THE ARCHAEOLOGY OF POWER: UNDERSTANDING THE EMERGENCE AND DEVELOPMENT OF NEOLITHIC MONUMENT COMPLEXES IN BRITAIN AND IRELAND

Volume 1

SUSAN ELEANOR GREANEY

PhD in Archaeology

School of History, Archaeology and Religion, Cardiff University

Department of Archaeology, University of Southampton

Submitted 9 February 2022

Summary

Neolithic monument complexes in Britain and Ireland were places where dispersed non-human and human powers were gathered and drawn upon by people, creating new political, religious and social configurations. This thesis investigates the circulation of power within Neolithic societies by examining the evidence from these ceremonial complexes, focusing particularly on five case studies (Stonehenge, Avebury, Dorchester, Brú na Bóinne and Stenness-Brodgar). Approaches derived from relational, new materialist and assemblage thinking are used to explore the interconnectedness of people, places and things at monument complexes. By considering and including non-human aspects of the world, including rivers, topography, landforms, directionality, alignments and concepts of past, present and future, it is shown how these places were appropriate for the construction of monuments, and how complexes emerged and developed over time. This includes a detailed interpretation of the chronology of the Dorchester complex, derived from new radiocarbon dates and Bayesian analysis. A focus on unequal power relations is retained throughout, with a particular emphasis on how human relations were mediated through things and places, in order to move forward discussions of power within archaeology. Monument complexes emerge as places where relations of power with other beings or things, as well as other people, could be negotiated and worked through.

Declaration of originality

I hereby declare that, except where indicated by specific reference, the work submitted herein is the result of my own investigation, and that the views expressed are my own.

I further declare that no portion of the work presented has been submitted in substance for any other degree or award at this or any other university or place of learning, nor is being submitted concurrently in candidature for any degree or other award.

Signed

Total length = 78,881 words, excluding front matter and tables in Volume 1 and appendices (Volume 2)

Acknowledgements

This PhD was generously funded by the Arts and Humanities Research Council, through the South, West and Wales Doctoral Training Partnership (award number 1502811). I am deeply grateful to my supervisors, Professors Alasdair Whittle, Joshua Pollard and Niall Sharples, who have supported and guided me at every stage with enduring patience. Since his retirement Alasdair has continued to read draft chapters and provide timely encouragement. The wider Cardiff and Southampton archaeology departments have provided me with opportunities and funding, as well as the friendship and support of staff and fellow post-graduate students.

I would like to offer my sincere thanks to the Scientific Dating Team at Historic England, who funded the radiocarbon dates obtained for the Dorchester monuments, especially to Dr Peter Marshall who assisted with the selection, sampling and analysis of the dates presented in this thesis, while attempting to train me as a proper Bayesian archaeologist. Figures 6-4–5, 6-11, 6-19–22, A3-6, A3-10 and A3-14–15 were created by Dr Marshall and are used here with his permission. Also at Historic England, Dr Jonathan Last and Martyn Barber have advised and supported me as part of my DTP partnership with English Heritage/Historic England, including a short placement with the Aerial Survey and Investigation team. Simon Crutchley assisted with providing basemap data for Figure A1-1. Thank you to Dorset Museum who allowed access to their archaeological collection on several occasions and who agreed to all my sampling requests. I am grateful to Professor Joanna Brück and Dr Oliver Harris for their useful comments on early drafts of individual chapters. Thanks to Nick Card and the Ness of Brodgar team for allowing me to take part in the excavations at their extraordinary site, and to the Living with Monuments team for the chance to excavate within the Avebury landscape. Thank you to the BBC and AHRC for selecting me as a New Generation Thinker 2019, allowing me the opportunity to share my research with a wide audience on Radio 3 and beyond.

Many people have provided me with unpublished data, draft papers, ideas and tips, including Professor Richard Bradley, Dr Kenny Brophy, Dr Neil Carlin, Dr Rosamund Cleal, Dr Kerri Cleary, Dr Steve Davis, Dr Catherine Frieman, Dr Chris Fowler, Dr Frances Healy, Dr Roy Loveday, Dr Lesley McFadyen, Dr Richard Madgwick, Nigel Jones, Paul Linford, Martin Green, Pippa Bradley, Jake Rowland, Clive Waddington and Katy Whitaker; I am grateful to all of them and apologise to those I have no doubt missed. Many people have given permission for the use of images, they are credited in the individual captions.

I am deeply indebted to my family, colleagues and friends who have supported me over the past seven years, and never got tired of asking ‘how’s the PhD?’. This thesis would not have been completed without the support of friends in archaeology who fully understand the PhD struggle and who have provided role models to follow. Finally – to Martin. You have lived this PhD with me and have supported me every step of the way. Thank you for everything.

Contents

1 Contents

List of figures

List of tables

Notes on formatting and conventions

Following international convention (Mook 1986), radiocarbon ages are cited as 'BP' and calibrated radiocarbon ages are cited as 'cal BC'. Dates '*cal BC*' in italics are posterior density estimates derived from Bayesian modelling. All dates are cited at two sigma (95% confidence), unless otherwise stated. Calibrated date ranges have been quoted with the end points rounded outwards to 10 years, unless the error range is less than 20, in which case the end points are rounded outwards to 5 years. Dated have been calibrated using IntCal20 (Reimer *et al.* 2020), using software OxCal 4.4 (Bronk Ramsey 2009). Full radiocarbon date tables for the five case studies can be found at the end of the relevant appendices.

All reconstruction drawings (except Figures 1-1 and 4-17) have been commissioned by the author as part of her role at English Heritage.

Figures in the appendices are prefaced by A (e.g., A1-3).

Two edited volumes (Whittle *et al.* 2011 and Parker Pearson *et al.* 2020) have been referenced by the main editors, rather than individual author teams for chapters and sections.

To my parents, for their unfailing support

‘Place is three-fourths of time.’

‘[He] said that there had never been sacredness in rocks or springs, but in the mind-soul, the spirit, only. The rock and the spring and the body, he said, were screens, that kept the spirit from pure sacredness, true power. I said [it] was not like that; it was the rock, it was the water running, it was the person living. If you gave Blue Rock nothing, what could it give you? If you never spoke to it, why should it speak to you? Easy enough to turn from it and say, “The sacredness has gone out of it.” But it was you that had changed, not the rock; you had broken the relation.’

Ursula K. Le Guin

Castle an Dinas and Chysauster Village (1976)

Always Coming Home (1985)

Introduction

The construction of ceremonial monuments of timber, earth and stone during the Neolithic period in Britain and Ireland has long prompted inferences about the complexity and organisation of the societies who built them. The immense labour and co-operative demands of such projects have been viewed as evidence for social complexity, including the presence of elites and hierarchies. However, direct evidence for social stratification is sparse. For much of the Neolithic people disposed of their dead in archaeological invisible ways, with little evidence for 'high-status' burials indicated by grave goods or biological markers. Where burials do exist, for example within early Neolithic long barrows or middle Neolithic passage tombs, there are few indicators of status and no clear social hierarchy. Similarly, settlement evidence is relatively rare, despite increasing numbers of large timber 'houses' dating from the early Neolithic in Ireland and to a certain extent in Britain. It is not clear whether these were communal structures or family houses, and there are no settlements incorporating larger buildings that might indicate hierarchies. Settlements dating from the late Neolithic are scarce; any larger buildings may well have ritual or ceremonial purposes.

Monuments and their associated activities therefore provide one of the few avenues for investigating social organisation in the Neolithic. However, current interpretations of monument building remain unsatisfactory, with a lack of theorisation about concepts of power and reliance on out-dated models of social organisation (Chapter 1). This thesis will examine the potential of new theoretical approaches derived from relational and assemblage thinking to examine relations of power and social organisation evident at monuments. These relational perspectives expand the social to include interactions with non-human actors (places, materials and things) and have the potential for a more nuanced and sophisticated approach to the circulation of power in Neolithic societies. These theoretical approaches themselves have neglected notions of power and inequality; here a focus will be retained on unequal human-human relationships as part of wider assemblages (Chapter 2).

The thesis will focus on clusters of monuments, known as monument complexes, as nodal points within networks of these relations; places of negotiation and collaboration. These ceremonial complexes have the potential to "offer a kind of narrative that is as close as prehistorians can come to writing a political history" (Bradley 1993, 98). Much archaeological research into Neolithic monument complexes has focused, quite understandably, on specific and geographically limited landscapes. To date, few archaeologists have compared different monument complexes across Britain and Ireland, to explore how they emerge and develop over time, and how they might relate to themes of power and inequality. The rare volumes that have tackled these questions directly are now more than 25 (Barrett 1994) or even 35 years old (Bradley 1984). Since then, the five monument complexes that form the focus of this thesis have witnessed new archaeological excavations, revised radiocarbon dates and innovative scientific

studies. This information, together with older studies and new radiocarbon dating undertaken as part of this project, will be used to create detailed temporal and spatial biographies of these monument complexes. These will be used to explore the circulation of power in Neolithic societies, between different people but also between people, places and things. Detailed chronological and spatial descriptions of these complexes are presented (Volume 2) and the main chapters explore the fundamental theme of place, with a thematic structure that moves through the underworld (Chapter 3), the surface world (Chapter 4) and the upper world (Chapter 5), before examining relations of time (Chapter 6). This approach will be evaluated alongside more traditional ways of identifying power relations and social structures in the Neolithic (Chapter 7). An overview of the emergence and development of monument complexes will be presented, as well as connections between complexes across time and space.

New radiocarbon dating for all the major monuments in the Dorchester monument complex has been undertaken as part of this thesis, with funding from Historic England and the assistance of Dr Peter Marshall in sample selection and Bayesian analysis. These are presented and discussed in Chapter 6, and the full radiocarbon date list for these sites can be found in Table A3-1. A more detailed discussion of the sample selection and model construction has been published for Mount Pleasant (Greaney *et al.* 2020) and similar papers are in preparation for the other monuments. In addition, Case Study 1 has been published as a book chapter (Greaney 2019).

1 A history of ideas

This chapter will review previous archaeological approaches to power in relation to Neolithic monuments. Progressing roughly chronologically through the major relevant debates and key thinkers, the chapter will explore how power has almost always been conceptualised as something possessed by elites and leaders, and exercised through the control of land, agricultural surpluses, labour, religious knowledge and ideology, including through the construction of monuments.

1.1 Typologies, systems thinking and functionalism

1.1.1 Evolutionary typologies

Long before any discussion of the specific concept of power in relation to monuments and prehistoric societies, established methods of dividing people into successive groups contained implicit ideas about social organisation. The 19th century three-age system of Stone, Bronze and Iron (Thomsen 1836; Lubbock 1865) was based on social evolutionary theories that had been part of Western thinking since the 18th century (Chapman 2003, 33). These ideas were paralleled among early anthropologists, who identified three basic social forms — savagery, barbarism and civilisation (Morgan 1877). As they became documented, non-Western people such as Aboriginal Australians were viewed as fossils from earlier stages of evolution or "our contemporary ancestors" (Service 1975, 18). Building on a long history of thought stretching back to Voltaire, Rousseau, and Kant, such technological criteria have been used to distinguish different periods or forms of society, which are often seen as evolving from 'simple' to 'complex' (e.g., Brumfiel and Earle 1987).

There was a revival of social evolutionary theories within anthropology in the 1950s and 1960s, led by scholars such as Steward, White, Sahlins and Service (Yoffee 2005, 8). For example, Sahlins (1958) proposed that tribal societies could evolve into chiefdoms, based on social stratification that he observed in Polynesia. These 'neo-evolutionists' created typologies based on living groups and then projected them back into the past, the most widely cited being a four-stage sequence which progressed from hunter-gatherer bands, via tribes and chiefdoms, to civilisation in the form of the state (Service 1962; Fried 1967; see Chapman 2003, 33–8). These changes were thought to be driven by improvements in subsistence, with farming and the creation of surplus seen as the major reason for the shift from band to tribal organisation. There was a parallel revival of these approaches among influential archaeologists working in Britain (e.g., Clark 1939; 1946; Piggott 1949). Archaeologists such as Childe would write about progress between these levels of social differentiation in prehistoric Europe through the farming and industrial the revolutions (Childe 1936). The conclusions were popularised by Atkinson in his book on Stonehenge, "I believe that Stonehenge itself is evidence for the concentration of political power, for a time at least, in the hands of a single man, who alone could create and maintain the conditions necessary for this great undertaking" (Atkinson 1956, 166; Figure 1-1). Later, the North American 'New Archaeology' would spend

time trying to identify transitions between these categories in the material record (e.g., Binford and Binford 1968).

In descriptions of the original socio-evolutionary categories, each stage was increasingly hierarchical, with the band seen as egalitarian and the tribe as having situational leadership based on kinship or achievement. Only at the chiefdom level were a small number of elites able to control the redistribution of goods and mobilise human labour for various public works, including ceremonial monuments (Chapman 2003, 34). These chiefs were usually assumed to have religious authority, initially operating along egalitarian principles of redistribution but eventually leading to the emergence of wealthy and repressive leaders (Service 1962).

Figure 1-1 Reconstruction of the building of Stonehenge from 1980 showing a leader or chief (brandishing 'symbols of power' from the Bush Barrow) directing the construction of Stonehenge by hundreds of hard-working men; a clear hierarchy and gender division is envisaged © Historic England, drawing by Ivan Lapper

The most influential adaptation of socio-evolutionary theory for ceremonial monuments in Britain was Renfrew's (1973) identification of chiefdoms in the spatial patterning and labour estimates for monument complexes in prehistoric Wessex. Writing in reaction to the prevailing diffusionist explanatory models, Renfrew saw clusters of monuments in Wessex as representing the territories of emerging chiefdoms. Drawing on Service (1962; 1975) and Sahlins (1958), Renfrew identified a checklist of 20 frequent features of chiefdoms (Table 1-1).

List of frequent features of chiefdoms	
1) Ranked society*	11) Rise of priesthood
2) Chiefly redistribution of produce*	12) Relation to total environmental situation favouring specialisation in production
3) Greater population density	13) Specialisation, regional or ecological but also pooling of individual skills
4) Increase in total number in the society	14) Organisation and deployment of public labour, for agricultural work or building monuments
5) Increase in the size of individual residence groups	15) Improvement in craft specialisation
6) Greater productivity	16) Potential for territorial expansion
7) More clearly defined territorial boundaries or borders	17) Reduction of internal strife
8) A more integrated society with a greater number of sociocentric statuses	18) Pervasive inequality of persons or groups within society associated with leadership in fields other than economic
9) Centres which coordinate social and religious as well as economic activity	19) Distinctive dress or ornament for those of high status
10) Frequent ceremonies and rituals serving wide social purposes	20) No true government to back up decisions by legalised force

Table 1-1 - List of frequent features of chiefdoms (from Renfrew 1973, 543) – * = defining features. Numbers 9, 10 and 14 are the only features identifiable in Neolithic Britain and Ireland.

Ceremonial monuments in this model were built through the central organising power of the chiefs, who could gather and redistribute agricultural surplus and co-ordinate mass labour. Identifying a number of these traits in the archaeological record of Neolithic Wessex, Renfrew (1973) proposed that earlier small chiefdoms (centred on causewayed enclosures, and later henges at monument complexes) coalesced over time, culminating in an overarching chiefdom represented by the construction of Stonehenge. Power was concentrated in the hands of a few leaders, who controlled monument construction and use. Renfrew later developed his theory further, setting out two different forms of chiefdom: 'group-orientated' and 'individualising' (Renfrew 1974). Group-orientated chiefdoms were societies who expressed their solidarity through communal activities such as monument building but had no obvious signs of personal wealth. Individualising chiefdoms were societies that had a marked difference in personal possessions, showing individual ranking, with little evidence of large communal projects (Renfrew 1974, 74). Renfrew proposed that the late Neolithic of southern Britain contained group-orientated chiefdoms, as evidenced by the large communal henges and other monuments, whereas the 'Wessex Culture' of the early Bronze Age represented an individualising chiefdom. In this paper and later,

Renfrew (1976; 1979) would famously use Thiessen polygons and the spatial distribution of megalithic monuments to argue for the existence of early Neolithic segmentary societies on the islands of Malta, Rousay (Orkney) and Arran (western Scotland). Segmentary societies are characterised by a lack of central hierarchy but are divided into autonomous separate units. It has been proposed that the layout of chambers within tombs (Fleming 1972, 62) and the 'segmentary' construction of ditches at causewayed enclosures (Startin and Bradley 1981, 293; Edmonds 1999, 101) may reflected such organisation. Darvill (1979) proposed that the shift from court cairns to passage tombs in Neolithic Ireland directly reflected a change from a segmentary society to chiefdoms and Sheridan (1985) thought that the shift from an egalitarian society to competitive groups was reflected in the development of passage tombs in Ireland. Early work on causewayed enclosures interpreted them as central places for regional groups, although more recently their position on the edges of occupied zones has been emphasised, being built in liminal or neutral locations between communities (Oswald *et al.* 2001). The size of monuments has often been used as an index to social complexity, with either labour estimates or the size of spaces enclosed interpreted as a proxy for the scale of the communities controlled by elites in the act of building or frequenting them (e.g., Barnatt 1989; Earle 1991). However, as will be explored below, monumental architecture cannot be used as a direct index to the scale of the communities involved.

