of the timber mortuary structures – was built with a stone ante-chamber, facade and trapezoidal long cairn (Piggott and Powell 1949). This monument can be seen as a forerunner of the 'Clyde cairns' of southwest Scotland (Henshall 1972, chapter 7).

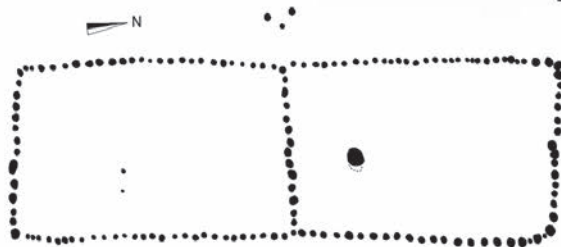
As noted above, burial within a monument is not the only funerary practice known from early Neolithic Scotland.

'Linear zone' mortuary structures



Left: Eweford West; right, Pencraig Hill, both East Lothian
(position of structures arrowed)

Mortuary enclosures



Douglassmuir,
Angus



Inchtuthil,
Perth and Kinross

Fig. 18.2 Non-megalithic funerary monuments associated with the earliest Carinated Bowl Neolithic in Scotland. Note that in David Hogg's reconstruction of a linear zone mortuary structure, the end posts may actually have extended above the rest of the structure. Sources: Kinnes 1992; Barclay 1998; Lelong and MacGregor 2007; reproduced with permission.

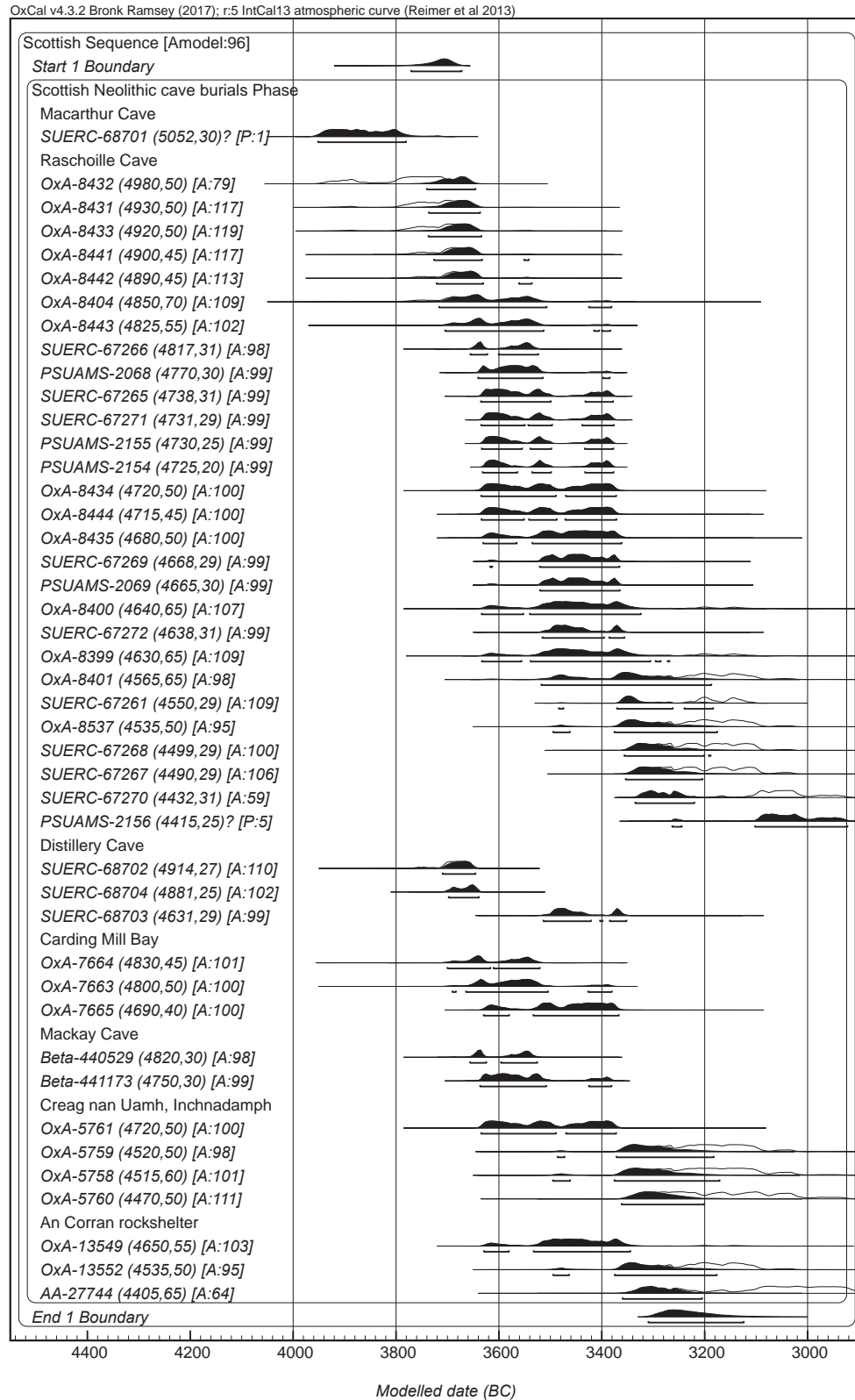


Fig. 18.3 Bayesian model for the dating of 4th-millennium BC human remains from caves and rock shelters on and near the west coast of Scotland. Note: SUERC-68701 and PSUAMS-2156 were excluded, based on their identification in a previous run as early and late outliers, respectively. Sources: Bonsall 1999; Schulting and Richards 2002; Saville 2005; Milner and Craig 2009; Saville et al. 2012; Armit et al. 2016a; Bownes 2018; Sheridan et al. 2018.

Indeed, given the small number of individuals found under non-megalithic mounds, it is likely that that particular type of monumental burial was very much the exception rather than the rule. Those buried under non-megalithic mounds may have been selected to represent a notional ‘founder’ group for an area, to be invoked as a way of legitimising claims to the ownership of land, while the norm for the CB Neolithic could well have been excarnation within a mortuary enclosure, or else cremation followed by deposition in a simple pit, as recently attested at Duns, Scottish Borders (Anderson 2018).

In the west, burial in caves was practised during the first quarter of the 4th millennium, as indicated by one dated individual buried in Macarthur Cave in Oban, not far from Achnacreebeag (Figs 18.1.4, 18.3; Armit *et al.* 2016a). The question of the cultural attribution of this practice is hard to resolve. There is no known Mesolithic precedent for cave burial in Scotland, unlike elsewhere in Britain (Chamberlain 1996; Bonsall *et al.* 2012; Schulting 2016), nor is this practice attested in the Morbihan or in Nord-Pas de Calais (although it is attested in Belgium). The cave is far removed from the areas where CB Neolithic material has been found. Ancient DNA evidence has nevertheless confirmed that the individual in question has a Continental genetic signature (Brace *et al.* 2019).

Expansion and regional trajectories, 3800/3750–3600/3500 BC

Several developments in Scottish funerary monuments can be documented or proposed for this time period.

Development 1: expansion and regionalisation of passage tombs

The first of these is the northerly and northeasterly expansion in the use of passage tombs, from the west coast of Scotland to the Western Isles (Outer Hebrides), the Northern Isles, and parts of the northern Scottish mainland (Fig. 18.4). As argued elsewhere (*e.g.* Sheridan 2010; 2014a), this is likely to reflect the expansion of farming communities, as a result of population growth, into parts of Scotland that had not been settled by the first few generations of farmers from the Continent. Some of these passage tombs, with simple polygonal or squarish chambers, short passages and small round mounds (Fig. 18.4.1–3), show obvious affinities with the design of the Achnacreebeag simple passage tomb, while others display a regional diversification in design. In the Hebrides, for example, scaled-up versions of the Achnacreebeag passage tomb format are associated with larger, kerbed round mounds with a distinctive V-shaped facade (*e.g.* at Marrogh, North Uist and Rudh’ an Dunain, Skye: Fig. 18.4.4–5), while around Loch Calder in the old county of Caithness, early examples of Henshall’s ‘Orkney-Cromarty’ type passage tombs exist alongside a simple passage tomb (Fig. 18.4.6–7; Davidson and Henshall 1991, 146–149, 157–163). Meanwhile, in the

area around Achnacreebeag, we can arguably see both a continuation of the practice of building simple closed chambers (as attested at Moleigh, noted above) and the construction of larger and more elaborate passage tombs (as attested at Càrn Bàn, Achnacree, just *c.* 750 m to the west of Achnacreebeag: Henshall 1972, 355–357).

That this process of expansion and regional diversification was underway during the second quarter of the 4th millennium, if not earlier, is indicated by radiocarbon dates for human remains from the monuments in question; by evidence for multi-period and ‘hybrid’ monument construction; and by the pottery found in the monuments.

The Bayesian-modelled dates (Fig. 18.4, bottom) for the simple passage tomb that formed the first phase of a multi-phase monument at Tulach an t’Sionnaich, and for ‘Orkney-Cromarty’ passage tombs in northern mainland Scotland, indicate a start-date for the use of these monuments of 3840–3645 BC, Amodel: 103.3, *n*=8. This suggests that ‘Orkney-Cromarty’ passage tombs started to be used earlier on mainland Scotland than in Orkney (*cf.* Fig. 18.6), *contra* Bayliss *et al.*’s claim (2017, 1184) that ‘Orkadian passage graves [are] among the earliest examples of [passage tomb] architecture in Britain and Ireland’.

Evidence for multi-phase construction confirms that simple passage tombs and early Orkney-Cromarty passage tombs are early in the regional sequence of monument building. The Tulach an t’Sionnaich simple passage tomb was the focus for two phases of subsequent elaboration, firstly being incorporated within a short-horned cairn, then within a long cairn (Davidson and Henshall 1991, fig. 18) while at Camster Long, also in Caithness, a simple passage tomb may well have been the earlier of two passage tombs that were subsequently incorporated within a long trapezoidal horned cairn (Davidson and Henshall 1991, fig. 18).

Elsewhere, in the Outer Hebrides, the ‘hybrid’ monument at Clettraval, North Uist, incorporating elements of both passage tomb and Clyde cairn design (Henshall 1972, 506–511), is likely to have been built during the 38th or 37th century, to judge from the modelled start date of 3765 BC–3645 BC for Clyde cairns. This is supported by the style of the pottery found at Clettraval and also in other passage tombs in the Outer Hebrides: clear connections can be seen between this and the pottery found in Clyde cairns in southwest and central Scotland (as discussed in Sheridan 2016). The deep lugged bowl from Clettraval, for example, has close parallels in the Clyde cairns of Torlin, Clachaig and Sliderry Water on Arran, and other pots from Clettraval can be paralleled at Cultoquhey, Perth and Kinross and Bicker’s Houses on Bute (Henshall 1972, 304, 305, 306, 308). Moreover, the passage tomb pottery differs slightly from the repertoire seen in non-funerary contexts in the Western Isles such as crannogs – there are no heavy ridged jars or definite examples of Unstan bowls, for example – and since those contexts have been producing dates between *c.* 3600 BC and *c.* 3000 BC,

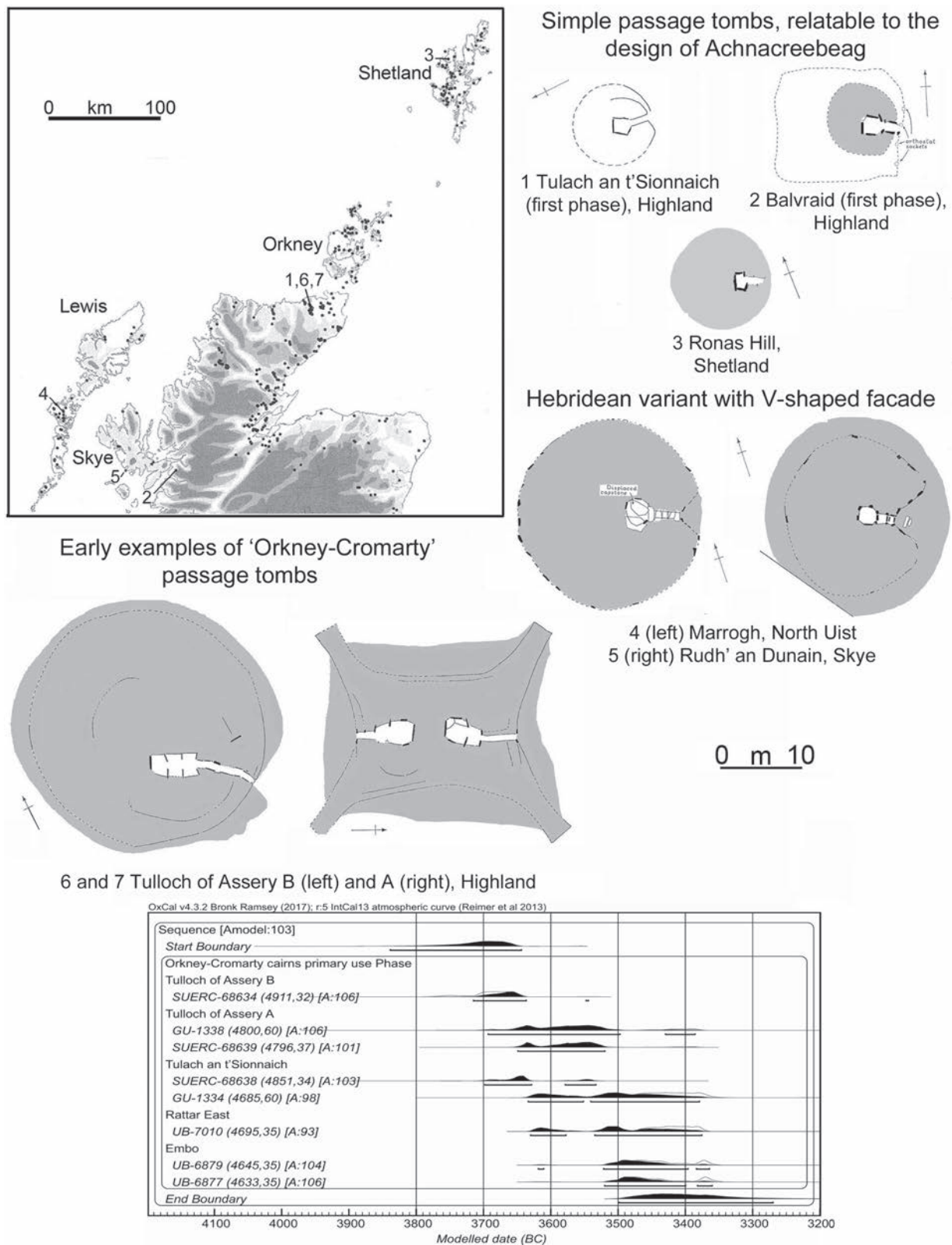


Fig. 18.4 Top: the expansion of the use of passage tombs, and the beginning of their development trajectory; bottom: Bayesian model for the dating of human remains attributed to the main use-phase of the simple passage tomb at Tulach an t'Sionnaich, Highland, and at Orkney-Cromarty passage tombs on the northern Scottish mainland. Sources: Henshall 1963; 1972; Davidson and Henshall 1991; Henshall and Ritchie 1995; 2001; Sheridan 2006; Armit et al. 2016a.

mostly c. 3600–3300 BC (Garrow *et al.* 2017; Garrow and Sturt 2019), these dates offer a *terminus ante quem* for the style of Hebridean pottery found in the passage tombs. One further piece of ceramic evidence in support of a pre-3500 BC date for some passage tombs comes from Càrn Bàn, Achnacree (Sheridan 2016, 194 and fig. 4). The heavy-rimmed ‘Achnacree Bowl’ found inside is of a type found at several sites in western Scotland, including the Clyde cairn at Nether Largie in Kilmartin Glen, Argyll and Bute, and at a settlement at Culduthel, on the outskirts of Inverness (Sheridan 2016, 194 and fig. 4). The Culduthel example is from a context dated to 4780±30 BP (SUERC-20229, 3641–3519 cal BC: Ross Murray, pers. comm.) and it is plausible to assume that the Achnacree example is roughly contemporary.

Development 2: Clyde cairns

A distinctive regional type of chamber tomb known as the ‘Clyde cairn’ emerged in west and southwest Scotland, with a few outliers (Fig. 18.5). This features a segmented rectangular chamber, a forecourt and a long rectangular or trapezoidal cairn. The origins of this monument type in the non-megalithic funerary monuments of the CB Neolithic tradition are clear with the aforementioned site of Cairnholly I providing a design ‘bridge’ (Henshall 1972, 438–441). Clyde cairns are closely related to northern Irish court tombs (Schulting *et al.* 2012) and to the monuments at King Orry’s Grave in the Isle of Man (Lynch and Davey 2017); such parallels, together with ceramic similarities and other shared material culture, underline the maritime interconnectedness of the farming communities across the Irish Sea.

In a number of instances, the long rectangular or trapezoidal cairns associated with Clyde cairns were superimposed on pre-existing monuments, as at Mid Gleniron, Dumfries and Galloway, where two simple box-like chambers with round mounds were encompassed within a long trapezoidal cairn (Henshall 1972, fig. 2). Similar, albeit square, cairns were also superimposed on simple passage tombs, at Balvraid on the northwest Scottish mainland (Fig. 18.5.2) and at Unival on North Uist (Henshall 1972, fig. 34). Perhaps this imposition of such a radically different cairn shape onto pre-existing round cairns related to the expression (or imposition) of a specific cultural identity. With the aforementioned ‘hybrid’ passage tomb/Clyde cairn at Clettraval, North Uist, however, a melding of distinct traditions and identities is suggested (as discussed further in Sheridan 2016).

Improving the dating of Clyde cairns has long been an aspiration of the current authors, and over the years they have obtained several AMS dates on human remains from five monuments. The results of the Bayesian modelling of these, and of human remains dates from the Clyde cairn at Cladh Aindreis, Highland, kindly provided by Oliver Harris, are shown in Figure 18.5, top. These place the start of the initial period of use of Clyde cairns at 3765–3645 BC, Amodel: 94, n=13. This is nearly identical to the modelled

start date of 3700–3570 BC for Irish court tombs (Schulting *et al.* 2012).

Interestingly, the carbon and nitrogen isotope data for the individuals found in Clyde cairns (Fig. 18.5, bottom) show clear differences from those for contemporary and earlier individuals buried in west Scottish caves and the An Corran rock shelter, and from individuals buried in Orkney-Cromarty cairns on the northern mainland and in Orkney. Further research will clarify whether these differences relate to the environment, to diet, or to both.

Development 3: non-megalithic monuments

In lowland Scotland, it appears that non-megalithic round mounds continued to be constructed into the second quarter of the 4th millennium, although without the linear mortuary structure as seen at Pitnacree (Sheridan 2010). Those at Boghead, Moray, and Midtown of Pitglassie, Aberdeenshire, were erected over the remains of a cremation pyre; at Pitglassie, the remains were of one person. The dating of these round mounds leaves a great deal to be desired (Whittle *et al.* 2011, 830–832 and fig. 14.171), although the pottery found at Boghead, Pitglassie and East Finnercy – of modified CB type (Sheridan 2010) – accords with a date within the first half of the 4th millennium. This is consistent with the date of 4995±35 BP (GrA-34772, 3941–3666 cal BC) obtained for cremated bone from Pitglassie (Sheridan 2010, 37).

Other non-megalithic monuments that may well have memorialised the dead during the second quarter of the 4th millennium are the long, rectangular, cursus monuments, defined by ditches, pits or posts, that are known almost exclusively from lowland Scotland (Thomas 2007; Brophy 2015), plus the long rectangular bank barrows (such as Auchenlaich, Stirling), along with the Cleaven Dyke, in Perth and Kinross – a long narrow mound with flanking ditches (Barclay and Maxwell 1998). Space does not permit a detailed discussion of these monuments here; suffice it to note that cursūs may be scaled-up versions of the rectangular mortuary enclosures of the early 4th millennium, while bank barrows and the Cleaven Dyke mound could be scaled-up versions of long barrows. Whether or not the dead had been placed inside any of these monuments is arguably beside the point; more pertinent is the fact that large numbers of people will have been required to construct them and – in the case of timber cursūs – to burn them down in a major ceremony (Thomas 2007). Perhaps these gigantic monuments served to commemorate and honour the ancestors at a tribal (or similar) scale, underlining the importance of identifying with a large social grouping, and not just with local communities, at that time and in those parts of eastern, central and southern Scotland.

Other activity relating to the dead

In western Scotland, the practice of cave burial continued, as shown at the Raschoille, Distillery, Carding Mill Bay and Mackay Caves in Oban, where burial was collective

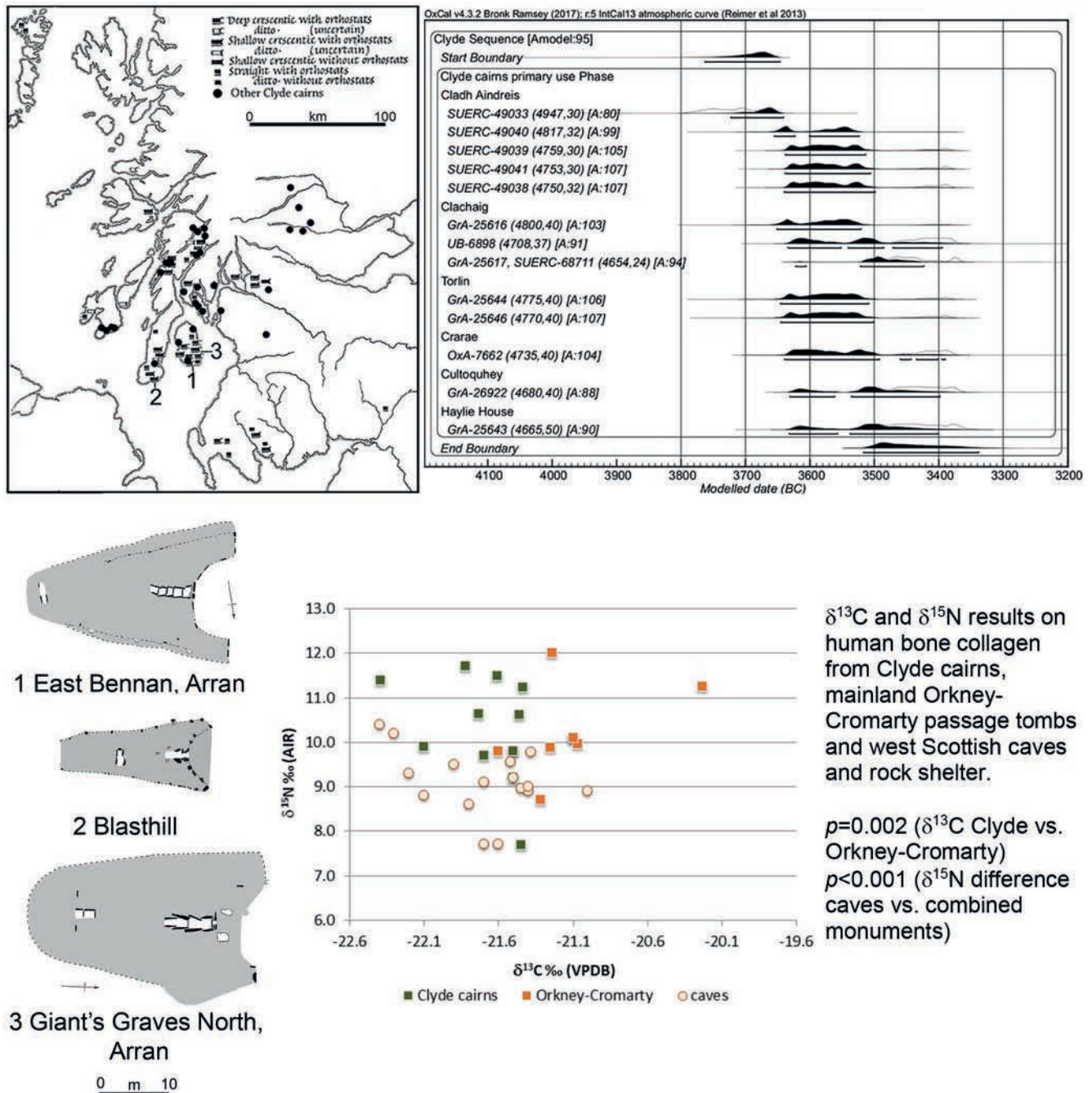


Fig. 18.5 Distribution of Clyde cairns; examples from Argyll and Bute; Bayesian model for the dating of human remains attributed to the main use-phase of Clyde cairns; and stable carbon and nitrogen isotope values for individuals buried in Clyde cairns compared with those from west Scottish caves and the An Corran rock shelter, and mainland Orkney-Cromarty passage tombs. Map and plans after Henshall 1972.

(Fig. 18.3; Bonsall *et al.* 2012, table 2.1; Armit *et al.* 2016a). The earliest dated individual at Creag nan Uamh Cave, Inchnadamph, in the old county of Sutherland in northwest Scotland, also belongs to this period (Saville 2005) and it may be that the rock shelter at An Corran on Skye (Saville *et al.* 2012) was starting to be used for burial around this time as well (Fig. 18.3).

Developments 3600/3500 BC–c. 3000 BC

Insofar as the radiocarbon dating evidence allows us to discern, the geographical focus of funerary monument construction and use during these centuries seems to have been in Orkney and the northern Scottish mainland, where Henshall's rather diverse category of 'Orkney-Cromarty' passage tombs were built, along with the earliest examples of her 'Maes

Howe [now referred to as ‘Maeshowe’] Group’ passage tombs (Henshall 1963, 45–134, Davidson and Henshall 1989; 1991; Henshall and Ritchie 1995; 2001).

Orkney-Cromarty passage tombs

Space precludes a detailed description of the various chamber and cairn shapes that fall within this category; this can be found in the publications cited above. Our Bayesian modelling of tombs with (mostly) stalled chambers in Orkney – excepting Isbister and Unstan which were modelled separately – has produced a start date of 3550–3435 BC (Amodel:120.7, n=47; Fig. 18.6). This is somewhat later than that of 3785–3430 BC cited by Bayliss *et al.* (2017, figs 2 and 5 and table S5).¹ In Orkney, excepting a single date for the Knowe of Lairo, there are currently no dates for Henshall’s tripartite chambers and it is not known whether monuments featuring such chambers under round mounds started to be used before stalled chambers under rectangular mounds, even though on ceramic grounds, this is a possibility. As for Bookan-type chambers, there are ceramic and other indications that at least some of these were constructed during the third quarter of the 4th millennium (*e.g.* the presence of Unstan bowls at Taversoe Tuick; see Sheridan 2016 for a discussion of this type of pot).

One clear trend that can be discerned over the period in question is a process of aggrandisement which, given the distribution of the monuments in question, may well reflect competitive conspicuous consumption between groups wishing to out-do each other in honouring their dead. This aggrandisement takes two forms, as follows:

1. Aggrandisement through superimposition of large, mostly long horned cairns on pre-existing monuments

This can be seen at a number of sites on the northern mainland and at one or two sites in Orkney, including Head of Work (Davidson and Henshall 1991, 118–119). It echoes the practice noted above regarding some Clyde cairns in west and southwest Scotland. Large and mostly long horned cairns were superimposed on pre-existing passage tombs with round cairns, as for example at Tulach an t’Sionnaich and Camster Long, Caithness (Davidson and Henshall 1991, fig. 18). Here, the enormous and imposing cairns measure *c.* 62 m by *c.* 20 m by *c.* 1.8 m, and 60.5 m by *c.* 17 m by *c.* 4.7 m, respectively; a considerable amount of effort will have been involved in their construction. The choice of the long cairn format may well constitute a deliberate evocation of the earlier, CB Neolithic long mounds that had been built during the early 4th millennium BC. The decision to impose this cairn format on round-cairn passage tombs, with their different cultural roots, may reflect the desire to impose a specific cultural identity that was aligned with the by-then ancient CB Neolithic tradition. With long horned cairns – along with short horned and heeled cairns – the

architectural emphasis on the facade suggests the importance of ceremonial activities in the forecourt area, irrespective of whether or not the tombs’ passages exit onto it.

There are currently no construction dates for these large cairns, although the dates of SUERC-68638 and GU-1334 for human remains from the first-phase monument at Tulach an t’Sionnaich could arguably provide a *terminus post quem* of *c.* 3650–3450 cal BC for the long horned cairn there, and at Camster Long there are three *termini post quos* dates, from collections of charcoal flecks of unspecified species relating to pre-cairn activities, of 4950±80 BP (GU-1707), 4915±60 BP (GU-1708) and 4920±125 BP (GU-1709), that suggest that the long cairn there was not constructed during the early 4th millennium (Masters 1997, 133). Such indications are not at odds with the dates relating to the use of the long horned cairn at Point of Cott on Westray, Orkney (Fig. 18.6). If the individuals there were buried not long after the monument was built, this suggests a probable construction date during the 36th century BC.

2. Aggrandisement through building ‘bigger and better’ versions of pre-existing monument types

This seems to have been the preferred strategy in Orkney. Midhowe and the Knowe of Rowiegar, for example, are massively scaled-up versions of the stalled chamber-in-rectangular-cairn format as seen, for example, in the smaller monument at Holm of Papa Westray North (Fig. 18.6; Davidson and Henshall 1989, 146–148, 136–138 and 120–122), while at Point of Cott and Knowe of Lairo (before the latter’s transformation into a Maeshowe-type passage tomb) the decision to construct long horned cairns may constitute a deliberate referencing of their counterparts across the Pentland Firth in northern mainland Scotland (*e.g.* at Camster Long, Tulach an t’Sionnaich and at South Yarrows South, Caithness: Davidson and Henshall 1991, 142).

Maeshowe-type passage tombs

These distinctive passage tombs (Fig. 18.7), featuring recessed polygonal cells ranged around a central tall chamber, and enclosed within a round or sub-circular cairn, constitute a marked departure in several respects from other Orcadian chamber tombs (Davidson and Henshall 1989, 37–51) and can be regarded as another expression of the aggrandisement and competitive conspicuous consumption referred to above. Space prevents a lengthy discussion of the novel features, which include the use of Grooved Ware and associated objects as offerings for the dead, with the Grooved Ware at Quanterness having strong affinities with that from the Barnhouse settlement, *c.* 11 km away (Schulting *et al.* 2010, 30–39). Suffice it to note that the Newgrange-like cruciform shape of the chamber at Maeshowe, both monuments’ orientation on the winter solstice sun, and the use of pecked designs

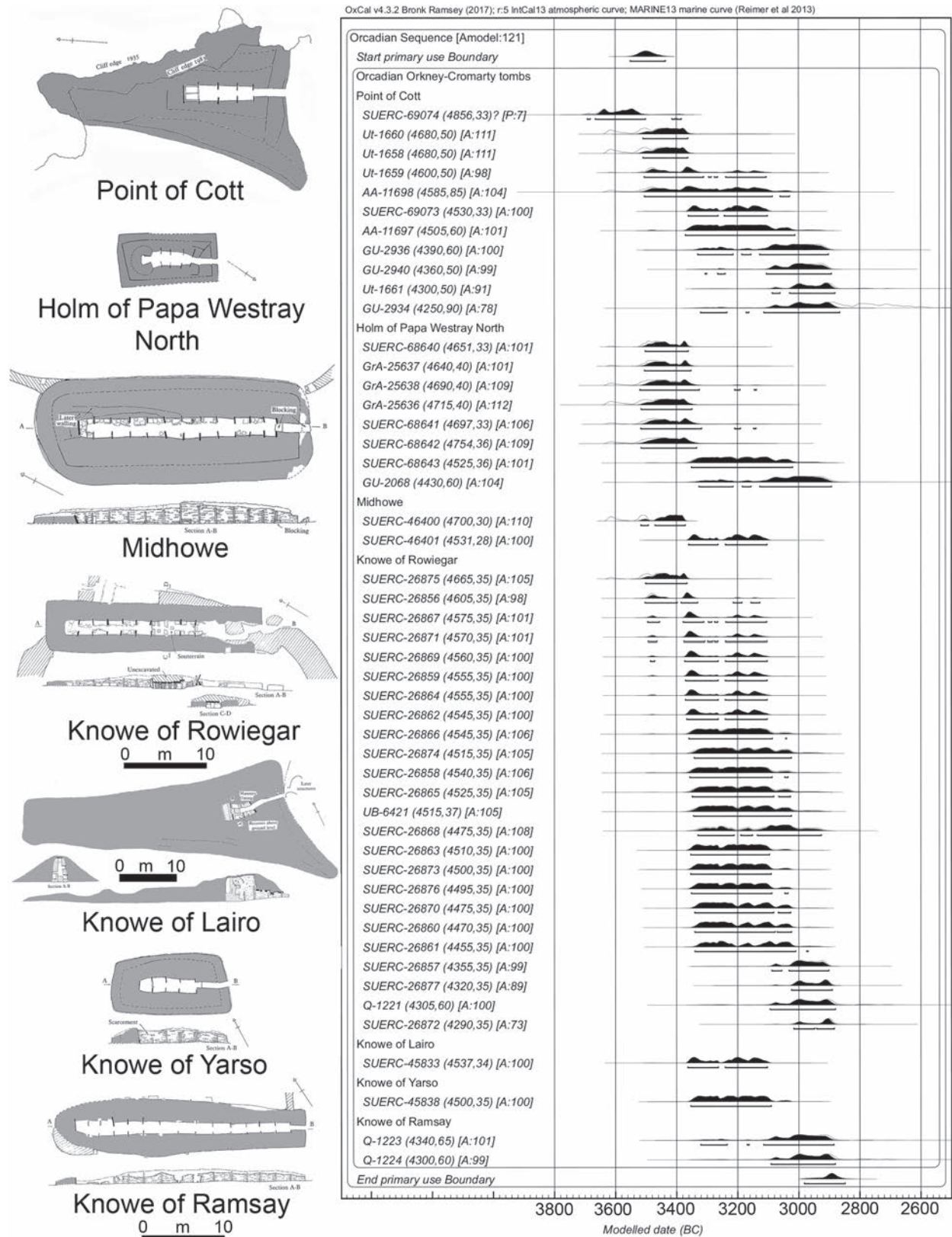


Fig. 18.6 Bayesian model for the main use-phase of Orkney-Cromarty passage tombs in Orkney, other than Unstan and Isbister (for which, see Fig. 18.7). Note: SUERC-69074, the earliest Point of Cott date, is shown but excluded from the model based on its identification as an outlier in a previous run. Sources: Davidson and Henshall 1989; Armit et al. 2016a; Bayliss et al. 2017.

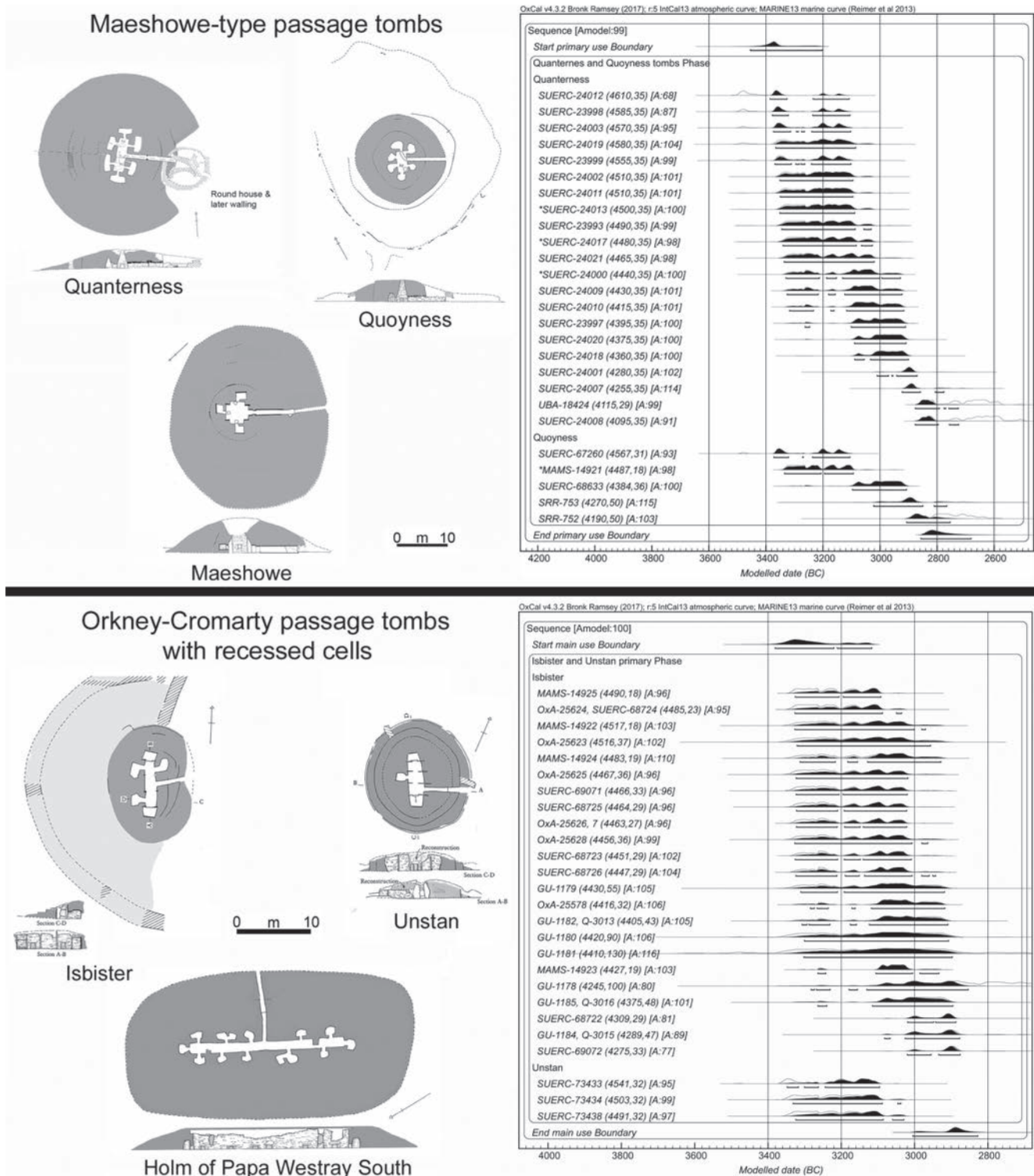


Fig. 18.7 Examples of Maeshowe-type passage tombs (top) and dated Orkney-Cromarty passage tombs with recessed cells (bottom), including Bayesian-modelled dates for human remains attributed to the main use-phase of the monuments. Asterisks mark dates obtained from small bones of the hands/feet and ribs. A small number of individuals have been modelled with a mixed terrestrial-marine curve ($10\pm 10\%$ marine, with a DR of 48 ± 47 based on Calib's Marine Reservoir Correction Database), based on their slightly elevated $d^{13}C$ values. Dates from other Maeshowe-type passage tombs at Pierowall and Cuween are excluded as they clearly relate to secondary activity. Sources: Davidson and Henshall 1989; Schulting et al. 2010; Armit et al. 2016a; Bayliss et al. 2017; Sheridan et al. 2017; Bownes 2018.

reminiscent of Irish passage tomb art at Pierowall, Eday Manse, Pickaquoy and Redland (Henshall 1963, 129 and plate 24; Davidson and Henshall 1989, 80–83, plates 25–27), have led some to conclude that the idea of constructing these monuments had resulted from long-distance sea voyaging to the Boyne Valley by ambitious individuals in Orcadian society (e.g. Sheridan 2014b). News of the magnificent passage tombs at Newgrange, Knowth and Dowth and of the ceremonies undertaken there could have reached Orkney via the extensive network that already linked Orkney with the Western Isles – evidenced by the shared use of Unstan bowls (Sheridan 2016; Copper and Armit 2018) – and the latter to Ireland.