1.1.2 Systems thinking

Alongside Renfrew's work, there was a general move in 1970s archaeology towards 'systems thinking', deriving from cybernetics, information theory and behavioural studies (e.g., Flannery 1972). In these approaches, society was a network of interlinked attributes, forming a complex and dynamic system. This network was a kind of self-perpetuating organism in which the various institutions (e.g., economy, trade, subsistence and ideology) articulated and worked together for the good of the whole (Clarke 1968, 42). However, this division of societies into different institutional functions does not reflect how these areas are intertwined and interdependent, and there is no general agreement about what these categories mean (Leach 1982, 131). Explaining how power within chiefdoms was unequally distributed, lying with institutions or individuals, Peebles and Kus (1977) argued that power was exercised for the collective needs of the whole to maintain society in equilibrium or homeostasis in the face of increasing complexity and information. They argued that Neolithic Wessex was a chiefdom under three of their own defined criteria (Peebles and Kus 1977, 432), even though two of these related to settlement evidence which is distinctly patchy for this period. Cherry (1978) hypothesised that large monuments (in his example Minoan peak sanctuaries) were built to justify and promote the role of dominant groups either at the time of their establishment or when the fabric of that society starts to break down, both occasions when the 'need' was greatest and the social order most fragile. Burgess (1984, 143) suggested that intense henge building in the late Neolithic was a response to rising population, land pressure and declining fertility of soils. Hodder (1979) also thought that groups were likely to symbolise distinct identities during times of economic stress.

These ideas contrast with previously held views that monuments were something to be indulged in when time and resources were plentiful. Case (1969), for example, had argued that ceremonial monuments were not the priority but rather projects that could be undertaken during a phase of 'stable adjustment' after initial Neolithic colonisation. Recent work on modelling the dates of the earliest Neolithic monuments in Britain has shown that there is indeed such a time-lag between the beginning of agriculture and the appearance of the first monuments (Whittle *et al.* 2011, fig 14.179).

We can see the impact of systems thinking in Renfrew's (1976) interpretation of monumental tombs as territorial markers, as solutions to competition for land. Renfrew's work drew on ethnographic analogies, and the Saxe-Goldstein hypothesis (Saxe 1970; Goldstein 1981; Morris 1991) which stated that formal disposal areas exclusively for the burial of the dead (i.e., tombs or cemeteries) are maintained by corporate groups legitimising their rights over crucial but restricted resources, through claim of descent from ancestors. Sahlins (1961) had earlier suggested that communities in competition for resources were more likely to stress links with an ancestral lineage. Scholars such as Cooney (1983; for County Leitrim, Ireland) and Madsen and Jensen (1982; for Denmark) have followed Renfrew in making links between early Neolithic megalithic tombs and areas of good agricultural land and the model is still cited today (e.g., Parker Pearson *et al.* 2020, 318). However, when Bradley (1984, 16–17) examined the relationship between monuments, productive agricultural land and stone sources in Neolithic Britain, he found that more elaborate tombs could be found in marginal areas where groups might be undergoing internal competition for resources (Bradley 1984, 20).

1.1.3 Challenging chiefdoms

Only features 9, 10 and 14 of Renfrew's chiefdom traits (Table 1-1) can be identified in the archaeological record for Neolithic Britain and Ireland. The category of chiefdom is restrictive, as it uses a description of the elite to characterise a whole society, rests on binary notions of gender (the elite are usually male) and the belief that certain people crave power and control, via wealth accumulation (Pauketat 2007). Renfrew's model depends very much on assumptions regarding not only where people came from to take part in building monuments, but also about the length of time over which construction took place. Recent ancient DNA and isotope studies on both people (e.g., Neil *et al.* 2016; Snoeck *et al.* 2018; Olalde *et al.* 2019) and animals (e.g. Wright *et al.* 2014; Viner *et al.* 2010) show that travelling over relatively long distances was quite common in the Neolithic period. "We need to challenge the preconception that individual communities built individual monuments" (Cummings 2016, 53). The model also relies on unfounded estimates about population growth and land competition (Hodder 1984, 52) and makes the supposition that the people buried within tombs lived in the immediate surrounding area or had established tenure of those areas. Despite being cited as a classic example of a society who bury their dead in communal tombs, thereby fixing their ancestors in relation to specific territories (e.g., in Chapman 1981, 73), Bloch's study of the Merina in highland Madagascar shows that people were often

buried far from their places of residence, with others who they had not necessarily known in life (Bloch 1971). The distribution of Neolithic monuments in different parts of Britain, with widely variably spacing of monument complexes across different regions (compare Wessex with Kent, for example in Figure 2-7), implies something quite different to bounded regional chiefdoms.

More generally, the functionalist approaches that characterised the New Archaeology of the 1960s and 1970s contained basic assumptions about the nature of societies. Their models made change in prehistory difficult to explain, with sudden jumps between static categories usually stimulated by adaptation to external variables or population growth. These jumps were along an inevitable evolutionary, and ultimately triumphalist, trajectory. Social categories, if they exist at all, are not static – they are fragile and negotiated processes (Wolf 1990, 591–2). As well as 'evolution' there can be 'devolutions' and cyclical change (Mann 1986, 39). Frustratingly, abstract social categories have often been explanations in themselves, lumping together widely differing people and histories and smoothing over their differences, in "an illusion of history, a series of myths" (Yoffee 2005, 231).

Although concepts of ladder-like social categories and evolution are largely unfashionable today, deep-seated assumptions of ethnocentric progressivism, elites and power relations still persist in archaeological discussions of prehistoric monuments. Although more nuanced and detailed descriptions of different types and models of society (Flannery and Marcus 2012) can be helpful in attempting to describe the wide variety of ways in which power structures operate, these models may not be directly applicable to the past and can still imply universalising and static categories that do not help explain power relations or change over time.

Many societies are now known ethnographically that do not fit Service's (1962) categories (e.g., in South America Indian groups, Clastres 1977) and documented historical examples of chiefdoms and early states have been shown to often be 'secondary' formations, reflections of wider modern world systems (Sherratt 1984, 124; Chapman 2003, 45; Spriggs 2008). Chiefdoms themselves have been found to widely variable and far from static entities. Pacific Island societies that have long been influential models for socio-evolutionary development have been shown to have different forms of monumentality and so cannot be used as proxies for social organisation. For example, Bedford (2019) has shown how three different islands in Vanuata, Melanesia have complex and varied monument practices. On two of the islands, there is only minimal hierarchy with chiefs having only local influence and yet monuments built of stone are widespread on one island and not the other. On the third island, there is a much more hierarchical chiefly system but almost no monument construction, but instead major ritual gatherings that leave little archaeological trace. The An-gami Naga people who live near the Burmese border in India, are an agricultural society with prestige based solely on achievement, yet they traditionally practise stone pulling ceremonies, erecting either single standing stones, or avenues and circles (Hodson 1911; Hutton 1921; Flannery and Marcus 2012, 104–9; Figures 1-2 and 1-3). The impetus for monument

building need not come directly from centralised authorities. In Evans-Pritchard's study of the Nuer of Sudan, a charismatic prophet Ngundeng was solely responsible for encouraging the construction of a large mound in the 1890s, "to bury all bad things associated with smallpox and rinderpest" (Whittle 1997a, 148–9).

For post-processual archaeologists (e.g., Shanks and Tilley 1987; Hodder 1991), linking monuments directly to social organisation and thereby to static power structures, was symptomatic of the cross-cultural generalisations that they deemed inappropriate for archaeology. "What matters most is not the attainment of a certain level of social evolutionary complexity but the strength of the motivation and the ideology which drive people from their own volition to construct the world in new ways and build cosmic order on earth" (Parker Pearson and Ramilisonina 1998a, 323).

Few of the approaches inspired by systems thinking explicitly addressed the question of power, and how it circulated or was exercised. Most accounts treated power as "the ability to exercise control or command over others" (Renfrew 1984, 24). There was no room for the individual; except for chiefs or leaders, human subjects were reduced to puppets of wider historical forces (Hodder 1991, 28; Fleming 2004, 144) or treated as specimens of a role or status (Robb 2010, 495). Individuals can simultaneously participate in different power relations at many levels, at different locations and stages of life cycle, and as members of different kinds of social groups (McGuire 1983). By conflating power with authority, these approaches neglected questions such as where power came from, how it was exercised and how it could be resisted. One exception to this was Earle, who investigated three intertwined sources by which chiefs come to power – economic, military and ideological (Earle 1991). With the addition of political power, these are the four sources that Mann (1986) had identified in his influential model of social power. Mann's work was innovative in several ways: in rejecting evolutionary models of progress, in seeing social structures as cyclical or transient, in making a distinction between authority and coercive power, and in discussing unintended consequences of action for social change. For Neolithic Britain and Ireland there is no evidence for direct economic or military power, so archaeologists have focused on forms of ideological and political power.

Figure 1-2 Megaliths erected by An-gami Naga people in India, in honour of those photographed. Only a man who had demonstrated his prowess in war could hold a series of ritual feasts, culminating in a month-long feast during which the stone pulling would take place, commemorating his achievements. No chiefdoms, institutions or hereditary leaders were required to erect megaliths here (Hodson 1911; Hutton 1921)

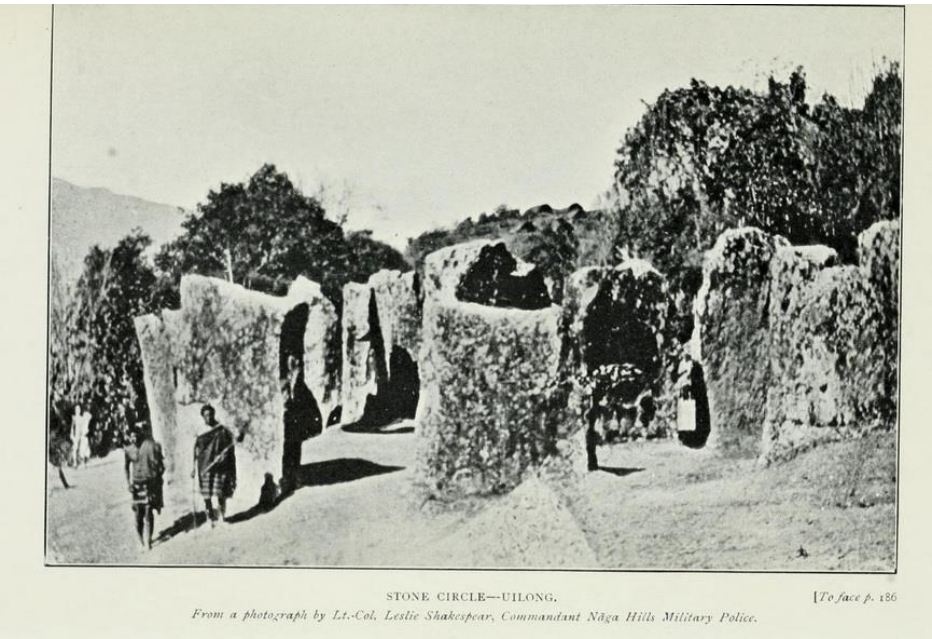


Figure 1-3 Megaliths erected by the An-gami Naga people included stone circles such as this one at Uilong. Unmarried men dance and wrestle inside the circle during the annual village feast and festival of the dead (Hodson 1911, 186–8).

1.2 Ideological control and false consciousness

1.2.1 Marxism

The contradiction between a few individuals who could be powerful chiefs and the majority who remained subservient members of society would be examined more closely by a new generation of archaeologists inspired by the work of neo-Marxist anthropologists. Although neo-Marxism did not form a major theoretical development in archaeology, it was within this stream of thought that power, and the closely related concept of ideology, were discussed in detail.

Marx and Engels were the first to strongly emphasise the role of human action within society in their discussions of social change, "it is not the consciousness of men that determines their being, but, on the contrary, their social being that determines their consciousness" (Marx 1977, 4). Key to Marxist theory is the 'mode of production', the distinctive way in which people in different times and places produce things: tribal, Asiatic, Ancient, feudal, capitalist (Spriggs 1984, 4). The mode of production, Marx argued, can be split into the forces of production (raw materials, tools, labour) and social relations of production (workforce, management) (Johnson 2010, 96). The economic base was overlain by a superstructure or ideology, an illusionary representation of reality. Marx argued that ideologies were mystifications to legitimise domination, to hide asymmetrical power relations and the objective realities of the economic base. Ideology was assumed to be negative and constraining, a set of false beliefs about something (Mills 2003, 34, 54). Ideology not only subjugated subjects, but also created them (Shanks and Tilley 1987, 76) and was viewed as the framework within which resources are given value, inequalities defined and power legitimated (Hodder 1991, 72). Power in this sense was domination, the control by one group over the production and reproduction of others. Engels took the notion of ideology further, coining the term 'false consciousness' in 1893 to describe how people acted with knowledge but without understanding the 'true' nature of social relations (Giddens 1979, 167).

Marx only began to investigate pre-class and early class societies late in life, discussing them in the unfinished *Grundrisse*, which did not become widely available to scholars until after World War II (Saul 2005, 754; Trigger 2006, 331). There were therefore many unanswered questions about how Marxist theory could be applied to non-Western and modern societies. During the 1970s, several French anthropologists took up this task, under the banner of what is now termed 'neo-Marxism', a school that would have a major influence on archaeological discussions of power.

1.2.2 Neo-Marxist anthropology

There was not one 'Marxist' school of thought; Marxist-inspired anthropology at this time took diverse routes, often building on prior structural or functional theoretical foundations (Spriggs 1984, 3). Two important changes were the extension of the concept of production from a purely economic definition to the 'production' of the overall society, and the argument that the economy cannot be separated from the super-structural elements such as ideology. Meillassoux (1960), from his work investigating labour

relations and marriage exchange in farming communities in Africa, argued that the reproduction of class, kin and society were as important as economic modes of production in determining power relations, and the pace and direction of social change. Similarly, Althusser (1971, 159) contended that in pre-capitalist societies, political and ideological relations dominated the functioning of the economy, not the other way around. Godelier also stressed the importance of religion in dominant power relations rather than seeing it as superficial (Godelier 1977a, 8). For the 'theocracies' that he had studied in New Guinea to have arisen in the first place, individuals aspiring to dominance must have channelled some sort of "invisible realities and forces controlling… the reproduction of the universe and of life" (Godelier 1978, 767). Religion or ideology cannot be some sort of imaginary afterthought legitimating power structures but must be integral to their development (Godelier 1977a).

The Italian anthropologist Gramsci used the term hegemony to describe how a ruling class could maintain their dominance by indirect persuasion and manipulation of the whole society, so that the ruling-class worldview is accepted as natural and normal (Gramsci 1971). The whole social process is therefore linked to unequal distributions of power, obscured by dominant interests (Ortner 1984, 149). This built on Engel's concept of 'false consciousness' and has become known as the 'dominant ideology' theory. Similarly, Lukes (1974) in his 'three-dimensional' conception of power stressed the importance of ideological legitimation of the social order, so that those subjected to power are largely unaware of their unequal status – the 'true' situation being hidden from the minds of most people. Importantly for archaeology, Althusser stated that ideologies do not just exist in people's minds as mere reflections of social relations but have observable material and practical manifestations (Althusser 1971; Bernbeck and McGuire 2011). Considering ideology as a source of power, Geertz (1973) argued that culture is created and exists through public rituals, ceremonies and performances which reinforce the social order and worldview; events that could be envisaged as taking place at monuments in prehistory.

Despite the development of these strands of neo-Marxist thought, there was no major shift from the original Marxist conception of power, which was still restricted to the maintenance of social relations of production and to domination. As Miller and Tilley (1984, 5) summarised, power "is simply conceived as flowing from the top to the bottom of societies, from the super-structural political forces… who possess it and exercise it on subjected populations in either an overt or a covert manner".

1.2.3 Neo-Marxist inspired archaeology

The increasing interest in Marxist theories in the social sciences did not begin to influence archaeological thinking until the late 1970s (e.g., Bender 1978). Particularly influential was Friedman and Rowlands' (1977) work on prestige-goods economies. In their model agricultural surpluses in tribal societies could lead, through communal feasting, marriage alliances and strong beliefs in active benevolent ancestors, to permanent unequal divisions of wealth and power. Eventually, the highest-status lineage could control surplus and valuables resulting in them becoming "identified as the direct descent of the territorial deity"

and monopolising the "imaginary forces of production" (Friedman and Rowlands 1977, 211). At this point, luxury goods and long-distance exchange become important to validate the chief's status. In these 'prestige good systems', members of society compete for these elite symbols to gain political power (Friedman and Rowlands 1977, 228). Archaeologists such as Bradley (1984) adopted this model for the later Neolithic in Britain, identifying corroborating evidence for feasting, the deposition and long-distance exchange of prestige goods such as maceheads and polished stone axes (Figure 1-4) and the celebration of ancestors through the construction and use of monuments. All of these activities took place most frequently in what he termed 'core areas', or ceremonial monument complexes, and particularly in association with the use of Grooved Ware pottery (Bradley 1984, 57-9).

Building on Friedman and Rowlands (1977), several volumes appeared in the 1980s that featured prominent discussions of power in relation to ideology, political models, domination and resistance, and prestige goods (Hodder 1982; Renfrew and Shennan 1982; Miller and Tilley 1984a; Clarke *et al.* 1985). Most authors did not just adopt neo-Marxist perspectives but critiqued them and tested their application to archaeology. For example, Miller and Tilley (1984, 5) rejected a Marxist definition of power in favour of Foucault's conception (see Section 1.3.1) and Shanks and Tilley (1982, 131) critiqued Althusser's definition of ideology.

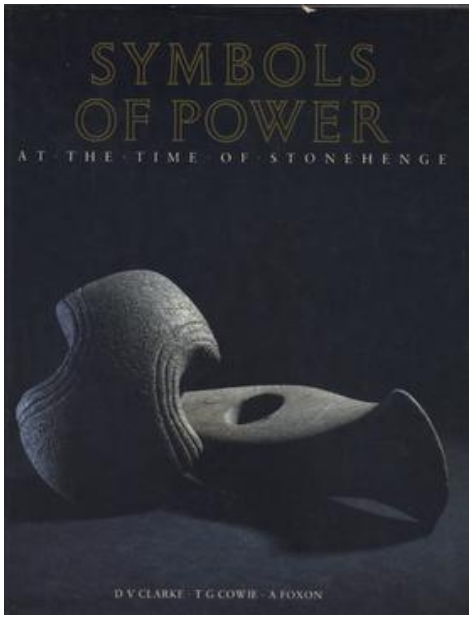


Figure 1-4 The exhibition 'Symbols of Power at the Time of Stonehenge', at the National Museum of Scotland and accompanying book (Clarke *et al.* 1985) was the apogee of Marxist explanations of status and power in terms of prestige goods and the ideology of domination

Several archaeologists (e.g., Hodder 1982; Parker Pearson 1982) re-examined mortuary practices, no longer interpreting them as mere reflections of social structures, but seeing them as expressions of ideological beliefs that potentially inverted, misrepresented or mystified real social structures. For example, many argued that collective burials in tombs in Britain and elsewhere served to deny the individual and assert the unchanging collective or 'community' despite differential access to power

(Shanks and Tilley 1982; Bradley 1984, 28; Sherratt 1984, 144; Thorpe 1984; Whittle 1996). Thorpe and Richards (1984) defined late Neolithic societies in Britain as 'ritual authority structures'. Those in charge were thought to have been closely linked to the ancestors and the supernatural, with authority descending through inheritance. Thorpe and Richards interpreted particular clusters or complexes of monuments, for example around Stonehenge, as evidence of greater ritual power. "The gradual expansion of a ritual landscape set aside from secular activity could have developed and maintained an ideology that stressed the importance of specialised activities carried out by an elite on behalf of the whole population" (Thorpe and Richards 1984, 75). These discussions were part of a growing realisation that not only was there no direct link between archaeological patterns and past social structures, but that material culture, including monuments, could be actively used to transform and negotiate relations of power (Hodder 1984; Parker Pearson 1984; Kristiansen 1984; Hodder 1991).

Several approaches stressed Godelier's argument about the role of ceremonial monuments and attendant ritual practices in ideological control (e.g., Tilley 1984, 116), suggesting that rituals serve to legitimate the social order and block expressions of other contradictory ideas: 'ritual is one form, albeit a particularly powerful form, of legitimising social hierarchies' (Shanks and Tilley 1982, 133). The control of communication with ancestors or other forms of deities and the access to specialist ritual knowledge was argued to give certain individuals power. Mackie (1977) famously argued for the presence of a 'professional priestly upper class' in late Neolithic Britain who controlled access to specialist knowledge. As Bradley argued, "in certain areas it is likely that access to sources of ritual knowledge played as much a part in reinforcing authority as access to special purpose objects. Here the realities of power may have been concealed behind traditional rituals" (Bradley 1984, 11).

Earle (1991, 91) wrote that monuments "created a sacred space set off for ceremonies that fundamentally separated the rulers from the ruled and identified their legitimacy with universal forces outside the world accessible to commoners". These 'universal forces' are intriguing (and similar to Godelier's 'invisible realities') but Earle does not go on to suggest what they might be. Parker Pearson and Ramilisonina (1998a and b), in their hypothesis that Stonehenge was built for the ancestors, suggest that human ancestors and perhaps a higher form of deity were sources of power for legitimising an elite. The idea has a pedigree that can be traced back to the ideas explored in Section 1.1.2, where ancestors could validate the claim to land. This use of ancestors as explanation has not been without criticism. Whitley has questioned why the omnipresent ancestor has become the explanation of choice for a whole range of archaeological evidence across different times and places, "ancestors were to the 1990s what chiefdoms were to the 1970s" (Whitley 2002, 119).

1.2.4 Passive dupes?

Neo-Marxist archaeological approaches remain inherently evolutionary and continue to use problematic terms such as chiefdom. Human societies are clearly more complex than a simple dichotomy between

those with power and those without, being instead “constituted of multiple overlapping and intersecting socio-political networks of power” (Mann 1986, 1). An important point highlighted by Braithwaite (1984, 94) is that rituals and symbolic practice do not always shore up dominant hierarchies but can also be politically subversive, conveying multiple and contradictory meanings. Monuments can be arenas for resistance, as much as domination.

Archaeologists such as Crumley (1995) and Earle (1997) have argued for more diffuse, multiple and inter-related sources of power. Known as heterarchy, this concept recognises that power can be held in separate institutions and multiple spheres of life. Individuals, households, communities and kin groups may be involved in simultaneous vertical (hierarchical) and lateral (heterarchical) relationships (Levy 1995, 47). Unfortunately, heterarchy developed as a rejection of the assumption of permanent and coherent ranking rather than a coherent concept itself (Brumfiel 1995, 125) and has rarely been applied to archaeological case studies. However, heterarchy is a useful concept for exploring the flow of power through different networks and relations in prehistory. For example, Thomas (1996, 196) has suggested that later Neolithic society may have been segmented in complex overlapping patterns, in which the individual may have found himself or herself active in some spheres but denied access to others.

The concept of ‘dominant ideology’ has been heavily criticised for its elite-centric view that ordinary people play no part in long-term history. Various scholars have argued that subordinates are not passive dupes, but knowledgeable people who can challenge and resist the dominant class and who are not greatly affected by ideology (Abercrombie *et al.* 1980; Burke 1992, 86). As Hodder (1991, 61–70) argued, people are not fooled by ideologies, they do not simply succumb to ‘false consciousness’ or accept hegemony unquestioningly. Barrett (1994, 77) has also critiqued this ‘truth: falsehood dichotomy’; the idea that ideology represents a ‘false’ knowledge which masks ‘reality’ in opposition to truth. He argues that this denies ordinary people the ability to see through ideologies, perceive their own interests, and act accordingly. The task is to account for the rise of shared practices and principles that maintain certain social systems, without falling into the trap of thinking that they are either actual reflections of reality or conscious devices thought up by rulers to fool their subjects (Bloch 1977, 322).

Often the approaches described above contain the assumption that there is an innate tendency among some ambitious people (usually men) to aggrandise and exert power over others. Why do a few leaders have the wisdom and power to decide the fate of all people? Where do the leaders gain their sources of authority? “The enactment of power always creates friction – disgruntlement, foot-dragging, escapism, sabotage, protest or resistance” (Wolf 1990, 590). During the 1990s, the rise of phenomenological approaches and ideas of agency and practice theory in archaeology would place individual action and the role of monuments to the fore of discussions about power in prehistory.

1.3 Post-processual approaches

1.3.1 Interpreting Foucault

In a radical new turn for archaeological theory, Miller and Tilley (1984, 5) argued that the view of power as negative domination, something that can be possessed or exercised, was a Western political perspective. They instead adopted Foucault's approach to power, who returned much closer to the original Latin meaning of the word power, 'to be able' (Sharp *et al.* 2000, 3). Whereas Marxism tends to view power as top-down, Foucault showed that it could also be bottom-up and need not be negative (Mills 2003, 34). Foucault viewed power as omnipresent in society, never possessed but only exercised or performed in relations between people, present in both domination and resistance. "Power must be analysed as something which circulates… … Power is employed and exercised through a netlike organisation… And not only do individuals circulate between its threads; they are always in a position of simultaneously undergoing and exercising this power" (Foucault 1980, 98). Despite early adoption of Foucault's definition of power by Miller and Tilley, their work somewhat diffused his theories by defining two types of power (*power over*, the dominating control discussed in Section 1.2.4; and *power to*, enacted and contested by everyone and an integral element to all social life), and by holding onto Althusser's incompatible idea of dominant ideologies, and claiming that some forms of power do not cause resistance (Miller and Tilley 1984b, 6; see McGuire and Saitta 1996; Thomas 2002). This has meant that the full potential of Foucault's work for discussions of power relations in prehistory has not been realised.

Foucault's original definition of power as relational, rather than a resource, and existing in unequal relationships, is adopted throughout the rest of this thesis. Power is the capacity of an agent (or group of agents) to direct or influence the behaviour of others. Foucault's concept of power helps us move beyond the binary of rulers and ruled; there were constant changes in the kinds of power that were being exercised in prehistory, with relations ebbing and flowing over time and space, and resistances being enacted in return.

1.3.2 Agency theory and phenomenology

Parallels can be seen between Miller and Tilley's *power to* and agency – individuals as active and knowledgeable rather than passive dupes, who could over time affect the social structure they lived within. There are many different uses and definitions of the term agency, and a divide between those who stress agency as intentional action, and those who view an actor's intentions as irrelevant to the actual consequences of their actions (Dobres and Robb 2000, 10). In studies of inequality and power there is a tradition of arguing that the way individual actors consciously pursue what they want, particularly the strategic pursuit of power, is a driving force for change, for example through feasting (e.g., Clark and Blake 1994) or 'big men aggrandisement' (Sahlins 1963). Some have argued that all people have an innate desire for power and prestige, others that only certain personality types have

these tendencies. To attribute aggrandising behaviour to 'human nature' is a mistake, as all personality types are culturally determined (Clark 2000, 102).

The rise of agency theory within archaeology that foregrounds the power of the individual led to wide acceptance of the idea that monuments and social spaces were how social structures were actively produced and reproduced. Giddens (1979) held that every social actor knows a great deal about the conditions of reproduction of the society of which he or she is a member, arguing that agency and structure were mutually constitutive. In the 1990s, there was a growing awareness among archaeologists that simple social models were not capturing the potential complexities of the motivations of individual agents and social groups. Some archaeologists turned to approaches inspired by the European philosophical tradition of phenomenology, particularly the works of Heidegger (1996) and Merleau-Ponty (2002), to explore prehistoric monuments (e.g., Pollard 1992; Kirk 1993; Richards 1993a; Thomas 1993a). Heidegger's key insight was that every person is a being-in-the-world; that is, not a mind separated from the 'outer' world but embodied in their environment. Similarly, Merleau-Ponty described perception as always being through the human body. The architecture of monuments was examined for the way in which the positioning and movement of the human body within space created certain kinds of knowledge, and the layout and appearance of monuments interpreted as devices to convey and maintain power structures and ideologies within Neolithic society. As Tilley wrote, "how monuments and places could be moved around, approached and understood was a vital component of power relations during the Neolithic, serving to differentiate between those who were included in the knowledges required to decipher the landscape and those who were excluded" (Tilley 1994, 205). Kirk explored these ideas in relation to earlier Neolithic monuments in Brittany, suggesting that power relations did not mean the direct control of people by other people, but control by dominating groups of the composition of funerary space and access to knowledge (Kirk 1993, 200–1). Barrett (1994) highlighted the process of inclusion and exclusion from monuments, highlighting how, for example, the chambers of West Kennet long barrow are small and restricted with only some people being allowed to enter the tomb, in contrast to the larger numbers who were needed to build the monument and who could gather in the forecourt (Figure 1-5). Monumental space was conceived of being constructed with a view to limiting the range of possible readings of that space, with consent achieved by situating the dominant group's beliefs and values within traditional practices.

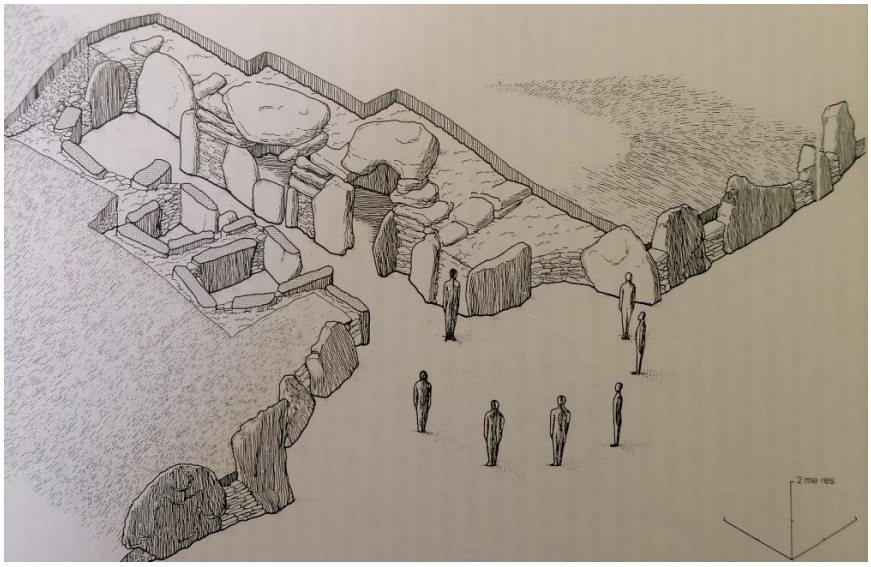


Figure 1-5 West Kennet long barrow showing the social divisions envisaged in the use of the open forecourt space, which contrasts with the restricted interior of the tomb, to which only certain people may have been permitted physical and intellectual access (Barrett 1994, fig 2.9)

Phenomenological approaches remain firmly anchored within the modern, Western, able-bodied individual, a taken-for-granted universal and a perspective that should be viewed with scepticism. Scholars such as Bender (1993), Meskell (1996) and Brück (2001) have criticised these accounts for focusing on the adult, usually male, leader, relegating everyone else to passive non-agenthood. Clark (2000, 101) has characterised these aggrandising agents as "too active to be credible"; they do a lot of thinking, calculating and acting while everyone else plays supporting roles. On the other hand, some phenomenological accounts of encounters with and landscape settings of monuments are rather apolitical, with no discussion of how different positions in society might affect readings, meanings or access to monuments.

As Brück (2005) has argued, these phenomenological accounts of monuments tend to rely on two contradictory concepts of the self. The first is a bounded, objectified and manipulable entity whose thoughts and movements can be controlled by others – people who passively experience spaces. In contrast, the second is people with reason, agency and the ability to initiate change – i.e., those who control and produce the meanings of these monuments. Some appear to have agency in bucket loads, others none. Brück hypothesised that this stems from a narrow, Western approach to the self. As Scott (1990, 76) had argued, an individual can act out a submissive role but still hold a view of themselves apart from that role. "Monuments cannot be said to sustain one dominant discourse but are the medium through which several different forms of social reality may be constituted" (Brück 2001, 651).