However, the increasing number of radiocarbon dates on human remains from Quanterness and Quoyness (Fig. 18.7, top) pose a chronological conundrum since, if taken at face value, these suggest a start-date for the use of these monuments of 3455–3200 BC (Amodel: 99.3, $n=26$) – earlier than the modelled date of c. 3200 BC for construction of the main passage tomb at Knowth (Schulting *et al.* 2017) and of c. 3100 BC for the stone cairn at the main Newgrange tomb (Schulting 2014, 49). Moreover, this also pre-dates the modelled 32nd century BC date of the for the emergence of Grooved Ware in Orkney and its first use at Barnhouse (Richards *et al.* 2016; Bayliss *et al.* 2017). Furthermore, the dated Orkney-Cromarty tombs that arguably show design influence from Maeshowe-type passage tombs – Isbister and Unstan, with their recessed cells – also have a modelled start-date prior to 3200 BC: 3380–3115 BC, Amodel: 99.8, $n=26$ (Fig. 18.7, bottom). (The undated monument at Holm of Papa Westray South² is a further example of such design influence.) How can this conundrum be explained?

The suggestion (Schulting *et al.* 2010, 40–41) that bones from an older monument had been introduced to Quanterness is weakened by the fact that several of the early-dated bones from there are small and unlikely to have been gathered up, unless the collection process had been thorough; these are indicated by asterisks on Figure 18.7. Moreover, one such bone from Quoyness has also produced a similarly early date.

It could be that Quanterness and Quoyness – which are less similar in design to Boyne Valley passage tombs than is Maeshowe – were indeed earlier than Maeshowe, and resulted either from local Orcadian innovation or from borrowing the idea of using recessed cells from Irish passage tombs that predate the major Boyne Valley monuments; examples of the latter include the cemetery at Carrowkeel, Co. Sligo (Kador *et al.* 2018). Against this, however, is the absence of round-based pottery from any Maeshowe-type passage tomb; the Quanterness Grooved Ware points strongly to a date no earlier than the 32nd century BC.

While the early end of the date ranges for the earliest dates for Quanterness and Quoyness fall just before the

radiocarbon calibration plateau that affects dates calibrating to c. 3350–3000 BC, nevertheless one cannot rule out the possibility that the dates for these monuments, and for Isbister and Unstan, are indeed subject to that effect. If that is the case, then this brings back into play the possibility that all the Maeshowe-type passage tombs, and not just Maeshowe itself and monuments with Boyne-inspired passage tomb ‘art’, resulted from long-distance voyages from Orkney to the Boyne Valley, involving what Mary Helms (1988) referred to as ‘cosmological acquisition’. That such voyages occurred, as part of a strategy to enhance power and create a new social order, is hard to deny; indeed, more distant voyages between Orkney and the Continent are attested to by the appearance of the Orkney vole (*Microtus arvalis orcadensis*), between 3455 BC and 3100 BC (95% probability; 3315–3135 BC at 64% probability: Bayliss *et al.* 2017, figs 4 and 5 and table S.3). DNA analysis has demonstrated that this species must have come by boat from the Continent – although, as explained by Sheridan and Pétrequin (2014), not from Belgium as others have claimed – and it may well have been used as a self-replenishing food source on the journey; it is known to have been cooked and eaten at Skara Brae (Romaniuk *et al.* 2016).

Developments elsewhere in Scotland

There is precious little evidence for the construction and use of megalithic funerary monuments outside Orkney and the northern Scottish mainland during these centuries, although the absence of radiocarbon dates from funerary monuments in Shetland (Sheridan 2014a), and their extreme scarcity in the Hebrides, do not help. One possible ‘new build’ monument is a small, roughly rectangular chamber with a narrow forecourt and small, sub-circular cairn at Strath Glebe on the Isle of Skye, Inner Hebrides, where human remains have recently produced a date for the use of the monument of 4569±35 BP (OxA-37513, 3494–3104 cal BC) (Kozikowski in press; Sheridan *et al.* 2018, 8). On Bute, a distinctive monument featuring two rectangular chambers with transverse portal stones under a sub-round cairn at Glecknabae (Henshall 1972, 411–414) has produced a date, for an unburnt human skull fragment in the north chamber, of 4385±40 BP (GrA-26919, 3308–2902 cal BC; previously unpublished). It is unclear, however, whether this represents a primary or secondary use of the chamber; the pre-Beaker pottery found in the monument (Henshall 1972, 306) suggests that it could have been built closer to c. 3500 BC. Finally, it is unclear whether the so-called ‘Bargrennan’ group of V-shaped passage tombs in the far southwest of Scotland (Henshall 1972, 2–14) was built during the second half of the 4th millennium. These monuments have a passing similarity to some of the simpler passage tombs from the Boyne Valley in Ireland, such as Knowth tomb 15, which was in use at some point between c. 3300 BC and c. 2900 BC (Schulting *et al.* 2017). Unfortunately, excavations at Cairnderry and Bargrennan by

Table 18.1 *Funerary practices other than burial in a megalithic chamber tomb attested in Scotland, c. 3600/3500 BC–c. 3000 BC.*

<i>Practice</i>	<i>Location</i>	<i>Date</i>	<i>Comment</i>	<i>References</i>
Collective burial in cave or rock shelter	Oban caves, Argyll and Bute: Raschoille, Distillery, Carding Mill Bay and Mackay Cave; Creag nan Uamh, Inchnadamph, Highland; An Corran, Skye	Various dates between c. 3600 BC and c. 3000 BC; see Fig. 18.3		Saville 2005; Bonsall <i>et al.</i> 2012; Saville <i>et al.</i> 2012; Armit <i>et al.</i> 2016a; Sheridan <i>et al.</i> 2018; Brace <i>et al.</i> 2019
Inhumation, flexed, in shallow pit, in small cemetery	Balevullin, Tiree (Inner Hebrides), Argyll and Bute	Combined result for SUERC-23660, 24589 and 24952: 4415±19 BP, 3340–3090 cal BC	Dated individual, Balevullin I, produced evidence for the earliest case of rickets in UK. Cemetery comprised at least four individuals; one covered by surface stone setting	Armit <i>et al.</i> 2016b
Inhumation in stone cist	Balintore, Highland	Adult: MAMS-21254, 4543±24 BP, 3364–3108 cal BC; infant: MAMS-21253, 4473±23 BP, 3335–3030 cal BC	Primary: adult male; secondary: infant, male (sexed through DNA)	Sheridan <i>et al.</i> 2018, 7
Collective inhumation in stone-lined pit	Sumburgh Airport, Shetland	14 dates, mostly between c. 3350 cal BC and 2900 cal BC; three individuals possibly slightly later	Disarticulated remains of at least 20 individuals, both sexes, adults, juveniles and infants; some evidence of extreme nutritional deficiency	Montgomery <i>et al.</i> 2013
Deposition of disarticulated bone fragment in a house	Knap of Howar, Orkney	Assuming contemporaneity with use of house, should date within the second half of the 4th millennium	Constitutes manipulation of human remains; the skull fragment in question could have been removed from a nearby chamber tomb	Platt in Trail and Kirkness 1937, 318; for modelled dates for Knap of Howar, see Bayliss <i>et al.</i> 2017, 1184 and figs 3a–b, 5, 6, table S1
Exposure on raised timber platforms within timber mortuary enclosure	Tayside and Fife: Balfarg Riding School (BRS), Fife; Littleour and Carsie Mains, Perth and Kinross	BRS undated but assumed to date to c. 3300–3000 BC; Littleour: c. 3600–3100 cal BC (but on oak charcoal); Carsie Mains: <i>taq</i> of 4435±70 BP (hazel charcoal), 3340–2918 cal BC	See Barclay and Russell-White 1993, illus 72, for artist's reconstruction of one of the BRS mortuary enclosures	Barclay and Russell-White 1993, 169–176; Barclay and Maxwell 1998; Brophy and Barclay 2004; for other possible examples, see Brophy 2007
Cremation followed by burial in pit in cemetery	Cairnpapple, West Lothian; Holly Road, Leven, Fife	Cairnpapple: burnt bone or antler pin: SUERC-25561, 4470±35 BP, 3350–3020 cal BC. Leven: calcined human bone: GrA-21729, 4480±60 BP, 3361–2938 cal BC	Deposits are of individuals and of more than one individual. At Cairnpapple, pits arranged in an arc, with positions possibly marked by posts or standing stones. Leven: two deposits, of which one had been disturbed. This practice continued into the early 3rd millennium at Forteviot, Perth and Kinross	Piggott 1950; Lewis and Terry 2004; Sheridan <i>et al.</i> 2009; Noble <i>et al.</i> 2017

Note: 1. There is also a possible example of a richly-equipped grave at Greenbrae, Aberdeenshire, where a necklace of large jet and amber beads and a fine blade-polished flint axehead, all probably imported from Yorkshire and possibly dating to c. 3500 BC, were found (Kenworthy 1977). However, this is an old (1812) and poorly documented find and there is no proof that the artefacts had been found in a grave; no human remains are mentioned. Cf. probable graves with fine flint adze- and axeheads, c. 3300–3000 BC, at Knappers and Biggar Common, southern Scotland (Sheridan 1992). 2. Excepting Knap of Howar, none of the findspots listed above was associated with any pottery.

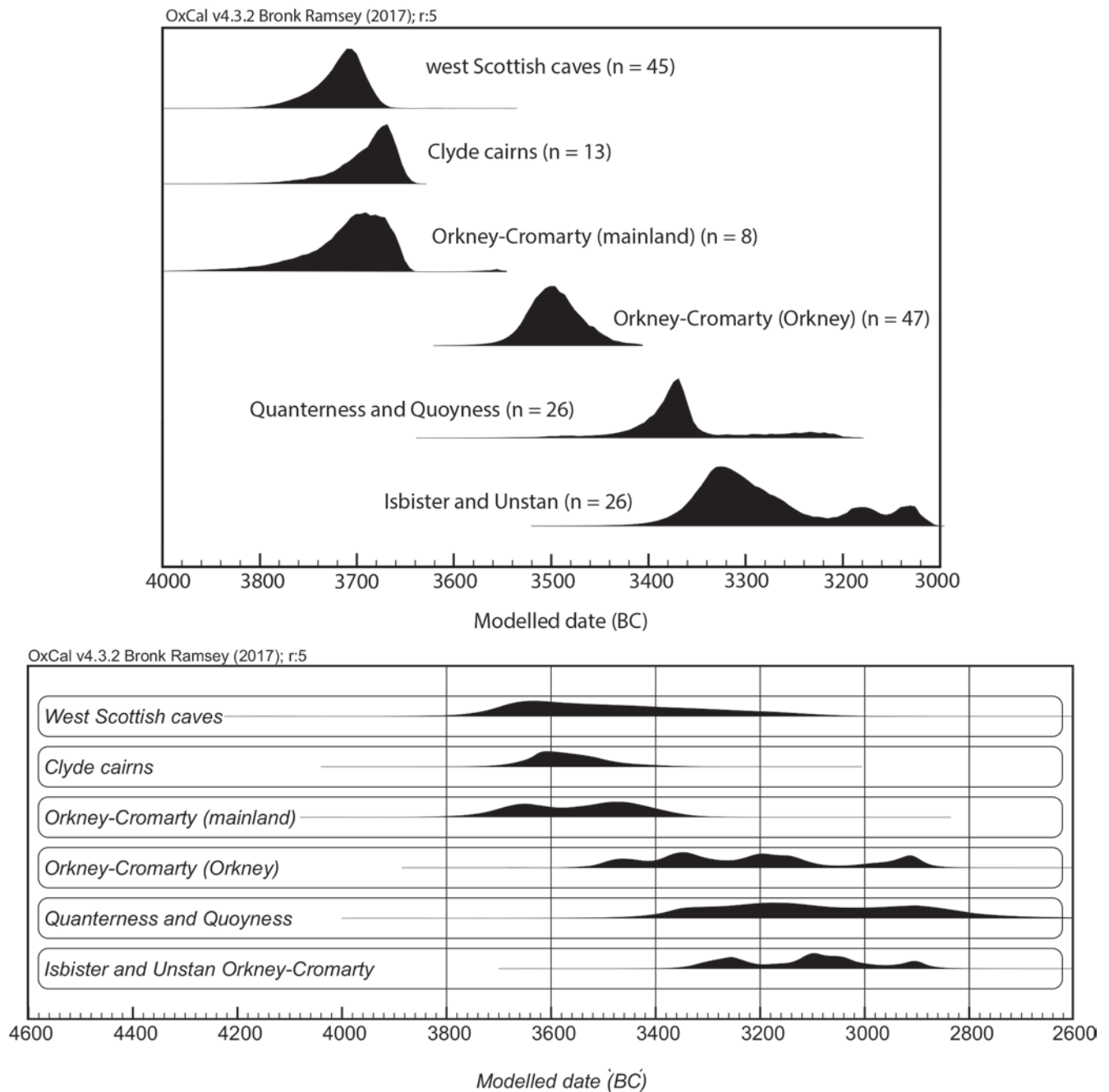


Fig. 18.8 Top: modelled start dates for Neolithic individuals buried in caves and in the rock shelter at An Corran, and for those buried in the various monument types discussed here; bottom: Kernel Density Estimation model (Bronk Ramsey 2017), for the same groups of dated individuals, showing the main use-phase of the chamber tombs. The dates used are those shown in Figs 18.3 and 18.4–7.

Vicki Cummings and Chris Fowler did not produce definitive dating evidence, other than the indication that they were built after the early 4th millennium and before *c.* 1800 BC (Cummings and Fowler 2007); only further excavation can resolve the issue of their dating.

A variety of funerary practices and of actions using human remains are attested elsewhere in Scotland, and these are summarised in Table 18.1. Of note is the fact that the

DNA results for two individuals buried in Raschoille Cave, Oban, dating to 3634–3378 cal BC and 3641–3384 cal BC respectively, revealed that there had been ancestral intermixing between farmers and the local hunter-fisher-forager community several generations beforehand (Brace *et al.* 2019, 768 and Supplementary Table S3, I3134 and I3135, 4730±25 BP and 4770±30 BP; Sheridan *et al.* 2018, 7). Also of note is the skull fragment found in a house at Knap of

Howar, Papa Westray, Orkney (Platt in Traill and Kirkness 1937, 318): this may well have been brought there from a nearby chamber tomb.

Developments c. 3000 BC–c. 2500 BC

There is no proof that any chamber tombs were constructed in Scotland during this period, although the small underground example at Crantit is a plausible candidate (Ballin Smith 2014, 127–131). Secondary burial within existing chamber tombs is, however, attested for these centuries, in Orkney (*e.g.* at Isbister, Rowiegar and Cuween: Bayliss *et al.* 2017), in northern mainland Scotland (at Embo: Henshall and Ritchie 1995, 75) and in southwest Scotland (at Giant's Graves North, Arran, involving cremated remains; Roy and Robertson 2007). Various other ways of dealing with the dead, including the secondary manipulation of human remains, existed.

Deposition of cremated remains of one or more individuals, in small pits, is attested at Forteviot, Perth and Kinross, where a rough arc of such pits seems to be marked by a small standing stone; modelling of the dates on the calcined bone has estimated the use of this cemetery between 3080–2900 BC and 2885–2655 BC (Noble *et al.* 2017). This continued a practice seen at Cairnpapple, West Lothian (Table 18.1). Around the same time, the deposition of cremated remains is associated with a standing stone setting at Orwell, Perth and Kinross (Ritchie 1974; Sheridan 2008) and with the erection of a stone circle at Balbirnie, Fife (Gibson 2010). At the latter site, where Grooved Ware was also found, token amounts of bone seem to have been involved. Elsewhere on mainland Scotland, there are a few other instances of deposition of cremated remains dating to this period, either with Grooved Ware (as at Raigmore, Inverness: 4371±33 BP [SUERC-77846, 3090–2907 cal BC]: Copper *et al.* 2018, 223) or without (Meldon Bridge, Scottish Borders: 4153±29 BP [SUERC-73285, 2877–2631 cal BC]: Sheridan *et al.* 2017).

In Orkney, the practice of depositing individual unburnt human bones in a domestic context, previously noted for Knap of Howar, is attested for this period at Links of Noltland (Gooney 2011); it also occurred at the 'temple complex' at Ness of Brodgar, where an entire skeleton of a baby was also found (Towers *et al.* 2017, 35), and in the henge ditch at the Stones of Stenness (Ritchie 1976, 12, 36). At Skara Brae, while this practice is attested in contexts post-dating 2500 BC (*e.g.* Sheridan *et al.* 2018, 9), there is a unique example of the burial of two bodies of elderly women, in a sub-mural cist in House 7, behind a sleeping area (Shepherd 2018); this will have occurred during the second quarter of the 3rd millennium. However, these examples of deposition clearly cannot be regarded as the norm for Late Neolithic funerary practices in Orkney, and it is not known what that norm was.

Conclusions

The story of Scotland's Neolithic funerary monuments is evidently long and complex, with considerable regional and chronological variation, but we hope to have achieved our aim of outlining the overall chronological picture (summarised in Fig. 18.8), identifying possible reasons for the developmental trajectories that can be discerned, and highlighting the importance of situating these monuments within a broader picture of Neolithic funerary practices. Much still needs to be clarified through fresh excavation and more radiocarbon dating, particularly in Shetland and the Hebrides, and further research on what we believe to be the earliest passage tombs in Scotland should be a priority.

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Notes

- 1 This discrepancy probably relates to: i) our decision to model the group as a whole, rather than as separate monuments; ii) the addition of a number of dates not available in earlier models; iii) our removal of an early outlier from Point of Cott; and iv) our consideration of the marine reservoir effect for individuals with $\delta^{13}\text{C}$ values above -20‰ , including a number from Point of Cott and Rowiegar as well as Holm of Papa Westray North.
- 2 Henshall included Holm of Papa Westray South in her 'Maes Howe group' (Henshall 1963, 121–134; Davidson and Henshall 1989, 37–51) but its long rectangular main chamber and rectangular cairn are features more characteristic of Orkney-Cromarty tombs.

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Group benefits? The story of a cluster of megalithic monuments in Danish Funnel Beaker society

Anne Birgitte Gebauer

Abstract

Megalithic tombs in northern Europe tend to cluster in small groups rather than stand individually with a more even spread across the landscape. In contrast to the more ephemeral nature of settlement, the monuments seem to create a stable ritual landscape. This paper investigates the character of such a megalithic group and the possible rewards of clustering monuments. The analysis is based on the architecture and pottery depositions at a group of four monuments at Tustrup in north-eastern Jutland, Denmark. Following a discussion of the architecture of the three tombs and the cult house, the pottery depositions at these monuments are compared in terms of volume and variation of the deposits, the amount of special ritual vessels and of domestic type pottery, as well as the degree of fragmentation. The discussion focuses on the location in the landscape and the regional and local significance of the cluster, as well as identity and social affiliation among the builders of the monuments. Finally, the abrupt halt in the use of the cluster is addressed.

Introduction

Within the Northern Funnel Beaker culture, an intense construction of thousands of megalithic monuments took place between 3600–3100 BC. Over time the preferred architecture changed from smaller, rectangular and polygonal dolmens erected during the early Neolithic period between 3650–3350 BC to larger extended dolmens, passage graves and gallery graves which were mainly built after 3350 BC. However, regional cultural preferences affected both the period of construction and the geographical distribution of the different types of monuments (Wunderlich *et al.* 2019). The monuments tend to cluster in small groups that seem to be in parallel use based on the presence of similar chamber

types as well as pottery styles (Gebauer 2014; Mischka 2014; Andersen 2016). The preference for incremental agglomeration of tombs in certain funerary areas creates a stable ritual landscape lasting for generations in contrast to a fluid settlement pattern with short-term settlements distributed more evenly across the landscape (Müller 2011, 54). This discrepancy raises the question of what were the benefits of the monument clusters as opposed to solitary monuments more closely related to the settlements?

The following analysis is based on the architecture and pottery depositions at a group of four monuments at Tustrup in northern Jutland, Denmark (Kjærum 1955; 1958; 1966; 1967) (Fig. 19.1). The three megalithic tombs include a round dolmen with a polygonal chamber, an extended dolmen with a passage, possibly surrounded by a circle of monoliths, as well as a passage grave with a large rectangular chamber and a small side chamber. A U-shaped building, interpreted as a cult house, had a backwall built of orthostats and wooden side walls and was facing towards the northeast. Possibly the tombs were situated in a semi-circle around the cult house or the four monuments were placed in a diamond shaped pattern with a mutual distance of c. 50 m between each site.

Absolute dates of the three tombs in terms of their construction or skeletal remains from the chambers are not available. Carbon 14 dates of the megalithic tombs in northern Germany indicate a chronological difference between dolmens being built during the early Neolithic period between 3650–3350 BC and passage graves only after 3350 BC in the early Middle Neolithic period of the Funnel Beaker culture (Furholt and Mischka 2019, 928), but in Sweden different types of megalithic tombs were in contemporary use (Sjögren 2011, 112; Blank 2020). Overlapping dates show that construction of passage graves may begin

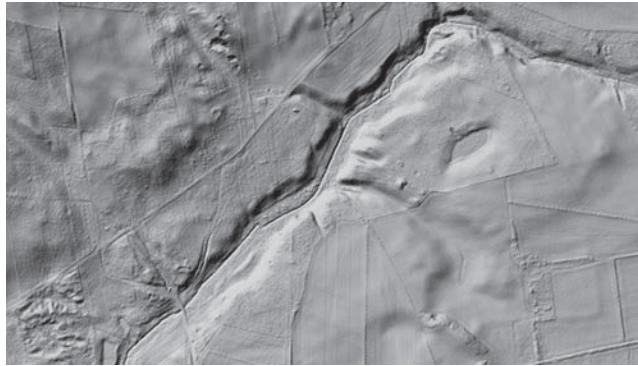


Fig. 19.1 LiDAR map of the Tustrup site. The four monuments are placed in a rhomboid pattern with a mutual distance of about 50 m between a small lake and a gorge leading to the Hevring stream.

already in the 34th century (Dehn and Hansen 2006; Schulz Paulson 2010; 2017, 306; Furholt and Mischka 2019, 930), whereas extended dolmens and smaller urdolmens could have been built during the first period of Middle Neolithic Funnel Beaker culture (Ebbesen 2011, 248; Sjögren 2011, 112; Eriksen and Andersen 2014, 298; 2016; Mischka 2014, 132–135; Blank 2020, fig. 19). Determination of the length of the construction period is hampered by the plateau on the calibration curve between 3350–3000 BC. A relatively short period of use between 3300–3100 BC is suggested by the styles of the ceramic inventory, but the duration of the construction period may have been longer. The round dolmen at Tustrup may be the earliest tomb due to the high percentage of funnel neck beakers in the depositions and few beakers dating from EN II – MN I (Kaul 1988, 52).

The wooden structure of the cult house may well be contemporary with the passage grave and perhaps the dolmens based not only on the pottery, but also samples of the wooden planks with a combined date of two ^{14}C dates to the interval of 3340–2900 BC (K-718 and K 727 – H. Tauber 1964; recalibrated using OxCal 4.2 (last updated 9/10/2013 © Christopher Bronk Ramsey)) (Gebauer 2019, 883). No independent dates are available on the stone-built backwall or the features inside the house, a pit and a small monolith. While stratigraphical evidence allows the detection of three episodes of deposition at the cult house, the number of events at the tombs is unknown (Gebauer 2019).

Monumental tombs – construction and architecture

The close spatial relationship of the four Tustrup monuments suggests that some kind of plan determined their mutual location (Fig. 19.1). The conventional sequence of the tomb construction would be from smaller to larger chambers beginning with the dolmens and ending with the passage grave (Furholt and Mischka 2019, 926). Pottery depositions at the round dolmen suggest that this was the first tomb to

be built, even though the ceramic inventory may not date the construction per se.

The round dolmen with a freestanding chamber was erected towards the south at the Tustrup site (Fig. 19.1). The chamber, 4.8 m² in floor area, was surrounded by a low mound and stone pavement as well as a circle, 8.5 m in diameter, of tall kerb stones and substantial amounts of drywall. To the north a freestanding extended dolmen chamber with floor area of 6 m² and a short, uncovered passage was surrounded by a low mound paved with stones and lined by a circle of smaller stones, 10 m in diameter and possibly also an additional circle of monoliths about 11.5 m in diameter. The third megalithic tomb was a passage grave with a main chamber of about 24 m², a small lateral chamber of 3.7 m², and a 6 m long passage. The mound of the passage grave is 2.5 m high today and 23 m in diameter. The circumference of the mound was covered by a stone pavement and a short line of seven orthostats flanked the entrance (Kjærum 1957, fig. 4).

The cult house at Tustrup is part of a group of 12 Neolithic house-like structures in northern Jutland that apparently served only ritual purposes and were deliberately destroyed (Kjærum 1967; Becker 1996; Mennenga 2017, 30–33; Gebauer 2019). The Tustrup house seems to be a local adaptation of the ideas associated with the cult houses, but with unique features like the megalithic backwall, the central pit and the monolith at the open end of the house. Close connections to the core area of the cult houses in northern Jutland are supported by other shared features such as the lateral chamber to the passage grave and three rare kinds of carinated vessels.

Pottery depositions at the four Tustrup monuments

The three tombs at Tustrup were probably used as collective tombs (Sjögren 2003, 226; Wunderlich 2019, 1139). However, just a few human bones, an amber bead and some fragmented pottery were found in the passage grave chamber while the dolmen chambers were empty. Furthermore, only little is known about the burial rites; remains of individuals may have been interred in the tombs as token offerings of a few bones (Eriksen and Andersen 2014, 284; 2016).

The pottery depositions at the entrance of the tombs and on the floor of the cult house provide the main insights to the use of the four monuments and their mutual relationships. The pottery depositions were compared in terms of the total number of pots (Fig. 19.2), the number of different types of vessels (Fig. 19.3), the proportion of ritual versus domestic type pottery (Fig. 19.4), including the amount of pedestalled bowls and clay ladles (Fig. 19.5), as well as the degree of fragmentation of the ceramics (Figs 19.6 and 19.7). The depositions at the two dolmens were very much alike according to all of these parameters. The number of 38 and 33 vessels is modest and similar to

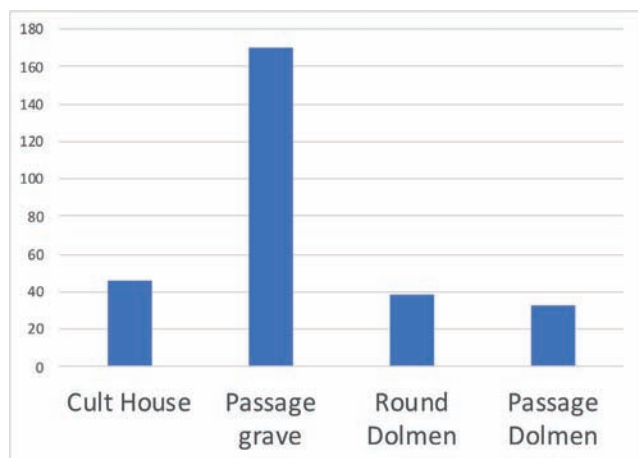


Fig. 19.2 Total number of vessels deposited at each monument.

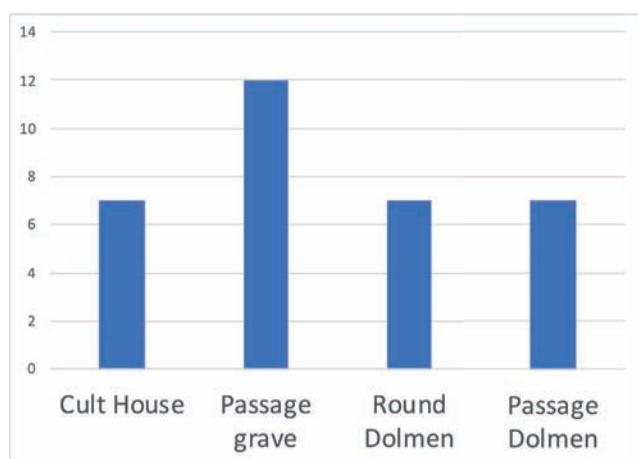


Fig. 19.3 Number of different vessel types at each monument.

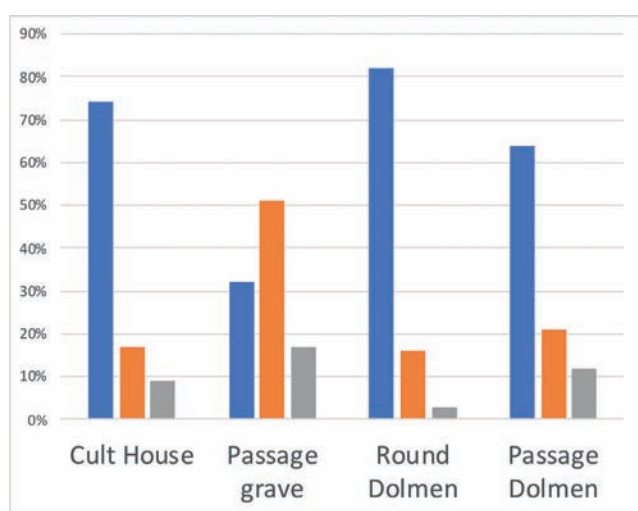


Fig. 19.4 Percentage distribution of ritual and domestic type vessels at each monument (Blue: Ritual type, Orange: Domestic type, Grey: Unknown type).

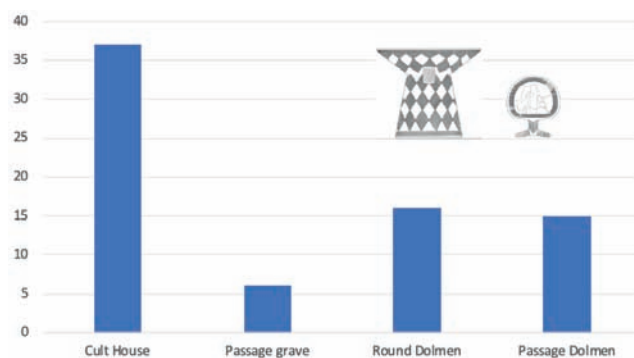


Fig. 19.5 Percentage distribution of pedestalled bowls and clay ladles at each monument.

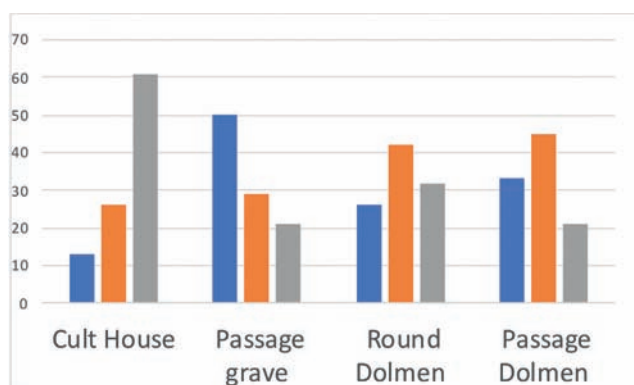


Fig. 19.6 Degree of fragmentation of the pottery at each monument based on the percentage of vessels represented by a single sherd (blue), 2-9 sherds (orange) and more than 10 sherds (grey).

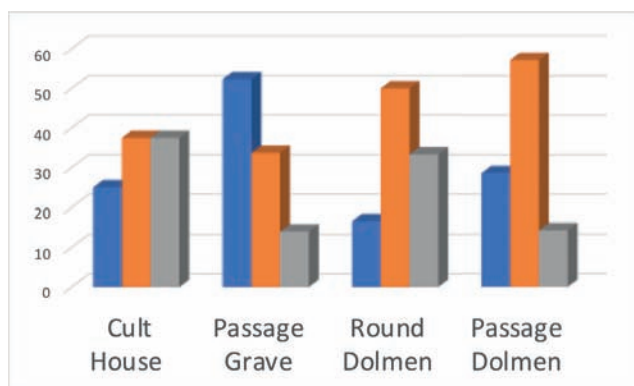


Fig. 19.7 Degree of fragmentation of the domestic type vessels at each monument based on the percentage of vessels represented by a single sherd (blue), 2-9 sherds (orange) and more than 10 sherds (grey).

the average number of vessels used at megalithic tombs in northern Jutland in general (20–50 pots). Only 7 different types of vessel were used at each dolmen. The proportion of the special ritual type vessels, the clay ladles and the pedestalled bowls, is 16% and 17% respectively, while the domestic type vessels make up 16% and 21%. Based on the pottery depositions, the events taking place at the two dolmens were very similar.

Depositions at the cult house were similar to those at the dolmens in terms of number of vessels (46 pots) (Fig. 19.2), number of seven different types of vessels (Fig. 19.3) and the proportion of domestic type vessels (12%) (Fig. 19.4). However, the pottery in the cult house stands out in terms of the high proportion of 44% of the special ritual type vessels, pedestalled bowls and clay ladles (Fig. 19.5).

In contrast, the depositions at the passage grave included considerably larger amounts of ceramics, a total of 170 pots, and greater variation in the ceramics (12 types of vessels) (Figs 19.2 and 19.3). The composition of the pottery depositions also differed from those at the dolmens and the cult house with a high proportion of domestic pottery (51%) (Fig. 19.4), and only a few pedestalled bowls and clay ladles (9%) (Fig. 19.5). Furthermore, about half of the domestic type vessels was only represented by a single potsherd (Fig. 19.7). The ceremonies at the passage grave were clearly different both in terms of magnitude and perhaps also in the number of events. The symbolic significance of at least some of the rites may also be different given the large quantity of domestic vessels and the degree of fragmentation of these vessels.

Fragmentation of pottery deposited at megalithic tombs is a well-known phenomenon and most likely was carried out intentionally (Chapman and Gaydarska 2006; Madsen 2019, 912). Simple erosion cannot account for the enormous proportion of missing pottery (Holten 2000, 291). The degree of fragmentation of the pottery shows a clear difference in the proceedings of the rites at the four Tustrup monuments (Fig. 19.6). The pottery at the two dolmens was treated alike in terms of fragmentation; a similar number of vessels was preserved in the form of a single pot sherd, 2–9 sherds and 10 or more sherds. At the cult house, most of the vessels were well-preserved and represented by 10 or more sherds; as a rule, complete vessels were deposited at the cult house and later intentionally broken to some degree. In contrast, the majority of the vessels from the passage grave were only represented by one or very few sherds. The domestic vessels were especially fragmented.

The high degree of fragmentation suggests that the vessels were broken somewhere else prior to deposition at the tombs (Madsen 2018). In the case of the majority of the vessels only fragments were brought to Tustrup. The pottery found at the cult house is an exception; most of the pots found here were so well preserved that they must have been placed in the house as whole vessels and broken to some degree as part of the ritual similar to the depositions

at the Herrup 46 cult house (Becker 1996, 340). If the pottery was used in another context prior to deposition at the tombs, most likely the vessels were used in displaying and serving of food at the feasts that are often associated with megalithic construction (Hayden 2014, 222; Adams 2019, 1120; Wunderlich 2019, 1147).

In general, the pottery from the cult house, the passage grave and the round dolmen is very similar stylistically (Fig. 19.1). Some of the vessels found at the cult house, the passage grave and the round dolmen were almost identical and may have been produced by the same person. Only the size of the vessels and details of the utensils used in the decoration indicate differences. Possibly there was a linkage between events at these three monuments regarding the depositions of certain types of vessels at the cult house, the passage grave and the round dolmen. The number of pedestal bowls and ladles is extraordinarily high at the cult house, while the number at the passage grave is very low compared with the two dolmens as well as other megalithic tombs in the region (Fig. 19.5). Possibly, these ritual vessels were placed in the cult house rather than at the passage grave. Furthermore, small, nicely decorated funnel neck beakers may have been deposited at the round dolmen rather than at the passage grave where only one such beaker was found.

Interestingly, the pottery styles found at the extended dolmen deviate in various aspects, such as the decoration of the pedestal bowls, the selection of rim designs, and decoration techniques. The persons making the pottery deposited at the extended dolmen represent a different stylistic tradition and may derive from another social group (*e.g.* Larsson 2009, 192).

Discussion – significance of small monument clusters

Spatial clusters of megalithic tombs and their associated ritual feasts could well function as a meeting place and an arena for interaction between members of the same descent group living in separate settlements throughout the area (Adams 2019, 1127; Furholt and Mischka 2019, 934). While solitary monuments may play a similar role, most likely it would be at a much smaller scale. Social cohesion among these autonomous communities was achieved by investing large amounts of labour and symbolic power in construction, maintenance and reconstruction of communal buildings at a monumental scale. Communities participating in the same labour force and logistic support shared a complex repertoire of symbolism that controlled the monument construction and thus created and maintained a shared identity (Watkins 2018, 139).

Ethnographic studies at Sumba and in Nagaland describe how clear socio-economic benefits at all levels of society were associated with active participation in these collective projects by providing either food or labour (Adams 2010;

2019; Wunderlich 2019, 113). The key to personal renown and political power was the mobilisation of supporters to contribute livestock and labour for the tomb building and feasting endeavours (Adams 2019, 1116). In order to have a voice in clan affairs and access to the clan support networks, active participation was a necessity (Adams 2019, 1125). The labour mobilisation was tied to the importance of mutual support between households, within the clan as well as in relation to inter-clan alliance relationships (Adams 2019, 1122). These strategies to attract supporters and aggregate large communities in monument construction have been interpreted as hallmarks of a contested landscape where different social groups were competing to attract new members (Beck 2006, 20). Clustering of monuments suggest that local competition was pervasive and that leaders were actively aggregating followers and negotiating their own status in society (Beck 2006, 27). However, it is important to remember that strategies of alliance formation existed alongside corporate group strategies linked to intergroup competition (Adams 2019, 1127).

Regional context of Tustrup

The significance of Tustrup as a landmark was amplified by the clustering of monuments. The group of tombs became a meeting place where the economic wealth and social standing of the community of builders and their supporters was on display (Adams 2019, 1127; Furholt and Mischla 2019, 934). Due to the number and size of the monuments as well as the additional resources invested in the cult house, the site of Tustrup stands out as one of the most impressive clusters of monuments within the region of northern Djursland. The character of the monuments suggests the mobilisation of a larger group of people extending beyond the actual funeral community and perhaps a degree of consolidation of political power. Connections to people in the central part of northern Jutland is revealed in architectural features with a limited distribution such as the lateral chamber of the passage grave and the cult house itself as well as types of rare pottery. Incorporation of these features in the construction and ritual events may have been another way of demonstrating the alliances and prestige of the Tustrup people.

The Tustrup monuments were located in pasture; no trace of settlement activities was found in terms of flint artefacts and waste, pottery, pits or houses. The monuments may have been placed at an important point of communication in the landscape rather than in relation to the habitation. The site is situated next to a stream and a river crossing marked on historical maps (Eriksen and Gebauer 2015, 99, fig. 1). According to Klassen (2014, 119 and 91, fig. 51), Tustrup may be placed on a prehistoric route marked by barrows, crossing the river near Tustrup and connecting with two enclosure-related sites at St Brokhøj and Nielstrup about 4 km away. Spatial association between tombs and

routes of communication is suggested elsewhere by long barrows and megalithic monuments aligned with routes through the landscape (Bakker 1976; Schülke 2009, 81–82; Gebauer 2015, 136; Hage 2016, 275). Highlighting the road through location of burial monuments is a powerful way to assert ownership of the route (von Hackwitz 2009, 247), and a way to display the economic capabilities of a village (Wunderlich 2019, 1137). In addition, the small lake or bog nearby may have added ritual significance to the Tustrup site.

The funeral community associated with Tustrup

Affiliation of a corporate group to the Tustrup site is supported by the tight spatial clustering of the monuments as well as ethnographic studies (Adams 2010, 281; Gebauer 2014; Mischka 2014, 128) (Fig. 19.1). In ethnographic studies, megalithic cultures are characterised by descent groups that traditionally controlled corporately held land (Adams 2019, 1126). The biological relationship among the people buried at Tustrup is unknown given the lack of skeletal material, but examples of kinship have been found elsewhere (Chambon and Thomas 2011, 257; Wunderlich 2015, 158; Alt *et al.* 2016; Sánchez-Quinto *et al.* 2019). The combination of several tombs at a single location increased the genealogical time depth as well as the significance of the site to future generations. The time depth of such an affiliation with monument clusters is estimated at 200 years at Damsbo Mark where the same group of people supposedly built a new tomb every 50 years (Andersen 2016, 134). At Sumba the estimated genealogical time depth of the oldest tombs ranged from 100–450 years (Adams 2019, 118).