Despite more sophisticated debates about situated knowledge and agency, discussions of monuments have largely remained either implicitly or explicitly linked to elite power, with their construction either legitimising existing social elites, or creating them (Bradley 1984; Barrett 1994, 27–9). Monuments are often explained as demonstrations of authority or elite power (Edmonds 2019, 213), but that assumes

that such structures pre-existed, and reduces the purpose of building such monuments to a single factor; akin to claiming that medieval cathedrals were built only to demonstrate the authority of the church, when they were clearly much else besides.

Barrett has encouraged archaeologists to examine the individual lives of people as agents whose actions created and carried forward certain material conditions. “There is an obvious contradiction in explaining the construction of monuments by reference to a social hierarchy which, it is argued, also required those monuments to exist for it to become operational” (Barrett 1994, 28). Large monuments need not imply military coercion or other forms of political authority if they were not built according to a central plan with a rapid mobilisation of labour. For example, Barrett argued that the henge and stone circles at Avebury were not planned as a single entity in the mind of some autocratic chief, but instead were the result of several different abandoned and repeated projects, the creation of which sustained particular human relations (Barrett 1994, 13). Unequal power relations are therefore a possible outcome of monumental architecture, rather than a driver or pre-requisite. For Foucault, local acts of power may be intentional, but these add up to a global strategy which is unintentional, “people know what they do; they frequently know why they do what they do; but what they don’t know is what they do does” (Foucault 1964, 95). Pauketat (2000) has used this concept of unintended consequences to portray the builders of monuments in North America as unwitting agents in their own domination, working over too long a time to see the consequences of their actions. Similarly, Joyce (2004) proposes that pyramids of later classic Maya and Aztecs were simply the end point of a long trajectory of monument building that began with relatively modest structures, becoming the sites of new political practices. These approaches usefully place ordinary people as agents of monumental construction, rather than an elite.

1.3.3 Competition and collaboration

Two themes have emerged in the last twenty years or so of archaeological discussion about monuments complexes and social structures: competition and collaboration. Monument complexes have often been described as the result of competitive behaviours between social groups (Cooney 2000a, 157; Richards 2004, 111; Gillings *et al.* 2008, 211; Clare 2009, 85; Cleal and Pollard 2012, 328; Edmonds 2019, 197; Parker Pearson *et al.* 2020, 318). Different communities, usually associated with individual monument complexes, have been envisaged as constructing larger and more impressive monuments in direct rivalry and competitive emulation with others, reacting to one monument with another of greater size or complexity, perhaps deliberately differentiating monument forms to express local identities. For example, Whittle *et al.* (2007, 137) have suggested that monuments might be thought of “as some kind of advertisement for the ability of a sub-group within the local community or area to organise and sponsor the construction of a monument.” Sheridan (2004, 32) has argued that “the construction of large and elaborate tombs can be regarded as part of a process of competitive aggrandisement by local elites”. At a larger scale, competition has also been invoked as part of the interaction between different

monument complexes. For example, Sheridan has argued that a male-dominated theocratic elite developed on Orkney around the 31st century BC bolstered by long-distance travel and exotic goods, such as maceheads (Sheridan 2012, 173). This follows much older models of prestige goods economies (Friedman and Rowlands 1977) and peer-polity interactions (Renfrew 1986), which postulate the primary driver of social change as relationships and contacts between societies of relatively equal standing. It also takes inspiration from Helms' (1988) account of how political power can be bolstered by information or objects from far-away places and people through cosmological acquisition and 'socially valorised' goods (Sheridan 2014, 312). "There was a kudos to be had from travelling below the horizon, returning with objects, with stories and with talk of alliances made with distant powers, powers that grew in the telling precisely because they were distant" (Edmonds 2019, 45). However, convincing evidence for the presence of either a strongly hierarchical or gendered society or such exchange of objects is not well demonstrated and these relations are likely to have been mediated through places between. Although there are a few specialist objects that circulate in the late Neolithic such as maceheads and carved stone balls, these are usually made of local stone and in regional styles (Carlin and Cooney 2020, 322; discussed further in Chapter 7).

Recent ancient DNA evidence showing close genetic relations between people buried across different passage tomb complexes has been used to support the idea of a hierarchical society in late Neolithic Ireland (Cassidy *et al.* 2020; Sheridan 2020, 349). However, this evidence shows close relationships between complexes rather than highly discrete political units. Evidence that Neolithic people were regularly travelling over long distances to gather and build monuments (Section 1.1.3) also argues against such bounded social entities. As Carlin and Cooney (2020, 326) highlight, the archaeological evidence for any sort of elite group in Britain and Ireland is lacking, and these ideas rest on circular arguments in which the explanations for the emergence of such elites are not discussed.

The second theme in interpretations of Neolithic monuments and power is the suggestion that they were constructed by separate groups or communities coming together and working on communal projects; monuments as collaboration, rather than competition (although the two are not necessarily mutually exclusive; Figure 1-6). The segmented ditches of causewayed enclosures could have been 'gang dug' by small groups of people (Piggott 1954, 244; Startin and Bradley 1981). The standing stones at the Ring of Brodgar in Orkney, representing at least seven different geologies (Appendix A5.4.3.2) could have been brought by dispersed groups, "material citations or metaphors for different places and peoples, the importance of gathering them together transcending social microcosm" (Downes *et al.* 2013, 116). Harding has described the cluster of henges at Thornborough in North Yorkshire as "socially-neutral religious centres which served the many", suggesting that each side of the henges could have been built by a separate group, representing regions to the east and west (Harding 2012, 70). Similarly, Parker Pearson (2012a, 24) has suggested that the bringing together of the bluestones and sarsens at

Stonehenge in around 2500 BC, was an act of unification of the two regions, each type of stone representing a different community. He has separately suggested that the bluestone pillars were inalienable possessions of the community who built Stonehenge, incorporating deep-seated ancestral and regional identities and has even asked whether the bluestones "were trophies captured by an aggressive polity in Wessex?" (Parker Pearson 2019, 96). This raises by-now familiar problems with the idea of discrete political and social entities but does at least consider the idea that these were not always peaceful or conflict-free endeavours. Parker Pearson has also perceived the cluster of monument complexes in Wessex, as a "corridor of monumentality" that emerged in a neutral zone of social interaction where people from different regions could resolve conflicts and build alliances (Parker Pearson 2019, 95). It could be questioned whether this cluster exists in the broader distribution of such complexes (Figure 2-7).

Figure 1-6 The organisation and sheer effort that went into building the final phase of Silbury Hill in *c*.2300 BC are difficult for us to comprehend; what motivated people to willingly take part in such a communal endeavour? © English Heritage, drawing by Peter Urmston

These explanations contrast with others that have focused on the construction of monuments drawing on relational and assemblage theories (explored further in Chapter 2) as a process, performance and a practical engagement with materials and place, being less concerned with final form. As Jones (2012, 197–8) asks, "how did the building of these monuments produce certain kinds of socialities?". This echoes Barrett's suggestion that when people constructed large monuments, they did not mean for hierarchies to emerge, nor did they necessary pre-exist, but they were a consequence of such activities (Barrett 1994, 28). It is not that people had no prior intentions when they built or altered a monument, as seems to be implied by Leary and colleagues' account of Silbury Hill (Leary *et al.* 2013a, 204–5) where the builder's intentions appear to be entirely side-lined, but that the enactment and engagement with people, materials and place was active and unfolding. A focus on origins and authorship can lead to the idea that meanings of monuments were fixed by a dominant power or authority at the start of

construction, rather than a place that had multiple meanings created by the observer or interpreter (Barrett 1999, 28). Harris (2009, 282–7) has even suggested that monuments helped to maintain equality and defeat hierarchy. The sheer number of people involved in building large-scale monuments meant that everybody took part in construction; a process of performing the idea of community. Individual and small-scale acts of deposition, feasting and performance of rituals at these sites added up to a 'somewhat chaotic choreography' through which it became clear how people were expected to behave, and demonstrated that power was held by many, not by a few (Harris 2009, 287–8).

However, monument construction may not always have been cathartic for the community, involving resolution, closure and communal endeavour. The possibility that such creative projects were bad for some is rarely entertained – monuments may exclude or divide, the act of building may enslave or coerce or may re-traumatise a community. Herodotus records the visit of some Greeks to Egypt where the local inhabitants remembered the construction of the pyramids as a time of horror (Chatwin 1987, 199). A rare exploration of such interesting ideas has been Richards' (2013) work on both physical danger and social risk involved in monument construction. He cites an example of a stone dragging ceremony in Sumba, Indonesia, where the people allowed the stone to drift out to sea as they deemed the sponsor unworthy; a failure (Richards 2013a, 13). Richards argues that the ritual process itself was fraught with peril because of the potentially dangerous and uncontrollable forces involved, which is why monument form and the rituals carried out there might remain highly prescriptive. Monument complexes will not have been neutral spaces. Not everyone is equal in their ability to construct monuments; building requires considerable economic resources, a significant amount of knowledge about materials and architectural technology, situated knowledges of practices and structures elsewhere and the ability to take risks. To reduce this to a sense of communal endeavour is to miss this complexity. Episodes of construction and alteration will have radically changed existing social relationships and power dynamics between people.

1.4 Conclusion

One of the stimuli for this thesis was a growing sense of dissatisfaction with some of these archaeological narratives about competition and collaboration at monument complexes in Neolithic Britain, which appear to rely on out-dated and sometimes contradictory perceptions of past social structures, make assumptions about the presence of hierarchical elites and leave power relations somewhat under-theorized. A more focused and exploratory approach to social archaeology in the British and Irish Neolithic is needed, one that focuses on specific times and places, working from the ground up rather applying models from the top down.

However, several approaches and ideas outlined in this chapter are useful to retain and will be returned to within this thesis. Crumley's (1995) concept of heterarchy is useful for thinking about the multiple overlapping networks of power that people acted within. Godelier's (1977a; 1978) argument that religion is integral to the development of, and our understanding of, unequal power relations, is important. His

'invisible realities' or Earle's (1991) 'universal forces' must be brought more fully into discussions of power. Monuments are key to understanding relations of power, including resistance and subversion (Braithwaite 1984). This was not the enactment of ideology, the idea of an illusionary representation of reality perpetuated by those in charge, but was reality itself for these people, acting within their worldviews and belief systems. Barrett's (1994) argument that certain power structures and hierarchies may emerge from the process of constructing monuments, rather than being pre-existing is key, as is Brück's statement that monuments are the medium through which different forms of social inequalities and relations may be constituted (Brück 2001, 651). The work of Richards (2013) on risk and the ideas of Parker Pearson (2019, 96) about conflict serve to remind us that even if relations look peaceful and egalitarian in the material record, unequal power relations will always be in the process of being negotiated. Finally, Foucault's (1980) original definition of power as performed in unequal relations between people is crucial, as something that circulates through networks, ebbing and flowing over time and space, something that both limits and enables. This relational approach to power fits well with the theoretical stance to be adopted and developed in this thesis, to be outlined in Chapter 2.

2 An alternative approach

All the approaches described and discussed in Chapter 1, from evolutionary typologies to post-processual interpretations, discuss power as something possessed by, or circulating among, humans. This is a narrow and partial way to conceive of power, which fails to consider the full range of possible actors within society and power beyond the human and the political sphere. The recent 'ontological turn' within archaeological theory, in which a people-centred view of the past has been challenged through relational and material approaches, seems to offer a new way to explore power relations in the past. Discussions of competition and collaboration in the Neolithic within or between monument complexes have been largely separated from these sophisticated current theoretical debates. Can the adoption of a non-anthropocentric, relational approach to power reveal new insights about monument complexes and social relations in Neolithic Britain?

Section 2.1 will review several strands of theoretical discourse within the 'ontological turn', exploring the way in which these have been applied within archaeology and discussing how relevant aspects will be adopted in this thesis. The conception of power within these new approaches will be explored and critiqued. Section 2.2 will provide a brief outline of some ethnographic examples that give insight into alternative ways of conceiving power, particularly exploring how perceptions of power might relate to beliefs. Finally, the methodology adopted within this thesis is explained in Section 2.3.

2.1 The ontological turn

The 'ontological turn' (Alberti *et al.* 2011, 896) in archaeology (and more widely within social sciences) has been inspired by a wide variety of interlinked ideas drawn from anthropology, philosophy and science studies. One of the most important aspects is the rejection of categories imposed on the world, whether these are socio-evolutionary labels like 'chiefdom' or binary categories of nature/culture or mind/matter. These prevent us from understanding the past and different worlds on their own terms (Harris 2018, 5). There are a variety of different interlinked approaches within this school of thought (for example, new materialism is different to symmetrical archaeology), but they all provide something of an antidote to the human-centred approaches to Neolithic monuments outlined in Chapter 1, and present potential methods with which to explore power relations in the past in more nuanced and innovative ways.

2.1.1 Assemblage theory

The assemblage thought of Deleuze (and Guattari 1987), brought to wider appreciation by DeLanda (2006) and Bennett (2010), has been influential amongst archaeologists (Hamilakis and Jones 2017). Everything can be thought of as an assemblage, not only of component materials but also of ideas, beings, people, and processes (Jervis 2019). Assemblages are a series of intersecting forces, entities, practices, always in a process of becoming (Fowler 2013, 22). Within assemblages agency emerges from the interaction of these things together, becoming more than the sum of its parts (DeLanda 2006, 5;

Harris 2018, 8). As Bennett (2010, 23–8) has explored, assemblages can be enormous; the North American power grid is "a volatile mix of coal, sweat, electromagnetic fields, computer programs, electron streams, profit motives, heat, lifestyles, nuclear fuel, plastic, fantasies of mastery, static, legislation, water, economic theory, wire and wood" (Bennett 2010, 25). Alternatively, a single object can be viewed as an assemblage of material properties, form and use history. For example, a Grooved Ware pot is an assemblage of material, decoration, and skill, it may form part of a deposited assemblage and in turn belong to a wider assemblage of similar pottery vessels. In this sense, assemblages always operate at multi-scalar levels (DeLanda 2006, 32).

Assemblages are not fixed but are fluid ongoing processes. Properties and structures emerge from the gathering of new assemblages and the dispersal or breaking of others, becoming territorial and deterritorialising (DeLanda 2006, 12), or accumulating and fragmentating over time (Chapman and Gaydarska 2007). This emphasis on process, on change over time, through 'becoming', is a key aspect of approaches in archaeology that draw on assemblage theory (Harris and Cipolla 2017, 200). This focus on change over time, and the multi-scalar nature of assemblages, makes them useful to explore monument complexes, which are made up of multiple components and are constantly in a state of change or 'becoming'.

2.1.2 The importance of relations

An important point in DeLanda's assemblage theory is his argument that humans need not necessarily be ontologically prior to anything else and can be placed equally with other beings and things, a concept often termed 'flat ontology' (DeLanda 2002, 58; Figure 2-1). This allows for the vibrancy and affordances of materials and enables attempts to temporarily remove our Western modern assumptions about the primacy of humans (Jervis 2019, 22–3).

Latour's (2005) much-cited Actor-Network Theory (ANT) conceives of society not as a totality, but as a network of actors (or potential actors, which he terms 'actants') along with their relationships and associations. Not only can individuals be members of several different networks and have social ties in several different directions (similar to power relations in heterarchies, see Chapter 1), but these associations can be with non-human entities as well as with other humans. This alternative conception of society not only includes living people, but also non-humans: animals, plants, spirits, the dead, ideas, objects and places (Strathern 1988; Latour 2005; DeLanda 2006). Some view the word 'network' as too restrictive and static, preferring terms which refer to messier and changing relations such as entanglement (Hodder 2012) or meshwork (Ingold 2011), although this is partly due to a mistranslation of Latour's original term *acteur réseau*, which means something closer to a netting or woven fabric (Ingold 2010, 12). These concepts all place importance on the lines, the relations and the interactions between people and things. Particularly useful is Pauketat's (2012) metaphor of a 'bundle' for a place or package

of distinct things, substances or qualities, that forms a node within a larger set of relations and can be agentic in itself.