The human remains that were interred in the Tustrup tombs may only represent a selected group of individuals within the community. The contemporary use of flat graves suggests that only selected individuals were interred in a megalithic tomb; an assumption that is supported by the size of the population at the settlement of Bødelsdorf and at the adjacent tombs at Borgstedt (Hage 2016, 271). In Sumba, megalithic tombs were considered the collective property of the corporate group, but only a selected group of individuals was entitled to a megalithic funeral (Adams 2010, 280). Most likely, the construction and initial use of the megalithic tombs is an expression of status differentiation within the Funnel Beaker society, but perhaps related to the social group of the builders rather than certain individuals (Price and Gebauer 2017; Wunderlich 2019, 1148).

Membership in the same social group among the interred is supported by the stylistic similarities in the pottery at three of the Tustrup monuments, the round dolmen, the passage grave and the cult house. Ritual activities at these three monuments were likely coordinated and perhaps performed simultaneously considering the apparent coordination in

the use of vessels possibly made by the same potter and the placement of specific types of vessels at certain monuments. Nevertheless, a degree of social differentiation may be expressed in the different decorative style used at the extended dolmen (Gebauer 1988). The different traditions of pottery decoration at Tustrup may reflect different learning environments and perhaps affiliation with different lineage segments.

Change in architecture and the role of the site

The combination of a number of dolmens and a single passage grave is seen at a number of sites (Andersen 2016). The change in architecture represents a gradual shift in emphasis on collective building activities to more inclusive burial rites and larger communal ritual activities involving pottery depositions (Tilley 1996, 166; Holten 2009, 171; Sørensen 2016, 755; Furholt and Mischka 2019, 932). The smaller, accessible dolmens were not only built repeatedly, but also lend themselves to re-modelling. In contrast, the construction of the passage grave was final and followed a preconceived plan. The scale and complexity associated with the organisation of labour for the various steps in the tomb building process might have been greater than that associated with ritual festivities at the tombs (Adams 2019, 1125). Possibly the post-construction employment of the monuments represented a reduced investment in funerary rituals. In the case of Tustrup, however, a rare additional investment was made in the construction of a cult house intended only for temporary use before being burned down.

The three rather different megalithic tombs may have been built in order of increasing size of the chambers as well as the surrounding structures. The sequence suggests growing competition at the inter-group level as increasing amounts of surplus production as well as a growing reliance on extended social networks would be necessary (Tilley 1996, 157; Adams 2010, 283; Gebauer 2014, 111; Wunderlich 2015, 164; 2019, 1142). However, considering the uncertainty about the date and sequence of the tomb construction, the different types of monuments may also reflect differences in status and resource availability among the builders (Adams 2010, 281; Wunderlich 2019, 1137). Although no fixed hierarchy of Funnel Beaker grave types is suggested by the distribution of grave goods (Wunderlich 2019, 1146), similarities in the architecture and the depositions at the Tustrup dolmens suggest that these two monuments were used by individuals or groups of comparable status. On the other hand, the passage grave, perhaps in association with the cult house, was a monument of a different magnitude. Most likely a wider community was involved in the construction as well as the rites associated with this tomb.

Interestingly the rites associated with the passage grave did not replace activities at the dolmens. All three tombs remained in parallel use, although the rituals at the passage

grave were more comprehensive and possibly had an added focus on fertility reflected in the high number of storage vessels (Fig. 19.6). The continuous collective rituals at all three tombs underscore the significance of the site for the social cohesion of the communities associated with Tustrup.

Final end

In spite of the prosperous appearance of the funeral community at Tustrup, the use of the site came to a halt around 3100 BC. The final deposition at all four monuments was pottery in early Ferslev style dating from a late part of MN II. No depositions of later Neolithic pottery or flint axes have been found. Although the dolmen chambers were looted, the degree of preservation makes it unlikely that later depositions at the monuments would have been destroyed.

The closure of Tustrup appears to be a deliberate act undertaken by people connected with the monuments. The cult house has been deliberately destroyed by fire, the line of kerb stones was tipped over and the entire site of the house paved over with stones. At the round dolmen some of the kerb stones were tipped over before a final pavement of stones was added (Eriksen 2019, 21–22). Most likely the termination of Tustrup represents a profound change in society, perhaps related to the arrival of the maritime Pitted Ware Culture with an important centre at Kainsbakke about 23 km to the east (Klassen and Iversen 2016; Klassen 2020) (Fig. 19.8).

Conclusion

A cluster of four monuments, a round dolmen, a passage dolmen, a passage grave and cult house were built in close proximity to one another at an important point of communication in the landscape at Tustrup. Judging by the stylistic similarities in the pottery depositions, the monuments may have been used only for a relatively short period of perhaps a few generations, however, the length of the construction period is unknown due to lack of dates and the plateau on the calibration curve. Clustering of the tombs suggests pervasive local competition where monument construction was employed as a strategy to attract supporters and aggregate large communities. The benefits of grouping the monuments included the creation of a social meeting place for the funeral community and their followers at a highly visible and permanent landmark. Combining several monuments enlarged the community affiliated with the site. In addition, the social, political and ritual significance of the site was amplified by the time depth of the construction of multiple monuments and the increased frequency of collective rituals at the site as compared with a solitary monument. The depositions of highly fragmented pottery that were part of these rituals may only be token offerings left from feasts taking place elsewhere. Aside from the ancestor cult, other aspects of the cosmology such as renewal and fertility may have been

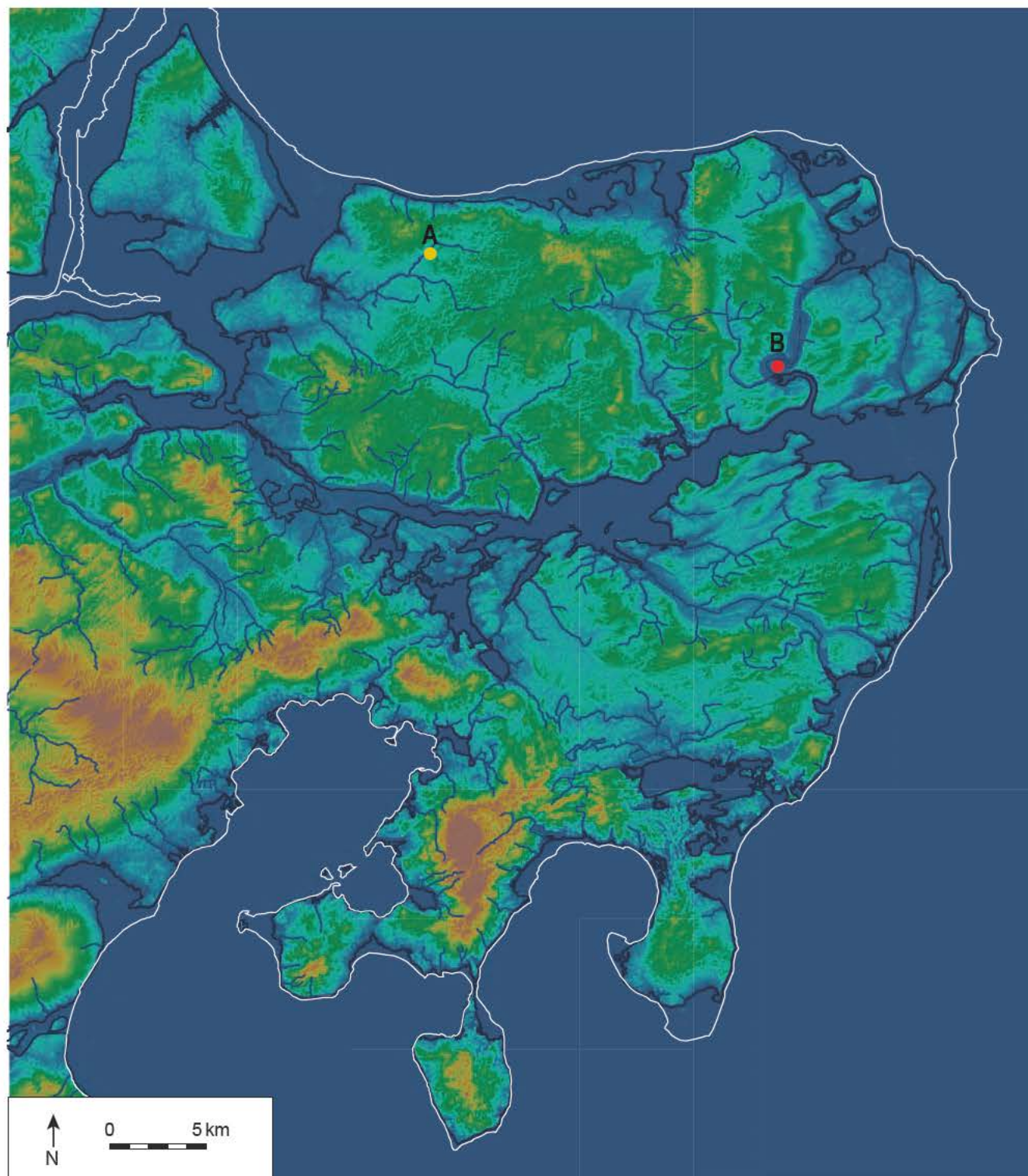


Fig. 19.8 Map of Djursland, Jutland. A: The Tustrup site, B: The Pitted Ware site Kainsbakke. Mads Lou Bentsen based on Klassen 2014, 91, fig. 51.

celebrated in the rites as reflected in the number of storage vessels at the passage grave. The deliberate closure of the Tustrup site already around 3100 BC was probably related to the arrival of a new maritime culture, the Pitted Ware with a different ideology and cosmology.

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Enclosures and landscapes

Storied structures, sustainability and resilience in Late Neolithic Malta: excavations at Santa Verna, Gozo

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 Simon Stoddart and Caroline Malone*

Abstract

The Maltese Islands were the setting of a unique and unparalleled tradition of monumentalism that spanned almost 1,500 years (3800–2300 BC). The development and decline of the Maltese megalithic ‘Temples’ have remained an important focus of European prehistory for over a century, with discussions on the emergence of megalithic architecture on the Maltese Islands having centred around themes of isolation and insularity. The following paper introduces monumentality in the prehistoric central Mediterranean, before discussing how megalithism on the Maltese Islands has been previously explored and theorised. Finally, the results of the recent excavations at Santa Verna, Gozo, are presented as a case study for how the ongoing research by the ERC funded FRAGSUS project is formulating a new economic and palaeoenvironmental context for the emergence of monumentalism in Late Neolithic Malta.

Introduction

The Maltese Islands were the setting of a unique Late Neolithic culture which saw the development of elaborate megalithic architecture and art in the period spanning 3800 and 2300 BC. The megalithic monuments of Malta are unparalleled in the central Mediterranean in terms of their form, elaborateness and non-funerary function, expressing a strong regional identity that sustained itself for almost 1500 years (Trump 2010). The development of these unique ‘Temple’ monuments in the 4th millennium BC has traditionally been explained by their isolated island setting (Bonanno *et al.* 1990; Stoddart *et al.* 1993; but see Robb 2001; Grima 2002). To elaborate this model, recent research under the ERC-funded FRAGSUS project, investigating the fragility

and sustainability of the Maltese Islands in prehistory, has formulated the important economic and palaeoenvironmental context for the Temple culture (McLaughlin *et al.* 2015). Throughout the Late Neolithic period in Malta, ritual architecture was a prominent part of the landscape, with megalithic Temple sites placed according to certain geological, hydrological and topographic constraints and overlying pre-existing early Neolithic settlements. The Temple period faded away between 2400 and 2300 BC, when the environment became depleted, unstable and incapable of supporting a large population. The islands subsequently came under the influence of Bronze Age cultures with little perpetuation of megalithic traditions.

In this paper, we provide a summary of recent excavations at Santa Verna, Gozo, which have dated the early beginnings of megalithic architecture on the Maltese Islands and, remarkably, rediscovered the remains of a five-apse megalithic structure equivalent in size and orientation to the nearby UNESCO world heritage site of Ġgantija. We discuss the configuration and chronological development of the Santa Verna megalithic structure, placing the site in the broader context of Neolithic megalithism in Malta and monumentalism in the central Mediterranean. By identifying phases of rebuilding at the site during the 4th millennium BC, we reveal the actions of a society devoted to elaboration and maintenance of ritual architecture. Such activity at megalithic complexes likely enacted social roles that enabled and sustained long-term agricultural productivity and dense human settlement on a fragile and restricted island landscape. The new data from the FRAGSUS project also allow the models of explanation that have been offered for the Maltese Late Neolithic temples to be reconsidered.

Maltese monumentalism in context

The 4th–3rd millennia BC saw the emergence of various ‘monumental’ traditions throughout the central Mediterranean, ranging from megalithic tombs, statue stelae and rock-cut tomb cemeteries (Fig. 20.1). The Maltese megalithic

‘temples’ stand out as a singular tradition of elaborate and sophisticated monumentalism unparalleled within Europe, reflecting a strong local identity at a time where the archaeological record of the surrounding region was one of much diversity. Contemporary with the above-ground megaliths,

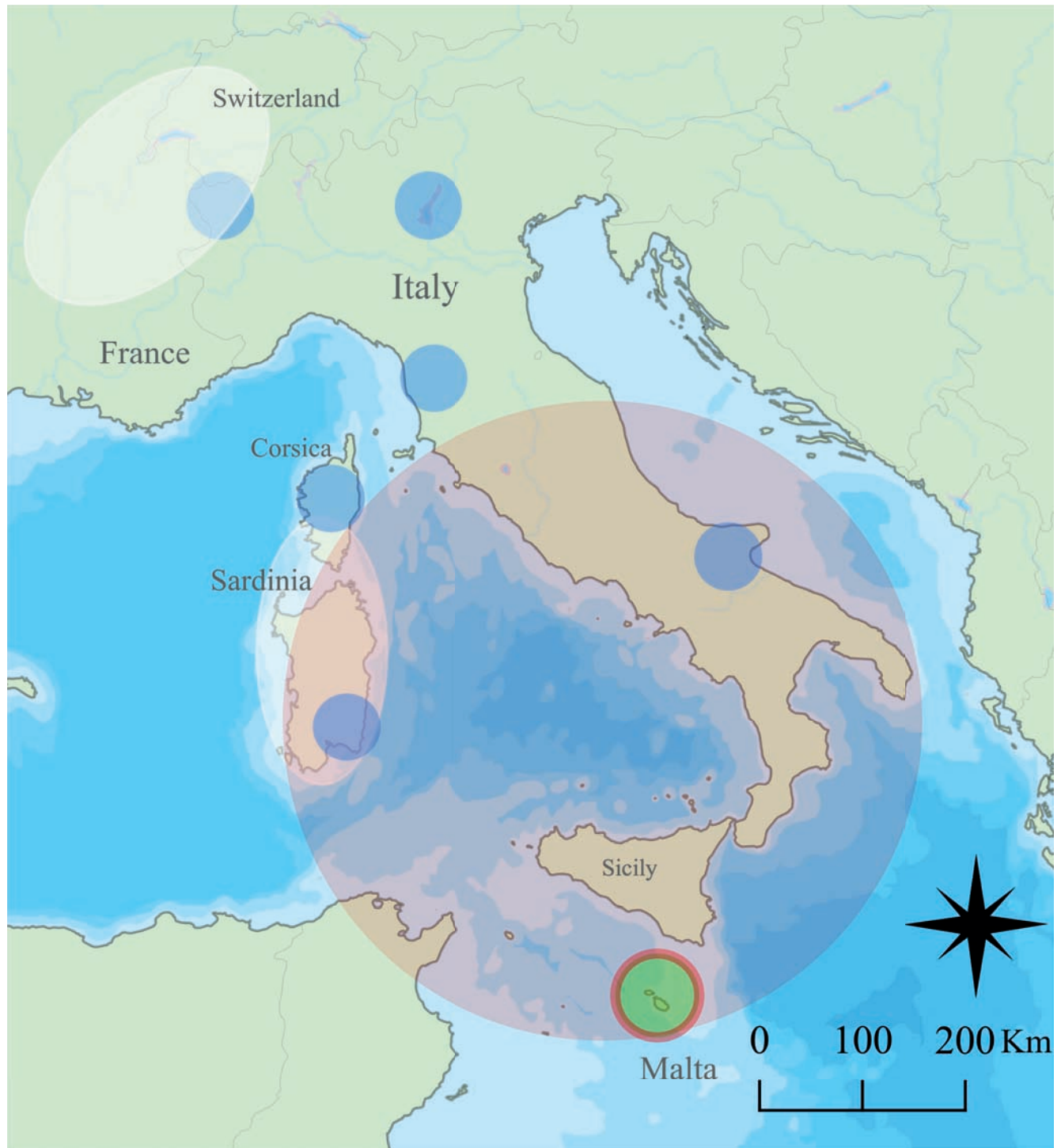


Fig. 20.1 Distribution of monumental traditions of the Late Neolithic and Copper Age (4th–3rd millennia BC) in the central Mediterranean. White: Megalithic tombs; Blue: Statue stelae; Red: Rock-cut tombs; Green: Maltese Temples.

the Maltese Islands also saw the development of large complex funerary hypogea, also unparalleled in terms of their spatial complexity and size, with these sites mirroring the stylistic and architectural aspects of the ‘temples’. A similar tradition of megalithism and elaborate rock-cut tombs occurred on Sardinia during the 4th–3rd millennia BC (Melis 2014), but the Sardinian monuments held an exclusively funerary function. A Late Neolithic ziggurat-like structure in northern Sardinia at Monte d’Accoddi dated to the early 4th millennium (Melis 2011) similarly represents a unique form of monument. Other pseudo-megalithic and monumental traditions occurred among Early Bronze Age *Castelluccio* culture funerary contexts in southeast Sicily during the mid-3rd millennium and into the 2nd millennium BC (Leighton 1999). In central-southern Italy, large cemeteries of rock-cut tombs associated with the *Gaudio* (Holloway 1976; Bailo Modesti and Salerno 1995; 1998) and *Rinaldone* burial traditions (Petitti *et al.* 2003; Silvestrini *et al.* 2004) demonstrate a similar creation and delineation of ritual space within the landscape, whilst northern Italy saw development of megalithic traditions along the southern margins of the Alps (Baioni and Poggiani-Keller 2014) and construction of dolmen cemeteries in the Aosta Valley (Poggiani-Keller *et al.* 2016). Another form of monumentalisation was the erection of anthropomorphic statue stelae, often in groups and found in discrete pockets in northern and southern Italy, central Sardinia and Corsica (Whitehouse 1992; Robb 2009; Harris and Hofmann 2014). The emergence of these individual traditions formed part of a larger pan-regional process that saw the creation of demarcated ritual spaces within the landscape and a break from the nucleated settlement and society of the earlier Neolithic (Dolfini 2015).

In contrast to adjacent regions of the central Mediterranean, the Maltese megalithic ‘temple’ monuments are differentiated by their lack of any funerary function and their distinctive plan, which typically consists of a central corridor and adjoining lobed rooms, or ‘apses’. Exterior walls are formed by large megalithic blocks, with more decorative elements carved from the local soft Globigerina limestone situated inside. The floors were smooth layers of beaten earth or pounded limestone ‘*torba*’ founded upon a layer of small stones. Contemporary *maquettes* and at least one ancient *graffito* suggests that the structures were originally roofed with ashlar blocks, a spectacular achievement of megalithism, although none of the sites survive to their original height. Excavations at Tas-Silġ on Malta have recovered evidence for roof collapse within the Late Neolithic ‘temple’, indicating that some sites may have been capped with wooden and *torba* structures (Cazzella and Recchia 2012). There is much variation in size and layout across the 30 or more known ‘temple’ sites but, in general, the structures are characterised by curved facades, paved forecourts and complex internal spatial divisions, which included thresholds, concealed spaces and changing floor levels that restricted

and controlled movement (Malone 2007). Many temple sites also show evidence for embellishment throughout the long history of their use during the 4th and 3rd millennia. Prior to the emergence of the temples, the Maltese Islands shared cultural ties with neighbouring regions, representing a southernmost extension of Sicilian and south Italian earlier Neolithic ceramic styles (Malone 2003; Robb 2007). The subsequent development of elaborate art and architecture on the Maltese Islands during the mid-4th millennium BC has been variously argued as reflecting increased isolation and insularity over time (Trump 1961; Stoddart *et al.* 1993), ‘evolution’ or ritual amplification (Evans 1959), or a deliberate attempt to create a unique island identity (Robb 2001; Grima 2002). Theoretical models for the emergence and elaboration of megalithism on the islands have previously suggested Late Neolithic Malta was territorially divided, possibly into ‘chiefdoms’ (Renfrew 1973; but see Cazzella and Recchia 2015) or highly competitive social groups (Bonanno *et al.* 1990), or that the temples formed a stage for social control (Malone *et al.* 1993). Renfrew’s (1973) conclusions were based on the distribution of major megalithic complexes but were problematic in that they did not account for all of the temple sites nor their chronology (Grima 2008). Grima (2008) developed Renfrew’s (1973) territorial model, suggesting the distribution of megalithic complexes was dictated by their positioning around agricultural planes. The recent excavations at Santa Verna temple, plus other settlement and temple sites, re-analysis of burial contexts, palaeoecological and geoarchaeological investigation of the landscape history have together provided much more data for the settlement history and economy of Late Neolithic of Malta, thus allowing us to refine these models for why monumentalism occurred on the islands at such an elaborate scale.

Santa Verna: site history

The Santa Verna temple is located at the centre of the island of Gozo, on the south-western margin of the Xaghra plateau, beyond the limits of the modern village (Fig. 20.2). The site forms part of a larger megalithic landscape that incorporates the nearby Brochtorff-Xaghra hypogeum and Ġgantija temple, which overlooks the surrounding valleys and sea. The name Santa Verna comes from the reuse of the site as a chapel and small cemetery dedicated to St Verena during the medieval period. Santa Verna was not recorded by the 18th and 19th antiquarians A.A. Caruana and Jean Houël who surveyed the other megalithic sites on the plateau. The site itself had presumably fallen into obscurity until its rediscovery in the early 20th century by Mr Nicola Said of the then Public Works Department Gozo (Evans 1971). Subsequent excavations were carried out by Thomas Ashby and Robert Bradley on behalf of the British School at Rome in 1911 (Bradley 1912; Ashby *et al.* 1913) as part of an expansion of the school’s archaeological remit into other

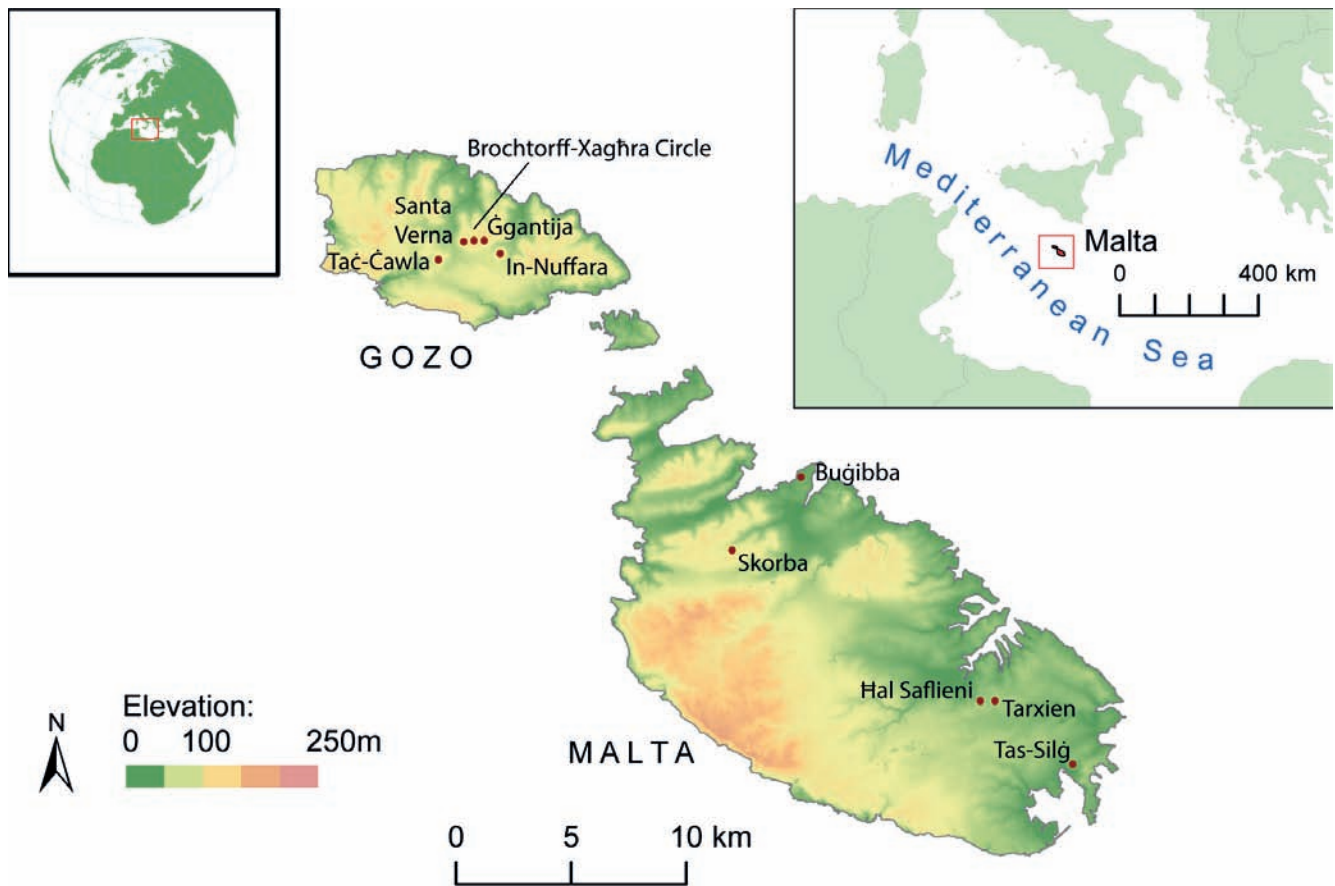


Fig. 20.2 Map of the Maltese Islands showing location of sites mentioned in the text.

areas of the western Mediterranean (Hodges 2000). A second set of excavations were conducted by David Trump in 1961 (Trump 1961; 1966) as an extension of his landmark excavation campaign at Skorba Temple, on the Island of Malta.

The 1911 excavations did not fully resolve the layout of the temple but did uncover and record extensive areas of *torba* floor and a series of *in situ* megaliths (Fig. 20.3). This excavation also made use of pioneering stratigraphic excavation methods (McLaughlin *et al.* in press), recording a series of overlying deposits in vertical section. Alongside prehistoric remains, the 1911 excavations unearthed disarticulated human remains and primary burials related to the medieval phase of use of the site. The burials were found lying in a supine position and orientated east–west, within a circular stone mound located at the southwest extent of the site. Robert Bradley mistakenly assumed the burials were prehistoric but acknowledged differences between the burial rites at Santa Verna and those he observed at the Hal Saflieni hypogeum (Bradley 1912). Trump's 1961 excavation consisted of three test pits situated in the approximate location of the areas marked 'A', 'B' and 'C' on the 1911 excavation plan (Fig. 20.3), with the aim of recording the stratigraphic

sequence of the site to aid his attempts to refine the Maltese prehistoric cultural sequence. Each test pit recorded a series of layers spanning from the pre-Temple early Neolithic to the successive phases of the Temple period (Trump 1966).

2015 excavation

The 2015 excavations at Santa Verna were successful in resolving the plan of the temple structure, which had eluded the previous campaigns, and also identified a series of remodelling events, thus charting the development of the structure over the course of the 4th and 3rd millennia BC (McLaughlin *et al.* forthcoming). Prior to excavation, the most visible remains of Santa Verna temple were three large upstanding stones, which formed the left facade of the structure, perimeter walls along the north and a random set of megaliths hidden in undergrowth near the centre of the site (Fig. 20.4 and 20.5a). The discovery of expansive floor surfaces and internal architectural features during the 2015 excavation (Fig. 20.5b), when combined with data from the 1911 and 1961 excavation trenches, further helped to define the internal structure of the site. By considering the position

P. B. S. R. VI Plate XXVIII.

PLAN AND SECTION OF THE NEOLITHIC STATION OF "SANTA VERNA" AT HAGHRA, GOZO.

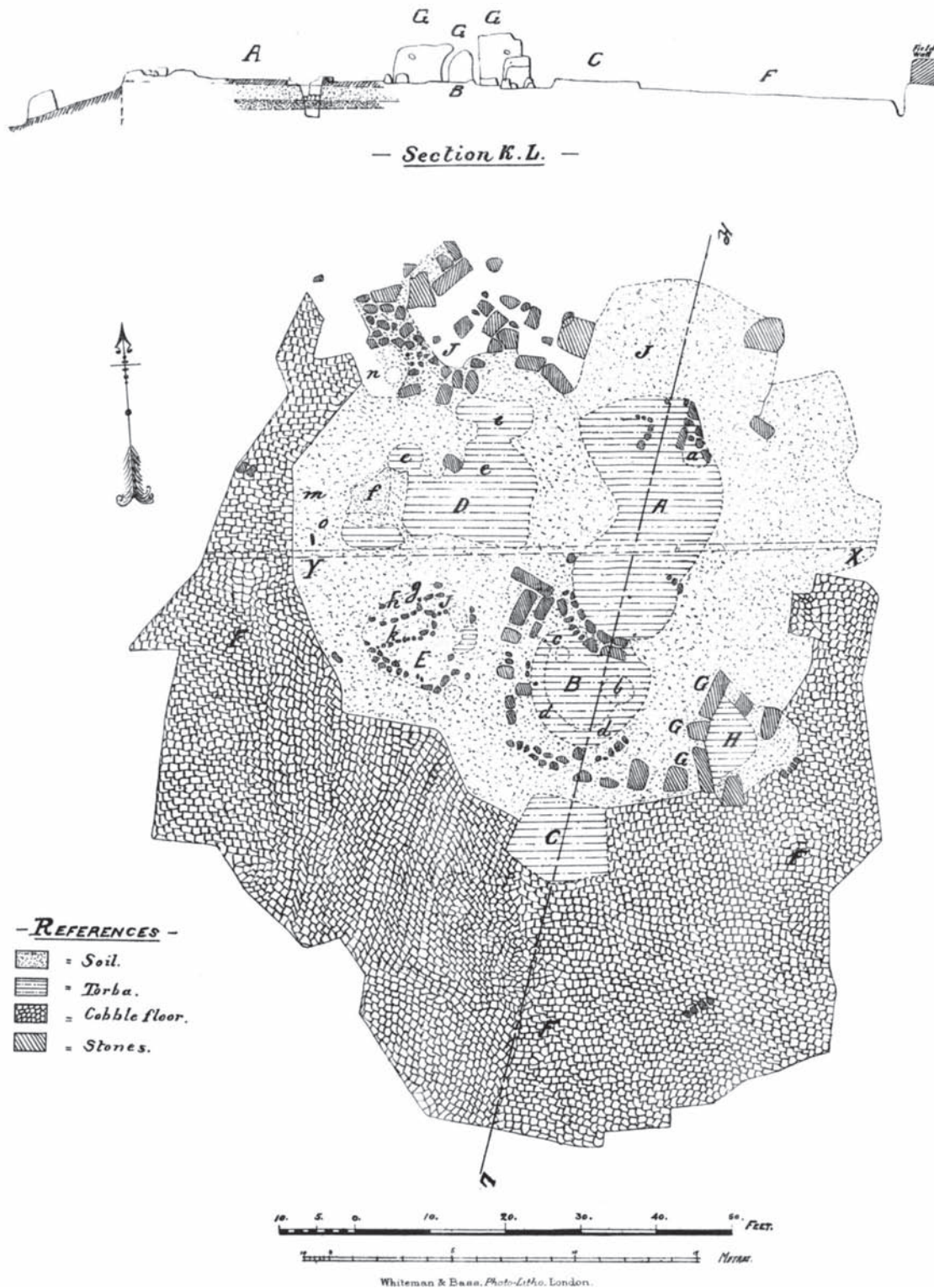


Fig. 20.3 1911 excavation map (Ashby et al. 1911).



Fig. 20.4 Photograph of Santa Verna prior to excavation, showing the site engulfed by vegetation.

of extant megaliths and structures uncovered during the 2015 excavations, and those recorded in 1911 which no longer survive, it was possible to establish the layout of the Santa Verna temple building.

The 2015 excavation led to the identification of apses and other structural features enabling the reconstruction of Santa Verna, especially the discovery of a largely complete apse wall that conformed in size, orientation and curvature to those at Ġgantija. This also corresponded to the distribution of *torba* floors recorded in 1911 (Fig. 20.6a). At the centre of the site, a threshold stone was found that established the location and south-eastern orientation of the central corridor, as well as determining the juncture between the outer and inner parts of the temple. Overall, what emerges is a building intermediate in size between the north and south temples at nearby Ġgantija. The Santa Verna temple was also comparable in terms of form and orientation to Ġgantija. An interpretive diagram of the outline of the temple and its internal structural layout is presented in Figure 20.6b.

Excavated features also pointed to the possible location of internal architectural elements that adhered to generic spatial conventions identified at other Maltese megalithic sites (Malone 2007). The location of a plaster lined semi-circular feature at the juncture between the central corridor and the outer left apse may represent a socket for the placement of a large vessel. Whilst stone bowls are known from almost all megalithic sites from late Neolithic Malta, such

socket-like features are not evident at other temples, but rock-cut parallels are found at the Hal Saflieni and nearby Brochtorff-Xaghra Circle funerary hypogea. Like other temple sites in Malta and Gozo, this was found at the left side of the entrance to the building, reinforcing these hints of a somatic or cosmological significance to how space was structured (Malone 2007).

At the northern extent of the megaliths, the foundations of the northernmost boundary of the inner right apse was found in the form of a cut feature that corresponded to an arc of now missing megaliths that were planned during the 1911 excavations (Ashby *et al.* 1913). Further excavation of this feature found that the foundation of the inner right apse wall was cut into a pre-Temple period early Neolithic *Skorba* phase structure. Once again, a combination of the features from the 1911 and 2015 excavations allowed for an outline of the building and its internal layout to be established (Fig. 20.6a and b). Within this right inner apse, the 2015 excavations uncovered a circular feature demarcated by a pronounced ring of hardened earth and limestone fragments cemented to the beaten-earthen floor of the temple. This feature is significant in having a similar size (c. 120 cm), form and location as the ‘fire pit’ at Ġgantija’s south temple, further strengthening the parallels between the two structures (Fig. 20.6a and b). The 2015 excavations also uncovered the extent of the central inner apse, which was delimited by an earthen floor and wall foundations. The floor appears to have been laid immediately

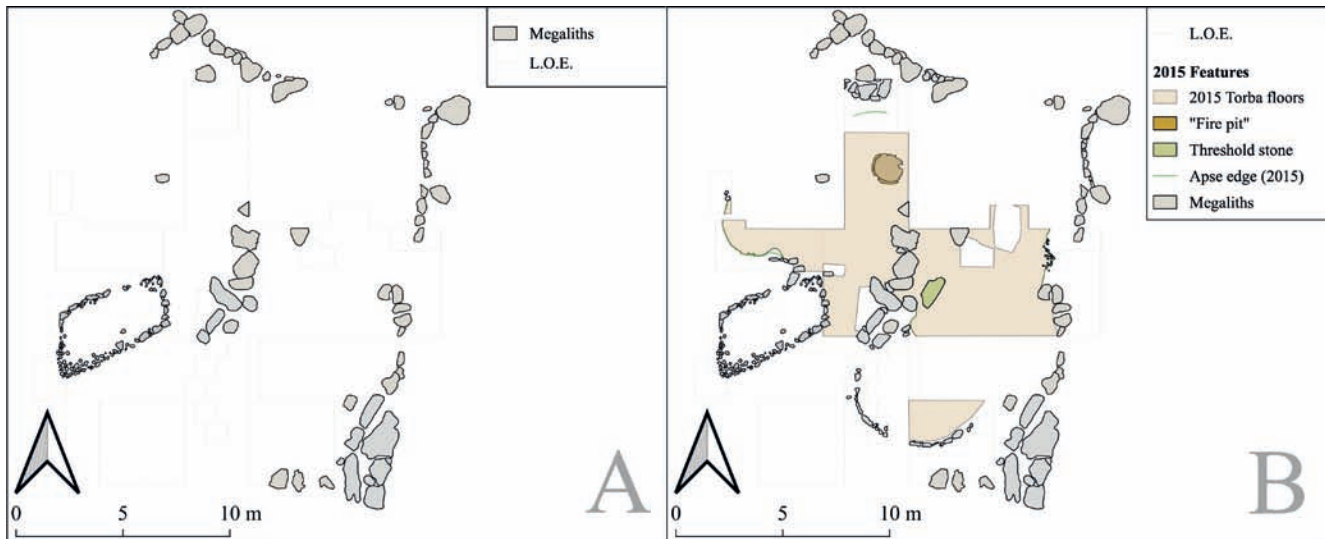


Fig. 20.5 Plan of Santa Verna showing A) site as it was on discovery, B) 2015 excavation features.

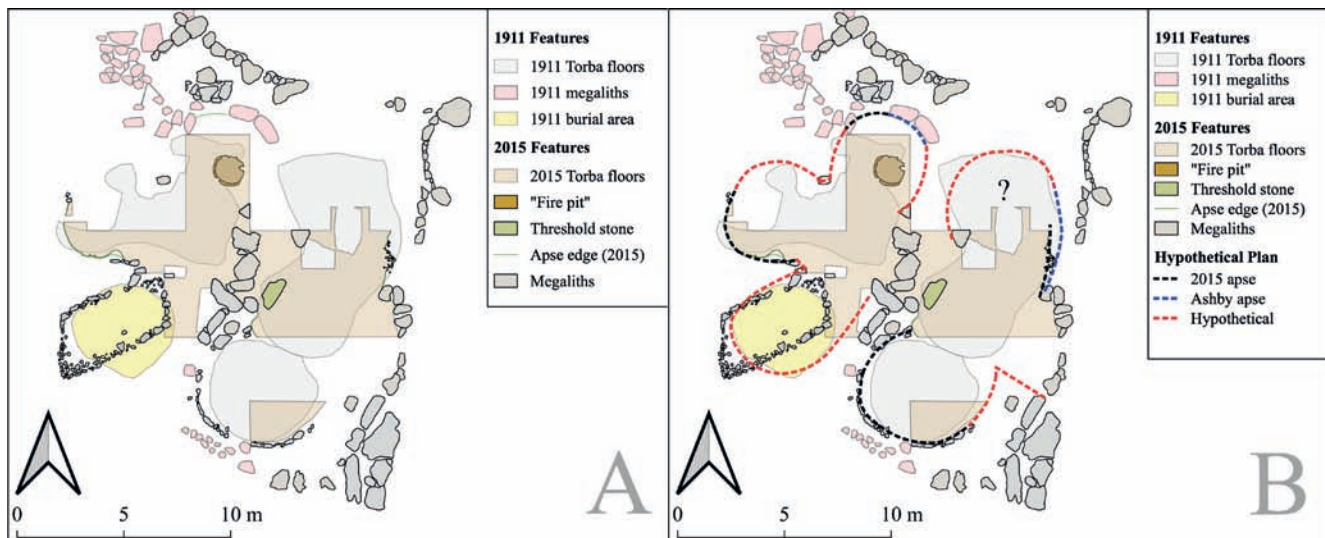


Fig. 20.6 Plan of Santa Verna showing A) 2015 excavations overlain on 1911 excavation features, B) hypothetical layout of the five-apsed temple.

after the walls had been rendered with pounded limestone, similar to the outer left apse. A thin fold of this material was preserved sandwiched between the wall foundation and the floor surface.