Figure 2-1 Representative diagrams of a human-centred ontology (left) compared with a flat ontology (right). The icons represent possible aspects of Neolithic assemblages

In ANT, rather like Foucault's concept of power, agency is distributed in the relations between people and things. If a phenomenon, entity or being somehow alters the trajectory of some other being, then that thing has agency (Latour 2005, 71). So, for example, if a group of people observe a comet, and take it as a good omen to begin building a temple in a certain place, it can be argued that the comet is an actant and has agency. To be an agent is simply to cause events to happen, whether intentionally or not (Pauketat 2012, 29). Archaeologists and anthropologists have differed in the extent to which they have been able to accept some of these ideas, particularly in relation to the concept of non-human or object agency. Some (e.g., Joyce 2008; Knappett 2011; Pauketat 2012; Jones 2014; Crellin 2017) have followed Latour in arguing that the notion of an actor can be extended to include non-human entities, including objects, landscape features, animals, plants, natural phenomenon and supernatural beings. Others, such as Ingold, have argued that not all actors are equal or similar, objecting to 'flat ontology' and suggesting that it is ludicrous to attribute agency to objects that do not grow or develop (Ingold 2011, 94). Some have argued that by focusing on the animacy of matter, we are in danger of forgetting the complexity of human lives, the humanness of humans (Lazzari 2014; Barrett 2014). For example, Robb (2004, 132) has separated agency into 'effective agency', that which might be ascribed to anything, from 'conscious agency', a distinctly human variety which is governed by intention or consciousness. Meskell (2004) has argued that human and non-human agencies are not equal, as it is only through the actions and beliefs of people that the agency of various things exists governed by intention or consciousness. These criticisms

are useful but miss the key point in DeLanda's and Latour's theories – that agency is not possessed by an individual being or object but is distributed in the relations between these different entities (Knappett 2011). ANT is not the empty claim that objects do things 'instead' of human actors (Latour 2005, 72). People and things act together; the comet in the example above would not have agency if it were not for the beliefs of the people seeing and interpreting it. Agency is contingent on beliefs, worldviews and situated perspectives of people.

Rather than seeing human society as something fixed, static and bounded, individual beings are composed of relations with others (Strathern 1988). Rather than agency as something possessed by a person or thing, it exists in the relations between things. People are entangled in multiple assemblages that are vast, hidden and unknowable. Much of what people do is done thoughtlessly or unintentionally or has consequences which cannot be predicted (Foucault 2001, 95; see Chapter 1.3.2). Agency does not depend on intentionality. Barad (2007, 23) has argued that the intentional state of mind cannot be taken for granted, but that intentionality might be better understood as attributable to a complex network of human and non-human agents. In her 'agental realism' model, this confirms the idea of distributed agency: "agency is a matter of intra-acting; it is an enactment, not something that someone or something has." (Barad 2007, 178). Barad uses the term 'intra-action' rather than 'inter-action' as the latter implies pre-existing entities, rather than entities that emerge through their relations. This relational notion of agency as distributed or flowing amongst entangled networks or assemblages of human and non-humans through interactions is adopted in this thesis. For example, in the analysis that follows, monumentality is not inherent within the physical structure of a monument but exists in the relations between it and the people experiencing it. Importantly, these perceptions can differ between different people, can change over time and space, and will be affected by power relations.

2.1.3 A return to things

A more extreme branch of the 'ontological turn' is object-orientated philosophy, which has partly developed in reaction to the purely relational approach of Latour and others outlined above, but draws, like them, on the ideas of Heidegger and Whitehead. Harman (2010; 2018) and Morton (2013) have argued that we should put things and objects at the centre of our study, not because of their relations, but because they have individual qualities, essences or realities of their own. Often termed object-orientated ontology (OOO) or symmetrical archaeology (Webmoor 2007; Olsen *et al.* 2012), these approaches argue that things are more than their relations with the world and can possess their own agency.

This provides a useful focus on the 'materiality' or affordances of objects and things (Jones 2012, 17) not as having cross-cultural and consistent physical properties (as argued by Parker Pearson and Ramilisonina (1998a, 310)) but as mutable and changing entities that intrinsically possess dynamism and movement (Jones 2012; 2014). Conneller (2011), drawing on Bennett's 'vibrant materialism', has applied this

approach to discuss tools and objects from Palaeolithic and Mesolithic Europe. She demonstrates that the vibrancy and properties of materials emerge through the process of interactions within human and non-human assemblages. Things, materials and landscapes can 'act back' on the people who create and are entangled with them, making demands on people to treat them in particular ways (Gibson 1979; Tilley 2010, 40; Ingold 2013, 62). By paying close attention to seemingly mundane materials, places or activities (Figure 2-2), such an orientation might be able to uncover a range of interacting and vibrant materialities at monument complexes (Bennett 2010, 99), some potentially involved in power relations.

Figure 2-2 This stone was laid down in geological processes millions of years ago, formed by heat and pressure. After it became detached, the stone has been shaped by the action of the sea, by attrition against the other rocks and sand, into a pebble. In turn, the pebble has affected the flow of water, creating an unusual pattern on the sand that it lies upon. This appearance caused me to take a photograph of it. Looking carefully, the white traces on the pebble suggest that it was once the home of tiny tube worms. A single pebble can be entangled in a multitude of relations with other materials and beings (author's photograph)

However, taken to the extreme an object-orientated approach suggests that as scholars we should not restrict ourselves to how humans interact with things, but also how things interact with each other directly. Some approaches under this banner have abstracted objects entirely from meaning and the history of their relations (e.g., Olsen 2010) and in doing so have become less valuable to archaeological thinking (Harris and Cipolla 2017, 201). Hodder (2012, 16) has called for a 'return to things', arguing that things have primary agency (rather than Gell's (1998) 'secondary agency' which he used to denote abstract things that do not have intentionality), through their processes of material interaction, decay and transformation. This is true, but it is only when humans are imbricated by their concern to interpret, halt or speed up these processes, do these materials have agency and potentially power. For archaeology, there is a danger in moving too far away from the object of our study: humans, and their material culture, in the past.

2.1.4 Power in relational ontologies

A broader definition of society that considers the possibility of agentic non-human elements has a major impact on we might think about power in prehistoric communities. Since Miller and Tilley (1984) most have claimed, in theory, to be following Foucault's conception of power (as outlined in Chapter 1.3.1). This concept of power, when adopted properly, closely aligns with the ontological approaches outlined above and with agency existing in the relations between people and things. Like agency, power is not held by, nor is intrinsic to, people or objects, but must be understood as existing within the relations between these things. Power is not simply some form of 'super-agency' but is a specific type of agency and structure together (Harris and Cipolla 2017, 46).

It is not just that objects can 'express' power relations, 'symbolise' social hierarchies, or 'reinforce' social inequalities, but they themselves can be actors involved in power relations (Latour 2005, 72). The range of objects involved in potential relations of power could be endless but as archaeologists we are restricted to gleaning evidence relating to material substances and events that we can identify in the archaeological record. Fortunately, however, human lives are thoroughly entangled in material culture (Lucas 2012, 268), "crucial to understanding the workings of power is an understanding of the nature of power in the fullness of its materiality" (Barad 2008, 66). Bennett stresses that it is important to follow the trail of human power to expose social hegemonies, but there is also value to following the scent of a non-human, 'thingly' power, the material agency of bodies and artefacts (Bennett 2010, vi). The way of recognising how non-human beings or objects were involved relations of power is to observe behaviours that pertain to them. This includes evidence that people have visited them, deposited them in certain ways, aligned constructions with them or emulated them (Insoll 2004, 148). By looking closely at the material expression of those actions and how this relates to the physical properties of objects, beings or places, their potential affordances and associations, we can start to identify the ways in which people may have been located in potential power relationships within broader social assemblages.

One of the criticisms of ANT and assemblage thinking is that it does not consider power differentials between people based on race, gender, class or other divisions. Abandoning the search for power relations and inequality between people seems a significant backwards step (Harris and Cipolla 2017, 148). Some materialist and relational philosophical approaches *do* explicitly incorporate discussions of power differences among people, particularly those set out by feminist thinkers. Some of these accounts (e.g., Haraway 1991, Grosz 2005, Braidotti 2013) use the term 'post-human' to characterise an approach that moves beyond human exceptionalism to explore interconnected and emergent assemblages of human and non-human actors. Figure 2-1 could be critiqued on several levels, but one is that it assumes that all humans are the same; that all are equally capable of interacting with any of these other materials, things or beings. There are other humans involved (Figure 2-3); the post-human political landscape is not necessarily more egalitarian, or less divided (Braidotti 2013, 97).

Figure 2-3 Moving cattle in the early Neolithic period, where several unequal power relations are in play. We might suppose that the dog is owned and controlled by the man and is one of the ways in which he has power over his cattle. But equally the needs and actions of the cattle exert a great influence over the decisions and actions of the man. The dog's relationship to the child is less clear – would it obey her commands? Would the child be allowed to hold the man's stick? At a larger scale, the combined agency of multiple people-cattle groups over time will have maintained this landscape as open pasture, altering thousands of other lives: plants, insects, small mammals, birds. Power relations are multiple, entangled and constantly changing. © English Heritage, drawing by Peter Lorimer

Distributed agency does not mean that power is evenly distributed. "Persons, worms, leaves, bacteria, metals and hurricanes have different types and degrees of power, just as different persons have different types and degrees of power" (Bennett 2010, 108). Power concerns an agent's ability to limit or enable the ways in which other people exercise agency in each situation (Harris and Cipolla 2017, 46). Much like the quote from Wolf (1990) in Section 1.2.4, Deleuze says that the power of a body to affect other bodies includes a corresponding and inseparable capacity to be affected, and that bodies enhance their power as part of assemblages (Deleuze 1990, 93). However, there will be imbalances and inequalities, asymmetries of power. "Asymmetries exist, yes, but where do they come from and what are they made of?" (Latour 2005, 64). Those in power in one circumstance may find themselves subordinate in another (Brück 2001, 656). It was the position of people within an assemblage of materials, activities and practices that made their powers effective. "Such powers might be focused, emplaced, and embodied, making them tantamount to political power" (Pauketat 2012, 24). Such an assemblage-focused approach to power is not indifferent to the complexity of humanity (Braidotti 2013, 190). Rather it attempts to raise up non-human materials, objects and bodies so that we pay just as much attention to their affordances, properties and potential powers, as we do to humans, within an enlarged and entangled sense of the social.

2.1.5 Applying a relational approach

Some of the most successful applications of relational and assemblage theory approaches within archaeology have decentred the human by focusing on materials and objects as emergent, active and dynamic. Fowler's work on relational personhood has emphasised the way in which people can be considered composites of a variety of substances and beings, enabling him to think critically about our role as archaeologists in the production of the past (Fowler 2013). Another example has been the exploration of fossils within early Bronze Age burial assemblages (Brück and Jones 2018), locating the agency of these objects as emergent within the juxtaposition of people, place and objects within the grave. Chadwick (2016) has characterised linear earthworks of the later Bronze Age and Iron Age in Britain as active assemblages of materiality, movement and memory.

There have been few explicitly relational approaches to monuments that might form components of Neolithic monument complexes but McFadyen's detailed analysis of the materiality of long barrows (McFadyen 2007; 2016; 2018) describes the active dynamism of materials within the process of construction. Harris, a self-professed 'new materialist', has focused on case studies from early Neolithic Britain at a variety of scales; from individual bodies and objects to larger monuments such as Hambledon Hill (Harris 2013; 2018). Pollard (2013) has suggested the components of the Avebury complex are 'monuments in motion', bringing together materials, people and place. Jones *et al.* (2011) have written about the Kilmartin monument complex in Argyll as an 'animate' landscape, developing along principles of sacred geography. However, they describe the creation of rock art as an act of 'socialising the landscape', rather than the approach advocated here, which is to conceive of the landscape as intimately part of the social. Non-human sources of power have been invoked by Richards (e.g., 2013b) in his work on Neolithic monuments that he interprets as 'wrapped' in architectural layers of timber, stone and earth to contain places of active supernatural power. He and Cummings have suggested that the interior spaces of certain chambered tombs were deemed so dangerous or ritually powerful that physical access into the interior was prohibited, and that containing and controlling the dangers associated with animating practices may have been their function (Cummings and Richards 2017, 239). There is a similar idea in 'henging', creating earthwork enclosures to demarcate powerful spaces where important events had taken place or to contain the powerful forces associated with particular locations (Bradley 2012, 109; Brophy and Noble 2012). Parker Pearson and Ramilisonina (1998a, 319) have argued that Stonehenge was a domain of the dead, inhabited by the spirits of the ancestors, rather than used by humans, where the power of ancestors (historical and human) was harnessed and accessed. These perspectives are stimulating and will be returned to throughout this thesis. They remind us that power relations are contingent on beliefs, worldviews and situated perspectives of people.

Few archaeological applications of the 'ontological turn' have paid explicit attention to power relations or unequal human relationships. In Olsen's (2010) 'defence of things' and in Jones's (2012) account of

materiality, there is no acknowledgement that people may not have interacted with objects equally in the past. Hodder has admitted that his work has paid insufficient attention to power, emphasising merely that entanglements look different from different social positions (Hodder 2012, 213). If agency, and therefore power, can exist in the relations between not only different people, but also between people and things, this is both vastly freeing and entirely debilitating. An exception to these approaches is Crellin (2020), who has argued for a 'post-human' and 'post-anthropocentric' approach to power in the Bronze Age that de-couples power from human exceptionalism and locates it within relationships.

Inspired by the relational, materialist and assemblage approaches outlined above, and retaining certain useful aspects of earlier thinking (Chapter 1.4), the theoretical approach adopted within this thesis will focus on monument complexes as assemblages of places, people, materials and things, focusing particular on the flow of power relations between these different elements. A relational notion of power as distributed or flowing amongst entangled networks or assemblages of human and non-humans at monument complexes will be adopted. De-centring the human will allow the affordances and characteristics of places and materials to be foregrounded, while exploring how monument complexes comprise people and things emerging through their relations. However, this will not reject the privileging of humans as the object of study (Lucas 2012, 260). A particular focus will be on differential human power relations, and how these are mediated through other things and places.

2.2 Ethnographic accounts of power

Several of the relational approaches outlined above derive from the work of anthropologists whose ethnographic accounts have documented alternative worldviews among non-Western historical and contemporary communities. Gell (1998), for example, was inspired by concepts of animacy found during his fieldwork with communities in Polynesia and India. Strathern's (1988) work on the personhood and society drew directly on her fieldwork in Papua New Guinea. Several of the most inspiring archaeological accounts within the ontological turn draw directly on ethnographic or historical examples to enhance and illustrate their archaeological interpretations: Pollard's (2013) account of Avebury monuments explores Polynesian conceptions of power, and Pauketat's (2012) interpretations of monuments are partly inspired by the attitudes of Prairie-Plains peoples, where power moves beyond the human and the political. Rather than arrogantly seeing people's perceptions as mistaken understandings of the world (or as if they been taken in by 'false consciousness', see Section 1.2.1), if we see these as valid ontologies, we can take their potential for developing new epistemological methodologies seriously (Ingold 2006; Alberti and Marshall 2009).

It is worth examining a few of these accounts in more detail, as they demonstrate the wide variety of ways in which different societies might conceive of power. A note of caution must be expressed here about the dangers of representing Indigenous and non-Western ontologies. Accounts are obtained second-hand from non-Indigenous scholars, writing about communities whose histories are heavily

shaped by colonial interests, industrialisation, dispossession and resistance (Anderson 2013). As a researcher firmly situated in a Euro-American world, without much more than basic training in anthropological methods, relying on these partial accounts and choosing from them to suit the argument, any understanding will always be partial and misleading, some might say bordering on insulting. All societies encompass multiple (and sometimes conflicting) context-specific power relations. We should not assume that all people, even within the same small group or geographic area, thought the same way at any one time; "people always have the ability to produce alternative interpretations of a context because their personhood is not solely constituted within that context" (Brück 2001, 365).

Nevertheless, there is advantage in bringing such rich and varied alternative perspectives briefly to light. It is reasonable to think that Neolithic people had elements of their worldview that vastly differed from our own, and more closely aligned with alternative ontologies (Figure 2-4). These will not provide direct analogies, nor are meant to provide trivial examples, but may provide starting points (Whittle 1998, 853) or provide a check on potential assumptions that might stem from an embedded, and often unconscious, Eurocentric worldview. It is important not to draw a hard and fast line between 'the West and the rest' (Latour 1993; Jones 2007a, 30).