The human burials uncovered during the 1911 excavations, which are now known to be medieval in date, aided in the proposed location and extent of the inner left apse. Although the burial area is now demarcated by a rectangular stone wall and mound, the 1911 site plans (Fig. 20.6a) show that the burial area was circular in shape and corresponded to the likely location of a former temple apse. This suggests that the medieval burials were deliberately placed within the ruins of the megalithic building, specifically in what was originally the inner left apse of the building. A

conjectural outline was created on the basis of this hypothesis (Fig. 20.6b).

The 2015 excavations stopped at the level of the floors of the five-apsed structure. However, by re-excavating the *sondages* originally dug in 1911 and 1961, the stratigraphy below suggests that this five-apsed phase was the fourth of at least five different phases of the building's existence. Significantly, the lack of earlier deposits at the western end of the site suggests that the temple was expanded from a three-apsed structure to a five-apsed structure around 3300 BC. The earlier temple building was built in the 'Żebbuġ' Temple period sub-phase, around 3700 BC, about 100 years after the introduction of the material culture that can be distinctly associated with this period. The full stratigraphic

details of this sequence, and associated Bayesian analysis of the radiocarbon data, is being published in an open-access monograph also containing the results of other FRAGSUS project excavations in Malta and Gozo (McLaughlin *et al.* forthcoming).

Santa Verna, Malta and the Mediterranean

As one of first extensive explorations of an above-ground megalithic site in the Maltese Islands for 50 years, the excavations at Santa Verna add significant new insights into how the creation and maintenance of ritual space was central to how agricultural societies managed to flourish in the exposed, eroding and spatially limited Maltese Islands. The end of the Temple period in the 24th century BC in Malta has traditionally been suggested as representing a total collapse (Trump 2010) or social, economic and ritual failure (Malone and Stoddart 2013), although the FRAGSUS project has since nuanced this view by showing that the period was one of increasing landscape instability and gradual cultural change. Geoarchaeological and palynological research has indicated that the landscape of Temple period Malta was denuded of much of its vegetation (Carroll *et al.* 2002) but, despite this, environmental and ultimately economic stability was achieved by human augmentation of fragile soils (French *et al.* 2018). Land management and soil improvement strategies meant that the Late Neolithic inhabitants of the Maltese Islands lived in a delicate equilibrium with their landscape and engaged in a regimen where labour and the continued investment of resources was required to maintain productivity. Sustaining life on this rocky island environment also required strategic exploitation of limited resources. Faunal studies from Santa Verna, alongside those from the Brochtorff-Xaghra hypogeum and the nearby settlement sites of Taċ-Ċawla and In-Nuffara, all show reliance on sheep/goat over cattle and pig throughout Maltese prehistory, suggesting that herds that place less strain on water and fodder supplies were an ecological requirement (Malone *et al.* 2019). The location of temple sites over springs and in association with water sources (Ruffell *et al.* 2018) point toward a society that placed great importance on vital resources, and they were monumentalised and celebrated during specific phases of the agricultural year (Barrett *et al.* 2018). Within this emerging palaeoenvironmental and palaeoeconomical picture, Malone *et al.* (2019) have formulated an alternative economic model of the Temple period that placed less emphasis on religion and instead viewed the temples as centres of food storage, preparation and consumption. Internal architectural elements, such as large stone bowls, shelves and hearths, may also have held significant practical or symbolic roles in the distribution and consumption of food (Malone 2007; Malone *et al.* 2019). Indeed, we consider that this model fits well with the distinctiveness of the Maltese temples in their wider Mediterranean and European context, suggesting that Maltese

monumentalism developed out of the exceptional social and economic constraints of their restricted island setting.

The remodelling and maintenance of ritual architecture was also central to Maltese Late Neolithic society, mirroring the careful maintenance and management of the landscape. Similar processes of remodelling and maintenance of ritual space, and manipulation of human remains, were also undertaken at the Brochtorff-Xaghra hypogeum (Stoddart *et al.* 2009). The discovery of finely sculpted architectural details, such as the threshold stone with its parabolic curve, as well as the similarities in layout with Ġgantija, also demonstrates adherence to generic spatial, architectural and aesthetic conventions (see Malone 2007).

That Santa Verna was founded upon early Neolithic structures and pre-Temple deposits has confirmed Trump's (1966) model of village-to-ritual monumentalisation, as first identified during his excavations at Skorba temple. This highlights the importance and symbolism of places in the landscape, but also reflects the more practical point that prime agricultural land was of high value and that temples were strategically associated with such localities (Grima 2008). The enduring nature of these monuments in the landscape speaks to their timeless importance, as exemplified at Santa Verna by the site's re-use during medieval times as a cemetery and, according to local accounts, a place of worship. Incorporation of Neolithic megalithic structures into later architecture is apparent at other Maltese sites, as evidenced by the Early Bronze Age occupation at the Brochtorff-Xaghra hypogeum (Cutjar *et al.* 2009), and the Skorba and Tarxien temples (Zammit 1930; Trump 1966). Similarly, the temples at Tas-Silg (Cazzella and Recchia 2012) and Bugibba (Trump 2010) show the adoption of Neolithic temples into classical and modern structures, demonstrating a continued reverence of megalithic architecture and the sites upon which the temples were built in later time periods.

Conclusion

From a methodological perspective, the excavation of Santa Verna temple raises a number of points. Firstly, there is much to be gained from the excavation of megalithic sites that have previously been investigated. Such approaches afford reassessment of stratigraphies that have already been disturbed and enable the retrieval of samples for radiocarbon dating and environmental archaeology with a bare minimum of disruption to the archaeological integrity of the site. Secondly, the reassessment of excavation records is invaluable in our attempts of architectural reconstruction, and if incorporated into modern research environments such as computerised GIS, provide vital details that can be used in modern analyses. Lastly, the FRAGSUS project demonstrates the importance of considering the broader economic, environmental and settlement context of monumentalism.

The wider settlement and environmental context of ritual sites is all too often overlooked in archaeology. In contrast, the FRAGSUS project has started to show how the various models of ritual function of the Maltese megaliths can be augmented by complementary geoarchaeological, zooarchaeological, archaeobotanical and palaeoecological data on economy and land use. Only by engaging with integrated research across the natural sciences, can archaeology hope to develop useful models of what these megalithic structures actually meant to the societies who invested so much into their construction and maintenance, and who monumentalised their lives in impressive stone monuments that still capture the imagination of all who visit them today.

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Ephemeral and cosmological monumentality: the ‘strange’ ditched enclosures of Chalcolithic south Portugal

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Abstract

This paper focuses on the ephemeral and cosmological expressions of monumentality, by rejecting the construction of monuments as a simple by-product of economic and social change. In the context of the emergence of a productive system and development of social complexification, monumentality may have played an active role in framing social change. An unusual set of ditched enclosures, with sinuous and well patterned ditches characteristic of the Guadiana basin (south Portugal), is used to discuss how monumentality, embedded in cosmological principals, may have been displayed through ephemeral practices of building and dwelling.

Turning the human upside up: the centrality of symbolism

For decades, materialism and functionalism disregarded the mental and cognitive aspects of a past social human entity. Instead, economic, ecologic and material dimensions have been favoured in explaining the historical processes in which the Neolithic and Chalcolithic communities of southern Portugal, and in the broader context of the southwest quadrant of Iberia, were engaged. In a way, these approaches have reduced past human uniqueness to simply a by-product of economic behaviour, turning the human upside down (Fernández 2018).

Although the distinctiveness of humans regarding other species is more a question of level of complexity than of substance, only humans seem to have reached the capacity to imagine something and symbolise it, representing the world through symbols, and to establish complex links between the real (the visible and tangible) and the abstract and represented (the invisible and intangible). That ability turned humans into *Homo symbolicum* (Cassirer 1977;

Casini 1987; Mauro 1997; Pereira 1997; Schwartz 2018). From that capacity emerges the force that drives action and that bridges the material and the intellectual, the individual and the social, turning apparent oppositions into dualisms (oppositions that implicate one another). By establishing the centrality of symbolism in the definition of humanity, humans are turned upside up, and their reasoning gains another protagonism, not just in the interpretation but also in the explanation of social life.

The changes generated by agriculture and pastoralism, when integrated in long-term historical narratives are frequently presented as the main reason for the transformation from a condition of ‘participation’ to a state of more active and intrusive activity designated as ‘domestication’ (Hodder 1990; Criado Boado 1993; Jorge 1999). However, the focus on the productive system has led to the idea that the relation with the world designated by ‘domestication’ started only when humanity took control of the natural life cycles of plants and animals and, consequently, started to shape landscapes through architecture. The changes in the relation with the natural world though, started before, and ‘domestication’ was initially developed in the world of ideas and materialised in artistic expressions and ritual performances. It emerges with the development of consciousness, with the categorisation and symbolic ordering and naming of the world, accommodating the seen with the unseen, transforming Chaos into Cosmos. The ‘domestication’ of the world is cognitive and symbolic and occurs before agriculture and pastoralism.

When the domestication of plants and animals becomes effective it occurs in a pre-existing symbolic control and ordering of the world that frames it (Bender 1989; Valera 2012a). If Göbekli Tepe is surprising, that is because of the scale reached by the temples, not because of its initial

anteriority to agriculture. In Portugal, as in other parts of the world, the earliest monuments go back to the Late Palaeolithic, when, by added iconography, natural elements like outcrops or caves were symbolically transformed in vigorous memory devices and active social agents. The strange absence of monuments during the Mesolithic might be just a question of perspective. Some arguments for a Mesolithic form of monumentality, associated to shell midden mounds that received human burials and were covered with thousands of small stones, were put forward for Cabeço da Amoreira in the Tagus valley (Bicho 2011). Several authors now converge in considering that the building of the first monuments is related to the world views of the last hunter-gatherers (Cauvin 1998; Cummings 2002), and that monument building could have played a major part in the advent of agriculture and pastoralism. So, when noting that archaeologists studying the Neolithic of Northern Europe '[I]nstead of the houses of the living, they find monuments to the dead', Bradley (1998, 9) was just emphasising the idea that the building of monuments is not a simple by-product of the changes in subsistence. On the contrary, as a phenomenon of significant impact in social relations and social change, central to the understanding of the Neolithic way(s) of being in the world, it should be addressed in its own right.

Focus on monumentality instead of monuments

Underlining that centrality, we may say that the Neolithic (also including the period designated by Chalcolithic in Iberian traditional periodisation – for the discussion of the levels of continuity between these two periods see Valera 2018) is, within prehistory, a period of monumentalisation with an investment and a scale never seen before or immediately after.

However, attention frequently tends to focus on the monuments rather than in monumentality. The monument is what physically exists (that can be seen and touched), while monumentality is the intangible category that is inherent to the monument, but goes beyond it, linking it to its meanings (Rodrigues 2001). Monuments emerge from monumentality, that is, from the ways through which abstractions and meanings and specific material realities are reunited. Monumentality integrates the 'imaginal' sphere, a concept developed by Henry Corbin (Corbin 1979) to designate the mediation between the material and the abstract.

Monumentum is related to the Indo-European *men* and to the Latin *monere*, which refers to memory (Rodrigues 2001; Bradley 2002). So, monumentality is the 'imaginal' category that evokes the images of the past and perpetuates their meanings through monuments that appear as forms of external memory. However, understanding monumentality as a symbolic imaginative creation that allows abstractions to gain material form has implications in the concept. It

becomes more and more inclusive, allowing us to consider that monumentality is not just expressed by monuments, but also by mobile materials and by practices.

In fact, by focusing on the monuments as material buildings, we tend to privilege the categories of material magnitude and endurance (scale and immobility merged with permanence) and use them in the definition of what is a monument. But monumentality operates at variable scales. It can also generate small scale short living monuments, or it can be present in ephemeral periodic events or it can be behind recurrent social practices, becoming central in conforming the *habitus* and social trajectories. In other words, we may talk about monumental events or even monumental practices. Therefore, monumentality may also be expressed through the ephemeral, and the absence of large enduring monuments does not necessarily implicate a less operative sense of monumentality, only diverse forms of expressing it that might be less enduring in material terms.

Naturally, different social investments in monumentality have different social impacts, for they engage different resources and may result in different achievements, with significant implications in the development of social trajectories. Building large monuments can be risky in the face of the efforts involved. Such efforts are, themselves, of a monumental nature. Monumentality is therefore not just expressed by the physical monument but is also embedded in the process of their creation, for construction and reconstruction are part of the rituality involved in monuments (Evans 1988a; 1988b; Bradley 2002). Which is more monumental? The large, deep and long ditch? Or the amount of people reunited to open it, the effort involved in it, the ceremonial presiding it, the logistics called to support it, and the recurrent practices of intentionally filling it? The physical achievement or the process of achievement? Monuments, and their symbolic monumentality, should therefore not be detached from their processes of creation and dwelling.

But if it is wise not to disassociate the architectonic 'masterpieces' of these Neolithic communities from their processes of production and use, it is also important not to neglect the differences between them. If enduring and large monuments always involve a monumental investment, other forms of monumental investment may well generate ephemeral traces, leaving little evidence in the archaeological record. This perspective embraces performative and dwelling approaches to monumentality (Strum and Latour 1987; Ingold 2000), seen as resulting from active practices conducted by actors, recursively conforming their situated social conditions and levels of complexity (Giddens 2000; Bourdieu 2001). Neolithic communities did not just build a lot of monuments, they monumentalised life. And so, monumentality and monuments are not just related to memory, the ancestors and primordial times. They also incorporate the cosmology that organised life and transformed the chaos into a coherent world (Richards 1993; Benevolo and

Albrecht 2003; Valera 2010) and the ephemeral practices associated with the construction, use, closure and rebuilding of monuments.

This combination of the ephemeral expressions of monumentality, alongside more permanent and lasting cosmological principles, can be perceived in several ditched enclosures in southern Portugal, of which this analysis will privilege a group that presents a patterned design that is so far specific of the middle Guadiana basin, south Portugal.

'Strange' Neolithic monuments in southern Portugal: the sinuous patterned ditch enclosures

By the middle of the 4th millennium BC, western Iberia was entering a trajectory of social complexification where new monumental forms of expression accelerated and scaled up the process until an abrupt decay by the end of the 3rd millennium BC (Valera 2015). This process was non-linear and was characterised by regional diversity throughout the peninsula (see Cruz Berrocal *et al.* 2013 for the Spanish territory), although the southwest saw some of the most dramatic developments.

One of those developments that captures the spirit of the times was the construction of ditched enclosures (Fig. 21.1) that appear in the region around 3400 BC and developed until the transition to the 2nd millennium BC (Valera 2013a; 2015), never to reappear again with the same general characteristics. This well delimited chronology and a general conceptual similarity supported a claim to the use of the concept of ditched enclosure as a heuristic tool to address Neolithic societies in Iberia (Márquez-Romero and Mata-Vivar 2016).

In this context, one specific type of design appeared in the Alentejo region, where ditched enclosures featuring a sinuous pattern then developed. Many enclosures with sinuous ditches have been classified previously (Valera 2012b). Featuring a sequence of lobules, a variety of forms are known, including those separated by linear segments (Type B), those with an undulating form (Type C) and more irregular forms (Type D), but differ from those considered here (Type A).

Type A corresponds to enclosures of circular tendency and delimited by ditches that present a sinuous trajectory, forming sequences of contiguous semi-circular lobules, very well patterned (Fig. 21.2). They may present just one ditch, like Outeiro Alto 2 (Fig. 21.2.6), two concentric ditches, such as Santa Vitória (Fig. 21.2.4), or three concentric ditches, like Xancra (Fig. 21.2.1) or Borralhos (Fig. 21.2.2). At the site of Folha do Ouro (Fig. 21.2.3), the third sinuous patterned ditch is surrounded by an adjacent linear fourth ditch. This is repeated in a fifth and sixth ditch. This situation, of an external double ditch (an inner one featuring a sinuous pattern and the outer one being linear) is repeated in Salvada (Fig. 21.3.1), the only large ditched enclosure

of the region (c. 18 ha) that presents this kind of sinuous ditch (Valera and Pereiro 2015).

So far, we only have absolute chronology for three of these enclosures (Outeiro Alto 2, Horta do Albardão 3 and latest contexts of Santa Vitória (Table 21.1; Fig. 21.4). The dates are still few to allow an adequate understanding of the temporalities of these enclosures, but the available ones place them in the second half of the 3rd millennium BC (Santos *et al.* 2009; Valera 2013a; Valera *et al.* 2019), while other types of sinuous ditched enclosures, like Type B, are known in the region from the second half of the 4th millennium BC.

They occur in two main topographic settings: in hill tops with 360° visibility over the landscape (Santa Vitória, Outeiro Alto 2 and Borralhos) or in flat topographies in the Beja plain (Xancra, Horta do Albardão 3 and Folha do Ouro). They all have small to medium sizes, no more than 2 or 3 ha, except for Salvada, a large ditched enclosure with more than 16 ha, but for which we do not know the internal complexity.

Cosmological monumentality

Where we have good information about their plans, there seems to be astronomic alignments of the entrances in several of the considered sites (Valera 2013b). The gate of Outeiro Alto 2 is aligned with winter solstice and the gate of the inner enclosure of Santa Vitória is aligned with summer solstice, both at sunrise, while the aligned gates of Xancra and Borralhos are orientated close to the moon large Standstill event, and Folha do Ouro has the gates aligned to the summer solstice, both at sunrise and sunset (Fig. 21.5.1).

On the other hand, for those sites where we have more clear and complete plans there is a significant patterning, especially of the sizes of the central smaller enclosures and of the lobule's sizes (Table 21.2). In fact, Outeiro Alto 2 and the inner enclosures of Santa Vitória, Borralhos (1a) and Xancra have close dimensions (diameters between 20 and 30 m) and have six lobules, except for Xancra, that has four. This patterning is also seen in the sizes of the lobules, which correspond to segments of circles with diameters of 10 m average. Interestingly, this average is maintained in the lobules of the outer ditches in Borralhos and Xancra (Table 21.2). This regularity suggests that the lobule's size is not random and observes a model or norm of building conventions. The cases of Santa Vitória and Outeiro Alto 2 may provide an insight to this archetypal.

In the inner enclosure of Santa Vitória the diameter of the lobule at the right of the entrance is comprised by the angle of the alignments from the centre of the enclosure with the summer and winter solstices at sunrise (Fig. 21.5.2) defining a segment of a circle of 9 m diameter. This size is replicated by the other five lobules.

At Outeiro Alto 2 the same general situation can be observed (Fig. 21.5.3), with some interesting differences

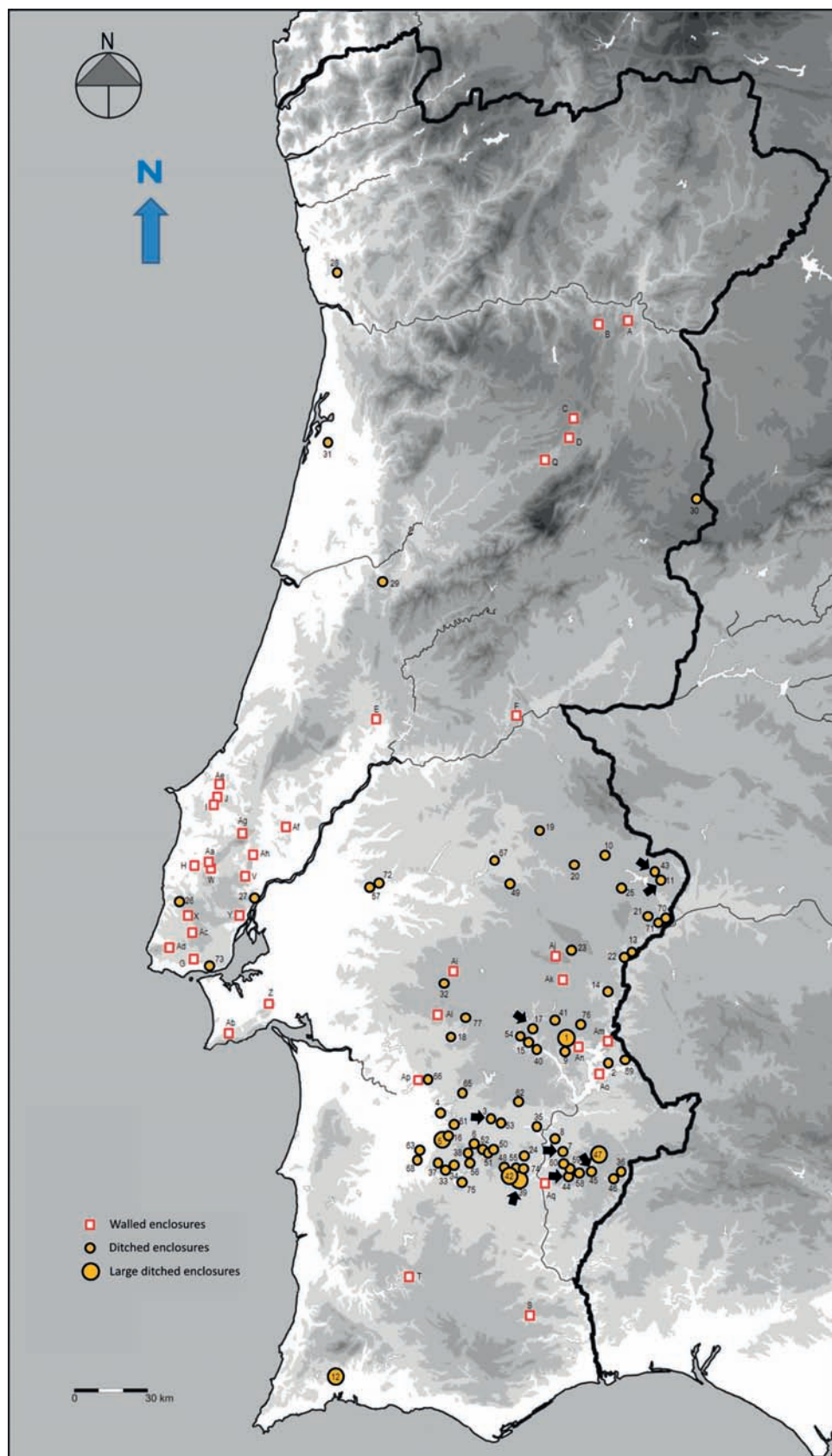


Fig. 21.1 Prehistoric ditched and walled enclosures in Portugal. Arrows indicate the principal sites mentioned in the text.

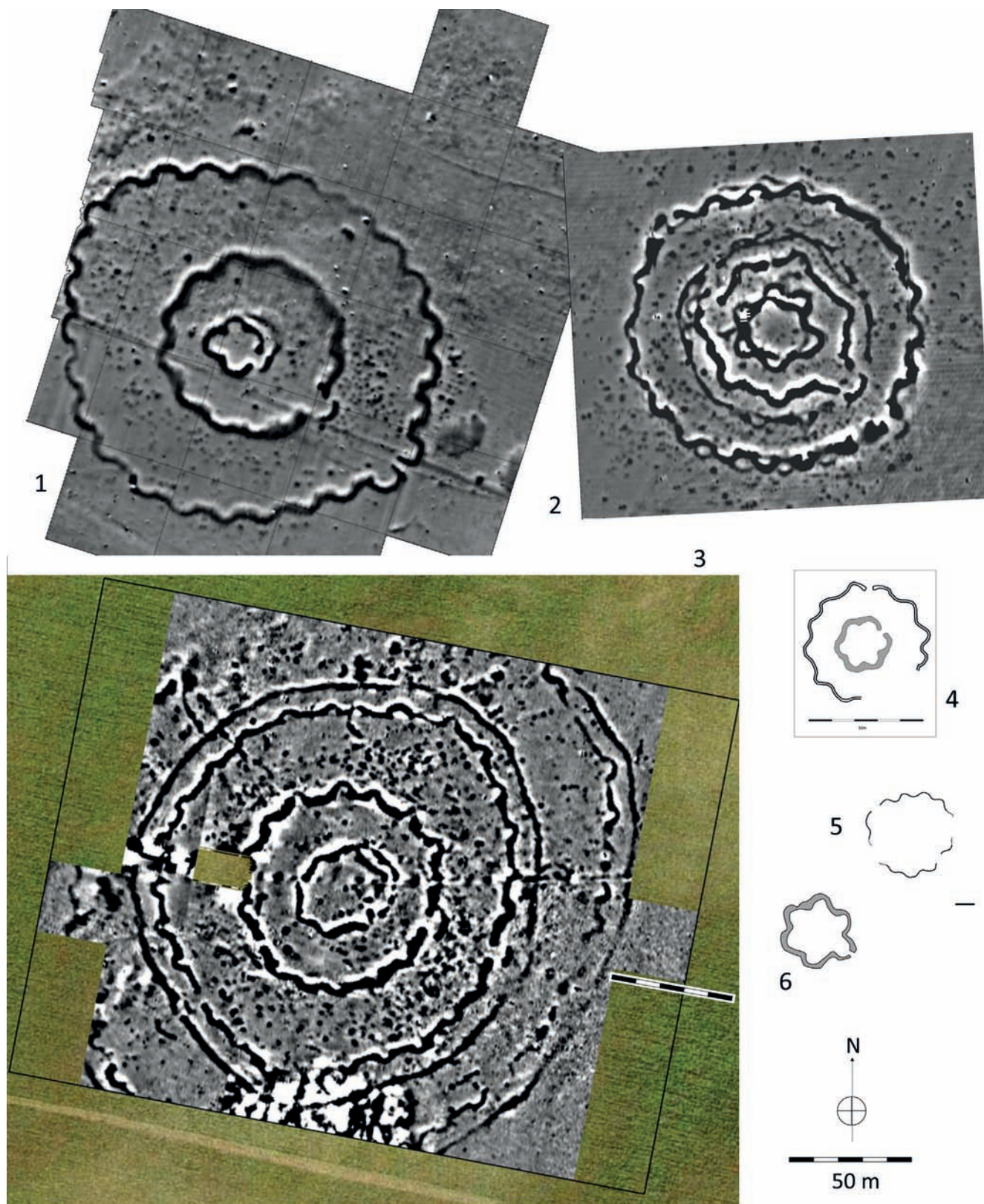


Fig. 21.2 Sinuous patterned ditched enclosures: 1. Xancra; 2. Borrachos; 3. Folha do Ouro; 4. Santa Vitória; 5. Horta dos Albardões 3; 6. Outeiro Alto 2.

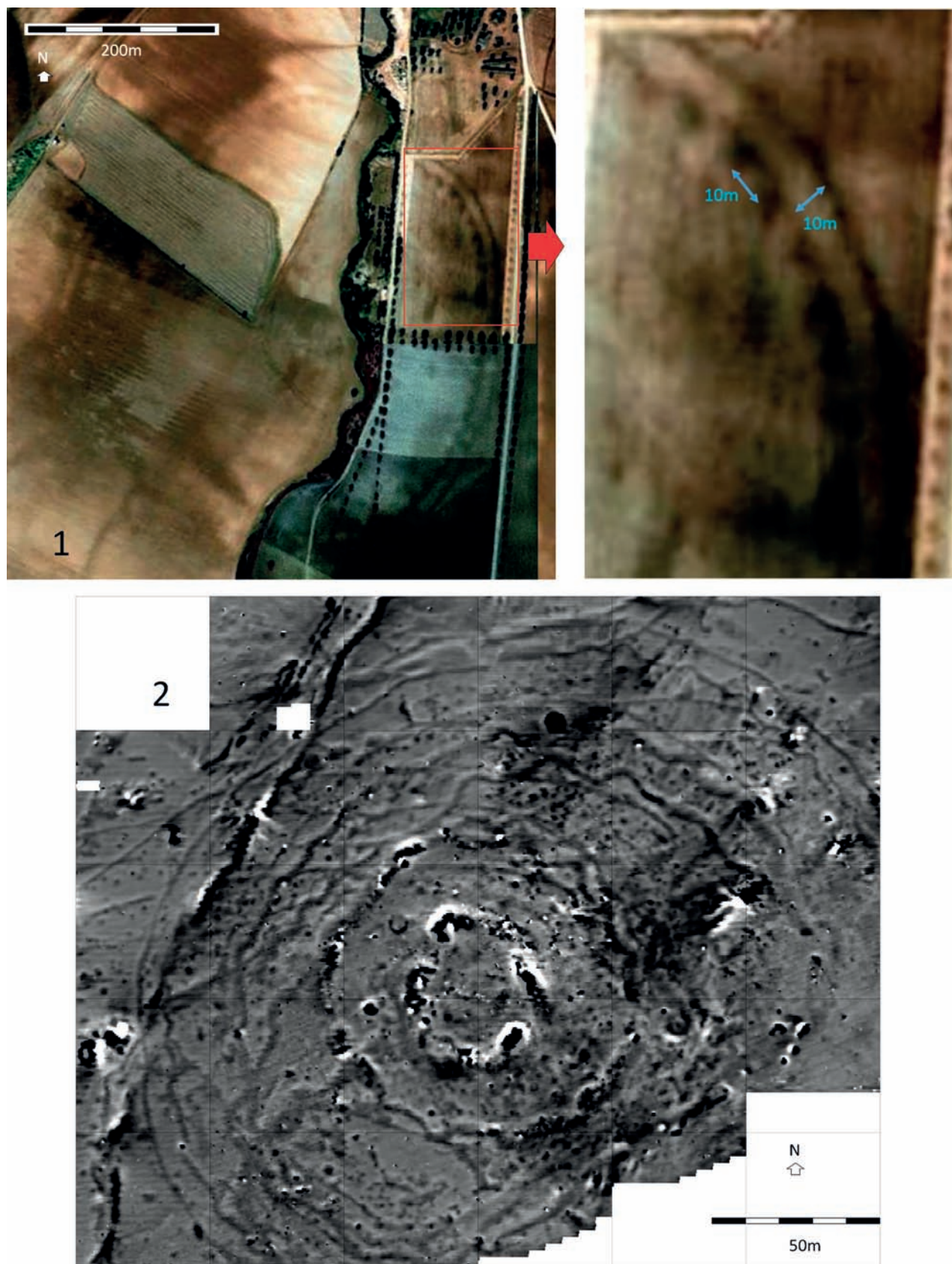
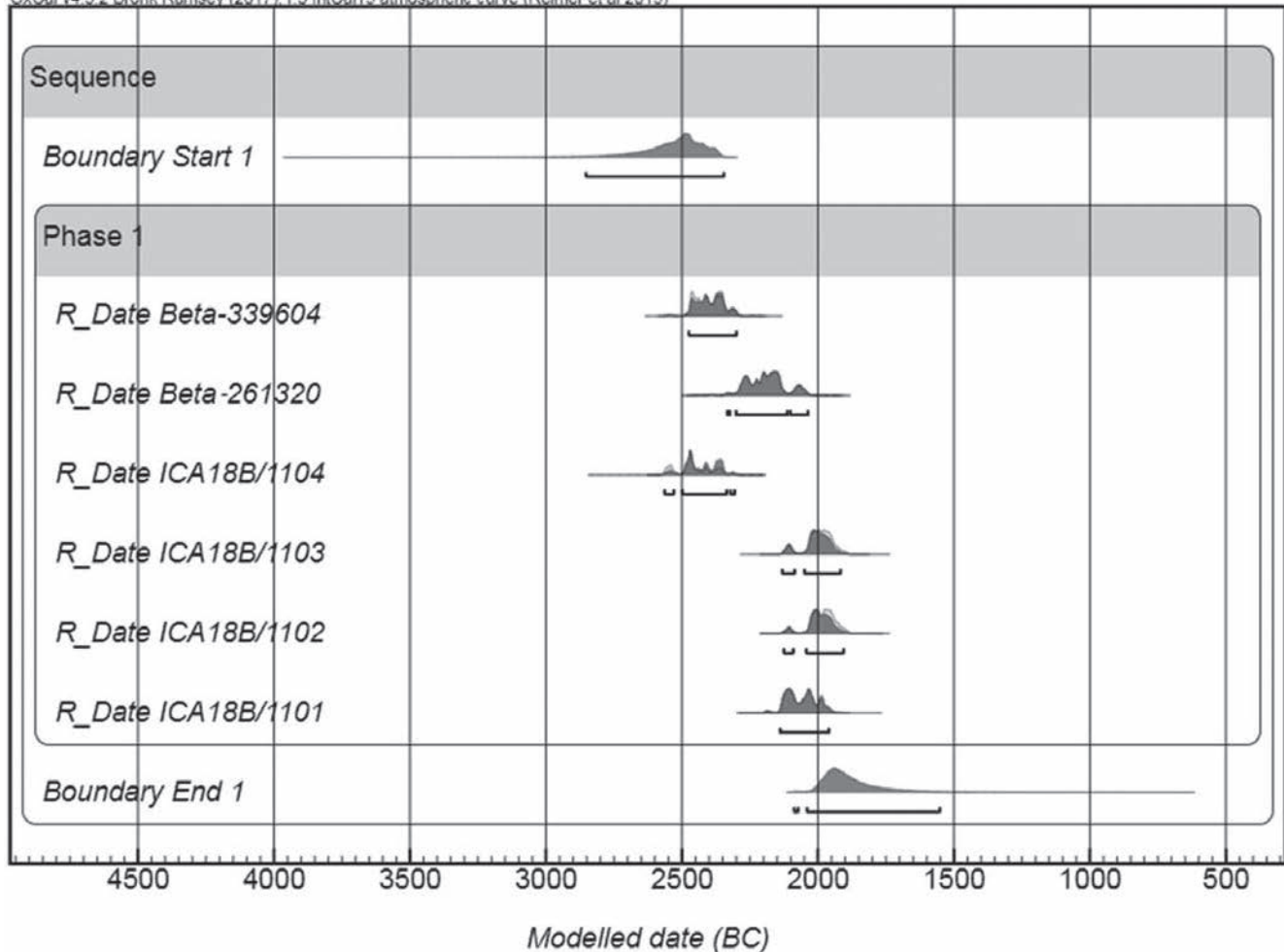


Fig. 21.3 Large ditched enclosures of Salvada (1) and Monte da Contenda (2).

Table 21.1 Radiocarbon dates for sinuous patterned ditched enclosures.

Site	Lab. Ref.	Date BP	Cal 2 σ
Outeiro Alto 2	Beta-339604	3920 \pm 30	2471–2437 (50.4%) 2421–2401 (19%) 2381–2347 (26.1%)
Horta do Albardão 3	Beta261320	3770 \pm 40	2272–2259 (3.9%) 2206–2192 (19.5%) 2180–2141 (72%)
Santa Vitória	ICA18B/1104	3950 \pm 30	2556–2521 (19.7%) 2499–2346 (75.7%)
	ICA18B/1103	3630 \pm 30	2127–2090 (9%) 2045–1905 (86.4%)
	ICA18B/1102	3620 \pm 30	2118–2097 (3.8%) 2040–1894 (91.6%)
	ICA18B/1101	3670 \pm 30	2139–1957 (95.4%)

OxCal v4.3.2 Bronk Ramsey (2017); r5 IntCal13 atmospheric curve (Reimer et al 2013)

Fig. 21.4 Modelled radiocarbon dates for sinuous patterned ditched enclosures ($A_{model}=95.4$).

regarding Santa Vitória. Here the gate is aligned with the winter solstice and, while at Santa Vitória it is in the inner curve made by the junction of two lobules, at Outeiro Alto 2 it is in the curve of the lobule. However, the size of the lobules is also comprised by the angle made by the axis of the solstices, defining segments of circles with 11 m diameter and maintaining a proportionality regarding Santa Vitória, seen in the relation between the sizes of the diameters of

the enclosures and of the lobules: Santa Vitória with a ditch diameter of 25 m has lobules of 9 m, which provides a quotient of 2.78 (dividing the enclosures diameter by the lobules diameter); Outeiro Alto 2 with a ditch diameter of 30 m has lobules of 11 m, providing a similar quotient of 2.73.

In sum, both enclosures, that have solstice orientations for their gates, have six lobules that seem to have their sizes related and determined by the angle formed by solstice axis.

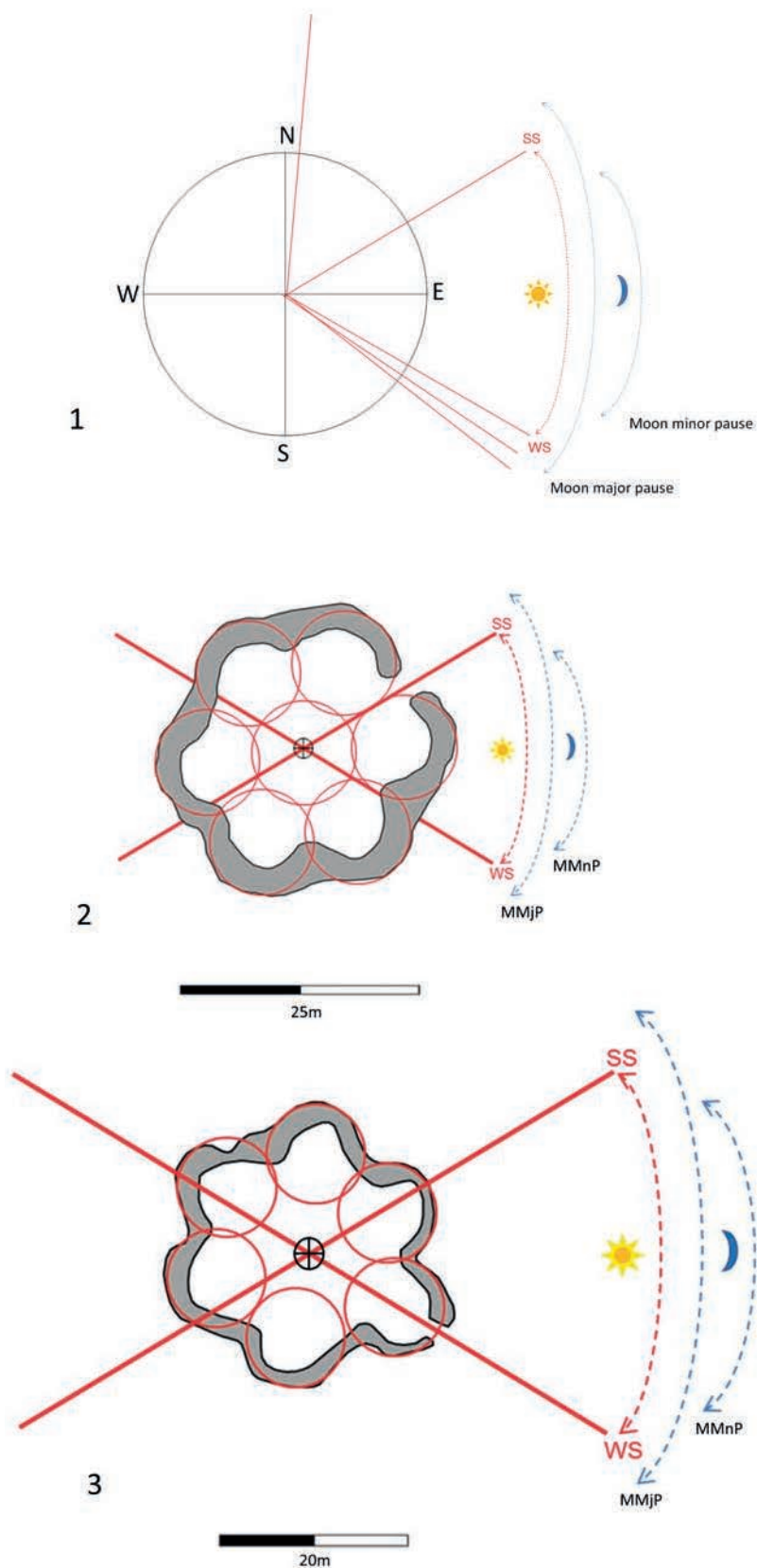


Fig. 21.5 1. Orientation of the gates of the sinuous patterned ditched enclosures; 2. Relation of the size of the lobules of Santa Vitória with the solstice alignments; 3. The same relation for Outeiro Alto 2.

Table 21.2 Maximum diameters (D), number of lobules (Lob.) and lobules diameter (LD) for the ditches of the considered enclosures. Measured in metres.

Ditches Sites	Ditch 1			Ditch 2			Ditch 3			Ditch 4		
	D	Nº Lob.	LD	D	Nº Lob.	LD	D	Nº Lob.	LD	D	Nº Lob.	LD
Outeiro Alto 2	30	6	11	—	—	—	—	—	—	—	—	—
Santa Vitória	25	6	9	50	12	?	—	—	—	—	—	—
Borrinhos	1a	25	6	10	65	7	10	110	20	10	—	—
	1b	40	6	10	—	—	—	—	—	—	—	—
Xancra	20	4	10	65	12	10	130/150	27	11	—	—	—
Folha do Ouro	30	7	10	80	14	9	140	26	5/6	160	0	0
Horta do Albardão 3	—	—	—	35–40	?(8)	—	—	—	—	—	—	—

These sizes also seem to be replicated in outer enclosures of the considered sites and even in Salvada, for which we have less precise dimension, the situation seems to be quite similar (Fig. 21.3.1). This suggests that these enclosures incorporate in their patterned architectonic designs cosmological principles clearly rooted in the Neolithic tradition, although they have chronologies from the Late Chalcolithic.

On the other hand, none of the excavated cases (Santa Vitória, Outeiro Alto 2 and Horta do Albardão 3) provided evidences of any kind of physical delimitation (banks, palisades) other than the ditches. The same goes for signs of residential structures while the enclosures were functioning, and material assemblages show clear atypical proportions between categories (usually abundant fauna and pottery and rarity of stone tools, copper tools or residues and loom-weights).

It seems that the ditches were enclosing spaces used for specific social practices, with no significant architectonic elements that would have constrained visibility or have had a substantial visual impact. The elaborated design of the enclosures would not have been perceptible at a ground level, similar to the Nasca geoglyphs, as if they were intended to be seen by other, aerial, entities. The monumentality of the monument appears to have been less in the visual impact of the architecture, and more in the ways it organised space in a cosmological order (Valera 2010; 2013b), in the building processes and in the events that took place there. In other words, more intangible and ephemeral.

Building by segments, achieving by reiteration

Spatial organisation is not independent from time, and architecture is also a temporal manifestation. Not just in a sense that it may assume mnemonic meanings and past evocations, but also in the circumstance that it is related to projections over the future and to a perception and conception of time through periodic events (Richards 1993; Bradley 1998, Silvano 2001).

Monuments have their own biographies embedded in the rhythms of daily life of the communities that built, used and contacted with them. In many cases, they do not seem to be built as closed and well-defined projects, but rather become the material remain of social practices. The phase of implementation of collective projects is a moment of aggregation particularly active in the production and reproduction of social relations and may express those social relations in the process itself, invested of impressive monumental significance.

That seems to be the case of the gradual construction by segments that has been identified in several ditched enclosures of southern Portugal, from the earliest Neolithic ones to the later sites, dated from the second half of the 3rd millennium BC. This segmented construction may occur through the slight overlapping of segments with different dimensions or by sequences of tangent segments, and sometimes is documented that, when a new segment is excavated, the previous one is already filled, generating a step by step construction of a boundary that was never a continuous ditch. This practice, documented through excavation in several enclosures (such as Perdigões, Bela Vista 5 and Salgada), is visible in the magnetograms of the sinuous patterned ditched enclosures of Xancra and Borrinhos, but only in their external enclosures (Fig. 21.6).

These segments could have been opened and filled by different groups cooperating in producing a layout but obtaining it in steps (more continuous or more differed in time), where the construction process might emerge as a metaphor of the social structure and social relations. The participation in the process, the procedures and practices carried on, may have specific purposes. Each segment may be assumed as an independent project, with its particular monumental expression, being the result of a sequence of projects that established monumentality. If this kind of enclosure may be considered a monument, in the sense it incorporates memory and eventual mnemonic roles, its monumentality results from recurrent ephemeral practices of opening and closing ditched segments (and other associated activities).

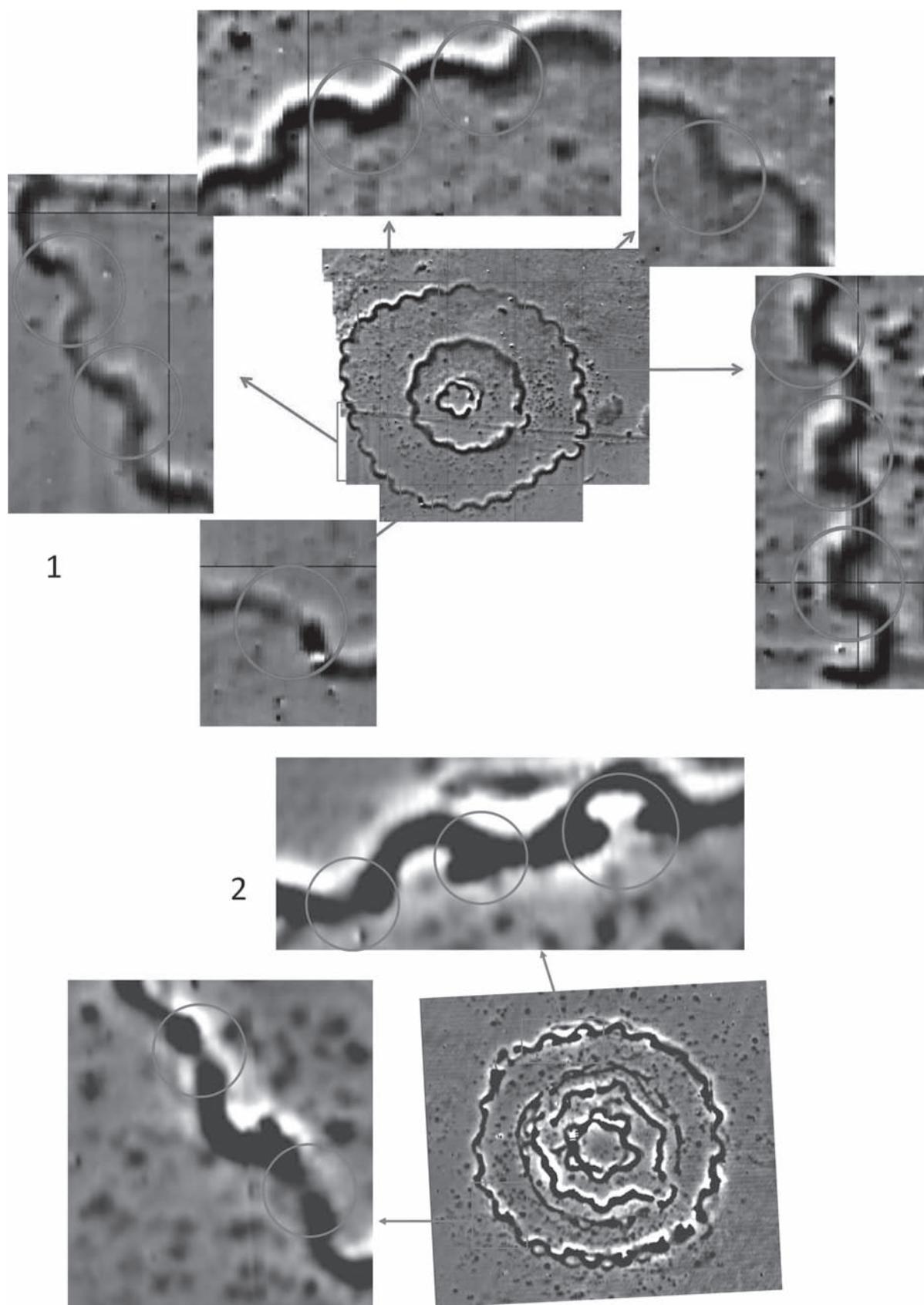


Fig. 21.6 Signs of segmented construction of ditches in Xancra (1) and Borralhos (2).

The monument is not built and then used in routines of ritual performance. It instead emerges from those routines, incorporating metaphorical links to life cycles (death/closure, reuse/rebirth), associating biographies of people and structures, and maintaining a cyclical perception of time (Hanson 1998; Brück 1999), whilst respecting a previous stipulated design. This same interpretation can be extended to the recurrent practices of re-cutting and refilling that are frequently observed in these enclosures.

The periodicity of building

Several ditched enclosures in southern Portugal show evidence of this cyclicity in periodic constructive activity, documented in processes of ditch filling – recutting – refilling, but also in the remodelling of the enclosures.

Perhaps the best example of this periodicity is the set of enclosures of Monte da Contenda (Valera *et al.* 2015) (Fig. 21.3.2). The site, with at least 17 ditches defining several enclosures that are overlapping each other, documents an area with a long and complex history of remodelling events throughout the Late Neolithic and Chalcolithic, with clear distinctive phases of construction, overlapping and with lateral displacements, corresponding to periods of construction, abandonment and reconstruction. Such histories represent periodicity of aggregation and movement, and an attempt to create permanency and memory of a place.

For most of the sinuous patterned ditched enclosures there is insufficient chronological information to understand their temporality, but the fact that there are cases of just one ditch, others with two and others with three or more, suggest there might be chronological sequences in the construction. However, for Borralhos the magnetogram clearly shows several phases of construction (Fig. 21.6), with two different inner enclosures, with several changes in the intermediary one and with a rebuilding of the outer one, with a similar pattern, only with some discrepancies between lobules, allowing the older structures to be seen in some sections.

Memory and ancestry can be maintained by the endurance of a construction, but also by periodicity of rebuilding (Edmonds 1993; 1999). In fact, the construction of monuments is frequently associated to the development of the image of the ancestor (Bradley 1998; Jorge 1999), embedded in a conception of primordial times and cyclical regeneration (Eliade 2016). The idea of regeneration by the permanent reincorporation of the past in the present turned life in a permanent expression of social memories through recurrent periodic practices and rebuilding. Stability and permanence are achieved by repetition and cyclicity.

Conclusion

During the Neolithic in southwest Iberia, ditched enclosures emerged and developed as one of the main forms of

expression of monumentality. Some may be planned monuments, following some principles of cosmological order and presenting well patterned plans, as if they conform to shared prescriptions. That is the case of the well patterned sinuous enclosures, presenting one ditch or more (usually concentric) designed with sequences of regular lobules. This type of design is, so far, characteristic of the Guadiana river basin, and this spatial restriction seems to represent a regionalised expression and interpretation of more general cosmologies and social practices.

They were rooted in Neolithic cosmologies, expressing them and perpetuating them through periodicity, recurrence and ephemeral social practices at a time of accelerated changes. The fact that, so far, none of these enclosures that was excavated has provided Bell Beaker pottery (although they have bell beaker chronologies) is worth noting, for it might be revealing a specific form of symbolic resistance. The available data, though, is more suggestive than affirmative, and a blurred perception of these unusual monuments persists. Rather than look at these sites simply as monuments, it is also important to attempt to understand how they enabled social practices. By doing so it becomes clear that many ditched enclosures of southern Portugal assumed their monumental character more through ephemeral and repetitive practices framed by the cosmological order, than from monumental enduring structures, although in some of them these structures were present.

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Connecting stories of the Neolithic in north-eastern Portugal: walled enclosures and their relationships with the genealogy of the landscape

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Abstract

In this chapter we aim to approach two walled enclosures, Crasto de Palheiros and Castanheiro do Vento (northeast Portugal) that we define here as monumentalised hills, justifying and discussing such terminological option. Even though they are geographically close to each other, being in general terms contemporary (3rd millennium BC), with similar archaeological materials, including Bell Beaker ceramics, they seem to exhibit different processes of monumentalisation and of its surrounding landscape. Bearing in mind these premises and the presence or absence of a previous monumentalisation of the territories, we will inquire about the monumentalisation process of its neighbouring landscape during the 3rd millennium BC, considering the interpretative possibilities of these sites.

Introduction

In this chapter we will examine the monumentalisation process of landscape through case studies of two Portuguese walled enclosures, dated from the 3rd millennium BC, interpreted as monumentalised hills – Castanheiro do Vento (Vila Nova de Foz Côa) and Crasto de Palheiros (Murça). These sites are located in the lower Douro River basin, in the north-east of Portugal, and are close to each other, being just 38 km apart (Fig. 22.1). Given that this hilly hinterland region has a variety of microclimates it is worth noting that theirs are remarkably similar, being of a continental Mediterranean type. Furthermore, available palaeobotanic evidence indicates that both regions would have had very similar climates to that of the present during the 3rd millennium BC (Figueiral and Sanches 1998/1999; Figueiral 2008; Figueiral and Jorge 2008; Sanches *et al.* 2008).

It is also the geographical and chronological proximity that allows for the discussion of each site's particular historical and ideological trajectories, based on the similarities and differences between them. We assume, as a starting point, that the concept of 'monumentalised hill' (Jorge *et al.* 2006) is the most suitable term that allows for the interpretation of these sites that witnessed long term historical processes that integrated memorial activities with daily and/or cyclical practices. In reality, walled enclosures (as other enclosures) can be included into strategies of monumentalisation of space through the socially coordinated construction of collective spaces, both in the short and in the long term, as places of significance for structuring and negotiating collective identities. Taking into account their long-term occupation, walled enclosures accumulated narratives over time. In turn, the term 'monument' accentuates the scale of the built 'feature' in itself, which marks the landscape and the correlative visual control of the surrounding space. It also highlights the congregating role of these sites as collective works, and as meeting spaces of various groups that, over several generations, and for multiple purposes, built them.

However, we must warn that the term 'monument' induces excessive focus on the immensity of the building itself, understanding it above all as an exceptional site overshadowing the processes of monumentalisation of the surrounding landscape (*e.g.* Jorge 2005; Jorge *et al.* 2006; Valera 2007; Sanches 2008; Vale 2019a). Such processes imply the idea of routine practices and movement, which go beyond the site and integrate it into a particular historical process that is expressed through practices of inhabiting particular landscapes. These landscapes also act as records of diverse traits of occupation and also of multiple narratives. Hence, this is the reason why



Fig. 22.1 The neighboring monumentalised hills of Crasto de Palheiros and Castanheiro do Vento (Portugal), in the Iberian Peninsula.



Fig. 22.2 Castanheiro do Vento and Crasto de Palheiros monumentalised hills, as they can be seen from a regional perspective.

our case studies – Castanheiro do Vento and Crasto de Palheiros – forcibly bring up the vestiges of occupation of their surrounding landscape. Concurrently, each site itself must be considered alongside its constructive and/or occupational details – such as pottery fragments or quern stones, remains of consumed animals or other ‘materials’ brought in from ‘outside’. We argue that these elements are not just idiosyncratic parts of a monument but are instead

active elements in the practices of monumentalisation connected with dynamic social processes. In summary, the term ‘monumentalised hill’, when used in reference to Crasto de Palheiros and Castanheiro do Vento, presupposes the action of monumentalising, but it does not refer only to the monumental character of the building/hill. It also carries the surrounding territory, its memory, its long occupation (Fig. 22.2).

The case studies

Castanheiro do Vento

Castanheiro do Vento¹ (Vila Nova de Foz Côa, Portugal) is located on a hilltop with a maximum altitude of 730 m. Due to the fact that the slopes of the hill were heavily altered by the planting of trees in recent times, it has become impossible to accurately estimate the full extent of the site. However, the general plan of the site (Fig. 22.3) could have been a complex architectural design that included three lines of stone-based walls, arranged concentrically, and interspersed by bastions (24 in total) (Fig. 22.4) and entrances (16) that define the archaeological site. The walls and the bastions had a strong buttress system on the outer side of the wall, made with slabs of schist arranged perpendicularly and in parallel (Cardoso 2014). In the interior space delineated by these walls, many circular structures of varying sizes (between 1 and 8 m in diameter) were identified (38); the bigger structures showed a complex organisation of their interior (Fig. 22.5), meanwhile the ones with c. 2 m in diameter (the most common in the site) were almost devoid of artefacts. They had a clay floor, the remains of which were discovered as a yellow, clayey deposit from which small schist stones lay within horizontally. The stone base-wall features were made with schist slabs, quartz nodules (extracted from the site itself) and pieces of granite (including reused quern stones) and would have had upper walls made mainly of earth and wood (Jorge *et al.* 2006). In the north and west slopes of the site, a stony embankment has been detected that begins in the vicinity of the external face of Wall 2 – M 2 (Fig. 22.3). This feature would have

been built during the 3rd millennium BC with the purpose of emphasising the monumentality of the site, making it more visible from long distances.

Castanheiro has a long history of occupation. Some archaeological evidence seems to indicate the hill was first occupied at the end of the 4th millennium BC,² prior to the construction of the walls (Muralha *et al.* 2019), which could have resulted from practices of aggregation in relation to other places, and be linked to the later emergence of the monumental building. However, in the surrounding territory, the archaeological remains dating from the 4th millennium BC are scarce (Monteiro-Rodrigues 2011).

The construction of the walls and inner circular structures would have commenced by the beginning of the 3rd millennium BC and the site continued to be constructed, transformed and used throughout the 3rd millennium BC into the Bronze Age (until about 1500 BC), although apparently according to different social contexts and strategies. The identification of phases in the construction and use of the site during the 3rd millennium BC has encountered several difficulties because: (1) the excavation strategy was aimed towards the identification of the general plan of the site and few in depth contexts were excavated; (2) the spatial relationship of the stone structures seems to have an additive character, with instances of cutting or overlapping structures being rare; (3) and the relative artefact typology does not differ throughout the 3rd millennium BC. In fact, Castanheiro is a space that was constructed over time and used across centuries – and the ‘site’ cannot be seen as the result of an original project, but instead as the final (archaeological) layout that represents successive additions of modules (Cardoso 2007), walls, bastions and other circular structures. Further, it is probable that not all the identified features were in use at the same time; for example some entrances were intentionally closed and the bastions of the Wall 1 – M1 were sealed with a level of stones at their baseline (Fig. 22.3).

This particular *making of the site*, rather than allowing for a linear periodisation of the construction and occupation processes, expresses the cyclicity and seasonality of its time. Despite Castanheiro’s, and likewise Crasto’s, inability to be understood as a settlement – as we shall see later – its construction and use is part of the life of the communities that inhabited the surrounding territory. Material traces refer to the everyday flow of domestic life and this tempo is sometimes encapsulated in small assemblages (interpreted as intentional depositions), which bring together everyday things, such as quern stones and fragments of ceramic vases (Vale 2019b). The zooarchaeological study (Costa 2007; Soares 2019) allowed for the identification of animal species that connect Castanheiro with its territory and its activities – such as *Alosa sp.*, a fish seasonally caught in the water courses near the site (Vale 2011) – but also allowed for the observation of the exceptional character of the site, considering the exaggerated presence of *Sus sp.* when comparing

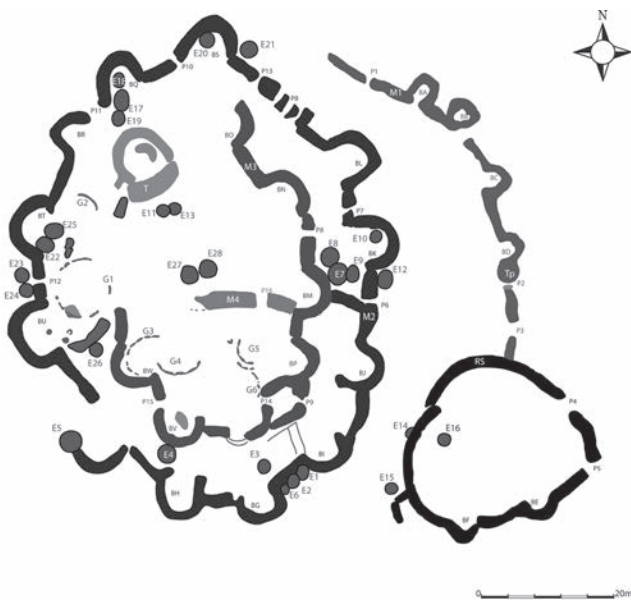


Fig. 22.3 Sketch of the general plan of Castanheiro do Vento, showing the main stone-based features – walls, bastions and circular structures – made from Bárbara Carvalho’s and João Muralha’s field drawings.



Fig. 22.4 The excavation of Castanheiro do Vento's walled enclosure, showing bastion BL, integrated in wall M2, and a small circular structure constructed in the inner space of the bastion (2018).



Fig. 22.5 A view of the circular structure G1 with entrance P12 and wall M2 in the foreground (Castanheiro do Vento, 2011).

to contemporary nearby sites (Soares 2019). It remains to be clarified whether the species of *Sus sp.* is domestic or wild, which would imply distinct strategies of exploring the territory. However, their presence is indicative of a great investment and symbolic connection between the communities and pig/wild boar, a species that is preferentially consumed in excess on site, probably at specific and/or cyclical times.

Crasto de Palheiros

Crasto de Palheiros (Murça, Portugal) occupies a hill surmounted by a quartz ridge, distinct from the other surrounding geological forms due to the aggressiveness of its quartz outcrops. The most imposing stone constructions, mainly concentric in form, are concentrated in the upper part, occupying an area of more than 2.5 ha, but they are the result of an additive process that took place throughout

the entire occupation. Due to the integration of a vertical outcrop on its southern side, the stone constructions define a large D-shape ground plan, which incorporates its highest and most prominent point at 590 m (Fig. 22.6). The huge embankments and peculiar outcrops create artificial ‘slopes’ of a gradient that varies between 5% to 7%. However, the site continues to the immediate neighbouring quartz ridge and also downhill, possibly to the two creeks that border it, and only new excavations can reveal the full extent of the site. Despite this wide area, it is in its upper part that the most imposing buildings can be found. These constructions define an Upper Enclosure – elevated like an ‘acropolis’ – and a Lower Enclosure, both reinforcing the hierarchy of spaces created by the topography (Fig. 22.6). The regularity of the two concentric enclosures must have been obtained through a Herculean effort due to the above-mentioned unevenness

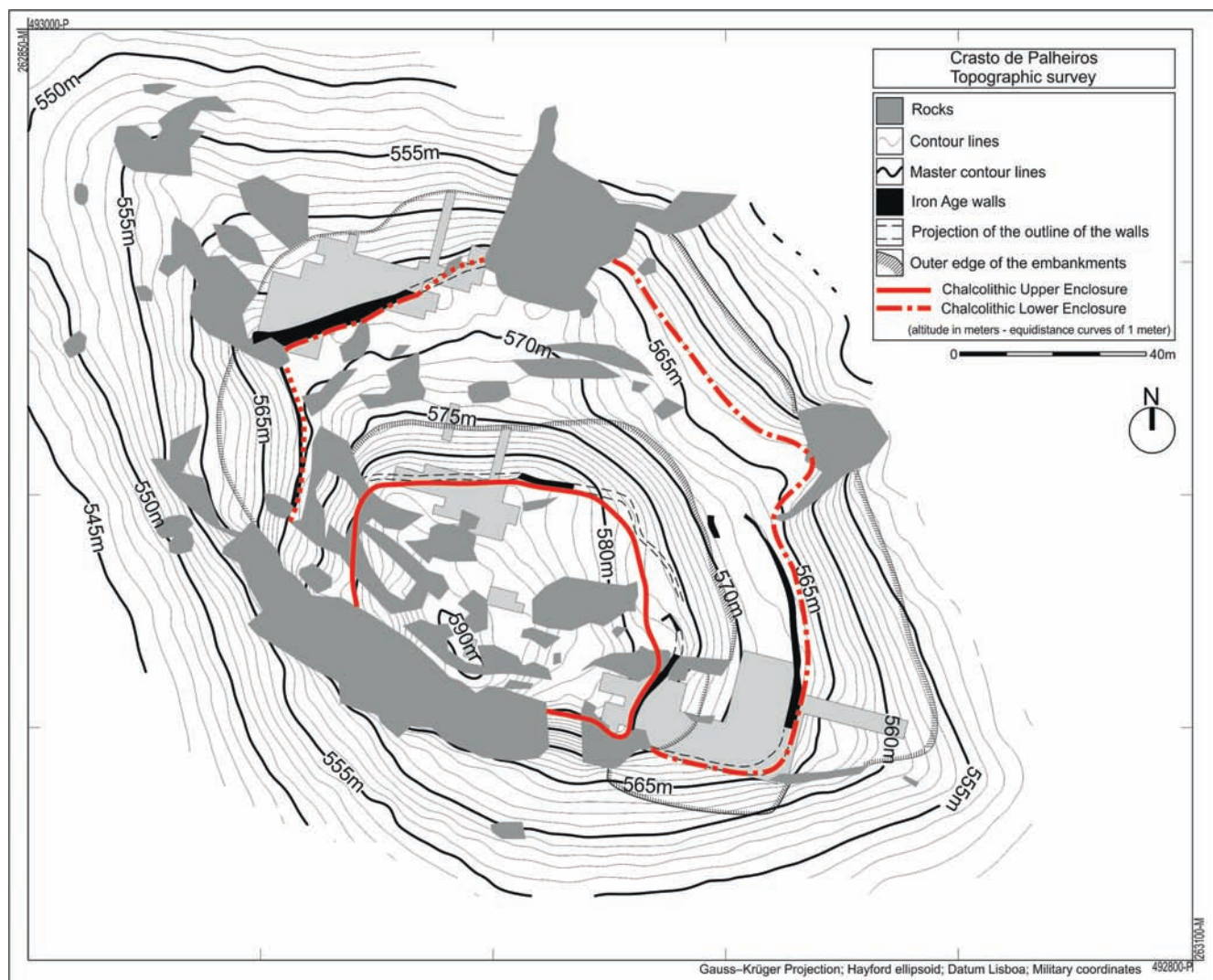


Fig. 22.6 Crasto de Palheiros topographic survey where we simultaneously mark its D-shaped plan, integrating its highest rocky cliff (590 m). The Upper and Lower Enclosures, bounded by embankments surmounted by walls, are marked in red. The excavated area is marked in light grey.

of the slopes. In summary, both Enclosures are defined by imposing and inclined stone embankments on which a wall was superimposed. Sometimes this wall had a stone base and its 'body' (main elevation) was made of perishable materials and, possibly, rammed earth. The enclosed space is particularly irregular, consisting of small platforms – the majority created artificially – adjacent to outcrops and separated from each other by sloping spaces. It appears that intensive, but very diversified, constructive and occupational activity was developed both on the platforms and at the top of the embankments. The archaeological evidence suggests that these were activities that included the deposition of artefacts and the intentional sealing of little structures and platforms.

In addition to the initial Neolithic/Chalcolithic occupation, the site was also an Iron Age settlement, with this later occupation transforming some of its earlier features, particularly the intentional sealing of the site with slabs and clayed earth, which took place during the 3rd millennium BC. As such, it is not possible to assess whether the intentional closure took place throughout the whole site or if it was restricted to precise, but still enlarged areas.

Nevertheless, the intentional sealing/condemnation of the site – made through a strong carapace of stone blocs and archaeological materials (stone artefacts, ceramics and animal bones) – is part of the actual occupation as it occurs in the Upper Enclosure from a very early date (about 2600 BC) (Sanches and Pinto 2008; Sanches 2016a; Sanches and Barbosa 2018; and ^{14}C dates not yet published). Additionally, this condemnation continues in other parts of the site until its abandonment around 2200 BC.

It is difficult to establish a linear chronology of the construction/occupation of the Crasto since the excavations show evidence that different spaces were occupied at different chronological times, particularly in the lower areas (Lower Enclosure). In any case, the monumentalisation itself had begun with the construction of the Upper Enclosure, around 2900/2800 BC (Fig. 22.7), and between approximately 2700 and 2600/2500 BC, sections of the Outer Embankment were still in construction, culminating – as a general plan – in the Lower Enclosure. Even so, the Outer Embankment is worth mentioning as well since it was enlarged in some areas around 2500 BC, and, probably at

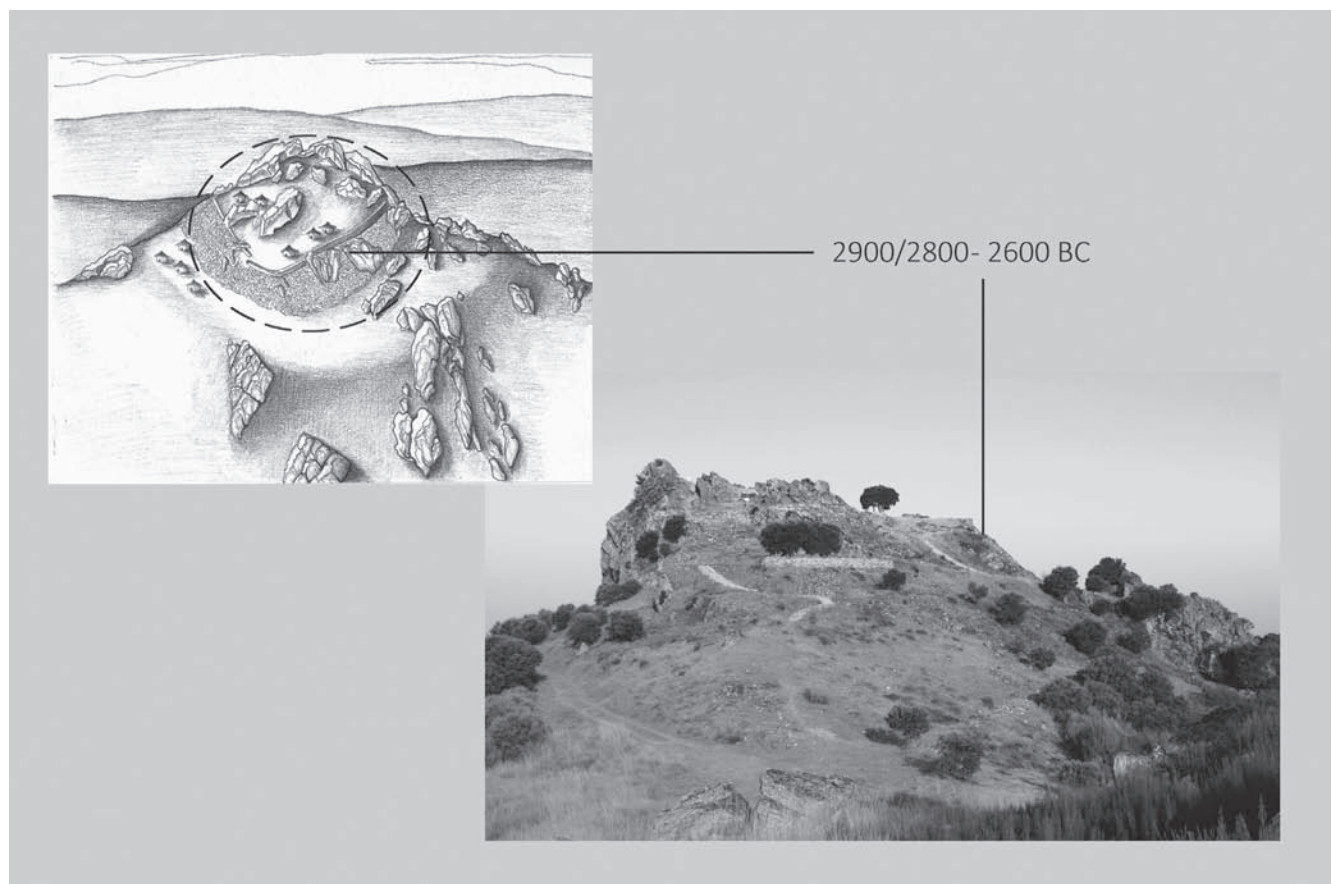


Fig. 22.7 Crasto de Palheiros in its first constructive 'phase', in a very schematic representation, being of note the Upper Enclosure/'Acropolis' created through an outstanding embankment. The vertical walls seen on the photo belong to the Iron Age occupation, and the pathways over the embankments are related to the site musealisation.

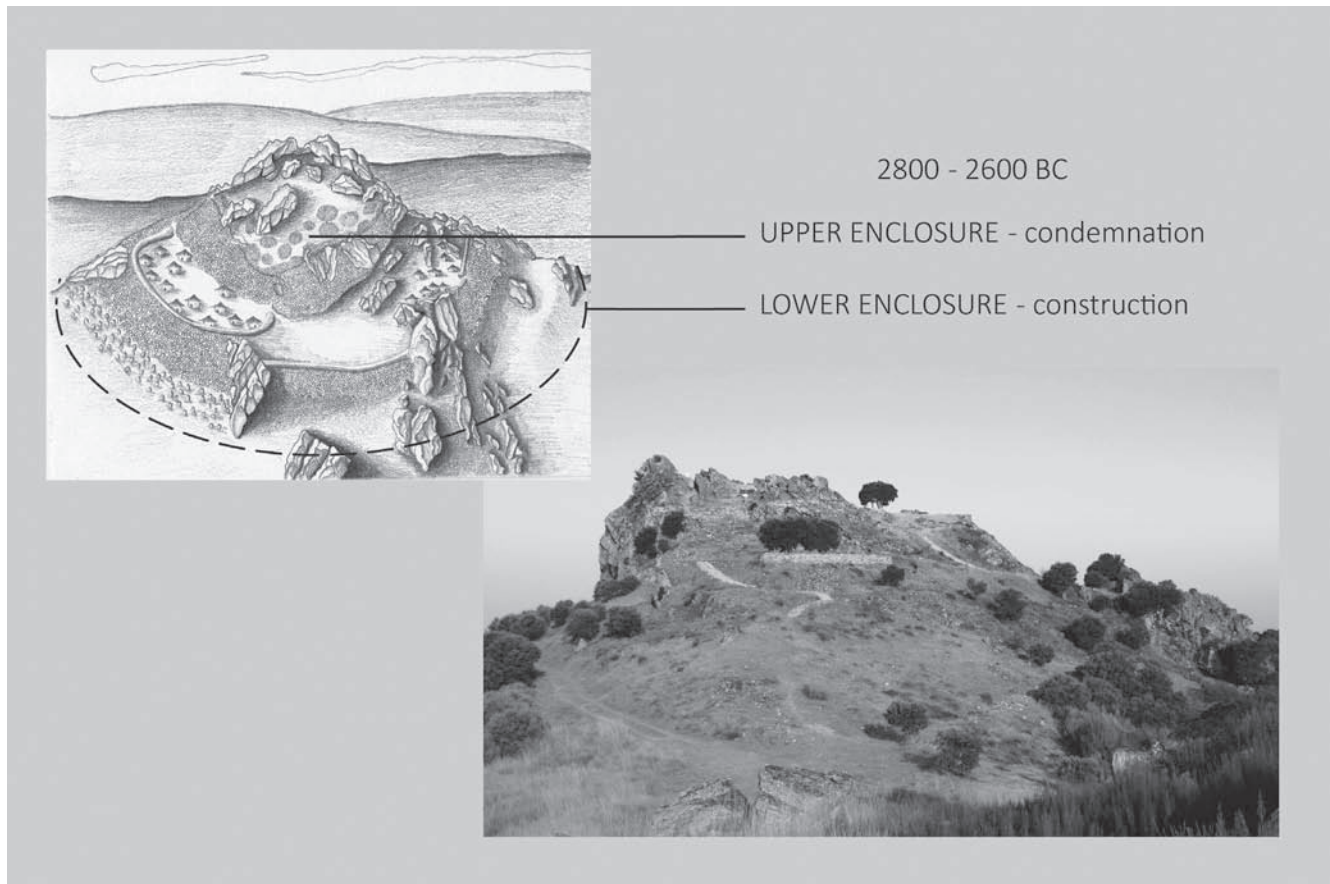


Fig. 22.8 Crasto de Palheiros in its second constructive 'phase', in a very schematic representation. We highlight the Outer Embankment's construction and its widening mainly through its external facade, and also the Upper Enclosure's carapace condemnation. The wall/precinct seen on the left end of the sketch belongs to the Iron Age, but it roughly conformed to the layout of the Chalcolithic ones.

the same time, it was architecturally bounded at its base by a facade of upright medium size stones in its eastern zone and by large, 'megalithic' quartzite blocks in its northern zone (Fig. 22.8). The available radiocarbon dating evidence suggests the abandonment of the Crasto c. 2300/2200 BC, but we are convinced that the future excavation of new areas will reveal that it will not exceed the end of the 3rd millennium BC, even though it may refine the specific chronology of particular areas. Crasto's monumentalised hill would, thus, have had a duration of about six to eight centuries.

In Crasto de Palheiros, the scale of the constructions and their formal and constructive similarities reflect megalithic monuments of this region. Besides the above-mentioned facade, the stone embankments formally and technically reproduce the burial mounds found in the region, which are dated from the 4th and first half of the 3rd millennium BC.

Discussion

Concerning the chronology, both sites are occupied at the same time, during the 3rd millennium BC.³ The occupation

of Crasto is relatively short (six to eight centuries), when compared to Castanheiro (about 13 centuries), the latter ending in the middle of the 2nd millennium BC (Middle Bronze Age). Nevertheless, in both sites it is the occupation of the 3rd millennium BC that gives them the peculiar architectural character described here, conferring them both the centralising and aggregating role of the settlement in the two sub-regions under analysis. However, a long occupation of at least six to eight centuries appeals to multifaceted practices and diverse social settings (Jorge 2003, 104), as it will occur in other, but rare long duration monumentalised hills of the Portuguese Estremadura, and of Castelo Velho de Freixo de Numão (Jorge 2005), this one located nearby Castanheiro do Vento. In sum, the idiosyncrasy of the sites must be highlighted if we do not want to just submit their 'function' to general explanations, which create distant and homogeneous narratives that submerge the richness of the peculiar historical processes.

For a better understanding of the possible relationships between the two sites, a synthesis of the similarities and differences of Castanheiro do Vento and Crasto de Palheiros

is presented (Table 22.1), reminding us that these two ‘neighbouring’ monumentalised hills are only 38 km apart. Twenty-one characteristics were considered, and while both sites share the majority of them, the differences are equally important. There are some relevant items for which we do not have enough archaeological information that allow us to make an adequate comparison and some of them could not be expressed in the table. We would like to stress, as common devices, (1) the creation and continuous alteration of restricted spaces, denouncing a fragmentation and transformation of the place over time; (2) the seasonality/cyclicity of the constructions, given the substantive use of clayed earth, and (3) the seasonal use of the sites, it having been possibly scheduled. It is possible that a small contingent of people may have dwelt throughout the year in the sites in order to keep them occupied, or simply to maintain them.⁴ Likewise, we emphasise the remains of multiple activities, many of which seem to support commensality practices, especially the consumption of pork/wild boar and cattle in Castanheiro

(Soares 2019) and cattle in Crasto (Sanches 2016a). It is worth noting here that the study of the ecosystems’ potential for husbandry around both sites allows for the existence of cattle albeit with severe restrictions; it is suitable, however, for the subsistence of the remaining consumed animals (goat, sheep, pig/boar, horse and deer)⁵ (Sanches 2016a; Soares 2019). Thus, the systematic consumption of these animals, cattle and wild boar, would require a socially and culturally directed economic effort given its consumption in exceptional circumstances. It also suggests particular negotiations among the people who inhabited the territory and used other walled enclosures and open-air settlements – in the case of Castanheiro – or only open-air settlements – in the case of Crasto. Nevertheless, we must be cautious about the relationship of a single site with the surrounding territory, and the relationship between humans, plants and animals, which cannot be interpreted strictly from an economic perspective. More excavations and related multidisciplinary research are needed in both sub-regions.

Table 22.1 Similarities and differences between Castanheiro do Vento and Crasto de Palheiros.