Figure 2-4 We cannot interview Neolithic people to find out what they thought about their world. No doubt we would get many varied and highly confusing answers. However, the perspective of people with different worldviews can help to widen our interpretative imagination and destabilise our situated and narrow ways of thinking © English Heritage, photograph by Mike Harrington

How then do some different societies perceive power? The short answer is, in varied and multiple ways, but as outlined in some of the theoretical approaches outlined above, as not usually restricted to

humans. As we have seen from the overview provided in Chapter 1, the dominant archaeological discourse in recent decades has focused on power as something held exclusively by people. In other societies, there is potential for animals, materials, objects or places to be perceived as people, and to hold some form of power or life-force. For example, Polynesian *mana*, meaning power or prestige, can be present in people and things such as animals, buildings, trees or rocks (Sahlins 1985; Shore 1989). This is a form of energy that might be derived from ancestral lines, generated through achievement or gained through contact with other powerful things. Chiefs have *mana* but it can be easily lost and gained – life is the constant flow of power that emanates from supernatural, human and non-human achievement (Flannery and Marcus 2012, 210). Several Native American groups hold that power is distributed among human and non-human agents, "theirs [is] a world in which sympathy, dependency, and reciprocity bound human beings to plants, animals, rocks and stars. And thus they became beings rather than objects, fellows rather than things, and members of a circle of social relations" (Nabokov 2007, 34). In broad categories, the Aboriginal Australian 'totemic' ontology can be contrasted with the circumpolar North 'animic' understanding of power or 'life force' (Ingold 2000; Descola 2013). For Aboriginals, the flow of power is from ancestral beings to the land, which is imbued with potency given to it by the actions of both past peoples and ancestors. This power can be accessed by song, dance and storytelling, re-enactments of ancestral activity, and by close attention to the landscape (Smith 1999, 194; Ingold 2000, 56). Animism, on the other hand, characterises a worldview that recognises a life-force or soul in things; an object's capacity for becoming a person and behaving like one. For example, in some communities there are certain 'index objects' that have the power to animate other objects or materials around them (Zedeño 2009). *Aché*, a powder used by Afro-Cuban diviners in rituals is seen as power, enabling a deity to become immanent in the marks created in the powder. This material is neither thing nor concept or symbol; it is not just considered powerful, but is power itself (Holbraad 2007, 206). The idea 'symbolism' is far from applicable here. In contrast, in the animic cosmos, power is distributed among humans and animals that inhabit the world. Hunting success, for example, is often dependent on proper killing, butchering, preparation and discard of meat, and on personal relationships built up and maintained with animals through previous hunts. Shamans also make arduous journeys to communities of non-human animals to negotiate with them (Ingold 2000, 67). Bird-David (1990) has described this as 'the giving environment' where hunter-gatherers engage with life or food-giving agencies based on sharing and trust.

From a variety of ethnographic sources from around the world, we know that power structures changed over time and place. For example, Wengrow and Graeber (2015) have drawn attention to societies where different power relations operate at different times of year. They note that hunter-gatherers in the polar North have summer and winter social structures, with two different corresponding systems of law and religion, both hierarchical and egalitarian. Any power relations that were exercised within or around monuments complexes may not have extended far beyond. Similarly, there are examples of societies who

cycle between different forms of power over relatively short time scales. Flannery and Marcus (2012, 191–203) cite the Konyak of Assam whose villages are constantly changing between hereditary elites and egalitarian organisation with achievement-based leadership, as the upper classes die out due to restrictive marriage practices.

These examples provide salutary lessons; we cannot assume power structures in the Neolithic were stable over time or space but may have been unstable and rapidly shifting. They also show that we cannot generalise, nor apply a 'one size fits all' approach to human perceptions of power (Warren 2010, 100). There is a danger of applying animism as a universal kind of perspective (Whittle 2018, 148); we do not know if the communities of Neolithic Britain possessed an animist ontology (Pollard 2013, 184). The approach must be to work from the ground up, asking questions of the archaeological evidence relating to monument complexes in Neolithic Britain and Ireland, open to the possibility that human power relations were mediated through non-human beings and things. Thinking about monument complexes as relational assemblages will require an attentiveness to the various components involved – the features and affordances of the places where complexes emerged, the materials used to build the monuments, how existing features and structures might influence later activity and how the complexes change over time. Before this methodology is described in detail, two further areas are important to think through: religion and belief, and the power of place and time.

2.2.1 Beyond religion

A key insight that can be drawn out from the ethnographic and historical examples briefly outlined above is that people's perceptions of where power lies are closely entwined with systems of belief. This confirms Godelier's (1977b) argument that religion is integral to power structures (Section 1.1.2). Understanding belief is crucial for understanding power relations: one community may venerate a particular old and venerable tree; another group may simply see it as a source of firewood. "Religion and politics are never easily disentangled" (Edmonds 2019, 225).

To some, this might seem antithetical to a key principle of the ontological turn; "that our investigations can be about the world as it actually *is*, rather than what people *think the world is*" (Harris 2019, original emphasis), although at least for anthropology, it is simply a methodological approach (Holbraad and Pedersen 2017). While scholars might accept as comprehensible that an apple tree has agency because it is a living, growing being that affects other living organisms and human action, the question of power seems rather more contingent on specific beliefs and personal relations. There is a need "to account for the fluid workings of power by grounding them in specific locations and immanent relations" (Braidotti 2013, 159). There may be room here for accepting that humans are thinking, creative, rational beings because of (not despite of, or in exclusion of) our entanglement in material and relational worlds (Anderson 2013).

Since Hawkes's (1954, 161–2) ladder of inference, or 'hierarchy of influence' archaeologists have been reluctant to mention religion in relation to Neolithic monuments, preferring less loaded terms such as ritual (Insoll 2004). However, for Neolithic Britain and Ireland, it is arguable that religious beliefs are easier to investigate than everyday subsistence and settlement, given the imbalance of the available evidence. However, religion is a Western category that modernity has reified as separate from politics and science (Fowles 2012, 241); such categories do not exist in non-Western societies, nor did they likely exist in prehistory. Fowles has advocated instead for using the term 'doings', encompassing dances, pilgrimages, initiations, rituals and beliefs of the Pueblo communities he studied, "doings… are a kind of relational revelation ground in the material experiences of particular places" (Fowles 2012, 254). Power is fully intertwined with worldview and belief, and constantly enacted through places, objects, materials and ritual protocols (Koldehoff and Pauketat 2018). Fowles's approach that to separate out 'religion' from other forms of doing or being is inappropriate, is adopted in this thesis. For the Neolithic of Britain and Ireland, a relational approach that decentres the human may help to show the ways in which various material components and places may have been accorded supernatural powers and great reverence, thereby involving them in relations of power.

2.2.2 Beyond bodies and objects

Although the definition of the object, thing or body within the philosophical approaches outlined above is extremely broad; "objects include atoms, skyscrapers, pianos, souls, cotton candy, helium, mountains and hallucinations" (Harman 2010, 148), relational and new materialist approaches within archaeology have so far been applied to relatively narrow categories (see Section 2.1.5 above), with little attention given to place and landscapes. Nevertheless, there are countless examples in ethnographic studies from across the world that certain places in the landscape were understood to be powerful, with the landscape perceived as active, living and having continuing roles in myths and stories (Carmichael *et al*. 1994; Hirsch and O'Hanlon 1995; Feld and Basso 1996; Bowser and Zeñedo 2009; Eck 2012). Certain types of places, including caves, mountain tops, river junctions, springs and shaped rocks seem to be particularly important across different times and cultures (Bradley 2000, 12; 2017, 168). These can be described as special numinous locations where the sacred world is revealed; hierophanies as defined by Eliade (1959). Across India, for example, these places are called tïrthas, places of pilgrimage, the word literally meaning 'ford' or 'crossing point', where spiritual passages between worlds can take place (Eck 2012, 7). Most famous are the sources, confluences and mouths of the rivers, particularly of the Ganges, but these can also be mountain tops, unusually shaped rocks or caves. In Tibet, these sacred locations are called *gnas-chen*; literally 'power-place' (Huber 1999, 91). One of the major focuses of this study examine how places were entwined within power relations (Chapters 3 and 4). As well as places, beings and objects in the skies were also likely to be intimately bound up within people's relational understanding of the world. Chapter 5 will discuss the potential of celestial bodies in the sky to have formed part of entangled social worlds and to have been involved in relations of power.

In a less obvious way, concepts of time and temporality can also be related to power relations. Geertz (1966) in his study of Balinese culture and Itéau (1999) who researched the Orokawai of Papau New Guinea, both found that time in these societies was not linear but qualitative and subjective, and was closely related to notions of personhood, social status and role. Shanks and Tilley (1987, 127–36) have argued that temporality is not neutral, but a condition of social practice and closely related to social control and power relations. The social production of time can be closely related to structures of power. Archaeologists have found it fruitful to think about the past in the past (e.g., Tilley 1994; Bradley 1998), particularly in relation to prehistoric monuments and memory, with the idea that deep histories and the past can be used to legitimate the present. Chapter 6 will focus on the concept of time in relation to power at monument complexes and will present new radiocarbon chronologies for one of the case studies.

Several other non-human entities potentially involved in relations of power in the Neolithic could have been explored. For example, some authors have argued that cattle may have been important sources of wealth and power in the British Neolithic (Kinnes 1988; Thomas 2003) because of their incorporation into ceremonial and funerary monuments such as long barrows. The power of distance and the exotic in relation to objects and practices (Helms 1988) might also have been a fruitful avenue (advancing the discussion of 'socially valorised' goods (Sheridan 2014; Chapter 1.3.3). But for the purposes of this study, boundaries must be drawn. The fundamental themes of place and time provide new avenues into the exploration of power and relational networks in prehistory, which can help move forward the discussion of power in archaeology.

2.3 Methodology

This thesis aims to examine Neolithic monument complexes from a perspective inspired by relational and assemblage approaches drawn from the ontological turn in archaeology. Monument complexes are an ideal place to start rethinking power relations in Neolithic Britain and Ireland, as they "offer a kind of narrative that is as close as prehistorians can come to writing a political history" (Bradley 1993, 98). They also provide a way of cutting across monument typologies, which can divorce monuments from their contexts or landscapes. The premise adopted is that the creation and use of ceremonial spaces at monument complexes involved engagement, and negotiation of powers with non-human agents, but importantly also unequal power relations with other people. People operated within heterarchical multiple overlapping networks of power, and their acts of construction and ritual activities were important ways in which social inequalities and power relations were worked through. Monument complexes were assemblages that were constantly in a state of becoming and so it is important to chart the chronologies and changing compositions. In Chapter 7.6, this approach will be evaluated alongside

more traditional ways that people have identified power relations and social structures in the Neolithic, including those relating to architectural exclusion and inclusion, and events such as feasting and rituals.

Although this thesis will explore monument complexes across Britain and Ireland, more detailed analysis and biographies have been created for five case studies (Section 2.3.1). These can be found as individual appendices in Volume 2. The 'fieldwork' for this research has taken place mostly in the library, working through published and unpublished archaeological reports, as well as archaeological syntheses and analysis. Site visits have been undertaken to all the key case studies, in order gain familiarity with the geography and landscape of these places, as well as an understanding of current research. In some cases, this has involved joining archaeological excavations, for example at the Ness of Brodgar on Orkney, and at West Kennet palisaded enclosures near Avebury. Some visits have been timed with events – for example, the autumn equinox at Loughcrew in Ireland (Figure 2-5) or the summer solstice at Stonehenge (Figure 5-26). A short placement was undertaken with the aerial survey team at Historic England in Swindon, to analyse the landscape around the Stanton Drew monument complex as well as interpretation of a new geophysical survey at the site (Linford *et al.* 2017), although the lack of excavation at this site prevented it from being a core case study.

Figure 2-5 Exploring the structure of Cairn U, Carnbane East, part of the Loughcrew monument complex in Co. Meath, Ireland, a visit timed to coincide with autumn equinox on 21 September 2017. Photograph by Martin Greaney

2.3.1 Case studies

Clusters of Neolithic monuments have so far been referred to as 'monument complexes' without the term being closely defined. Archaeologists have named these clusters of monuments in a variety of ways: central places (Barnatt 1989; Kristiansen and Rowlands 1998, 80), core areas (Bradley 1984), inter-

regional centres (Barnatt 1989, 188), ritual complexes (Loveday 1989), ceremonial complexes (Ray 2007), religious centres (Garwood 1991; Pollard 2009, 348), cult places (Loveday 1999, 55; Burl 2002, 2) and even power centres (Brophy *et al.* 2012). The more neutral terminology of 'monument complexes' is preferred here. Ray (2007, 69) has usefully defined monument complexes as "concentrations of structures that embodied or facilitated gatherings and activities of a collective nature". Some archaeologists have described monument complexes as 'ritual landscapes' (Thorpe 1984, 58; Malim 2000) but this is unsatisfactory, since it is not clear to whether settlements and monuments were separated (Bradley and Chambers 1988, 272). This is especially the case with recent discoveries of domestic style structures at monuments such as Durrington Walls and Marden henge (Parker Pearson 2007; Leary and Field 2012; Gaffney *et al.* 2020).

A monument complex is defined here as a group of three or more Neolithic monuments of more than one type and within close geographic proximity (less than 10 sq km). A full database of Neolithic monument complexes in Britain and Ireland that fall under this definition can be found in Table 2-1. Note that this list does not include more minor monument complexes, usually focused on cursus monuments, of which there are many, particularly strung out at regular intervals along the river valleys of the Midlands of southern England (Barclay and Hey 1999; Malim 2000; Ray 2007). These smaller complexes focused on cursus monuments, identified by Loveday as 'Barford-like complexes', (Loveday 2006, fig 33) are relatively little understood and appear quite different to the more major complexes as defined here.

Some monument complexes comprise groups of monuments that substantially date to only the early Neolithic (e.g., Hambledon Hill, Dorset; Mercer and Healy 2008) or only the late Neolithic (e.g., Eden Valley, Cumbria; Topping 1992), although these are rare. Some major monument complexes in Ireland, such as Rathcroghan in Co. Roscommon, Navan Fort in Co. Armagh and parts of the Tara complex in Co. Meath may have major components that are Neolithic or at least prehistoric in date, but as these are currently undated it would be speculative to include them. The same could be said for Shap in Cumbria, also largely unexcavated and undated, although this complex has remains more typical of the Neolithic such as stone and timber circles (Turnbull and Walsh 1997) and therefore has been included. Note that some so-called 'monument complexes' in the literature do not fall into the narrow definition preferred here, despite being identified as such within the literature (e.g., Godmanchester, Cambridgeshire (McAvoy 2000; Lyons 2020); South Petherton, Somerset (Mudd *et al.* 2012) or Cairnpapple Hill, West Lothian (Barclay 1999)). Many of the smaller complexes not included in this database are known through aerial photography alone and have not been tested by excavation; it is difficult to know whether all the monuments within such clusters date to the Neolithic period. Monument definitions by morphology alone are difficult; many ring-ditches are likely to be Bronze Age, but some could be middle or late Neolithic hengiform monuments, or Neolithic round barrows, particularly when located within monument complexes (as at Maxey/Etton, Eynesbury and Raunds).