<i>Similarities between the two monumentalised hills – architecture and practices</i>	<i>Castanheiro do Vento</i>	<i>Crasto de Palheiros</i>
Seasonal construction (extensive use of clay in Mediterranean climate)	X	X
Enclosures globally concentric in form	X	X
Formalised architectures (use of partial ‘layout’ plan: sum of segments and semi-circles)	X	–
Narrow entrances/passages	X	X
Buildings (walls /embankments) and outcrops occupy between 60 and 80% of the space	X	X
Large circular structures in the organisation of the inner space	X	–
Creation and continuous transformation of restricted spaces	X	X
Exclusive use of local raw materials in construction	X	X
Use of ceramic fragments, hammer stones, etc. as ‘building materials’	X	X
Presence/absence of artefacts and assemblages that do not indicate everyday use	X	X
Intra-site areas with distinct purposes (but in continuous alteration)	X	X
Extensive closure/sealing (closed areas in distinctive times)	?	X
Consumption of domesticated animals (cattle, sheep, goats, pig)	X	X
Consumption of wild animals and fish (cervidae, horse)	X	?
Consumption of cereals (wheat, barley, broad beans, lentils)	?	X
Deposition of ‘small objects’ (pottery, quern stones, axes, etc.) inside niches or small structures	X	X
Deposition of fragmented ceramic pots and bovine remains in intentionally destroyed structures	X	X
Rare copper objects	X	X
Ceramic: dominance of decorated pots (up to 60–70%)	–	X
Ceramic: presence of Bell Beaker decoration	X	X
Ceramic: use of Bell Beaker to clearly distinguish spatial areas	?	X

Significant differences reside (1) in the general plan of the sites themselves (although the construction in both was additive), (2) in the plan of the circular structures in between walls, these ones being more expressive and larger in Castanheiro, and (3) in the excessively high consumption of pork/wild boar in Castanheiro. Thus, the presence of shared features between both sites can be interpreted as being characteristic of the general social behaviour of the communities of that enlarged Douro region in the 3rd millennium BC. Nevertheless, different cultural systems based on a long tradition of occupation of each area – which are expressed in some differences that we already pointed out, and others that we will talk about next – draw our attention to the weight of what we can enclose as a broad term ideology.

Cumulatively, we consider that in both neighbouring sub-regions there have been specific cosmologies and agencies that both relate to distinctive ways of managing the territory and the communities' affairs, and reflect idiosyncrasies engaged in expressing particular identities. This leads to our concept of ideology. The use of peculiar ceramic decoration in distinguishing 'functional' areas, particularly Bell Beaker decoration (Sanches and Barbosa 2018), the excessive use of ceramic decoration in Crasto (Perez 2018), or the excessive consumption of pork/wild boar in Castanheiro (Soares 2019), can be interpreted in the same way. Castanheiro's regional cosmologies and agencies (of which the excessive consumption of boar/pig might be evidence) can be compared to those of the Crasto sub-region if we consider the probable consumption, but deliberate destruction and sealing, of the nearby painted Buraco da Pala rock shelter (in Passos Mountain) – a huge burned granary that contained wheat, barley, fava-beans, acorns, poppies and a great quantity of ceramic vessels (Sanches 1997; 2016b).

Other extremely significant discrepancies are directed to the temporal and spatial relationship that both monumentalised hills establish with the surrounding landscape and with its monumentalisation. Crasto de Palheiros is part of the regional prehistoric settlement tradition rooted in the 5th and 4th millennium BC (Sanches and Nunes 2005), whether we consider not only its specific architecture – whose embankments mimic the barrows, and where the facades assume a megalithic character – but also its practices of deposition and deliberate condemnation as well as the characteristics of the artefacts, particularly the ceramic decoration. If the occupation of the territory of the 4th millennium BC, mainly materialised in 12 megalithic necropolises of barrows and dolmens, seems to be polarised by the Passos Mountain (Teixeira 2017); the geological feature that assumes territorial centrality in this region in the 3rd millennium BC is the Crasto, even if it shares this aggregating role with the Passos Mountain where there are painted rock-shelters of a similar date (Sanches 2002; 2016b).

The centrality of Crasto is reflected by the presence of 15 open-air settlements (Sanches 1997; Teixeira 2017) characterised by perishable dwelling structures, located in the site's surrounding territory spanning from 4 to 15 km away from it (1 to 4 hours walking distance). Most of them, 12 settlements, are between 4 to 10 km away (1 to 2–3 hours), the same distance from the painted rock-shelters of Passos Mountain. This reorganisation role is also revealed by the inclusion, in continuity, of 15 megalithic necropolises located within a similar 15 km radius. As with the open-air settlements, the megalithic/barrow sites are located beyond 5 km from Crasto, creating a significant spatial 'void' around it.

At Castanheiro, the monumentalisation of the site, or better said, the hill, and the monumentalisation of the landscape, are coincidental. Its surrounding territory during the 4th millennium BC is almost archaeologically invisible, although human occupation has been documented regionally from the Upper Palaeolithic and with apparent continuity in the following millennia, based on the excavation in the archaeological site of Prazo, located about 7 km away from Castanheiro (Monteiro-Rodrigues 2011; 2012). We would also like to point out that Castanheiro is 18 km away from the Côa Valley, occupied from the Upper Palaeolithic up to the Neolithic/Chalcolithic, with this continuity evidenced primarily through a significant set of engravings and some paintings (Luís 2009; Aubry *et al.* 2018; Santos *et al.* 2018). It is worth mentioning here that, in Castanheiro's entrance P2 (Cardoso 2007, 288; Vale 2011, 55), blocks recorded with the denominated 'devil claw' were used, that are regionally dated from the Epipalaeolithic-Mesolithic (between approximately the 12th and 7th millennium BC) (Sanches and Teixeira 2013; 2017). The movement of the people of Castanheiro through this extended territory and the deliberate transport of these blocks to the site – once detached from their respective outcrops – attests, once more, to the close relationship with the surrounding territory and with its 'memories', certainly recreated, in this case, over more than six–eight millennia of occupation during the late Pleistocene and Holocene. Additionally, in between the 12 to 15 km of the west-northwest arc of Castanheiro, the megalithic nuclei of Areita and Senhora do Vencimento (São João da Pesqueira), datable from the 5th–4th millennium BC, can be found (Heitor 2002). However, Castanheiro do Vento does not have any visual relation with these barrows/megalithic monuments.

Thus, sites located in prominent places in the landscape, bearing dominating views of their surroundings and displaying stone base structures start to occur at the beginning of the 3rd millennium BC. Regionally, the monumentalisation of the landscape as a continuous practice took place throughout the 3rd millennium BC and was made visible through the construction of walled enclosures. Two walled enclosures were situated less than 5 km apart from Castanheiro

(Cardoso 2007). Another intensively studied walled enclosure of Castelo Velho de Freixo de Numão (Jorge 2005), also interpreted as a monumentalised hill, was located at a distance of only 11 km from Castanheiro.

Conclusions

Hence, we interpret that in the 3rd millennium BC, Crasto, as an impressive monumentalised hill, would be, contrary to Castanheiro do Vento and to its sub-region, the main site of this kind with global aggregating functions. Several nearby located schematic painting rock shelters (in Passos Mountain) and in particular the Buraco da Pala rock shelter – where practices of deposition and destruction of products from agriculture and harvesting have occurred – surely shared several social practices with Crasto, having been possibly cyclical or scheduled (Sanches 2016a; Sanches and Barbosa 2018). The megalithic tradition emerging from the end of the 5th and all of the 4th millennium BC, despite being maintained, slowed down. In fact, some barrows and megalithic monuments were still being constructed and used during the 3rd millennium BC. Nevertheless, Crasto de Palheiros clearly manifests the social changes that occurred regionally during all of the 3rd millennium BC. Castanheiro do Vento seems to be part of a movement of monumentalisation of the landscape that began in the first half of the 3rd millennium BC, and shared the landscape with other monumentalised hills (such as Castelo Velho de Freixo de Numão), apparently breaking off with the 4th-millennium BC traditions in the way the landscape was inhabited and perceived.

Castanheiro do Vento and Crasto de Palheiros, although revealing particular stories of monumentalisation interconnected with the genealogy of their territories/landscapes, are part of the establishment of the agro-pastoral system during the 3rd millennium BC. This is inferred by the archaeological evidence of various crops and domestic animals, although hunter-gathering was still very important as shown by the presence of boar, horse and deer in Castanheiro do Vento and acorns in Crasto de Palheiros (and Buraco da Pala). In spite of the particularities and specificities of their ground plan, there are broad similarities in the construction and use of these sites, perceptible, for example, by (1) the construction of spaces, of a concentric tendency, integrating the top of the hills, visible over long distances and with great visibility over the environment; (2) by both the seasonality of construction and use; (3) by the complex organisation of the internal space, including several intentional depositions of different things that could have been part of the daily life of the communities but that by their mutual relation and disposition become special; and (4) by the consumption of certain animal species in exceptional social contexts.

In fact, the construction and use of these spaces emerges from different traditions and relates to different sites, nevertheless they are part of the same historical

process of monumentalisation of the landscape, identifiable throughout the whole Iberian Peninsula during the 3rd millennium BC.

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Notes

- 1 Castanheiro do Vento has been under excavation since 1998. At the moment, the research project is coordinated by João Muralha Cardoso, Ana Vale, Sérgio Gomes and Vítor Oliveira Jorge
- 2 Although only sustained by one carbon date with a large margin of error, the ancient chronology could also be supported by the typology of the ceramic decoration found at the site, which is associated with the regional Late Neolithic (Muralha *et al.*, 2019, 42).
- 3 In this chapter we will not discuss the terminological terms of Chalcolithic and Neolithic, having adopted in the title the most current terminological term in Europe. However, in the Iberian Peninsula the 3rd millennium BC is, by research tradition, considered as Chalcolithic.
- 4 The seasonal or cyclical occupation, scheduled or otherwise, of both monumentalised hills is derived mainly from the absence of artefacts linked to the routine practices of these farming and pastoralist communities, and which are usually recovered in other types of regional settlements. The smallness of the built-in spaces, particularly in Crasto de Palheiros, would not allow the development of routine life either.
- 5 Deer and horse consumption has only been recorded in Castanheiro. However, the local ecosystem presents restrictions for the maintenance of horses (both wild or domestic).

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The Neolithic roundel and its social context on the furthest reaches of the Danubian World

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Abstract

Roundels represent the oldest monumental structures in Europe and served as places of meetings and rituals of communal character. They began to be constructed around 4850 cal BC and spread very quickly across almost all of the ‘Danubian World’. This paper discusses a roundel at Nowe Objezierze, located in the lower Oder River area (Poland). The social and historical context of this roundel was fundamentally different when compared to similar structures assigned to the Lengyel culture in Hungary, Slovakia and Austria, as well as in the Stroked Band Pottery culture (SBK) in Lower Silesia, Czech and Saxony, where the settlements were long-lasting, intense and continuous. Although the roundel at Nowe Objezierze dates to a similar period as the other structures, it was built in a region where it represented the arrival of new settlers (SBK) emerging after the decline of Linear Band Ceramic culture (LBK). The roundel was used alongside quite numerous, but small and short-lived hamlets. This paper sheds new light on the role of roundels in building social ties that had been broken with the LBK decline.

Introduction

The construction of roundels began suddenly around c. 4850 cal BC when they appear within a short period of time in western Hungary, through Slovakia, the Czech Republic, Moravia, Silesia and Austria to the Rhineland and Westphalia, as well as Pomerania and Pałuki in Poland. The roundels remained in use for only 200–300 years when their construction abruptly stopped, almost as suddenly as it commenced. Pásztor *et al.* (2015, 1325) summarised the

morphology of roundels (or rondels) as terms that refer to Neolithic circular ditch systems that comprise of a ‘round ... ground plan; 1–3 ditches with V-shaped cross section; sometimes ramparts; more or less empty inner space; and gates, or causeways, crossing over ditches’. They go on to interpret the sites as a form of ‘causewayed enclosure, [that] as a common sacral/communal place belonging to several settlements, might have signified cosmological symbolism for the communities’.

Despite their broad appeal, our knowledge of roundels is largely superficial, particularly given the wide range of analytical methods currently available to archaeologists. To some extent this is due to the fact that research into roundels – which began in 1967 with Vladimír Podborský’s excavations at Těšetice, Moravia (Podborský 1988; Kovárník *et al.* 2006) – reached its peak in the 1970s and 1980s, when research questions were led by the culture-historical approach to archaeology and simply interested in categorising the monuments. It was during this period that excavations were carried out at well-known sites such as Svodin and Bučany in Slovakia (Němejcová-Pavúková 1995) and Friebritz and Kamegg in Lower Austria (Trnka 1991). The present-day interpretations regarding roundels range from intense discussions on the origins and dating of these structures on one hand, to a methodological perspective and fairly loose speculations about their ‘astronomical’, religious, economic and social function (Makkay 1990; Petrasch 1990; for a full overview see Podborský 1999). This general ritualistic perspective has dissuaded many archaeologists from further excavations at roundel sites.

Currently nearly 150 roundels are known. In Poland at least three roundels have been identified to date at the

following sites: Wenecja in the Pałuki region (investigated by aerial photography, geophysical surveys; not fully published), Bodzów in the Lubusz Land (aerial photography, geophysical surveys, excavation) (Kobyliński *et al.* 2012) and Nowe Objezierze in western Pomerania (aerial photography, geophysical surveys, excavation).

The roundel at Nowe Objezierze (Moryń Comm., site 22) (Fig. 23.1) is a monumental, circular structure with an outer diameter of c. 108 m. It consists of four concentric ditches (each around 2 m deep and of characteristic V-shaped section) separated by earthen banks, that are now completely levelled. Three concentric palisades stood within the circuit of ditches, and three symmetrically located entrances ('gates') provided access to the enclosure's interior. The central space, of around 64 m in diameter, does not contain any evidence of built structures (Fig. 23.2). The architecture of this roundel does not differ significantly from

other roundels, either in form and construction, or in terms of the estimated effort and time of its initial construction. Just as roundels from the neighbouring areas of the Oder and Elbe basins, it was built by the community of Stroked Band Pottery culture (SBK), however, it was constructed on the northern periphery of the 'Danubian World' in a different social and historical context. Therefore, it is an interesting case study that contributes to the discussion of both the function of this structure as well as social processes that took place at the beginning of the 5th millennium cal BC in Europe.

The SBK communities that dominated the Central European Lowlands during a period of c. 600 years, were represented by numerous small, short-lived and strongly scattered hamlets. These hamlets were mostly characterised by pit-houses as post frame dwellings were rather rare (see Czerniak 2007; Czerniak and Pyzel 2019). In comparison to

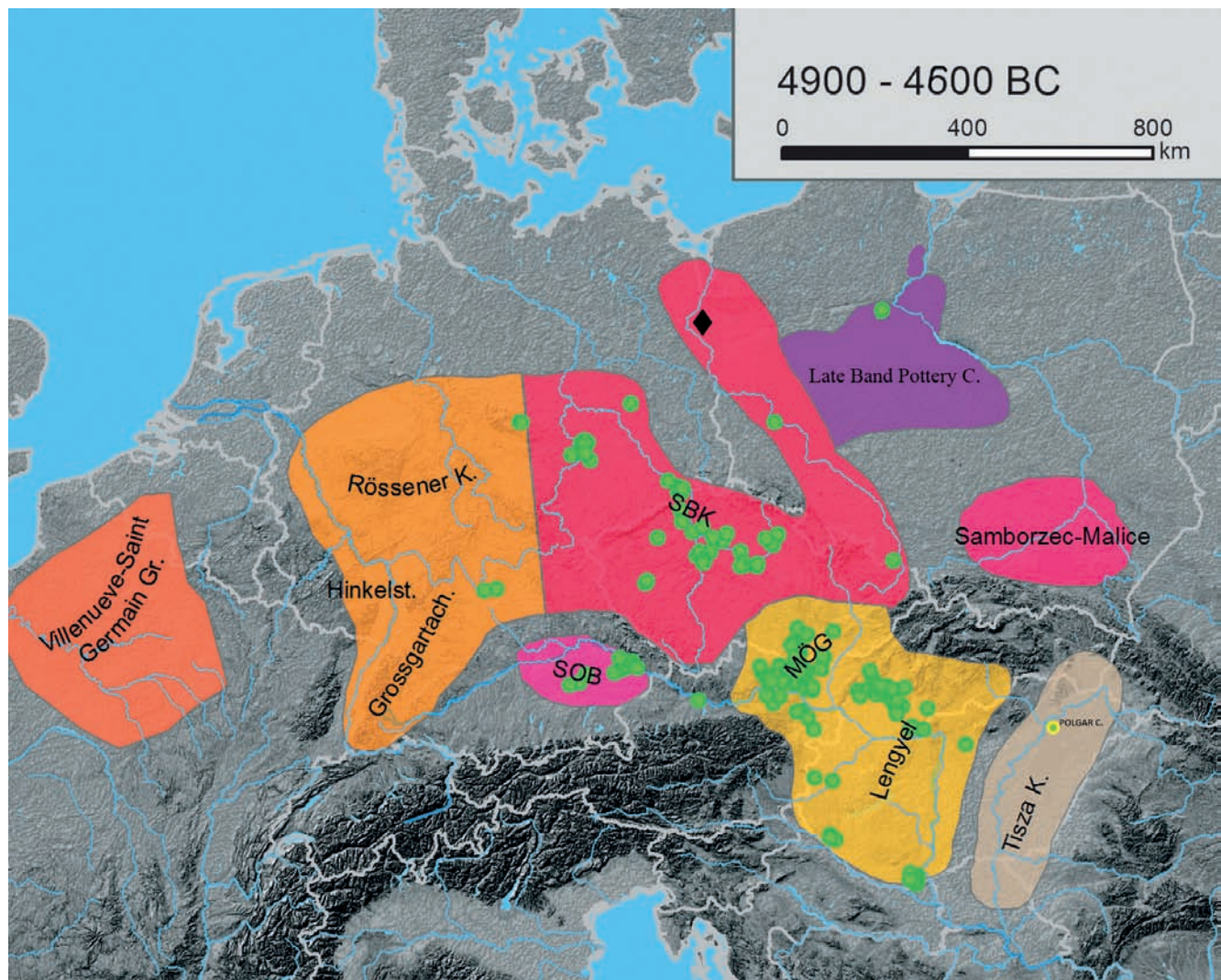


Fig. 23.1 Spread of post-LBK cultures (4900–4500 cal BC). Green dots designate the distribution of roundels. Roundel at Nowe Objezierze is marked by black diamond (after Řídký *et al.* 2015 with modifications by authors of the paper).

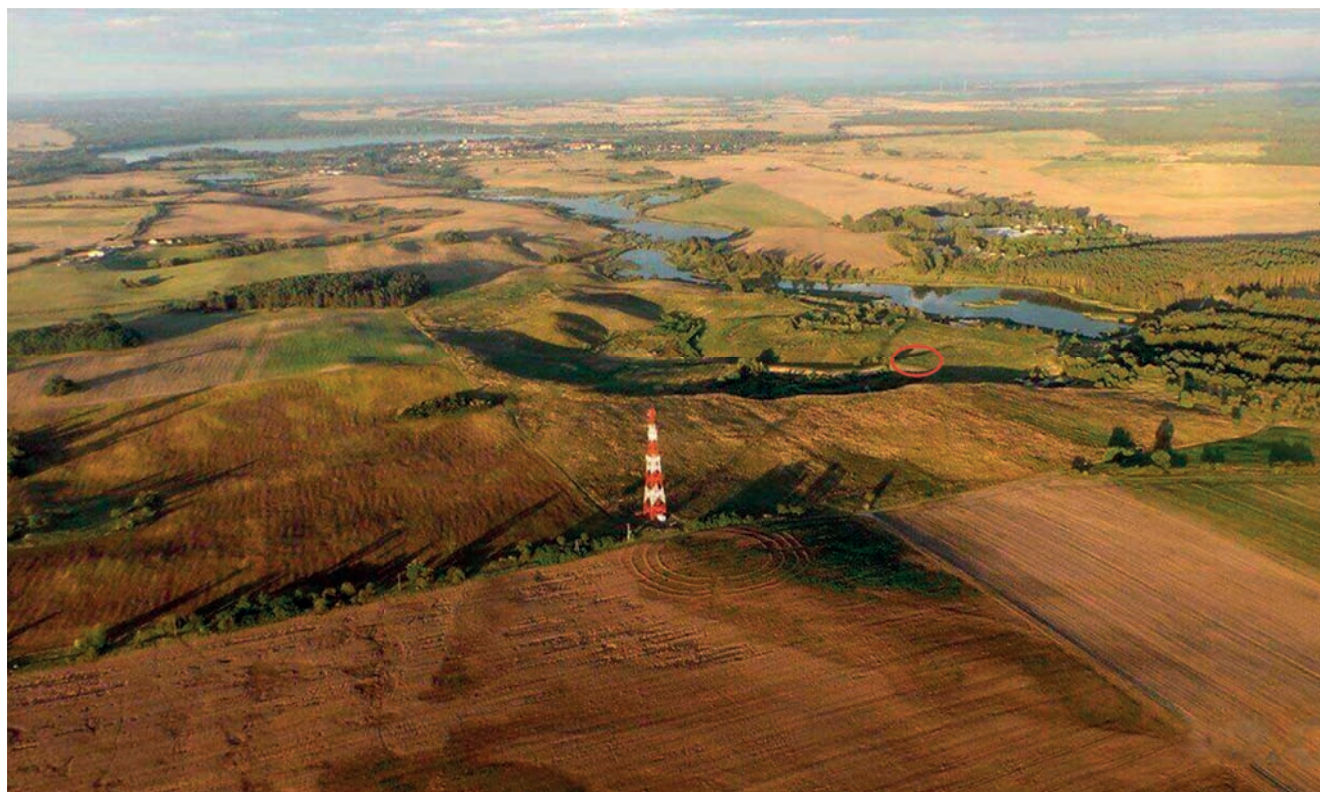


Fig. 23.2 The aerial photo of the roundel at Nowe Objezierze (site 22) and location of the contemporary SBK settlement (site 7 – marked as red ring).

the previous robust LBK villages, such settlements seemed to suggest a much smaller population and long-term social crises. However, the discovery of the roundel at Nowe Objezierze radically changes this assessment and demonstrates that these communities were connected with strong ties allowing them to carry out complex undertakings. Thus, we suggest that the change in relationship from the LBK to the SBK mainly consisted of a different settlement pattern and organisation, rather than an economic and social change. Furthermore, it allows us to suggest that the roundel replaced some of the important social functions that previously were attributed to LBK villages.

It is not clear whether the builders of the roundel were descendants of the local LBK or arrived in the Lowlands as colonisers from the south. There is insufficient data to assess changes in settlement occupation both in terms of pollen records and detailed radiometric dating, although we hope to address this within our research project. Nevertheless, we understand that there must have been a network of contacts from this area with SBK communities from Lower Silesia, the Czech Republic and the central area of Elbe (Saale), as shown by similar pottery assemblages and the use of raw stone materials in the material record. Interestingly, the roundel was constructed a few kilometres from the place where the prehistoric Oder river crossing was located. This crossing enabled access

to important waterways, namely the Warta and Noteć rivers, leading to the eastern part of the Central European Lowlands.

The aim of this paper is to present the preliminary results of our research and excavations that hopefully allow us to determine how the institution embodied by the construction of roundels operated. We would like to suggest that the construction of roundels did not only – as is widely believed – reflect exceptional advances in Neolithic knowledge like measurement of time, astronomical observations, but was first and foremost related to the emergence of a new social institution. Through communal celebrations and reference to cosmic powers, this institution helped overcome the issues related to social and ideological changes accompanying the disintegration of the earliest farming societies – the LBK – at the beginning of the 5th millennium cal BC in central Europe.

The oldest Neolithic monumental architecture?

Roundels are an example of the oldest monumental architecture in Europe. These structures appeared at a very specific moment in time – shortly after the collapse of LBK, as well as in a unique place – the LBK culture formation area. However, while the LBK spread further to the west, the distribution of roundels did not extend

beyond the Rhine river. At this time, the area west of the Rhine river can be clearly distinguished as a separate part of the 'Danubian Neolithic', because of interaction with the 'Atlantic Neolithic' communities. This is significant in regard to changes that characterise the beginning of the 5th millennium cal BC. Roundels had a unique character distinct from the causewayed enclosures of the LBK or the 'Danubian Neolithic'. According to Jeunesse (2019), the 'Danubian Neolithic' remained integral until the end. In addition to their graves and the organisation of settlements, the 'Danubian Neolithic' can be characterised through causewayed enclosures with 'pseudo-ditches' of the 'Balloy type', known from the area stretching from Paris Basin to Lesser Poland. The role of these enclosures was very important with evident links to the LBK, but also continuing as a part of Michelsberg culture and Funnel Beaker culture. Yet, causewayed enclosures with pseudo-ditches were quite rare in the first half of 5th millennium, perhaps because they were the legacy of LBK. In contrast, roundels appeared suddenly and were used only for about 300 years perhaps because they met new social needs.

Against the wider question of why monumental architecture became an integral part of early Neolithic societies in Europe, it is important to consider monuments and structures other than simply the potential monuments in the 'Danubian Neolithic' of roundels and causewayed enclosures with pseudo-ditches. The long houses of the LBK, and particularly houses that stand out due to their extremely large size, complex construction and, in some cases, central location, cannot be ignored (see Hofman and Lenneis 2017; Czerniak 2018). For example, as part of the Brześć Kujawski culture, dated to the last three centuries of the 5th millennium cal BC in Kujawy, Central Poland, remnants of long houses from the older LBK settlements were interpreted as monuments and used as ritual places and burial structures (Pyzel 2018; Czerniak and Pyzel in press). The number and variety of these structures suggest that cyclical reintegration of the community by referring to shared memory including the creation of objects of memory, feasting and rituals dedicated to ancestors, was a common phenomenon. In addition, the reintegration processes seem to have operated at various scales, from items and structures belonging to multi-family households (in 'Danubian Neolithic', probably in the type of 'house societies') to features constructed by villages, territorial and religious communities (e.g. sodalities).

However, monumental architecture (as defined by Furholt and Müller 2011; Raczky 2018) and communal feasting were not always linked together. At Çatalhöyük some of the paintings, in particular the famous 'Hunting scene' (Mellaart 1967), leave little doubt that a community of up to 2,000–3,000 people practiced communal rituals, shared feasts and collectively worshiped their ancestors. Although 'history houses' played an important role in

shaping and building up local identity by referring to the memory of communities of extended households, there were no communal structures at Çatalhöyük. Most likely these activities were situated outside the settlement and involved structures that did not leave permanent traces (Hodder 2013). Other sites have a monumental character like the tell at Polgár-Csőszhalom (eastern Hungary), where circular ditches with a roundel shaped plan created a contrast between the mound and the surrounding settlement (Raczky 2018). However, it is unclear whether tell settlements in general had a monumental character while they were in use. Some sites may have taken on a special meaning after the settlements were abandoned, like at Uivar where a Tiszapolgar grave was placed within the older tell (Schier 2013).

Thus, it is difficult to substantiate the hypothesis that emergence of monumental architecture was associated with social phenomena such as communal feasting, integrating rites as well as storing and displaying memory. On the other hand, why did some communities and not others invest in the tremendous effort of constructing and constantly renewing monumental structures dedicated to these purposes?

The roundel at Nowe Objezierze and its context

Although relatively numerous LBK and SBK sites (including those of the Rössen culture) are marked on the published maps of the Danubian Neolithic habitation in the lower Oder valley in Poland, the impression of a high density of settlements is somewhat illusive (Cziesla 2008; Terberger and Kabaciński 2010; Bigos 2014; Dziewanowski 2016 for a summary of research on this issue). The region is poorly investigated, and it is uncertain what kinds of past human activity was related to sites where perhaps only single potsherds or stone tools were found. The few rescue excavations that have taken place (e.g. Kowalski 2003; Cziesla 2008; Dziewanowski 2016) suggest that both the Pyrzyce area and larger enclaves with fertile soils west of Szczecin were places of intense settlement, at least from the classical LBK phase to the middle of the 5th millennium BC. The remaining areas of the Oder river basin, characterised by small and dispersed enclaves of good soils, were also inhabited, but – as it seems – mainly in the times of SBK.

A settlement contemporaneous with the roundel (Nowe Objezierze, site 7) was located around 300 m southeast of the roundel and has provided evidence on the context of human habitation and subsistence in which the roundel existed. The settlement, that was mostly destroyed, was partly investigated in the 1990s by a rescue excavation carried out at an extensive gravel quarry. A single piece of LBK pottery and one SBK pit were documented within the site; the rich content of the pit may indicate a location close to a residential building (Fig. 23.3).

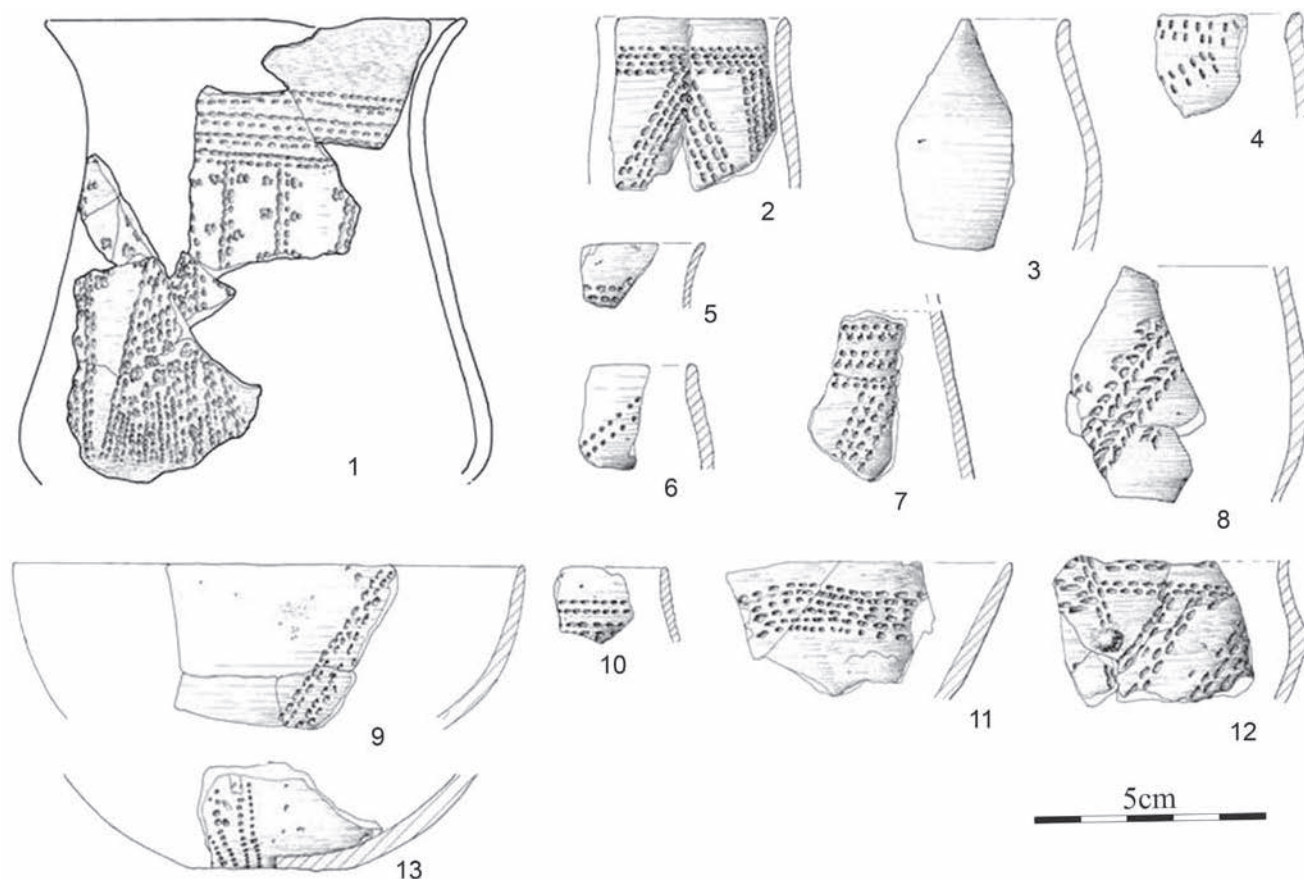


Fig. 23.3 Nowe Objezierze, site 7. Selection of SBK pottery from the settlement located next to the roundel.

Preliminary excavation results

The roundel at Nowe Objezierze was discovered by chance in 2015 by a local paragliding pilot, who took the first aerial shots of the structure. Quite independently, the roundel was also spotted in June 2016 by Marcin Dziewanowski in a satellite image in Google Maps.

The plan of the roundel based on the aerial photography and geophysical survey shows the excavation areas from 2017 and 2018 (20 × 60 m) (Fig. 23.4). The excavations were focused near the 'gates', where the highest levels of ritual activity presumably took place. The first trench covering 370 m² was excavated with the aim of exposing the north 'gate', encompassing all four ditches and palisades, and assessing the state of preservation of the structure at a point where it is truncated by a road. This field work provided information about the size of the ditches, their cross-sections and stratigraphy. The ditches were 1.6–1.9 m deep and V-shaped in section, as is characteristic of roundels. The remains of three internal palisades and a wooden structure associated with the gate were also recorded (Fig. 23.5).

Well-preserved animal bones, potsherds and stone and flint tools were found in the fill of the ditches. The

excavations in the second trench were focused on the identification of the south-eastern 'gate' to show the results of previous observations in regard to the ditch's cross-sections, renovation works and the complex structure of the palisades at the place where they met the 'gate'. The full volume of the fill of documented features was dry sieved. In addition, samples were collected for flotation. In comparison to similar structures from other regions, only a small number of finds was recovered in association with the roundel usage. In total, 380 potsherds, 287 flint objects, 3 fragments of stone tools and about 40 highly fragmented animal bones have been collected and recorded over two seasons of excavations. In spite of flotation there is a puzzling lack of charcoals, that would be expected in the ditches if fires were located nearby. On the other hand, the aforementioned artefacts, animal bones in particular with cattle as the dominant species, leave no doubt that meals were prepared and consumed inside the roundel before being partly deliberately deposited in the trenches.

A preliminary study of the pottery suggests that this structure can be dated back to SBK phase IVa, hence it is contemporary with the roundels noted along the Middle

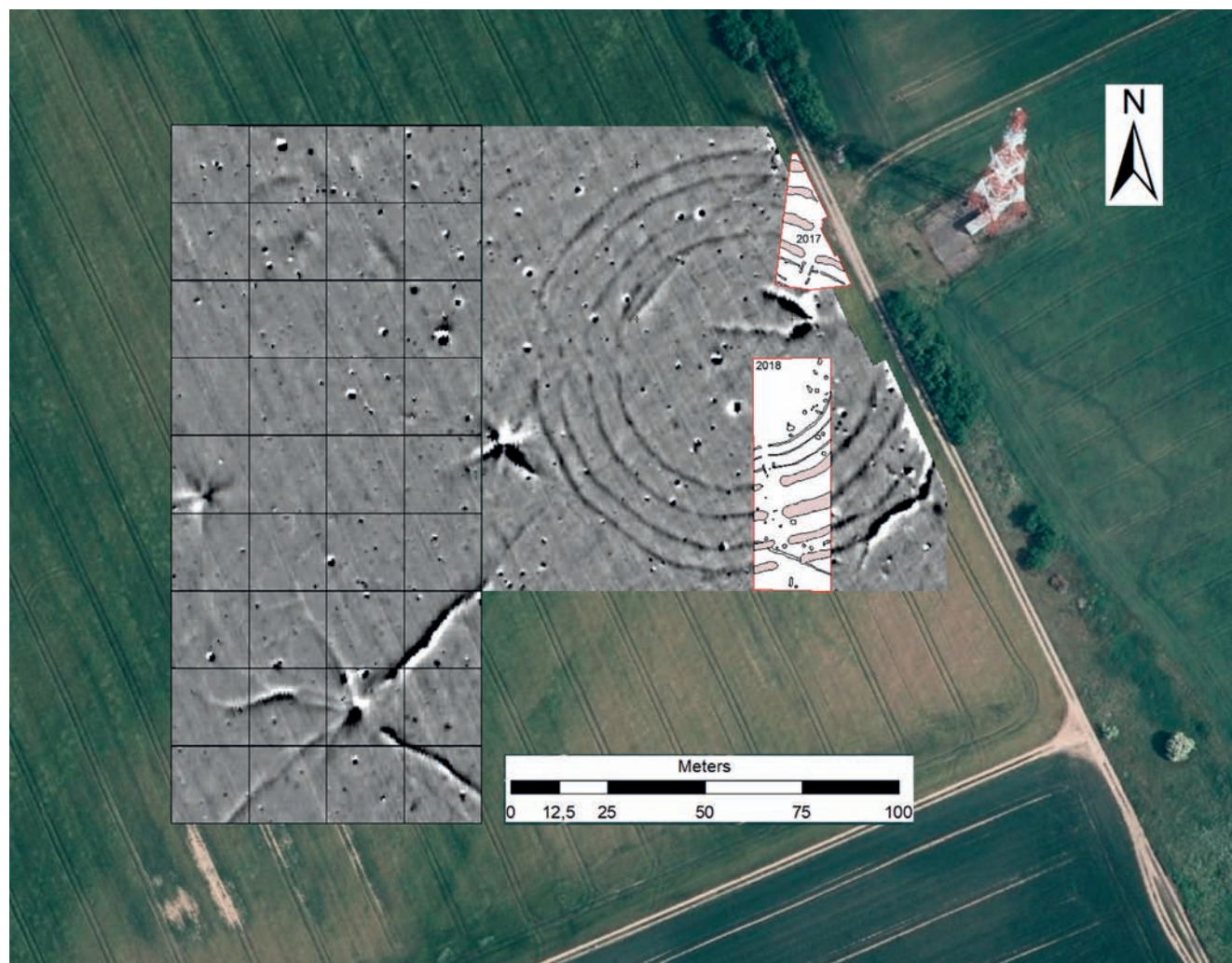


Fig. 23.4 General plan of the roundel generated on the basis of aerial photography and magnetometer survey geomagnetic research.

Table 23.1 Nowe Objezierze, site 22. Radiocarbon dates (animal bones) acquired from the ditches A4, A3 (Poz-99476) and B4 (Poz-99612, Poz-99613).

No. of sample	Ditch.	Dating BP	Calibrated dates cal BC (95.4% probability)
Poz-99476	A3	5750 ± 35; 0.5% N; 2.9% C; 0.7% coll	4692 BC (95.4%) 4503
Poz-99479	A4	5850 ± 40; 1.1% N; 4% C; 3.3% coll	4803 BC (94.3%) 4602
Poz-99477	A4	5890 ± 40; 1.2% N; 4.5% C; 4.4% coll	4849 BC (94.6%) 4685
Poz-99611	A4	5920 ± 40; 1.1% N; 3.6% C; 1.9% coll	4857 BC (87.3%) 4709
Poz-99478	A4	5875 ± 30; 0.7% N; 3.5% C; 1.4% coll	4803 BC (93.6%) 4689
Poz-99612	B4	5850 ± 40; 0.4% N; 3% C; 1.1% coll	4803 BC (94.3%) 4602
Poz-99613	B4	5840 ± 40; 0.8% N; 2.8% C; 1.3% coll	4798 BC (95.4%) 4584

Danube and the Elbe river. Furthermore, seven radiocarbon dates acquired from animal bones from the ditches that were investigated in 2017 mark the beginning of using the roundel at the same time as the oldest structures of this type in Europe (Table 23.1).

Discussion

The roundels spread rapidly over a vast area with only 50 years difference in the dating of the oldest objects at sites in Transdanubia and the roundel at Nowe Objezierze. Nevertheless, the use of these structures may have varied

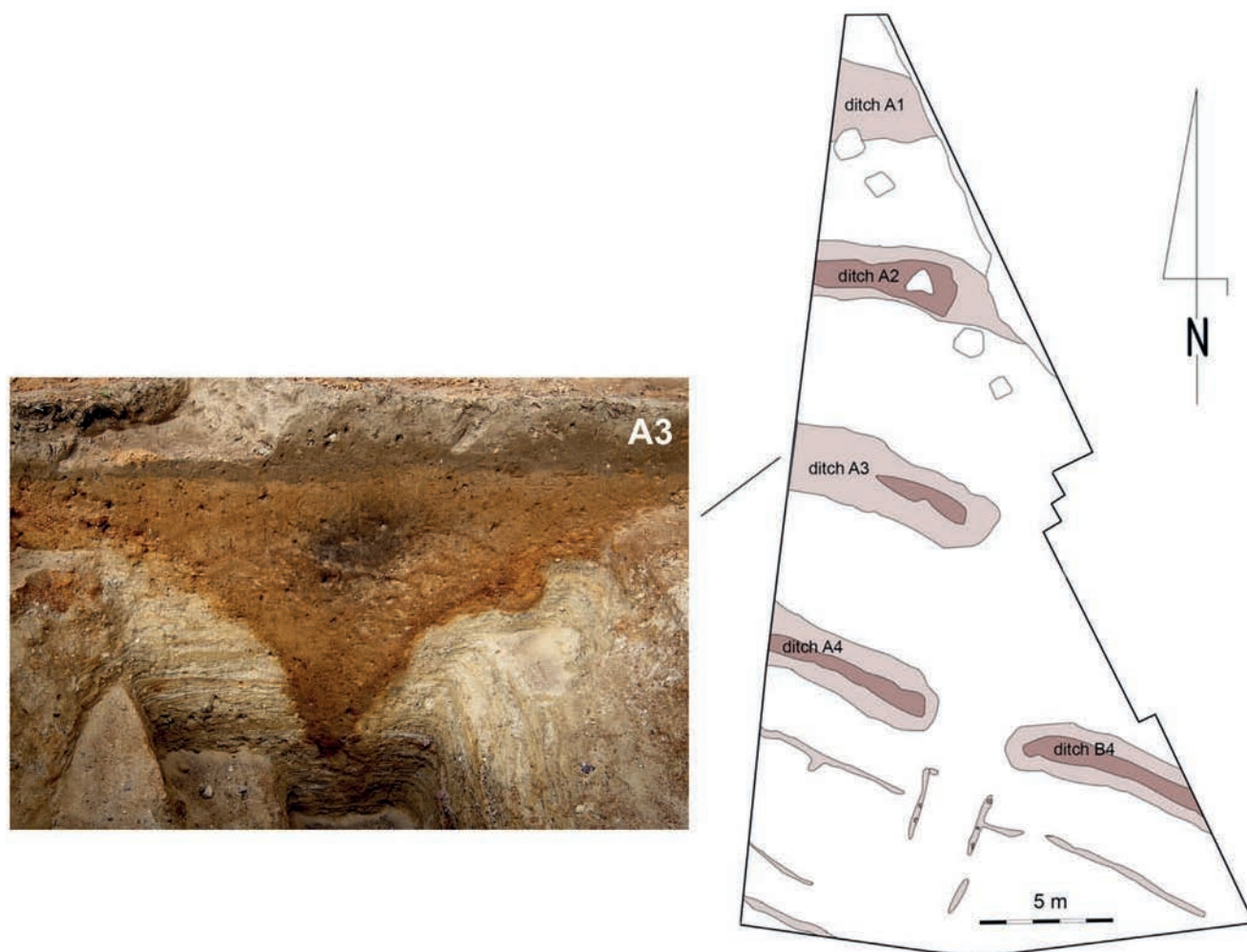


Fig. 23.5 Trench II with cross-section of ditch A3.

between the Danube (Lengyel culture), the Elbe (SBK) and the furthest reaches of ‘Danubian World’ at the lower Oder. In our opinion, two issues need to be discussed. Firstly, the evident cosmological reference to the orientation of the gates of the roundel clearly distinguishes these structures from the enclosures with discontinuous ditches of the Danubian Neolithic communities (Jeunesse 2019). What was the reason behind such a popularity of structures that architecturally referred to cosmic powers at the time of the demise of LBK societies, a demise that may have been related to social unrest and/or unfavourable climate change as well as social and religious changes originating in the Near East and Balkans? These changes may have been leading towards increasing social diversity and a more complex religious life perhaps illustrated by the use of anthropomorphic clay figurines in rituals documented within roundels of the Lengyel culture.

Secondly, attention should be paid to a number of social functions of roundels that may be difficult to document.

Three questions are worth considering: (a) what is the visibility from inside of the roundel perhaps with cosmological references (Zotti and Neubauer 2011; Michel *et al.* 2015; Pásztor *et al.* 2015) and the visibility of the roundel in the surrounding landscape? (b) can periodic cycles of use of the roundels be demonstrated? and (c) did social groups use events at the roundels as expression of their identity for instance by occupying different positions next to the gates, eating different meals, etc.?

Establishing the cycles of renewal and – in some cases – the enlargement of roundels is critical in the interpretation of their social and religious functions such as a distinction between rare but intensely celebrated ceremonies, and those of frequent and routine character (Whitehouse and Hodder 2010). Detailed analysis of the sedimentation processes in the ditches would help determine how often ceremonies were held in roundels. The case of enlargement raises the question of why roundels had different numbers of ditches. Was it merely a matter of the strength of the local

communities or was it related to more complex functions of the roundels? We believe that it is most likely that the Nowe Objezierze roundel was enlarged gradually with the number of ditches increasing to four over time. On the other hand, three long hiatuses of 40–50 years were observed during the lifespan of 200–300 years of the Gosek roundel with only one ditch (Biehl 2012). The various numbers of entrances at the roundels raise additional questions. The usual number of four gates may be associated with the four cardinal points. Examples of two, three or in rare instances even six gates may have had different cosmological meanings, or a social significance perhaps linked to the number of individual groups (e.g. clans, phratries, sodalities, etc.) who jointly built and used the roundel? Naturally, one scenario does not exclude the other.

Our field research, conducted systematically since autumn 2017, has provided information on more than a dozen new sites. Based on palynological analysis of cored soil samples, the entire chronological sequence of human activity at the roundel has been recorded from the period preceding the construction until the time immediately after its abandonment. Further analysis of deposits and refuse will provide evidence of food consumption, use of raw materials and exchange at the roundel.

Conclusion

The roundel at Nowe Objezierze belongs to a group of unique structures of Neolithic Europe that are not only clearly monumental structures that served a large group of people, but also had strongly marked cosmological references. The roundel functioned within a specific historical, social and cultural context, that was not a part of the early Neolithic (LBK) communities nor were they associated with primary Neolithisation. Instead, the context of the construction of roundels was linked to the formation of more complex ‘post-Neolithisation’ communities. Thanks to the use of remote sensing technology, the number of new roundels is constantly increasing. The large number of these structures along with their rapid spread within a period of no more than one to two generations, allows us to argue for the emergence of a new socio-religious movement that eventually put an end to the transition period related to the collapse of LBK cultures. These processes of change during the first half of the 5th millennium in central Europe are difficult to understand without the presence of roundels. Within the framework of the implemented research project, we aim to further interpret both the functions of roundels, and discover more of the organisation of local post-LBK communities.

Acknowledgements

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The living and the dead – the early Neolithic monumental landscape of southwest Scania, southern Sweden

Magnus Andersson and Magnus Artursson

Abstract

The last two decades of investigations in southwest Scania, Sweden (Fig. 24.1), mainly conducted within developer-funded archaeology, have given substantial new results, producing a more complex picture of early Neolithic society (EN I 4000–3500 cal BC). These results are both on a macro scale concerning settlement pattern, landscape use and the scale of monumental landscapes, and on a micro scale concerning, for example, houses and huts, monumental places and their complexity, and pits and depositional practices on different types of sites.

Introduction

In southern Scandinavia a shift from a hunter-gatherer-based economy to a Neolithic economy emerged from around 4000 cal BC. According to Lasse Sørensen (2014, 245), the transition towards an agrarian way of life in central regions of southern Scandinavia was rapid and a fully established agrarian society was present by the early EN I phase, 4000–3800 BC. This is particularly true for Scania (Fig. 24.1), where recent large-scale excavations have produced interesting new materials (Andersson *et al.* 2016). The shift in southern Scandinavia is almost parallel to the development in northern Germany, although slightly earlier, *c.* 4100 cal BC, in this region. Similarities in material culture, burial traditions and ritual activities in northern Germany and southern Scandinavia suggest the presence of a transregional ideology and common religious beliefs, generally summarised as the Funnel Beaker Culture, although there are local and regional variations when it comes to details (Tilley 1996).

Economic specialisation and the importance of farming have varied within southern Scandinavia; a Neolithic economy was clearly present in the southern regions, while

in the northern regions, especially in the eastern central part of Sweden and southern Norway, hunting, fishing and gathering remained important (Hallgren 2008; Østmo 2013; Sørensen 2014). According to Lasse Sørensen, Scania was fully Neolithised in all respects from the early part of EN I, but other researchers have brought forward other perspectives where a strong Neolithic identity or economy is not in place until the EN I/EN II shift around 3500 cal BC (Persson 1999, 87–94; Andersson 2004, 131; Schülke 2009a, 247–248; Andersen 2010; Furholt 2010; Kirleis *et al.* 2012; Thomas 2013, 74).

Southwestern Scania – a case study

Scania may have been relatively densely populated in the EN (Sørensen 2014, 268). In the area around Döserygg a population density of 1–2 individuals per km² in 3600–3300 cal BC has been suggested (Artursson *et al.* 2016, 12, table 1). Judging from the density of monuments, distribution of flint axes and topography, at least six major geographic concentrations can be discerned in Scania. These concentrations can be interpreted as material evidence of some kind of political organisation, most likely comparable to big-man or chiefdom-like polities. The size of these polities can be estimated at 400–800 km², representing populations of approximately 800–1600 individuals. Three of these polities are situated in south-western Scania (Fig. 24.2).

The monumental burials introduced from the beginning of the EN, long barrows and facade graves, involved a new and more elaborate engagement with the dead (Rudebeck 2010). A selection of individuals was buried in these monuments, which suggests that they can be seen as symbolically important interments of local leaders, ultimately achieving the position of mythological ancestors. The monuments

constituted symbols for ancestral ties that probably were critical for inheritance rules concerning status, resource use and land ownership.

The monuments involved substantial investment in materials and labour, requiring an economic surplus that could be mobilised and used by local leaders for construction. Some of the long barrows comprise very complex, multi-step sequences of construction, where different kinds of cult and death houses have been included (Tilley 1996,

76–79). This implies that elaborate religious and ideological ideas were expressed and enacted in a physical form at the burials. These physical representations were permanently present thereafter, fuelling notions of the permanency and rightfulness of social and political conditions.

Recent large-scale excavations have shown the existence of a hierarchy of monumental places in EN southern Scandinavia. During EN I (4000–3500 cal BC) numerous long-barrows, free standing facades, offering pits and other

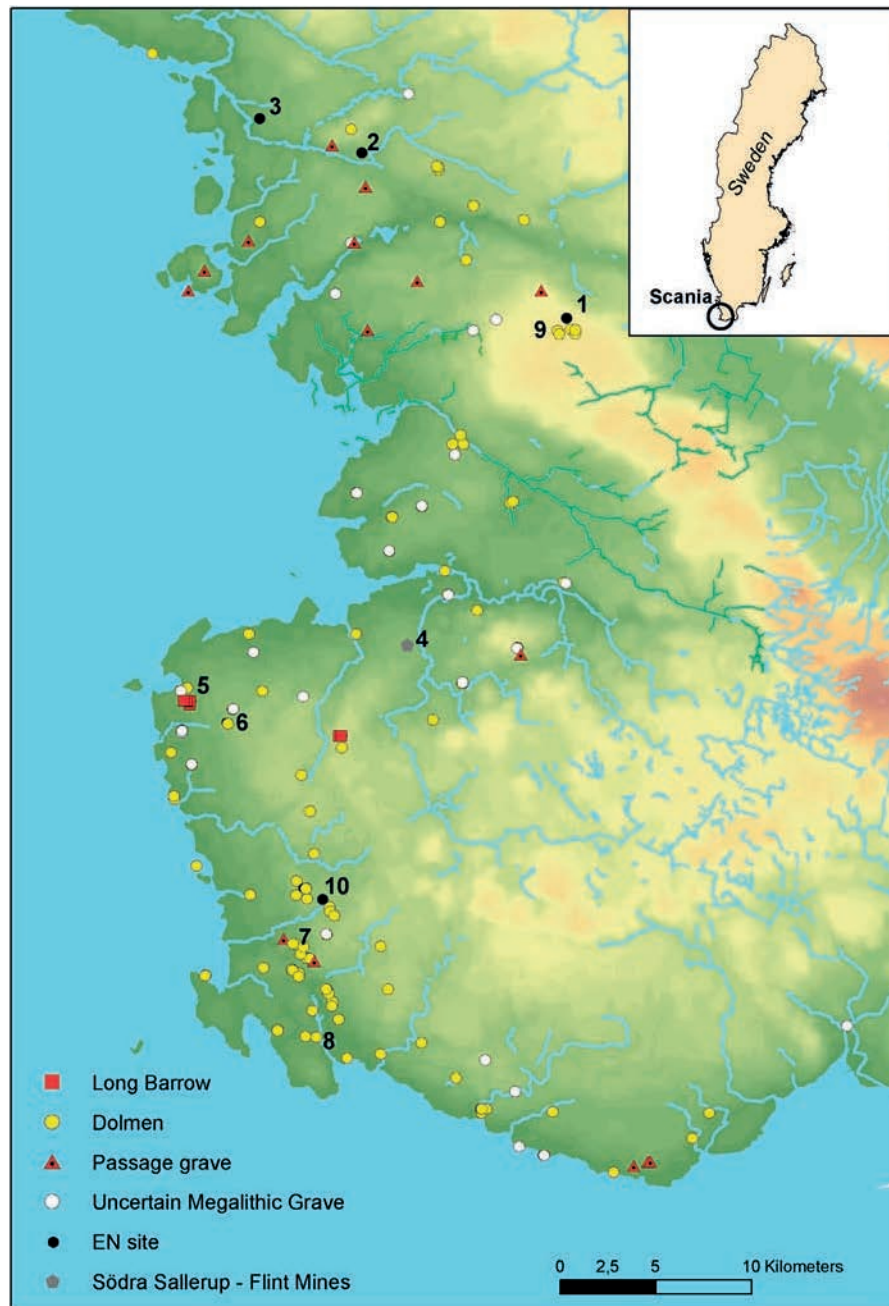


Fig. 24.1 Southwest Scania in southern Scandinavia. Recently excavated EN sites: 1 Östra Odarslöv, 2 Dagstorp, 3 Saxtorp, 4 Södra Sallerup, 5 Almohov, 6 Vintrie, 7 Döserygg, 8 Skegrie, 9 Science Village, 10 Herrestorp.

constructions occur in concentrations at certain central places, such as Almhov to the south of Malmö, but also at small, local ritual places and in settlements, such as Östra Odarslöv in the vicinity of Lund, producing a hierarchy of monumental places. During EN II–MNAI (3500–3200 cal BC) a similar picture can be seen when it comes to the distribution of dolmens and passage graves; in a few places, such as Döserygg to the south of Malmö, large concentrations of megaliths and other monumental constructions were erected, and parallel to this, single or small groups of megaliths were also erected at local monumental centres and at settlements (Andersson *et al.* 2016).

This hierarchy of monumental places probably reflects a difference in the use of monuments, mirroring the existence of a social hierarchy in polities (Fig. 24.2 and 24.3). The large central places were probably used for feasting and burial rituals organised by big-men or chiefs to establish and maintain a stratified social order on a regional level, while the local centres and the monuments in settlements were used for family- or group-based religious and ritual activities. In some cases, a continuity in use of certain places can be seen from EN I to EN II, implying a well-established

social order supported by regular meetings at local and regional centres.

According to Brian Hayden, feasting was a key factor behind the domestication process (Hayden 2014, 119–120; see also Jennbert 1984; Klassen 2000; Fischer 2002; Sørensen and Karg 2012; Sørensen 2014). Results from recent large-scale excavations in Scania hint at feasting as an important part of social life in the EN on different scales, from the large, central gathering places to local centres and single settlements or farmsteads (Andersson *et al.* 2016). Hayden's palaeopolitical ecology perspective stresses social and political ambition and competition as fundamental in understanding the process of Neolithisation. Domesticates in early agricultural societies probably played an important part in sociopolitical life, where feasting created networks of debt and support. In more or less sedentary societies like the Scanian Funnel Beaker Culture, surplus could be stored in settlements and farmsteads until feasts were held. At these feasts, exclusive foods such as specially bred cattle and cereal-based foods and alcoholic drinks like beer or mead were consumed (Hayden 2014, 119–137, 165–175).

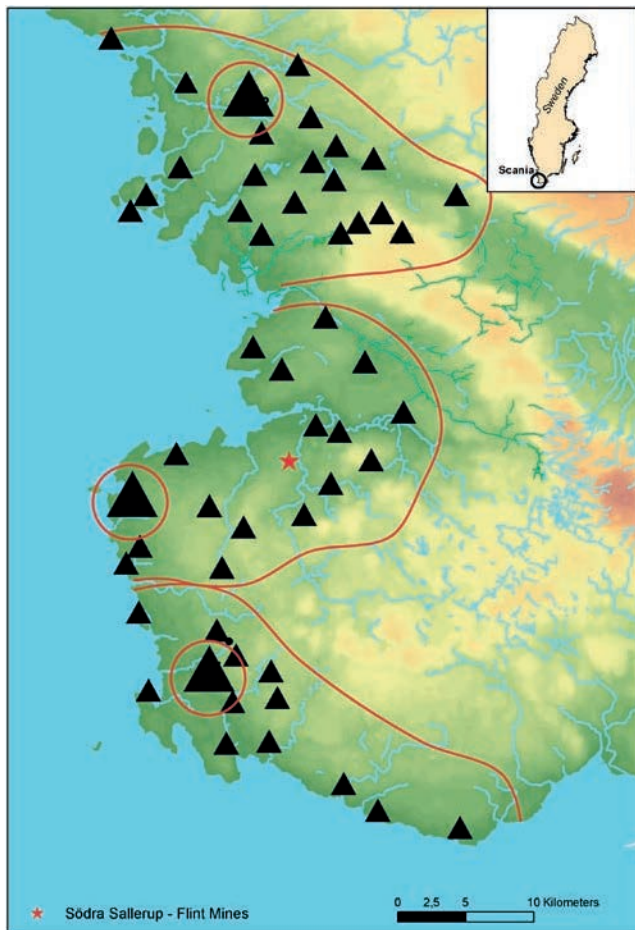


Fig. 24.2 Three Neolithic polities in south-western Scania.

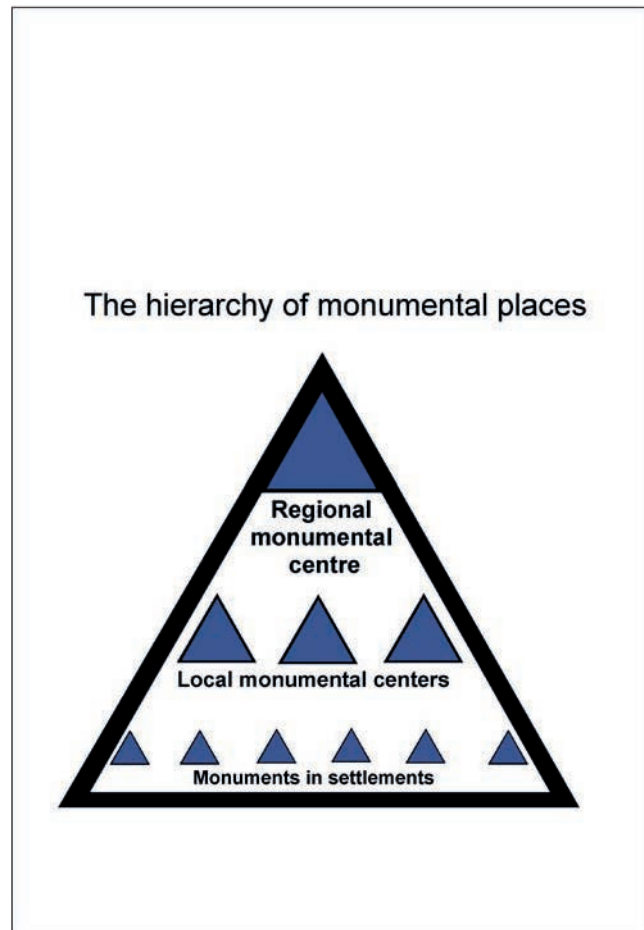


Fig. 24.3 A model of the hierarchy of monumental places.

Storage capabilities were certainly in place in southernmost Scandinavia, as seen through buildings such as huts and houses. In some cases pits, for example at Herrestorp, may have functioned as storage pits. The storage pits at Almhov are also a clear example of this capability (Rudebeck 2010, 120–121). Cereals were likely brought to the site from farms for large gatherings. Thus, they were first stored at the single farms and then again at Almhov before and during the feasting event.

Feasts are held to create solidarity, for material and economic gain or to manifest and create status and power (Hayden 2014, 10). However, these dichotomies are probably too strict since feasts are what Hayden calls polysemous, *i.e.* they hold different facets and elements of both solidarity and competitive power manifestations (although Hayden has a clear focus on the competitive aspects) (Hayden 2014, 11–12, 232, 242, 285–295). They are simultaneously arenas for social integration as well as social competition and the pretexts for hosting feasts are numerous (Hayden 2014, 174).

Social prestige and personal status could be gained by those individuals who could provide exotic products at seasonal feasts, where social relations were reinforced and confirmed through ritual activities. Continuous competition led to an inflation of social and ritual symbols and a constant introduction of new status marking objects and constructions for ritual purposes. According to comparative anthropological research, the allure of the exotic has often been used in connection with feasting to achieve the most efficient and dramatic effects. Different kinds of exotic objects and foodstuffs can often be seen in connection with feasting and ritual activities at central gathering sites and monumental burials (for discussion see Hayden 2014).

The use of ceramic vessels was first introduced in southern Scandinavia around 4700–4800 cal BC, probably under the influence of Neolithic groups on the European continent (Gronenborn 2009). Also, access to different kinds of axes such as shoe-last axes ‘Schuhleistenkeilen’, point-butted axes made of exotic stone materials and copper axes through long-distance contacts with the European continent were probably important for the gradual establishment and development of hierarchical structures in southern Scandinavia beginning in the Late Mesolithic and continuing into the EN, approximately 4800–3500 cal BC. These exotic objects had a value through their novelty as regards the materials used and their shape, and also through their origin in a distant and largely unknown part of the world. They were used in a prestige-based economy to mark social status and political power, gradually transforming polities in southern Scandinavia from big-man based societies to low-complexity chiefdoms (for discussion see Fischer 2002, 373–380; Klassen 2004; Artursson *et al.* 2016).

Mining and quarrying for flint and other stone materials were important for the provision of high-quality raw materials from the time of their introduction from

the Michelsberg culture in central Europe. In southern Scandinavia, mining and quarrying for flint started around 4000 cal BC (Rudebeck 1986; Russell 2000; Berggren *et al.* 2016). The known flint mining areas in southern Sweden are concentrated at Södra Sallerup just to the east of the city of Malmö in south-western Scania. Large areas have been excavated since the 1970s, producing an impressive number of features connected to well-developed and quite advanced flint mining. At least 400 flint mines and open quarries of different depth and size have been excavated so far (Rudebeck 1986). Quite a few of the mines and quarries have been radiocarbon dated to the beginning of EN I, 4000–3800 cal BC, indicating intense flint quarrying connected with the introduction of the Funnel Beaker Culture in the region. According to the latest results there does not seem to be a chronological division between the deep flint mines and the open quarries (Berggren *et al.* 2016).

As there is no detailed analysis of the lithic material from the quarrying areas so far, the full range of what the flint was used for is unclear. Preliminary studies nevertheless show that the main product during the first centuries seem to have been point-butted axes of different types and sizes (Berggren *et al.* 2016). This is the oldest Neolithic type of flint axe in Scandinavia, which corroborates the early radiocarbon dates from the activities in the area. It might even be that the quarrying was at the most intense during these early centuries, implying there was a quick adoption of the technique of extracting flint by mining (Rudebeck 1994, 12, table 1). Therefore, it cannot be ruled out that know-how was directly introduced to southern Scandinavia by experts on mining from continental Europe.

In parallel with this hypothesis, some researchers have lately reintroduced the old idea that the Neolithisation of Scandinavia has its roots in a more or less extensive immigration of Michelsberg/Funnel Beaker groups from continental Europe, searching for new grazing and farming land and prospecting for possible flint and copper resources (for discussion see Klassen 2000; 2004; Sørensen 2014; Sørensen and Karg 2012).

In the areas of mining and quarrying, different types of aggregations of worked flint have been found, representing both primary working areas and secondary depositions of waste (Rudebeck 1986, 15). Also, some concentrations of finds such as scrapers probably represent working areas where different kinds of handicrafts connected with the mining and quarrying itself were located, as the manufacture of antler pickaxes, wooden handles and ladders must have been substantial (Rudebeck 1986, 6). Consequently, the operation can be described as almost being on a massive industrial scale with specialised craftspeople in charge of the more complex and hazardous work. The 2–8 m deep mine shafts were perilous workplaces, and to avoid collapse of the mine walls the work must have been performed in

an organised and systematic way where every mine was emptied of its flint nodules and then refilled before a new adjoining one could be opened (for discussion see Roth 2008, 250–269). Also, the provision of craftsmen with food and other resources must have depended on the production and direction of an economic surplus that could be invested in the mining operations.

As a conclusion of the above discussion, the introduction of farming, husbandry and flint mining at the beginning of the 4th millennium can be interpreted as a sign of the establishment of prestige-based polities in southern Scandinavia, where exotic products like meat from domesticated animals and food and drinks based on cereals probably were used at local feasting events to establish prestige and status for the individuals providing these novelties. In particular, the domesticated cattle could be used as a direct measure of wealth based on the large quantity of meat they represented. The exotic properties of cereals would have included the potential to produce exotic new foodstuffs like bread and porridge, and of course alcoholic beverages like beer. This access to large quantities of meat, foods based on cereals and beer must have been important in polities where ritual feasting probably was a critical part of changing social and political relations and in creating and maintaining alliances.

Östra Odarslöv – a case study

One of the most important sites excavated in Scania during the last five years is Östra Odarslöv. The excavation has changed the outlook on this particular part of southwest Scania as an area in between more intensely occupied zones of the region (*cf.* Lagergren 2012). In this respect, it is an important part of our view of EN sites, landscapes and society in the region (Fig. 24.1). New excavations have revealed a steadily more complex and varied picture. Thus, in order to understand Östra Odarslöv as part of EN society, a wider regional outlook is necessary.

This site was located on sandy, gentle western slopes and strips of land, extending towards areas that in prehistoric times were wetlands. During the EN, the sea level was 4 m above the present level, and the site was only 8 km from the sea (Andersson and Artursson 2017).

The remains of 14 huts, two longhouses, cultural layers, ovens and various types of pits were found in the settlement area (Object 1). In the south-eastern part of the site the excavation documented a ritual area. Here, one wooden facade, an inhumation burial with a wooden facade, an inhumation burial without any markings above ground, a stone-built facade and three long dolmens were excavated (Fig. 24.4). All the structures have been dated to the EN, approximately 3800–3400 BC, based on finds, context and radiocarbon dating analyses. The whole settlement, from the EN phase, was probably located within the excavated

area – encircled by the wetlands to the west and south, and the heavier clay soils to the north and east.

Five hundred metres east of Object 1 another site, Object 2, was excavated. Four huts and several pits with EN material were found. This settlement replaced the western one around 3600 BC and was in use at the same time as the dolmens. The site extended beyond the excavated area, so it might be quite large. The huts from the EN at Östra Odarslöv can be divided into two types and there is a striking homogeneity in the design within each type:

- Round or oval huts with sunken floor/trodden surface, hearths and postholes for roof and/or walls (Fig. 24.5).
- Simple huts with U-shaped wall trenches with postholes and sometimes roof-postholes and hearth.

The two longhouses at Östra Odarslöv had a rectangular shape with rounded gables in the south and straight in the north (Fig. 24.6). The appearance of the houses is almost D-shaped, since the eastern long wall in house 1 and the south-western long wall in house 2 were slightly rounded. Three or four centrally placed roof-postholes were documented in each house as traces of the roof-bearing structure. Traces of the wall structure in the buildings consisted of a system of trenches and postholes.

At Östra Odarslöv a number of pits were examined, of which two pits will be discussed in more detail here. Two pits at Object 1 were notable as particularly complex and rich in finds: A20001, immediately to the south of the longhouses, and A10867, within the settlement's north-eastern part. The primary function of pit A20001 is interpreted as a working pit with ovens. What these ovens were used for is uncertain but based on the relatively abundant finds of charred cereals on the site, one may assume that people roasted cereals in them, possibly for brewing, and perhaps baked simple, unleavened flatbread. Pit A10867 is interpreted as a pit for clay extraction. In both pits, large amounts of osteological material, ceramics, flints and charred cereals had been deposited.

Remains of three long dolmens were found, situated on a gentle slope towards the southwest, close to a former wetland (Fig. 24.7). The three long dolmens had the same basic design with a central burial chamber placed within a rectangular rim of small stones. All the chamber stones were missing, as were the kerbstones. Interestingly, there were traces of entrances in all three long dolmens in the form of layers, trenches and impressions and stone packings indicating standing stones. One of the long dolmens had a paved platform adjacent to one long side. Presumably this was an area for ritual activity, where ceramic vessels and other objects may have been deposited (Andersson and Artursson 2017). In connection with a minor archaeological excavation at Science Village in 2014, remains were found of two more long dolmens on the other side, *i.e.* on the west side of the former wetland (Fig. 24.8). The construction

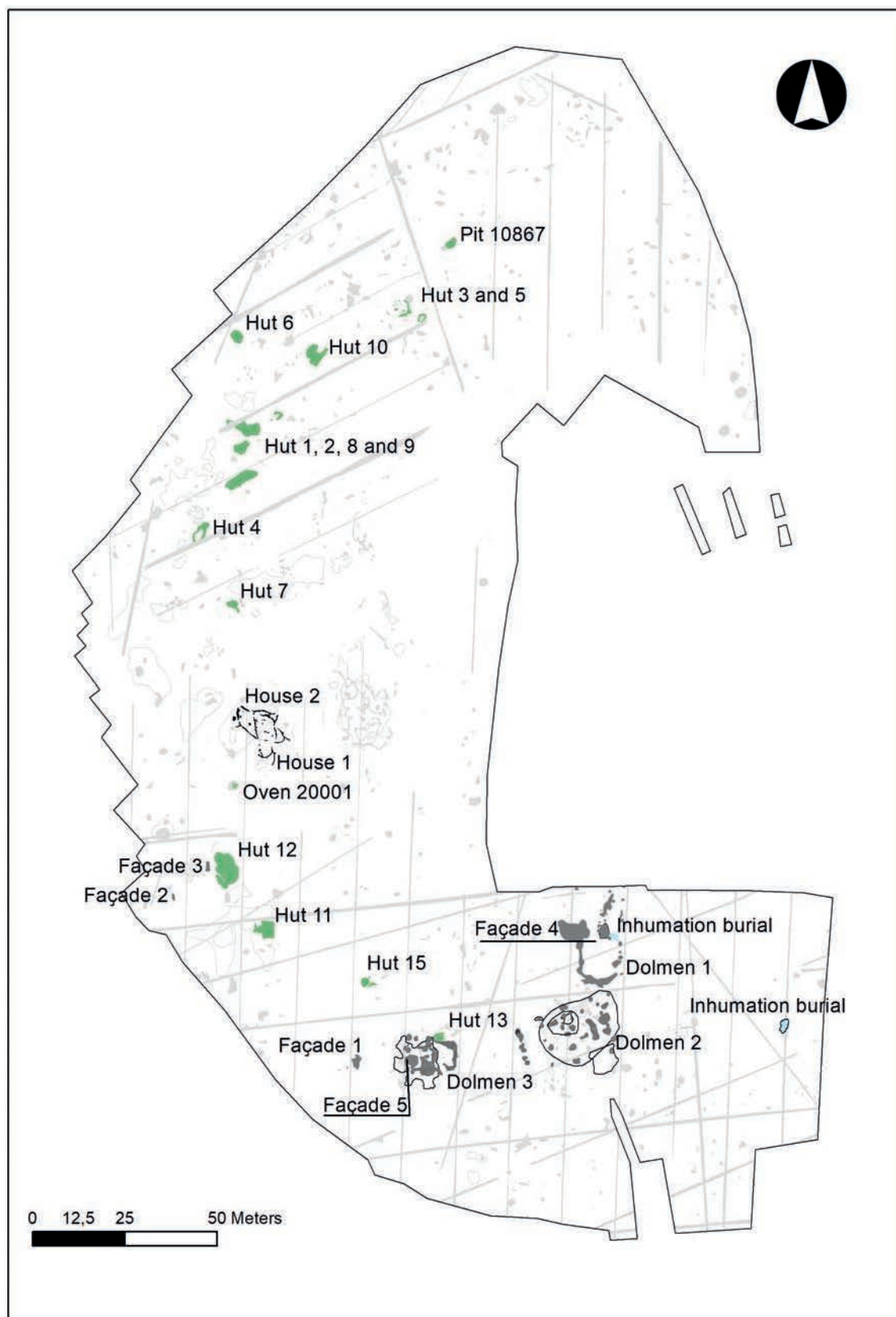


Fig. 24.4 The site at Östra Odarslöv.

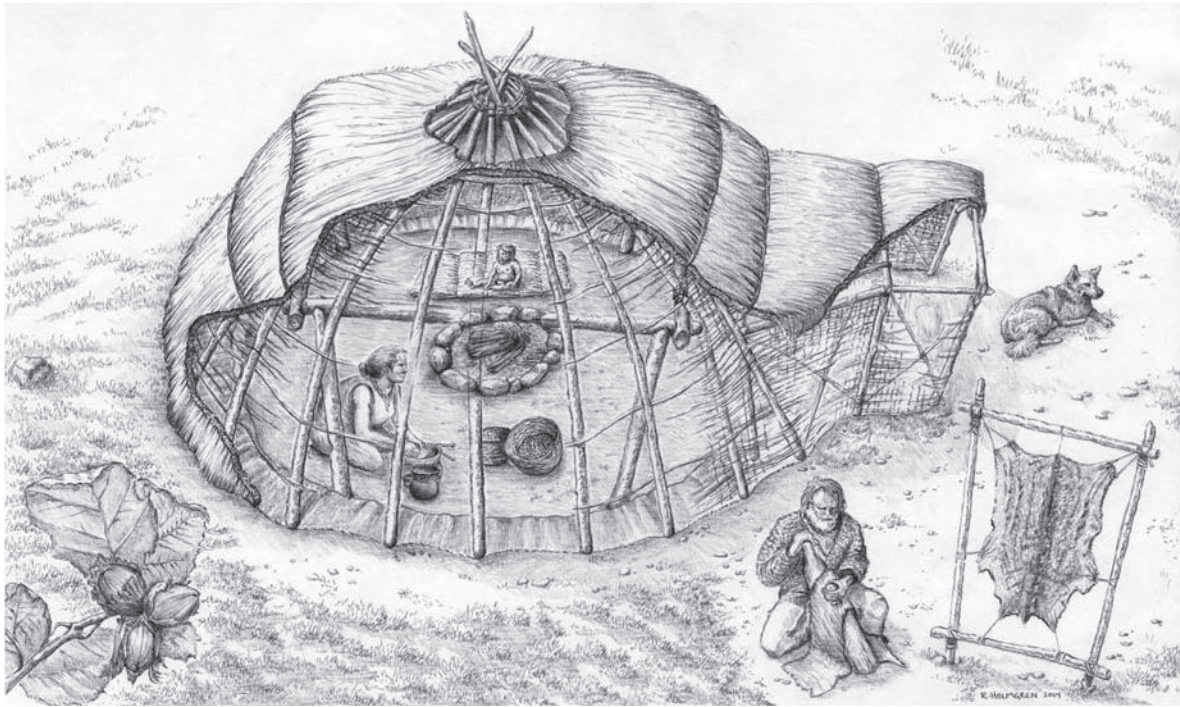


Fig. 24.5 Round oval hut with sunken floor (illustration: © Richard Holmgren, ARCD OC).

details of the dolmens are similar to those at Östra Odarslöv (Kronberg 2016).

Five facades were erected at Östra Odarslöv with a slightly different structure and context. Facade 1 was the youngest on the site, probably contemporary with the dolmens, and consisted of five standing stones that formed a facade running in a north–south direction. Based on the size of the impressions and the extent of the stone packing, it can be assumed that the stones were of different size and height.

The other facades were older, probably contemporary with the settlement on the site. Facades 2, 3 and 5 consisted of three to four wooden posts of different size. Facades 2 and 3 were placed close to one of the huts at the shore of the wetland and had a north–south orientation. Facade 5 was placed in the southern part of the site and had an east–west direction. Facade 4 had been erected at the head end of an inhumation burial and consisted of three wooden posts, probably with a larger post placed in the middle. Facade 4 was oriented in a northwest–southeast direction (Andersson *et al.* 2016).

According to the archaeological findings together with a Bayesian analysis of radiocarbon dates there seems to have been a continuous expansion at Object 1 and the site can be divided into three building phases (Table 24.1). The first settlement activities took place in the northern part of the area and can be placed somewhere in the range 3800–3700 cal BC. Within a probably rather short period of time huts 1–10 were constructed. Dates from the working pit with associated oven (A20001) indicate that this was already in use during the first settlement phase. It seems

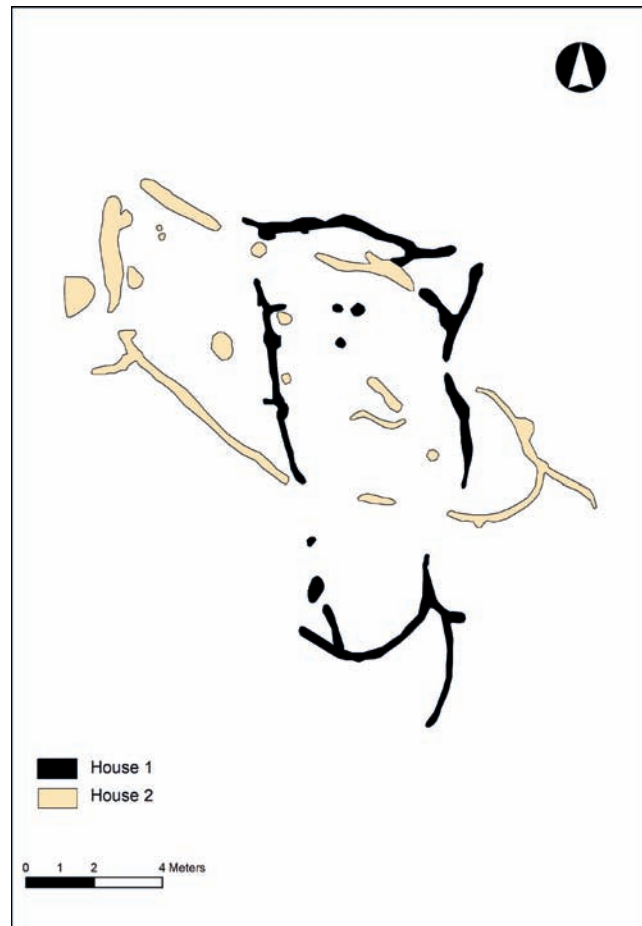


Fig. 24.6 Houses 1 and 2 at Östra Odarslöv.



Fig. 24.7 The long dolmens at Östra Odarslöv (illustration: © Richard Holmgren, ARCDoc).