Table 2-1 - Table of known monument complexes in Britain and Ireland (numbering refers to Figure 2-7)

No.	Name	County	Neolithic monuments	Setting	Key references
1	Milfield	Northumberland	Henges (Milfield North, Milfield South, Ewart, Yeavering, Akeld Steads, possibly at Coupland and Markeyknowe), five long pit alignments associated with GW pottery, lots of pits, cremations in enclosures, settlement at Thirlings.	Within loop where River Glen meets River Till, low-lying land	Harding 1981 Edwards 2004 Miket *et al.* 2008 Passmore and Waddington 2009 Waddington *et al.* 2011 Johnson and Waddington 2014
2	Thornborough	North Yorkshire	Cursus, three henges, pit alignments	Flat plateau of land between Rivers Ure and Swale	Harding 2013
3	Catterick	North Yorkshire	Cursus (Scorton), henge, pit alignments, double palisaded enclosures (Marne Barracks), probable round mound (Castle Hills)	Low-lying land adjacent to (and near crossing point) of River Swale	Moloney *et al.* 2003 Hale *et al.* 2009
4	Rudston and Great Wold Valley	East Riding of Yorkshire	Five cursus monuments, standing stone, several round mounds (Wold Newton, Willie Howe, Maiden's Grace), one with surrounding causewayed ditch (Duggleby Howe)	Located along narrow river valley of the Gypsey Race	Dymond 1966 Harding 2006 Gibson *et al.* 2009 Gibson and Bayliss 2010 Rowley-Conwy and Owen 2011 Gibson *et al.* 2014
5	Ferrybridge	West Yorkshire	Double-ditched henge, five hengiforms, two timber circles and a variety of other undated ring ditches.	Gently sloping ground about 1 km west of the River Aire. Low lying.	Roberts 2005
6	Penrith	Cumbria	Three henges, one with standing stones (Mayburgh), one with possible timber circle (King Arthur's Round Table)	Confluence of Rivers Eamont and Lowther on river terrace	Collingwood 1938 Topping 1992 Leach 2019
7	Shap	Cumbria	Two stone circles (Oddendale and Shap/Kemp Howe), several stone cairns and cairn circles, possible stone avenue. One ring	Alongside of upland north–south routeway	Clare 1978 Turnbull and Walsh 1997 Clare 2009

			cairn excavated and found to be a double timber circle dating from the late Neolithic, before being capped with stones and later made into a cairn.		
8	Long Meg	Cumbria	Three stone circles (Long Meg, Little Meg with cist and destroyed), standing stone, large ditched enclosure, other enclosures, possible cursus.	Upland location *c.*1 km east of River Eden	Soffe and Clare 1988 Archaeological Services Durham University 2016
9	Black Combe	Cumbria	Seven segmented circular ditches with internal pits, two embanked enclosures, a site with four concentric ditches and up to four cursus monuments	On coastal plain and slopes of Black Combe	Steve Dickinson (pers. comm.)
10	Catholme/ Whitemoor Hay	Staffordshire	At Catholme: timber monuments ('woodhenge' and 'sunburst'), two cursus monuments, hengiform, various pit alignments. At Whitemoor Hay: another cursus, henge monument and further pit alignments. Close by (up R. Trent) is a causewayed enclosure at Alrewas.	Catholme group is within a large loop of the River Trent. More generally at confluence of Trent, Tame and Mease	Coates 2002 Barber 2007 Hewson 2007 Chapman *et al.* 2010
11	Dorstone/ Golden Valley	Herefordshire	U-shaped split-post long barrow, possible timber structures, long mounds, single-ring causewayed enclosure, alignment of pits in river valley, chambered tomb with associated alignment or earlier structure	Hilltop above Golden Valley	Thomas *et al.* 2015
12	Fladbury	Worcestershire	Five short cursus monuments, possible hengiform, double ring-ditch, possible palisaded enclosure, two elongated enclosures	Within loop of River Avon, low-lying	Jackson and Dalwood 2007
13	Wasperton/ Charlecote	Warwickshire	Wasperton: series of minor monuments: simple circular enclosure *c.*100 m in diameter, shallow ring ditch surrounding two substantial posts, larger ring ditch, two parallel ditches with group of postholes (possibly a mortuary enclosure or small 8long	On low-lying ground on either side of Thelsford Brook, which flows into River Avon	Hughes and Crawford 1995 Ford 2003 Ray 2007

			barrow), small post circle 6.5 m in d9iameter, and various pits. Charlecote: rectilinear enclosure 80 m x 30 m with inner earthwork, flanked by two ring ditches, possibly Neolithic.		
14	Barford/ Longbridge	Warwickshire	Barford: cursus monument 185 x 35–50 m with u-shaped enclosure at one end, oval enclosure (undated), mortuary enclosure, triple-ditched enclosure 22 m in diameter with cremations, dated to mid-Neo, large U-shaped enclosure or pit alignment, various pits. Longbridge: cursus earthwork and nearby enclosure/henge.	Low-lying land adjacent to River Avon	Oswald 1966–7 Loveday 1989
15	West Cotton/ Raunds	Northamptonshire	Long mound or bank barrow, turf mound, 'avenue', long barrow, long enclosure, causewayed ring ditch, undated enclosure and henge-like enclosure (Cotton 'Henge'), plus middle Neo burials and cremations.	Low-lying valley of River Nene	Windell 1989 Chapman 1999 Harding and Healy 2008 Chapman 2012
16	Eynesbury	Cambridgeshire	Two cursus monuments, early Neo hengiform ring-ditch, long barrow, undated double enclosure and pits.	Low-lying ground adjacent to River Ouse	Ellis 2004
17	Etton/ Maxey	Cambridgeshire	Two causewayed enclosures (Etton, Etton Woodgate), two cursus monuments (Maxey, Etton), henge (Maxey), numerous pit circles, small henges, hengiforms (including one with internal post setting), ring ditches and a C-shaped enclosure	On fringe of seasonally wet landscape on low-lying Maxey 'Island', on gravel terraces of River Welland	Pryor 1999 French and Pryor 2005
18	Brampton	Cambridgeshire	Mortuary enclosure, cursus, hengiform monuments, possible henge.	Low-lying river gravels adjacent to Alconbury Brook, which flows in River Great Ouse	Malim 1999 Malim 2000

19	Arminghall	Norfolk	Henge with central oval setting of postholes, two large hengiform barrows, second possible henge (Markshall).	On gravel terrace just above confluence of the Rivers Yare and Tas	Clark 1936 Gibson 1994 Ashwin 1996
20	Hanworth/ Roughton	Norfolk	Causewayed enclosure, two probable long barrows or long enclosures, one possible oval barrow or enclosure, possible short cursus. 1.5 km to the north is cursus at Roughton with associated ring ditches and small oval enclosure within.	Between two tributaries at the headwaters of River Bure	Albone *et al.* 2007
21	Bures	Suffolk/ Essex	Cursus, possible cursus, double-ditched monument (possible henge), long barrow type ditches with large posthole structure within	Either side of River Stour, low-lying land	Colchester Archaeological Group 2014
22	Fornham All Saints	Suffolk	Cursus, two causewayed enclosures, henge, four-poster monument, possible small timber circle, various ring ditches and hengiforms	Low-lying terrace alongside River Lark	Dyer 1996
23	Springfield	Essex	Cursus (7 km long), oval enclosure, post circle, causewayed enclosure 1 km to north at Springfield Lyons	Partly cuts off meander, above confluence of Rivers Can and Chelmer	Hedges and Buckley 1981
24	Cardington, Cople, Willington	Bedfordshire	Three long enclosures or bank barrows around a larger rectangular enclosure, possible henge, several hengiforms, causewayed enclosure 1 km away	On gravel terrace between River Great Ouse and Elstow Brook, where the river rounds a spur	Malim 2000 Loveday 2006
25	Old Wolverton	Buckinghamshire	Four cursus monuments, mortuary enclosure, late Neo hengiform pit circle with GW and cremations	Gravel terrace within braided palaeochannels of River Great Ouse	Hogan 2013
26	Dorchester on Thames/ Drayton St Leonard	Oxfordshire	Cursus, large complex henge, timber circles, cremation cemeteries, pit circles, 1mortuary enclosures. 2.5 km to the NE at Drayton St.	At neck of gravel promontory defined by a bend of the River	Atkinson *et al.* 1951 Whittle *et al.* 1992 Bradley and Chambers 1988 Loveday 1999

			Leonard is a large unusual, causewayed enclosure and possible cursus.	Thames and its tributary, the Thame.	Morrison 2009 Small 1996
27	Rollright	Oxfordshire	Stone circle, chambered tomb, oval mound, standing stone	On limestone ridge between the Stour valley to the north and the Swere valley to the south.	Lambrick 1988
28	Barrow Hills, Radley/ Abingdon	Oxfordshire	Causewayed enclosure (Abingdon), double ditched middle Neolithic oval barrow, probable long barrow, Neolithic segmented ring ditch small henge, pits	Promontory between two streams which discharge into the Thames	Bradley 1992 Barclay and Halpin 2012
29	Buscot Wick/ Lechlade	Oxfordshire	Two cursus monuments, long enclosure or bank barrow, oval barrow, two hengiforms	Gravel terraces either side of River Thames	Benson and Miles 1974 Barclay and Hey 1999
30	Stanton Harcourt	Oxfordshire	Henge with stone circle and central stone setting (Devil's Quoits), two possible long enclosures, hengiform with middle Neolithic burial	On low-lying river gravels close to River Windrush, a tributary of the River Thames	Barclay *et al.* 1995a Lambrick and Allen 2005
31	Oxford	Oxfordshire	Middle Neolithic square 'mortuary' enclosure, possible long enclosures, henge with Grooved Ware pottery,	Gravel terrace at confluence of Thames and Cherwell	Lambrick 2013
32	Colne Valley	Surrey/ Greater London	Cursus (Stanwell), post-built 'avenue', possible further cursus monuments, mortuary enclosure, cremation cemetery (ICSG), possible enclosure (East Bedfont). Feasting midden (Runnymede), middle Neo burials in ring ditch (Staines Road Farm, Shepperton), causewayed enclosure 4 km to south-west at Staines	Flat low-lying area close to River Thames	Framework Archaeology 2010 Robertson-Mackay 1987
33	Sonning	Berkshire	Cursus, two long enclosures, possible long enclosure, ring ditch	On floodplain plateau, 750m away from River Thames.	Slade 1964 Dawson 2012

34	Avebury	Wiltshire	Causewayed enclosure, long barrows, henge enclosure, three stone circles, two stone avenues, concentric timber and stone monument, enclosure, monumental mound	At head of River Kennet, within and around chalkland valley system	See **Appendix A2**
35	Marden	Wiltshire	Henge enclosure, round mound (Hatfield Barrow), timber circle, henge with chalk building, henge (Wilsford) with possible internal and external pits/postholes, two long enclosures, long barrow (Cat's Brain) 2.5 km away	Vale of Pewsey, on either side of River Avon	Field *et al.* 2009 Leary and Field 2010 Carpenter and Winton 2011 Leary and Field 2012 Linford *et al.* 2013a Leary *et al.* 2016
36	Stonehenge	Wiltshire	Two causewayed enclosures, long barrows, two cursus monuments, henge enclosure with cremation cemetery, stone circle, avenue, settlement and two concentric timber monuments surrounded by palisaded enclosure and later henge, also surrounded by large pit circuit, another concentric timber monuments, square-in-circle structures and timber circle	Elevated plateau to west of River Avon	See **Appendix A1**
37	Priddy	Somerset	Causewayed ditch, four henge circles, long barrow and timber circle	Prominent hill on limestone plateau, at concentration of sinkholes	Tratman 1967 Lewis and Mullin 2011 Clark 2013 Linford *et al.* 2013b Leary and Pelling 2016 Lewis *et al.* 2018 Lewis 2020
38	Stanton Drew	Somerset	Three stone circles, avenues, cove, several standing stones	Land adjacent to River Chew, about halfway between source and confluence with Avon at Keynsham	David *et al.* 2004 Lewis and Mullin 2012 Linford *et al.* 2017
39	Cranborne Chase	Dorset	Cursus, long barrows, long enclosures, pit circle, hengiforms, square-in-circle	Upper Allen valley, and elevated land adjacent	Bradley *et al.* 1984 Barrett *et al.* 1991 Green 2000

			structures, monumental mound, three henges		French *et al.* 2007 Allen *et al.* 2016a
40	Hambledon Hill	Dorset	Long barrows x2, large causewayed enclosure, small causewayed enclosure, various cross-dykes and outworks	Isolated chalk hill on SW corner of Cranborne Chase	Healy and Mercer 2008
41	Dorchester	Dorset	Long barrow, henge enclosure with cremations, pit-defined henge, henge enclosure, palisaded enclosures x2, concentric timber monument. Causewayed enclosure nearby at Maiden Castle.	Low-lying land, floodplain near confluence of rivers	See **Appendix A3**
42	Hurlers	Cornwall	Three stone circles, pair of standing stones, stone pavement, large round barrow (Rillaton), embanked avenue and enclosure (Stowe's Pound)	Upland moorland pass, between slopes of Stowe's Hill and Caradon Hill.	Dymond 1879 Nowakowski *et al.* 2020
	WALES				
43	Llandygai	Gwynedd	Two henges, cremation circle, cursus, timber circle, early Neolithic timber houses	Low-lying ground between two rivers	Houlder 1968 Lynch and Musson 2004
44	Bryn Celli Ddu	Anglesey	Passage tomb with stone circle, standing stone, two stone cairns, nearby rock art, two chambered tombs	On promontory or ridge surrounded by lower land, including Afon Braint valley	Burrow 2010 Griffiths *et al.* 2016 Reynolds *et al.* 2016
48	Hindwell/ Walton	Powys	Three palisaded enclosures, henge/large ring ditch, two cursus monuments, causewayed enclosure, Four Stones (stone circle/setting), possible round mound (Knapp Mount)	Within large natural basin surrounded by hills	Gibson 1999a Britnell and Jones 2012 Jones and Gibson 2017 Britnell 2017
49	Sarn-y-bryn Caled	Powys	Cursus, pit circle, penannular ring ditch with cremations (Site 2)	On floor of Severn valley on gravel tongue bounded by old river channels	Gibson 1994 Gibson 2010a
	SCOTLAND				
50	Lochbrow	Dumfries and Galloway	Timber and earthwork cursus monument, one large and one small timber circle	Close to meander of the River Annan, on	Millican *et al.* 2017

				flat land adjacent to paleochannel	
51	Blackshouse Burn	Lanarkshire	Banked and double palisaded enclosure, smaller palisaded enclosure, six small cairns, another small enclosure. On opposite bank of river, mid Neolithic timber structure, possible settlement.	On slightly elevated land within broad loop of River Clyde, encircles double heads of Blackshouse Burn	Lelong and Pollard 1998
52	Dunragit	Dumfries and Galloway	Post-built cursus, triple circuit palisaded enclosure, monumental mound (Droughtuil), possible smaller buildings	On low-lying land near estuary at Luce Bay, near coast.	Thomas 2015
53	Calanais	Outer Hebrides	Stone circle with four 'avenues' with later chambered cairn inserted, four stone circles, two other groups of standing stones/stone settings, single standing stones	Low-lying land at head of a sheltered sea inlet (Loch Roag).	Ashmore 2016 Henley 2005
54	Kilmartin	Argyll	Long barrow, seven Clyde cairn chambered tombs, numerous rock art outcrops, post-defined cursus, two post-built 'avenues', timber circle and stone circles (Temple Wood), henge, standing stones and alignments (appear to be Bronze Age)	Situated within a valley on a north-east to south-west orientation, framed by hills to the east and west	Cook *et al.* 2010 Jones *et al.* 2011 Sheridan 2012
55	Forteviot	Perth & Kinross	Cremation cemetery, palisaded enclosure, timber circle, three henges, double-ditched enclosure	On low-lying land adjacent to a tributary of the River Earn	Noble and Brophy 2011a Noble *et al.* 2017 Brophy and Noble 2021barclay
56	Leadketty	Perth & Kinross	Palisaded enclosure, two four-poster timber settings, three mini-henges one of with a central post, possible henge, possible causewayed enclosure	On low-lying land adjacent to a tributary of the River Earn	Barclay 2001 Brophy *et al*. 2012 Noble and Brophy 2015 Brophy and Green 2015 Brophy and Green 2016
57	Balfarg/ Balbirnie	Fife	Balfarg henge, timber circle with associated pits and later stone circle; Balbirnie stone circle associated with cremations and central rectangular setting; Balfarg Riding School henge on site of two earlier linear timber	On broad shelf, 1.75 km north of the River Leven.	Ritchie 1974 Mercer 1981 Barclay and Russell-White 1993 Gibson 2010b

			structures and associated pits; possible long barrow.		
58	Meldon Bridge	Peebleshire	Palisaded enclosure, three cremation pits surrounded by stake circles, standing stones, pits, timber posts, undated timber circle (also standing stone row, stone pair, possible small long barrow, carved stone ball and battle axe from Sheriffmuir)	Spur of gravel terrace in basin, near confluence of Lyne Water and Meldon Burn, 1 km east of confluence with Tweed. Might encompass Lyne Water within enclosure.	Speak and Burgess 1999 Millican 2016
59	Machrie Moor	Arran	Six stone circles, square-in-circle timber monument, timber circle, standing posts, standing stones (cursus 3 km to SW)	Low-lying area in bowl-like topographic position, surrounded by higher ground	Barnatt and Pierpoint 1981 Haggarty 1991
60	Stenness-Brodgar	Orkney	Two stone circles within henges, henge (Ring of Bookan), monumental settlements (Ness of Brodgar, Barnhouse), chambered tombs (Maes Howe), walled enclosure, standing stones.	On narrow isthmus between two lochs	See **Appendix A5**
	IRELAND				
61	Brú na Bóinne	Co. Meath	Three major passage tombs, at least 36 smaller passage tombs, cursus, four henges, seven square-in-circle structures, timber linear structure, pit-and-post circle, stone circle, timber circles, standing stones	On linear ridge overlooking distinct bend of River Boyne	See **Appendix A4**
62	Loughcrew	Co. Meath	At least 15 passage tombs, 15 cairns, stone circle (Ballinvally), possible henge, rock art panels, standing stones, probable cursus	On and adjacent to the Slieve na Calliagh hills	Newman 1995 Shee Twohig *et al.* 2010 Prendergast 2011 Roughley *et al*. 2021
63	Carrowkeel	Co. Sligo	At least 27 passage tombs, simple and more complex	On and adjacent to the karstic limestone ridges of the Bricklieve	Hensey *et al.* 2014 Moore 2016 Kador *et al.* 2018

				Mountains, west of Lough Arrow	
64	Carrowmore	Co. Sligo	At least 25 passage tombs, mostly simple; stone circle	On a plateau dominated by the nearby mountains of Knocknarea and Ballygawley range, all with cairns on top	Bergh 1995 Bergh and Hensey 2013
65	Tara	Co. Meath	Passage tomb (Mound of the Hostages) with cremation cemetery, possible cursus or avenue (Banqueting Hall), palisaded enclosures, standing stones, ditched pit circle	On a large hilltop ridge with wide-ranging views	Newman 1997 O'Sullivan *et al.* 2013
66	Ballynahatty	Co. Antrim	Large henge (Giant's Ring) containing chambered tomb surrounded by palisade with facades and separate compartment tomb. Large palisaded enclosure with complex entrance and square-in-circle structure. Nearby standing stones.	On ridge and plateau above Lagan Valley	Hartwell 2002 Gormley 2004 Steve Davis, pers. comm.