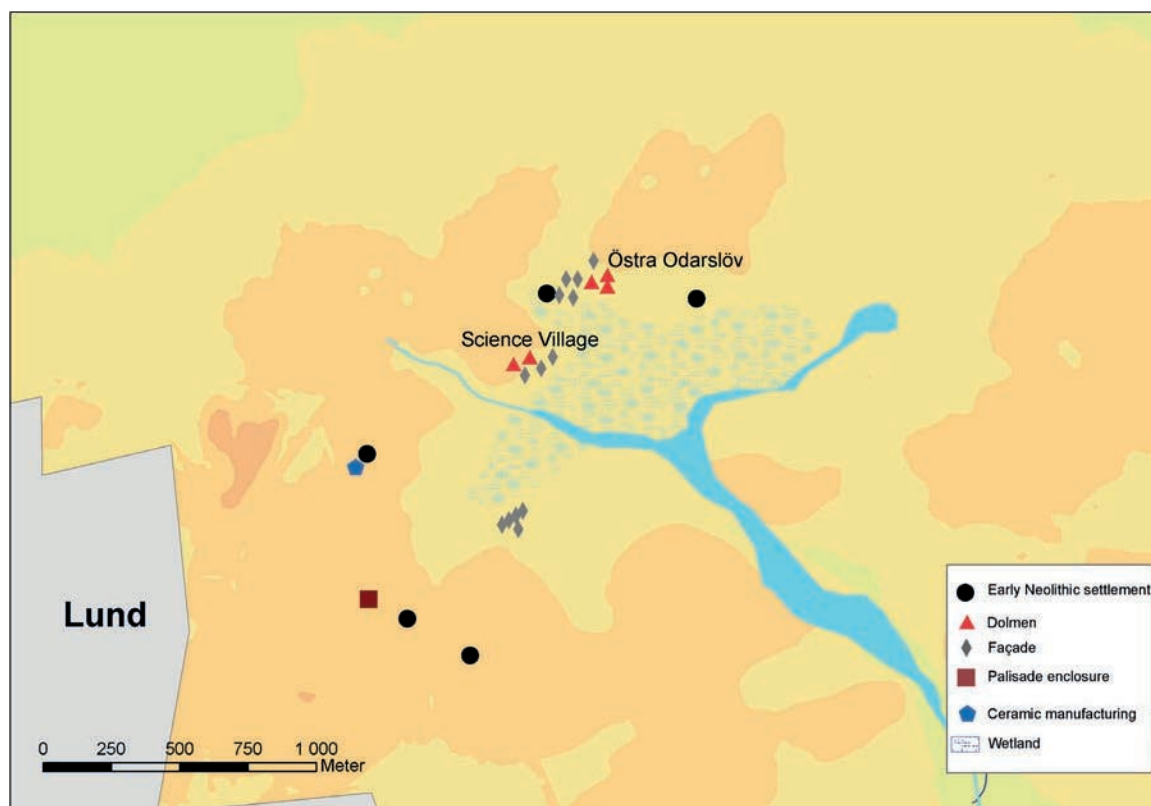


Fig. 24.8 The monumental Neolithic landscape around Östra Odarslöv.

Table 24.1 Building phases of the EN sites at Objects 1 and 2, Östra Odarslöv.

Building phases Östra Odarslöv	Northern settlement Object 1	Southern settlement Object 1	Ritual space Object 1	Settlement Object 2	Activities
Building phase 1 (¹⁴ C-phase 1) c. 3800–3700 cal BC	Huts 3 and 7. Huts 1, 2, 5, 6, 8, 9 and 10. Oven 20001.		Facade 5.		Settlement established in the northern part of the area. On an ar- chaeological basis huts 3 and 7 with slightly older datings should be incor- porated with the other buildings in the north. Ritual activities at Facade 5. Pit depositions.
Building phase 2 (¹⁴ C-phase 2) c. 3700–3600 cal BC	Huts 2, 4, 8, 9 and 10. Oven 20001, pit for clay extraction 10867.	Huts 11, 12, 13 and 15. Houses 1 and 2. Pit 3185. Facades 2 and 3.	Facade 4 with inhumation burial 1004608. Flat-earth grave 1789.		The settlement is growing gradually. The southern parts are also built. Ritu- al activities at the facades. Pit deposi- tions. Flat-earth graves.
Building phase 3 (¹⁴ C-phase 4) c. 3600–3300 cal BC			Dolmens 1, 2 and 3. Facade 1.	Huts 110, 126, 124952, 125024. Pits 67627, 78107. Trench 126175.	Settlement at Object 1 was abandoned and the southern part of the site trans- formed into a ritual space where three long dolmens and Facade 1 were erect- ed. A settlement established at Object 2 that eventually replaced the settle- ment on Object 1. Ritual activities at Object 2 in the form of pit depositions.

that the oldest facade (Facade 5) was constructed during this phase within an area to the south allocated for ceremonial activities.

The second settlement phase can be placed in the interval 3700–3600 cal BC. All huts south of the houses belong to this phase, *i.e.* huts 11, 12, 13 and 15. The second settlement phase immediately follows the first and should be seen as a gradual expansion of the site where parts of the northern settlement were still in use; this applies to huts 2, 4, 8, 9 and 10. The longhouses were probably built in connection with the second building phase. Stratigraphy shows that house 2 is younger than house 1.

The stratigraphy in pit A20001 together with the ¹⁴C-analysis show that it was also in use during settlement phase 2. Some other pits with deposits may be related to this stage too – among them the pit for clay extraction, A10867. The traces of ceremonial activity become more evident in the second settlement phase. In addition to deposits in some of the pits, the first burials at the site were constructed in the form of flat-earth graves in the south-east. Another two facades, 2 and 3 were erected, and an inhumation burial with a facade, 4, was constructed.

Around 3600 cal BC the settlement at Object 1 was abandoned and the southern part of the site was transformed and expanded into a specialised ritual space where three long dolmens and the stone-built Facade 1 were erected.

The ritual space was probably used during a relatively short time period, as the ceramics found can be placed in the later part of the EN II and the earliest part of the EN IIMN, approximately 3600–3400 cal BC.

The extensive analytical work on material from the site (osteology, palaeoecology, lipid analysis, micro-wear analysis, etc.) show indications of a well-developed agricultural economy during the EN, 3800–3600 cal BC (Brink and Larsson 2017). The buildings that suggest a settled existence are in themselves an indirect indicator of more stationary economies such as agriculture and animal husbandry. Many of the flint blades (sickles) at Östra Odarslöv show that they were used to cut grass plants. Furthermore, grindstones were found connected to the longhouses and hut 10 (Knarrström 2017). The many charred cereals, (mostly emmer and barley, but also bread wheat) from the EN in several contexts at the site are an important indication of cultivation.

The osteological material with bones from cattle and pig at Östra Odarslöv, shows that animal husbandry was probably more important than hunting in this period (Magnell 2017). The lipid analysis of pottery shows a total domination of terrestrial materials, mostly meat from ruminants, usually in combination with some form of vegetables. Furthermore, there are lipids that indicate that milk products of some kind were produced. These indications are consistent with the osteological material, with a predominance of cattle

bones. Elements of fish are entirely absent (Isaksson and Erdős 2017).

Thus, at the Östra Odarslöv site we encountered the expected activities of an EN settlement with an adjacent ritual activity area: huts and houses, hearths, cooking pits, low temperature ovens, waste in pits, clay extraction pits and ritual activities at the facades as well as funerals in various types of graves and dolmens. The settlement at Object 1 do not represent the very first Neolithic wave in southern Scandinavia around 4000–3800 BC. Most indications are that people established themselves in the area c. 3800 BC and then lived there until c. 3400 BC.

In recent years, archaeological studies around the Östra Odarslöv site have shown a monumental Neolithic landscape, located around an ancient wetland. Remains of dolmens, settlements, facades and a palisade enclosure have been found (Fig. 24.8). This further strengthens the hypotheses of a much more densely settled and complex society in early Neolithic southern Scandinavia.

Conclusion

The change to an agrarian way of life in central regions of southern Scandinavia seems to have been rapid and a fully established farming economy was established by the early EN I phase, 4000–3800 BC. Large scale excavations at Almhov, Herrestorp, Östra Odarslöv and Döserygg indicate that the EN polities in southwest Scania had a much more complex organisation than earlier research has shown. The introduction of farming, husbandry and flint mining around 4000 BC gave a base for the establishment of social complexity. Exotic products were used at local feasting events to establish prestige and status for the individuals providing these novelties.

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Conclusion

The lives of monuments and monumentalising Life

Julian Thomas

Introduction

The contributions in this volume have, in diverse ways, addressed the theme of monumentality in the Neolithic of Europe and southwest Asia, as well as in some more far-flung contexts. It is certainly the case that when we think of the Old World Neolithic it is often monumental constructions that come first to mind: the Carnac stone alignments, the Goseck circle, the Falköping megalithic tombs, the Maltese temples, Göbekli Tepe, or Stonehenge. But how far is it the case that the construction and use of monuments was something intrinsic to the Neolithic? Not all societies build monuments, but do those that do have anything specific in common? Conversely, did Neolithic societies in particular have a distinctive relationship with their monuments, or characteristic reasons for creating these prodigious works? One problem that we immediately face is that although ‘monument’ and ‘monumentality’ are ostensibly straightforward and readily comprehensible terms, they are actually quite slippery and complex. This is because the concept of *monument* embodies a series of different elements. The most significant of these are massiveness and memorial, but we will see that there are a number of others, and that not all need be combined in any particular context or structure. So, what we are talking about when we discuss monumentality can subtly shift and change from time to time and place to place.

The most obvious attribute of a monument is the sheer scale and gigantiness of its construction (Thomas 2013, 315). The colossal size of such creations sometimes seems to be excessive, and to transcend any practical function that they might have had. Indeed, it is this excessiveness that often sets monuments apart from other kinds of architecture, a kind of elaboration that underscores the distinctiveness of particular structures. Related to this theme of massiveness is that of visibility and conspicuousness (Fig. 25.1). Monuments may be ornately or distinctively formed, highly coloured, or make use of unusual materials, in order to

render them visually arresting, and they may have prominent topographic locations that help them to stand out from a great distance (Sanches and Vale Chapter 22). However, in some cases the ostentatious character of monuments may be deceptive. For instance, some of the very large Neolithic horned cairns of the Orkney Isles were built in an expedient fashion that made them look more imposing from a distance than they actually were (Richards 2013). Like Potemkin Villages, they were all show and little substance.

Furthermore, the ponderous materiality of these structures may sometimes be in tension with their other key attribute, that of memorability. We should remember that the Latin root of the word monument comes from ‘to remind’, and that their mnemonic capacities are just as important as their substantiality (Connerton 1989). In the Classical world, monuments were first and foremost constructions that were intended to commemorate a particular person or event, such as the *summi viri* of the forum of Augustus, Trajan’s Column, or the Mausoleum of Halicarnassus. As Josephine Shaya points out (2013, 83), these features were generally involved in the construction of a selective and streamlined understanding of the past, an ‘authorised public history’. By establishing a tangible and conspicuous representation of prominent persons and their achievements, these monuments channelled and crafted collective memory, often to the advantage of dominant social groups. Importantly, the reminding and recalling capacity of monuments is not always dependent on their enormous scale, and in some cases it is possible to talk of ‘intimate monuments’. A good example would be the *Stolpersteine*, or ‘stumbling stones’, distributed across the streets of continental Europe, initiated by the artist Gunter Demnig. These are small concrete blocks inset into the ground, each bearing a brass plate documenting the name and fate of an individual victim of the Nazi tyranny (Gross 2019). These tiny monuments do not seek to impose themselves upon us, and it is the inconspicuous



Fig. 25.1 A massive and conspicuous monument: the Big Buddha, Phuket Island, Thailand (photo: Julian Thomas).

character of the encounter that proves so powerful and evocative (Fig. 25.2).

Although monuments as memorials are generally created to convey a particular message, they are often engaged in a process of negotiation over collective memory that may be quite volatile. War memorials, for example, may be perceived as a necessary means of healing on the part of a bereaved community, but they also play a part in establishing what is to be remembered and what is to be forgotten (Mayo 1988). Equally, Holocaust memorials convey quite different aspects of unspeakable events in different parts of Europe, emphasising martyrdom, heroism, resilience or shame (Young 1993). Just how contentious the memories that are embodied in monuments can be is demonstrated by the recent debate over statues of Confederate military and political leaders from the American Civil War. For some, these are an embodiment of prejudice, racism and slavery, and they should be removed from public spaces and destroyed. For others they represent independence, state's rights, and the traditions of southern chivalry and honour, and they should

be retained. In between, there are positions that argue that Confederate statues should be contextualised by placing them in museums of the Civil War, or complemented with monuments to abolitionists or the Civil Rights movement, to reveal both sides of the story. Some point out that removing the traces of disagreeable pasts runs the risk of sanitising history and erasing the memory of contentious events (Shoat 2017). Clearly, the meanings of memorial monuments are not always self-evident, and the responses that they evoke may not be predictable. If we accept the argument that monumentality is not a straightforward concept, but is composed of a series of overlapping characteristics, it is easier to agree with the argument made by António Carlos Valera in his chapter in this volume, that some of the aspects of monumentality are shared by other practices and entities that we would not readily identify as 'monumental'. In the context of the Eurasian Neolithic, Trevor Watkins demonstrates in Chapter 2 that some of these practices prefigure the emergence of agriculture and of formal monuments by many centuries: settlement burial, skull curation and



Fig. 25.2 Stolperstein dedicated to Bernhard Einzig, Berlin (photo: Julian Thomas).

circulation, burial in rock shelters. This might encourage us to consider that Neolithic monumentality was an emergent phenomenon, something that gradually took form and gained coherence out of a series of possibilities that had been generated within contingent circumstances. We can take this argument further by identifying some of the other characteristics of monuments.

Dimensions of monumentality

One of these characteristics is associated with what has come to be referred to as a ‘thermodynamic’ perspective on monumentality (Trigger 1990, 119). This proposes that monument building is a form of social competition conducted through the expenditure of energy, information and matter. From this point of view, the colossal scale of monuments is a by-product of a form of conspicuous consumption that seeks to ostentatiously deploy vast quantities of materials and (particularly) labour. This, it is suggested, represents a cross-cultural phenomenon, most notably in the context of the

emergence of ranked and stratified societies (Osborne 2014). Importantly, the mobilisation of collective labour that this involves has two complementary consequences, for while it raises the profile of the prominent members of society who direct the effort, it simultaneously reinforces social ties and solidarity amongst those who take part. We will see that this double-sided character of monument-building and related social practices is a key theme in Neolithic archaeology. In some situations, the utilisation of labour in this way may represent an alternative to other means by which social prestige is generated and expressed. Thus, in Chapter 16 Pospieszny and colleagues contrast the rather austere grave goods found with burials beneath the massive long barrows of the TRB with the lavish funerary assemblages of the contemporary Lengyel graves. We should not assume that the latter were necessarily the product of a more unequal society.

But as well as demanding a considerable input of effort, another aspect of monuments is that they are frequently highly durable, being robustly constructed and composed of resilient materials. The longevity of monuments often

exceeds that of mundane architecture, and further contributes to their role in the creation and sustaining of memory, while also endowing them with an aura of the archaic and the traditional and promoting their association with the established order of things. Yet in their contribution to this book, Kinzel and Clare argue that while both the expenditure of labour and the accumulation of history can be part of what makes a monument, a more fundamental factor is the relationship that a community maintains with its constructions. Interestingly, this would cast monumentality as a relational concept, rather than something that is inherent in any particular structure. In the case of Göbekli Tepe, the implication of their argument is that the protracted existence of the special buildings at the site was less significant than the continuity of their use through time by a particular human group. This may plausibly be connected with Michel Serres' (1995, 87) observation that crafted material things can have the effect of stabilising social relationships. In other words, it is less important that monuments are themselves enduring physical entities, and more that by creating, using and venerating monuments human groups are lent a greater degree of coherence and stability over time. We might go further and connect this role of monuments in promoting social solidity and continuity with the notion of stateless societies, which lack institutions that facilitate social reproduction, such as a civil service, judiciary, police, education and social security (Hawthorne 2013, 78). In such societies, social order is often vested in continuity with the past, and the maintenance of traditional customs and practices. This continuity can be enhanced by material things including monuments, which have their origins in the past, are often highly valued, and influence the ways in which people move and structure their daily activities. Monuments may therefore reinforce established patterns of conduct, as well as the remembering of the past.

If monuments play a particularly important part in traditional or pre-modern communities, Lewis Mumford once proposed that in the modern world they have begun to lose some of their significance. His view was that in a contemporary milieu distinguished by change and tumult, in which 'all that is solid melts into air' (Marx and Engels 2012, 77), even monuments had come to be seen as transient, and as vain attempts to resist the depredations of time (Mumford 1937). This attitude is exemplified by Percy Bysshe Shelley's *Ozymandias*: 'two vast and trunkless legs of stone stand in the desert ... the lone and level sands stretch far away' (Shelley 2016, 194). The implication is that the despotic ruler and his works have been undone by the passing of the ages. Mention of the statue of Ozymandias (Rameses II) introduces another dimension of monuments: they may be intended to convey a specific message. Particularly in cases where monuments are to some degree representational, or bear a textual element, they may have been constructed in order to render a statement or image indelible, and to serve as

a continual reminder of its importance. However, in practice it may not always be possible to fix the meaning of a structure in this way. As Lars Larsson points out in Chapter 15, monuments of many kinds do not remain changeless through time and may be modified and transformed in multifarious ways. As he shows in his contribution, this may physically affect the way in which the monument can be used, but it may also alter its meaning, as when a new burial is inserted into an existing funerary mound. History reveals numerous episodes of iconoclasm, in which images and architecture have been destroyed or transformed in order to erase messages and likenesses that have been declared unacceptable (Besancon 2001; Boldrick *et al.* 2013).

Where monuments have actually been defaced (as with the erasure of wall paintings and the removal of the heads of statues in Christian churches during the Reformation), or where 'thematically opposed artworks' have been installed alongside them, Osborne (2017, 166) suggests that it is appropriate to talk of 'counter-monumentality'. Counter-monumental practices, he indicates, reveal the vulnerability of the public memories that are embodied in tangible things. So monumentality as a means of conveying information, or of expressing values, is actually quite a risky strategy. The earth, stone and timber monuments of Neolithic Europe were doubtless less directly representational than statues, plaques and memorials. But as we will see, they were often vulnerable to modification, elaboration, re-use and appropriation of various kinds. Neolithic monuments may also have differed from those of the modern world in that the substances of which they were composed may not have been understood as static, inert matter, but instead as volatile and animate, and endowed with metaphysical capacities (Taçon 1991; Cummings 2012). If this were the case, the assembly of materials to create a barrow or a stone circle might have gone far beyond aesthetics and ergonomics to create an entity that might have been imbued with efficacy, and that might indeed have taken on human-like abilities under certain circumstances (Zedeño 2008). Thus a tomb might not merely have been understood as a 'house of the ancestors', but as an ancestral being of some sort.

Another aspect of the materials that compose monumental constructions lies in the temporality that they bestow on them. We tend to think of standing stones or megalithic alignments as timeless and changeless, but like everything else they are slowly, imperceptibly eroding and falling into disrepair (Ingold 2012). Yet other materials decline and dissipate at faster rates: monuments of timber may only stand for a few decades before they rot away, so that their temporal signature is more comparable with that of human beings. This is perhaps the significance of the complementary pairing of the stone settings of Stonehenge and the massive southern timber circle at Durrington Walls, which are linked together by formal avenues and by the River Avon (Parker Pearson 2012). In some cases, the way in which

wooden monuments gradually decayed and collapsed may have been taken as a sign of their authentic derivation from the past. Such increasingly derelict structures may have progressively gathered greater importance: *Linearbandkeramik* longhouses often attracted burials after they had gone out of use, while at the Late Neolithic timber palisaded enclosure at Dunragit in Galloway, Scotland, deposits of human remains and possible feasting debris were inserted into the postholes of wooden uprights after they had rotted out or been deliberately withdrawn (Thomas 2015a, 161). In other cases, as with some of the post-defined early Neolithic cursus monuments of lowland Scotland, timber structures were deliberately burned down (Thomas 2007, 264). This represents the extreme temporal opposite of an enduring setting of stones: a temporary monument. But such a transient arrangement might represent an alternative strategy of memorability. By ending the short ‘life’ of a building in a spectacular matter, perhaps immediately following an event or performance for which it had been created, it might prove possible to secure its insertion into the collective history of a community.

In Chapter 1, Anne Teather draws our attention to an entirely different aspect of the temporality of monuments, the duration of their construction. Where a structure has been quickly built, perhaps in a single season, it is reasonable to imply that some coherent conception of the outcome existed before work began. But where monuments were created incrementally, and haphazardly, over decades or centuries it is much harder to argue for any pre-existing vision. At this point the distinction between the ‘original’ structure and later transformations or additions begins to break down, and the monument becomes the outcome of an emergent and almost organic process of growth. In Chapter 21, Valera draws a similar distinction between construction as event and as cyclical growth, noting that both the building and the use of sites may be recurrent and repetitious. This is most obviously the case with Neolithic ditched enclosures of various kinds, in which the backfilling and recutting of ditch segments may have represented repeated episodes in which the site was ‘re-made’, and the conditions for particular kinds of activity were re-established, before the place was again deconsecrated. To this Valera adds the important point that it is through such cycles of repetition that stability and permanence are achieved, which complements our comments on the importance of the reproduction of order in non-state societies.

Place and performance

As well as a temporal happening, construction is also a performance and a spectacle. Dragging stones across the landscape, erecting posts, constructing chambers, and piling up cairns and mounds of earth absorbs large quantities of labour, but it also engages a wider constituency (Hoskins

1986). Some people may be involved in making ropes and rollers, others prepare food for the workforce, and others still turn up for the feasting, to cheer on the labourers, or to jeer at those who slip, trip, or drop a stone. Monument-building is often a highly public activity, and because it is being witnessed by an audience it may be carried on in a state of some self-awareness. So the participants are like the performers on a stage, where the outcome is the success or failure of the enterprise, and the social standing of the sponsors or those directing the work is in the balance. And while the creation of monuments is a performance, as architectural forms they may also subsequently represent the foci or settings for performances of other kinds. These might include processing, feasting, dancing, praying, making sacrifices, oration, divination, blessing, cursing, invoking metaphysical beings, and acts of deposition (see Larsson Chapter 15). Since monuments often include architectural elements such as enclosed spaces, facades, courts, avenues and chambers, it is to be expected that conducting these activities in such places would have the effect of heightening experience and condensing the affective impact of performance. In other words, people taking part in ceremonial or ritual observances in these places are likely to find themselves exposed to very intense happenings (see Czerniak *et al.* Chapter 23).

This intensification of experience is one aspect of the ordering and subdivision of space that Sanches and Vale (Chapter 22) identify as a characteristic of certain forms of monumental architecture. This kind of spatial structuring can involve the establishment of a hierarchy of places, which may be reserved for the use of specific sub-groups within a community or set aside for particular practices. Archaeologically, it may be difficult to distinguish between a ranking of persons and one of activities, as we will see. These ranked and ordered spaces exist within the wider spatial context of the landscape, and in Chapter 2 Trevor Watkins argues that monuments must always be understood as having been tied in to more extensive networks of connections, often spanning considerable distances. In the case of the earliest Neolithic of the Near East, Watkins points to the importance of shared symbols and meanings, such as the T-shaped stone pillars shared between Göbekli Tepe and other contemporary sites. In some circumstances, then, it is appropriate to understand individual monuments as manifestations of broader patterns, or examples of a type or class of structures, and it is then the wider phenomenon that demands explanation. Moreover, monuments also represent an element of what John Robb (2013) refers to as the ‘landscape of action’. That is to say, they form part of an accretion of human modifications of the topography which collectively constitute the conditions of future action. As points of reference and orientation, they facilitate and constrain what can happen in future, and for Robb the emergence of an increasingly patterned landscape is one reason why change in the European Neolithic was directional and

incremental without being determined by simple cause-and-effect relationships. However, the ways in which monuments are distributed across landscapes are quite varied. In some examples, they occur alone, as isolated points of intensity and complexity. Thus at Crasto de Palheiros and Castanheiro do Vento, Sanches and Vale argue that the monumentalised hilltops focused the activities conducted in their surrounding landscapes, while rendering even mundane practices memorable (Chapter 22). However, particularly in the Neolithic of the Old World, monuments may form complexes, either composed of multiple examples of similar sites, or made up of a variety of different kinds of structures, which might include dwellings (Wadskjær and Hjortlund Chapter 14). In these cases, it is legitimate to talk of ‘monumental landscapes’, in which entire regions are organised around the structures and the relationships between them. Obvious examples of such landscapes include the area surrounding Stonehenge in the Neolithic and Early Bronze Age, or Chaco Canyon in New Mexico in the Pueblo period (Lekson 2015; Van Dyke 2008).

Where groups of monuments are found together, they may have been used in similar ways by different constituencies, or their uses may have been complementary. As Anne

Birgitte Gebauer shows in her paper, the dolmens, passage grave and cult house at Tustrup in Denmark produced rather different artefactual assemblages, indicating variations in the practices that took place in and around each structure. This modest group at Tustrup contrasts somewhat with the very large Döserygg and Skegrie dolmen complexes in Sweden (Fig. 25.3). In Chapter 24, Andersson and Artursson argue that the scale of these groupings of monuments may broadly reflect a hierarchy of emerging socio-political entities. There is no doubt that a more populous and powerful polity will be able to mobilise larger quantities of labour, and this provided the foundation for Colin Renfrew’s classic study of monument building in Neolithic Wessex (1973). For Renfrew, the increasing quantities of work invested over time provided an index of the size and centralisation of emergent chiefdoms. But by contrast, John Cherry (1978) emphasised the role of monument building as a profile-raising activity on the part of elite groups. This activity is likely to be engaged in discontinuously, at times of enhanced social change and instability. So the relationship between the scale of monuments and the character of social organisation may not be a direct one. Furthermore, the strontium isotope evidence from cattle teeth from Durrington Walls in Wiltshire, which



Fig. 25.3 Long dolmen at Skegrie, Sweden (photo: Julian Thomas).

indicates that animals (and by implication people) were travelling to the Stonehenge landscape from distant parts of Britain during the Late Neolithic (Viner *et al.* 2010), provides a hint that the workforce for exceptionally large monuments may sometimes have been drawn from regions that exceed any prehistoric polity. The capacity to draw on such a pool of labour may have been a temporary one, and might have relied on some combination of alliances, charisma, largesse, obligations and religious commitments.

Many of the papers in this book have reflected on the place that monuments may have had in the social organisation of the groups that made and used them. We have already argued that monuments may have simultaneously had an integrating and a coordinating function, constituting places where dispersed communities could meet at regular intervals (Czerniak *et al.* Chapter 23). It is for this reason that monumental foci often emerged in periods when substantial nucleated settlements dissipated, and mobility increased (Parkinson *et al.* Chapter 20). Further, as Maria Wunderlich notes in her contribution, the construction of collective monuments is not restricted to hierarchical societies (Chapter 13). For instance, the stone pillar sites of the Turkana area in Kenya were built by mobile, egalitarian groups (Grillo and Hildebrand 2013). However, where social inequality increases, monuments generally become the prerogative of the dominant groups (Osborne 2014). So although there is nothing essential about the assembling of labour that demands a preeminent authority, where leaders or a formal elite exist, monument building can become a focus for competition and tactical emulation. If monuments can be a source of both solidarity and prestige, the balance between the two may shift as groups become more internally stratified. Further, as the Renfrew/Cherry debate reveals, monuments may not so much reflect the degree of already-existing inequality within a community, so much as forming the medium through which it is created. It may not be the chief or the big man who causes the tomb or the enclosure to be made, but the project of construction that provides the forum in which their authority can be generated in the first place (Barrett 1994). Wunderlich's discussion of the raising of standing stones in Nagaland provides a vivid depiction of the factors that might be involved in this kind of process. Sponsors act as benefactors in providing competitive feasts, which give them the prerogative to raise stones that memorialise both the feast itself and their own ancestors. By this means, they enhance their own reputation while also securing the remembrance of their ancestral kin.

'Ritual monuments', and monumentalising the everyday

We have already seen that levels of effort that exceed any practical considerations have frequently been identified as a hallmark of monumentality. And although any

straightforward dichotomy between ritual and the mundane has been questioned in recent years (Brück 1999; Bradley 2005), monuments are often associated with ritual activity. For these reasons, it has sometimes been the case that monuments have been classified as 'non-domestic architecture', and in the process an opposition has been created between two separate realms of conduct. One of these is functional and rational, the other symbolic and ideational. In practice, it is more accurate to identify ritual as a mode of behaviour that people can slip into and out of, which is distinguished by an enhanced attentiveness to the significance of things and actions, which is generally somewhat formalised, and which draws on archaic traditions and ways of acting (Lewis 1980, 12). It is not restricted to particular places, buildings or artefacts, and frequently takes place in domestic and other mundane settings (Swenson 2015, 331). In the spirit of these arguments, Anne Teather (Chapter 1) reminds us that the economic and cultural roles of monuments cannot easily be prised apart. The houses of lineages and the palaces of rulers can be just as monumental as religious structures, although entirely quotidian activities might be conducted within them. Similarly, there is a strong argument that the massive longhouses of the *Linearbandkeramik* were deliberately over-engineered, colossally constructed beyond any functional requirement (Czerniak *et al.* Chapter 23; Hofmann 2006). Should we therefore identify them as monuments? Accepting this would demand a revision of the traditional view that in Central Europe the monumental was an *addition* to a primarily domestic and functional way of life. In the case of Gary Nobles' paper in Chapter 12, it is perhaps not that important to demonstrate whether the buildings at Zeewijk and Mienakker were long barrows or timber halls. In either case, they were monumental structures, and he is correct to assert that the Dutch wetlands were not non-monumental in the Neolithic. The imbrication and interpenetration of monumentality and the more utilitarian aspects of life is also demonstrated by Parkinson and colleagues in Chapter 20 on the stone temples of Malta. They note that the temples are generally located near to the finest agricultural land. This does not imply that whatever took place at these sites was of exclusively agricultural significance, merely that the ceremonial lives of the Neolithic Maltese were closely integrated into an existence that was grounded in the careful management of fertile resources.

While domestic sites and structures may sometimes be monumental in character, in other situations places that began their lives as dwellings are later monumentalised and venerated. In Polynesia, Patrick Kirch (2000) describes how the houses of prominent people are transformed into temples, while in Late Neolithic Wessex Joshua Pollard (2012) shows how henge enclosures were often constructed amidst the traces of settlement sites. In Chapter 8, Lasse Sørensen describes long barrows that were constructed over the remains of two-aisled houses and early settlement

clearings in Denmark. One explanation for this phenomenon is that although the remains that were being sanctified and monumentalised were related to everyday activities, they eventually took on an auspicious character by virtue of their association with ancestral generations. Non-western peoples are frequently intensely aware of the residues that survive in places that had been inhabited by their forerunners (Urwin 2019, 286). In Neolithic Europe, the recurring pattern of houses and halls being replaced by funerary monuments suggests that an equivalence existed between the 'house of the living' and the subsequent 'house of the dead' (Ray and Thomas 2020). In all of these situations, we might say that monumentality emerges out of a background of ordinary dwelling, rather than being imposed on the landscape in an act of appropriation.

Monuments and the Neolithic

The raising of massive earth and stone edifices has long been identified as one of the distinctive innovations of the Neolithic, attributable directly or indirectly to the presumed economic surplus provided by the adoption of agriculture (Childe 1925, 271). But as Trevor Watkins demonstrates here in Chapter 2, monumental buildings in the Pre-Pottery Neolithic of Southwest Asia began to be constructed some while before the emergence of farming. In this early period, the Neolithic was not synonymous with agro-pastoralism and domestication, although the exploitation and management of wild resources was certainly being intensified during this period. In this volume, the debate on the earliest Neolithic monumental buildings is concentrated on the site of Göbekli Tepe in southeastern Anatolia (Chapters 2–7). Here, a group of substantial stone structures were associated with bones of gazelle, aurochs and wild ass, together with barrel and trough-like stone objects that might plausibly serve as receptacles for food and drink, as well as grinders, pestles and mortars. This profusion of evidence for the preparation and consumption of food was originally interpreted as the product of feasting on a lavish scale, accompanied by activities including dancing (Dietrich *et al.* 2012, 687). Göbekli Tepe was identified as a ceremonial centre frequented by people from a wider hinterland, who partook of feasts and contributed to the construction of the special buildings. The increasing demand for labour over time, and for larger quantities of food for feasts at sites like Göbekli Tepe was therefore a stimulus for the domestication of plants and animals.

However, it is now evident that the large buildings at Göbekli Tepe were accompanied by smaller structures, some of which contained more modest versions of the T-shaped monoliths that distinguish the former. In some interpretations of the site, all of these are identified as temples, while others see them all as houses (Kinzel and Clare Chapter 3). In others still, a distinction is made between small domestic dwellings and larger sanctuaries, clan or lineage houses,

or cult houses (Jeunesse Chapter 5). The distinction in size is clear, but the sharing of artefacts and architectural elements between the two suggests a degree of overlap. In Chapter 3, Kinzel and Clare make two critically important points. Firstly, although considerable quantities of animal bones have been retrieved from Göbekli Tepe, they largely come from the redeposited fills of the buildings, and do not represent in-situ feasting debris. Second, the special buildings could have been constructed with a relatively modest workforce, so it is no longer necessary to imagine large numbers of people drawn from a wide area and demanding significant surplus production to support them.

Rather than supporting the view of Göbekli Tepe as a ceremonial mountain sanctuary, Kinzel and Clare draw attention to the rebuilding, modification and repair of the special buildings over a period of 1500 years, and the re-use of materials, including the T-shaped stone pillars. These buildings endured over long periods, with complex sequences of remodelling and renovation. The authors suggest that this indicates that specific social groups were attached to the buildings through patterns of obligation and association, and that the durability of structure and community were linked. Although there are eight monumental structures at Göbekli Tepe, each one may not have admitted more than about 50 people, suggesting that each may have been used by a separate sub-grouping with a larger society. As we have already argued, it is possible to propose multiple possibilities for the identities of these factions: sodalities, secret societies, clans or other kin groups, cults, or age grades.

Perhaps the most attractive possibility is that the large buildings at Göbekli Tepe relate to house societies, in the sense defined by Claude Lévi-Strauss (1982). A 'house' is a group of real and fictive kin whose solidarity is vested in their collective attachment to a tangible structure and/or an estate of property. While not all members of the household need be co-resident, temporarily or permanently, the house operates as a 'moral person', collaborating and competing with other equivalent units. This would seem to be very much in harmony with the picture that Kinzel and Clare present, of a society that lacked any centralised leadership, but which was characterised by division and internal competition. Interestingly, Christian Jeunesse compares Göbekli with two of the classic house societies: the Native Americans of the Northwest Coast, and the Torajas of Sulawesi (Waterson 2000). As he notes, in these societies the house represents the collective identity and history of the group, and functions as its social and ritual focus. Moreover, the house and its associated paraphernalia evoke and embody the household ancestors. Ian Hodder builds on this point in his commentary in Chapter 4, emphasising the importance of history making in the development of sedentary and co-resident groups in the Near East. But as he further argues, these highly competitive house-based units existed in an uneasy and volatile relationship with the

larger community, which possessed little identity of its own. Ultimately, the consequence would be the fissioning of the large early Neolithic settlements (Baird *et al.* 2017, 756).

The monumentalisation of life

In chapter 12, Gary Nobles proposes that the Neolithic was distinguished by a monumentalisation of life, and his sentiment informs the title of this book. There are two possible senses in which this might have been the case. Firstly, for some Neolithic societies, it could be said that the monuments in their landscapes organised and structured the rhythms and cycles of their existence through the repeating seasons. But secondly, monumentalising life could refer to the process by which aspects of everyday, unconsidered practice were made visible and memorable by bringing to notice things that would otherwise be passed over. Monuments rendered the habitual aspects of a new way of life conspicuous: domestic dwelling, the passing of the generations, the preparation and consumption of food, the relationships and obligations between members of communities. They also revealed familiar materials in unfamiliar ways: stones raised and placed in juxtaposition; the earth opened up, and its depths made visible; earth, clay and chalk piled up, their colours contrasting with their surroundings; trees felled and re-erected in circles and, facades and alignments, sometimes even with their roots uppermost (Pryor 2001). It might not be too far-fetched to argue that one of the effects of monument building (and the other related practices of memory and display that we have discussed) was to bring about a kind of ‘re-enchantment’ of the mundane, at once revealing and reinforcing the lineaments of Neolithic society. However, the question remains of why monuments came to be such an important element of the European Neolithic, given that they may have been less significant in its earliest manifestations (Czerniak *et al.* Chapter 23). Or to be more precise, why did some Neolithic societies sometimes seem to be so concerned with monuments (at some times), when there were clearly places and periods in which monuments were not being created (Müller *et al.* Chapter 11)? Nobles is undoubtedly correct when he points to the negative effects of an overly generalised model of the Neolithic, which demands conformity in economic and ceremonial practices across continents. Equally, Valera stresses that monuments cannot be removed from their particular social and economic contexts. None the less, the specific character of Neolithic monumentality is a question that continues to exercise prehistorians.

Rather than having been constructed continuously throughout the period, Neolithic monuments in Europe appear to have proliferated in ‘bursts’ or ‘waves’ (Brozio Chapter 10). Several of the papers in this book indicate that these horizons of monument building may not always have coincided with the beginning of the Neolithic in any given region. Indeed, the relationship between the first Neolithic

activity and the first monuments in an area may be an important indicator of the *kind* of Neolithic process that was at work. Müller and colleagues (Chapter 11) indicate that the megalithic monuments of south Scandinavia and North Central Europe were created over a period of about twenty generations, which is an appreciable period of time. But on the island of Rügen, most of the megalithic tombs date to the period around 3600 BC, which is approximately four centuries after the start of the Neolithic. Behrens (Chapter 9) suggests that this activity coincided with a change in settlement patterns, and the development of a more coherent Neolithic way of life. Similarly, in Central Europe, Czerniak and colleagues (Chapter 23) suggest that rondel enclosures emerged quite swiftly and were in use for only two or three centuries before being abandoned. One cautionary note in relation to this kind of pattern recognition in space and time is sounded by Pospieszny *et al.* and Papiernik *et al.* (Chapters 16–17), whose exemplary work in Poland, facilitated in part by the use of LiDar, demonstrates that the distribution of long barrows is far more extensive than hitherto imagined. In some situations, successive waves of monuments building differ, in that the structures concerned were architecturally distinct, or were clearly used in different ways. In northern Europe, passage graves and gallery graves were often built in a separate episode from the earlier dolmens. The number of persons deposited in these tombs was greater, they were used over a longer duration, and there is greater evidence for more extensive ritual observances during funerals and subsequent acts of veneration (Gebauer Chapter 19). The reasons suggested for this contrast vary: the change in the scale and morphology of tombs might be attributed to the emergence of a more stratified society, or to population growth (Sørensen Chapter 8; Andersson and Artursson Chapter 24).

Conclusion

In this contribution, I have suggested that monumentality is sometimes difficult for us to grapple with because when we look at it closely it dissolves into a series of distinct themes. These include massiveness and scale, memorability and remembrance, permanence and durability, labour and construction, experience and embodiment, performance and spectacle, spatial order, meaning and message, competition and solidarity. Some of these are particular to monuments, but others are shared by a suite of other practices that were important during the Neolithic: the manipulation of the remains of the dead, the exchange and circulation of fine artefacts, the use of natural places, the building and use of domestic dwellings, the mining and quarrying of stone, and acts of deposition in pits and other contexts. Several of the papers in this book have emphasised the role of all of these forms of conduct in societies that were based upon the generation of an economic surplus, which facilitated the

emergence of increasing inequality, prestige competition, feasting and gift-giving. These are important arguments, and they have much to contribute to an understanding of the period. However, they tend to cast monuments and related activities as cultural products that are secondary to a productive economic infrastructure.

I would like to suggest that monuments may have been more fundamental than this would suggest. We have seen that the durability of monuments can promote social stability; their endurance beyond a human lifetime upholds traditional structures. None the less, they remain ‘in play’ for as long as they survive, vulnerable to appropriation and transformation. Despite this potential for the alteration of their significance, it is the comparative permanence and continuity of monuments that is of critical importance to societies that lack the institutions that facilitate social reproduction. Neolithic societies, whether fully agricultural or practicing the delayed-return management of wild resources, were entirely dependent on stability and continuity. They did not have the option of fissioning into minimal social units as mobile hunter-gatherers do. Neolithic societies were collectively invested in bodies of shared wealth: gardens, herds, groves and plantations (Thomas 2015b). These needed to be retained within the community and maintained beyond the lifespan of any single person. So while the elaborate social arrangements and material paraphernalia of the Neolithic provided the fora for prestige competition, their more fundamental role lay in creating the socially stable conditions that were the prerequisite for cultivation and husbandry.

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