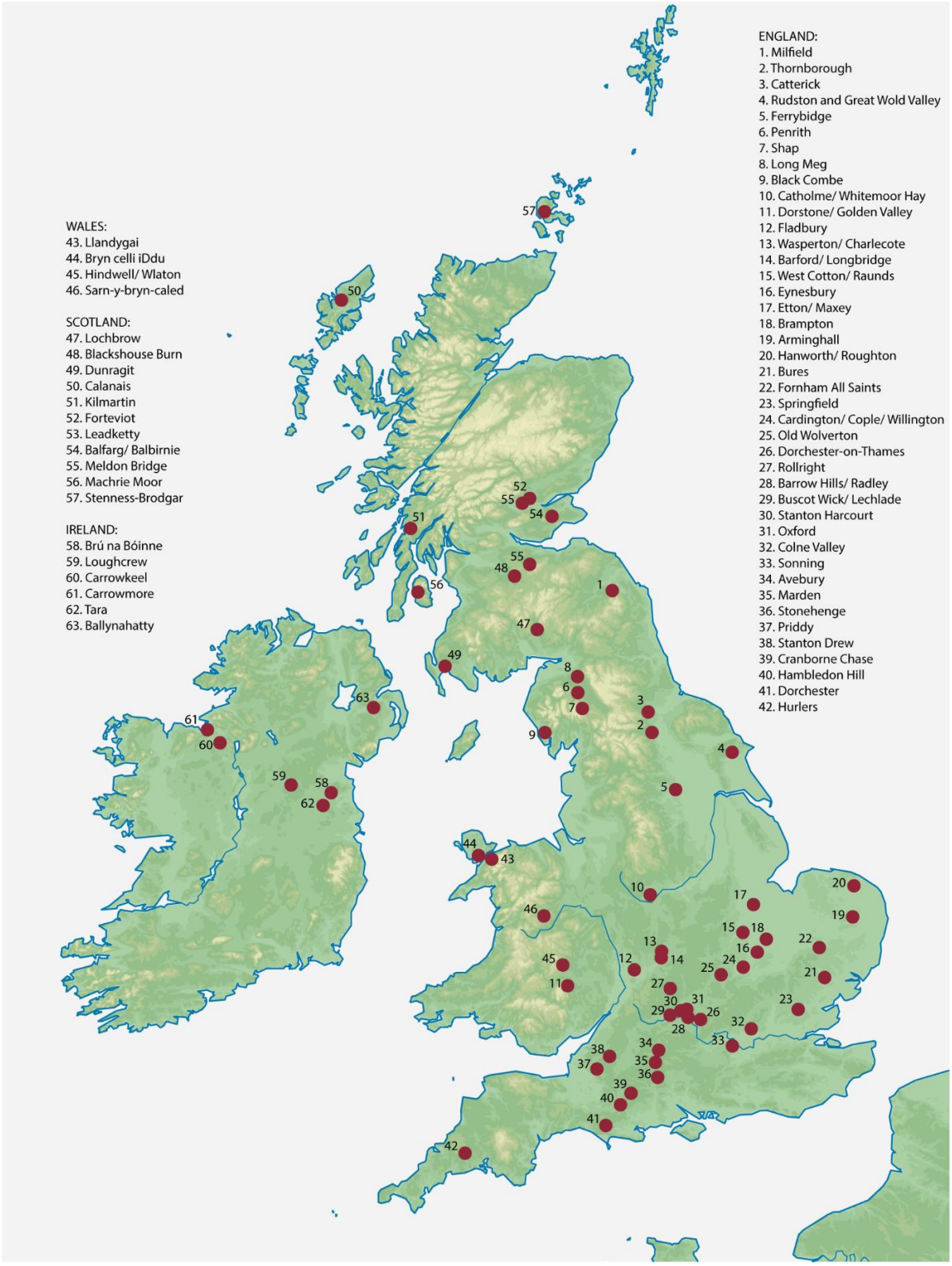


Figure 2-6 Map of major Neolithic monument complexes in Britain and Ireland

The complexes in this database have been identified by a thorough search of the archaeological literature, relying on recent regional resource assessments and summaries for orientation (e.g., Ashwin 1996; Garwood 2007; Bradley 2014), in some cases with recourse to county HERs and national databases, such as those held by Historic England. Much information has been derived from large-scale aerial

mapping projects (e.g., Albone *et al.* 2007). It is acknowledged that a focus specifically on the Neolithic artificially divides off the subsequent histories of these monument complexes, many of which include monuments built in the early Bronze Age. Equally, however, the database brings together groups of monuments that have previously been discussed separately because they lie on either side of a river (e.g., Buscot Wick and Lechlade, Oxfordshire), that have been the subject of different phases of archaeological investigation (e.g., Catholme and Whitemoor Hay) or are simply different monument types that have previously been studied in isolation.

The archaeological record from different regions of Neolithic Britain and Ireland is hugely variable because of differential preservation and different amounts of antiquarian and archaeological research. For example, aerial reconnaissance carries with it biases towards better drained soils (Barber 2007, 81) and this can be seen in the frequency of monument complexes identified on gravel river terraces, both due to their visibility but also because of aggregate landscape mapping projects (e.g., Jackson and Dalwood 2007). Some complexes have been discovered through developer-funded excavations, particularly prior to housing construction or road building. Others have been discovered by chance during excavations of known later activity; for example, the minor complex at Raunds in Northamptonshire was discovered because it was the site of a deserted medieval village (Harding and Healy 2008). A few have been discovered by targeted research, such as the complex at Bures on the Suffolk/Essex border identified by a local archaeological group (Colchester Archaeological Group 2014), or at Dorstone in Herefordshire, excavated by a university-based team (Thomas *et al.* 2015). The list is likely to have gaps due to incomplete information; the distribution map (Figure 2-7) suggests that the Peak District and Devon, for example, are notable gaps where complexes are likely to exist, perhaps in the areas of Arbor Low in the former, and in the Bow/ North Tawton area for the latter (Griffiths 1985).

Despite these biases in the visibility and discovery of monument complexes, the uneven distribution must reflect to some extent a genuine reflection of the intensity of prehistoric social practices. The West Midlands, for example, appears to have few major complexes, with only a scattering of Neolithic monuments in certain river valleys. It remains to be seen how much this gap is real; note that none have been found despite major infrastructure development projects such as the M6 Toll Route (Garwood 2007, 2). No doubt monument complexes remain to be identified; the example at Black Coombe in Cumbria only came to light in the latter stages of research (Steve Dickinson pers. comm.).

To write detailed and nuanced accounts of power relations at monument complexes, there is a need to focus on case studies where there is precise, detailed archaeological information, including accurate radiocarbon dating, large-scale landscape surveys and detailed excavations. Alongside this, it is important to work across a variety of scales: both regional and inter-regional. The monument complexes adopted as main case studies in this thesis (Figure 2-8) comprise a regional cluster in southern England, and one each in Orkney and Ireland.

1) Stonehenge, Wiltshire

2) Avebury, Wiltshire

3) Dorchester, Dorset

4) Brú na Bóinne, Co. Meath

5) Stenness-Brodgar, Orkney

Figure 2-7 Map of five case studies

This choice of case studies will be controversial. Barclay has called for the building of regional narratives for Neolithic Britain, particularly for those areas away from the 'usual suspects', the supposedly core or central places where patterns were first recognised, particularly the chalklands of southern England where there are several relatively well-defined major monument complexes (Barclay 2004; 2009). As Barclay (2009, 3) rightly asks: "How would our perceptions of relative importance be affected if the

complexes at Durnagit… or Hindwell… had survived in stone…?". There are distinct regional traditions within the Neolithic of Britain and Ireland. Harding has suggested that our assumption of "centrally controlled, territorially bounded and politically competitive social units" has been so long embedded in accounts of the Neolithic because of our familiarity with centralised societies and because regions beyond Wessex and Orkney are ignored (Harding 2013, 5). However, this selection should not be taken to mean that these areas were more important in prehistory, nor imply any kind of core/periphery model. The survival of impressive monuments in these areas has led to prolonged antiquarian and archaeological research, fuller mapping and characterisation, better chronologies and a high quality of available evidence, all required to construct the detailed narratives required for this thesis. By selecting three monuments in a regional cluster and two others further afield, these complexes can be compared at a variety of scales. Arguably there has been as much a false division between Britain and Ireland, perpetuated by scholars working within modern national boundaries, as there has been a division between Scotland and England (Barclay 2004). If we can begin to understand well-researched areas like that around Stonehenge, then we can begin to piece together wider patterns at complexes across the country.

Appendices A1–5 contain detailed summaries of the archaeological evidence for the five case studies, including phase maps and radiocarbon date tables. These should be referenced to obtain specific details, context and references for the various monuments and occupation sites within each complex. Each chapter focusing on place (Chapters 3, 4 and 5) contains three major case studies, presented within an overall synthesis. Chapter 6, on time, takes a different approach in that it focuses on just one monument complex case study at Dorchester, where new data has been gathered allowing for fresh analysis of the chronology. In addition to the core case studies, other complexes and monuments across Britain and Ireland (Table 2-1) will be discussed throughout the chapters.

2.3.2 Building chronologies

Many nuanced and interesting discussions of the social and community relations involved in the construction and use of monument complexes are severely hampered by a lack of precise chronology. To take just one example, Clare's (2009) discussion of the monument clustering and typology in Cumbria raises some interesting ideas about local and regional identities, but unless we know the dates at which these various monuments were constructed and the duration of their use, it is very difficult to move these beyond speculative claims. Were monument complexes built in bursts or pulses of intense activity, or in a series of successive small-scale episodes? The answer clearly has implications for social organisation and the groups involved in such events. Creating detailed narratives for complexes therefore relies on obtaining robust and precise chronologies, writing histories rather than simply prehistory (Whittle 2018).

This was the innovative approach taken during the analysis of the Raunds monument complex in Northamptonshire (Harding and Healy 2008), where Bayesian statistics were used to provide estimates of the chronology of individual monuments and of the landscape. Albeit slightly impeded by a lack of suitable samples, this enabled the construction of a detailed and nuanced narrative charting the gradual development of the complex, allowing the exploration of themes relating to memory, re-use, patterns of movement and continuities of knowledge. A similar monument complex biography has been written by Sheridan (2012) for the Kilmartin monument complex in Argyll, although here the account is hampered by a lack of excavation and precise radiocarbon dating of several sites. The case studies chosen for deeper exploration in this thesis all have reasonably full chronologies, and a more detailed chronology has been obtained for the Dorchester complex in Dorset, based on the collection and analysis of 65 new radiocarbon dates obtained on archive material from four major (and one minor) monuments (Figure 2-8; Table A3-1). Funded and guided by the Historic England scientific dating team, Bayesian statistical methods have been used to analyse these radiocarbon dates, allowing the construction of a detailed biography for this complex (Chapter 6, Case Study 10) enabling themes such as memory, time and power relations to be addressed in detail.

Figure 2-8 The Mount Pleasant excavation archive at Dorset Museum (author's photograph)

2.3.3 Tackling scale

One of the challenges to investigating social power in prehistory is scale. How can one move between the micro-scale discussion of individuals and their relations to other people and things, to explorations of interactions on a macro-scale, at the wider regional level? Is it possible to move from a discussion of activity occurring within a single generation to much longer timescales? Archaeology has developed good methods for exploring the micro-scale at the level of the specific, socially contextualised historical trajectory. For individual monuments this has included reconstructing the movement of people (Thomas

1993a), the process of construction (McFadyen 2007) and material citations (Downes *et al.* 2013). Investigating specific monuments and activities at the local scale matters because it is at the level of the individual that all interaction takes place (DeLanda 2006, 38); the network is always local (Latour 1993, 17). However, it is also important to explore long-term change and wider scale social interactions at the macro-scale (Knappett 2011, 36; Robb and Pauketat 2013, 9). Where quantities of precise radiocarbon dates are available, it is now possible to construct detailed narratives at the middle or 'meso-scale', that of the monument complex.

Taking an approach inspired by assemblage theory, the search for power relations at ceremonial monument complexes will traverse multiple spatial and temporal scales – 'tacking' between single monuments, whole complexes and regional patterns (Gamble 2015, 113–4, fig 4.6). From an assemblage perspective space is topological – what counts is not metric distance but how closely connected entities in a network were (Müller 2015, 35). As Barclay (2009, 3) warned, "we must be careful not to replace 'national' prehistories with micro-regional approaches that undermine the very real shared traditions and complex relationships between regions". The strong similarities between Neolithic monument complexes in Britain and Ireland, in terms of both forms of monumental architecture, shared material culture and the activities carried out there, suggest that people had some wider shared worldview and knowledge of how things should be done (Cummings 2016, 50).

2.4 Summary

Monument complexes were nodes in social interaction networks in Neolithic Britain and Ireland; specific places where traditions, powers and relations were gathered and entangled. This thesis aims to move beyond the current anthropocentric and perhaps simplistic characterisations of social structures in Neolithic Britain outlined in Section 1.3.3 by drawing on approaches and insights from relational and assemblage thinking to focus on non-human agents and actors, and how they might be entangled in power relations. However, in contrast to many approaches outlined above, a focus on unequal human relations and social organisation will also be retained throughout. It is envisaged that monuments complexes were places where dispersed non-human and human powers were gathered and drawn upon, creating new political and social configurations that could rapidly and fundamentally change social life (Robb and Pauketat 2013, 27).

3 Place: the underworld

3.1 The power of place

The next three chapters of this thesis will assess, through examining archaeological evidence from monument complexes, whether Neolithic people in Britain and Ireland were involved in power relations that were mediated through places. Is there any evidence that 'natural' substances, occurrences or features at particular places could have been perceived as powerful? How were they bound up within a relational social network? And how did these relations influence the emergence and development of Neolithic monument complexes?

The word 'natural' has been placed within inverted commas, to denote the understanding that a division between nature and culture is not shared across all times and cultures and is not one that is useful to project on to the past (Strathern 1988, 11; Bradley 2000, 35; Descola 2013). This is one the key binary oppositions rejected by the ontological turn, outlined in Chapter 2.1. Although the substances and events discussed in this and the following two chapters are classed as 'natural' from a modern Euro-American perspective, this may not have been the case for the people and communities under discussion, for whom they may have been social or cultural beings (Descola 1996). Other types of division may have existed, for example between things that could be classed as a person and things that could not. We therefore need to be wary of using terms such as 'natural environment' as it is a culturally constructed concept (Ingold 2000, 20).

It is now 20 years since Bradley published *An Archaeology of Natural Places* (2000), perhaps the deepest engagement to date with this subject for prehistoric Europe, which challenged understandings of what might comprise an archaeological site. It built upon wider anthropological literature that focused on sacred places and engagements with 'natural' geographies (e.g., Carmichael *et al.* 1994; Descola 1996; Ingold 2000). Why did this body of work not precipitate a wholesale shift in the way that archaeologists think about engagements with place in prehistory? Bradley (2017, 161) himself has suggested that most archaeologists who study British prehistory live in dense modern landscapes, meaning that we have lost the ability to recognise subtle differences in the world around us. He cites Macfarlane's *Landmarks* (2015), which gives 2000 examples of descriptive words for the landscape, to show what we have collectively forgotten. An alternative explanation is that our theoretical approaches are only just beginning to catch up with the key principles of this viewpoint. Archaeologists have tended to separate out the 'natural' to focus on the cultural and human. With the tools that new materialism and relational approaches provide, we can rethink past relations with place in all its forms: landscape topography, vegetation, rivers and celestial bodies.

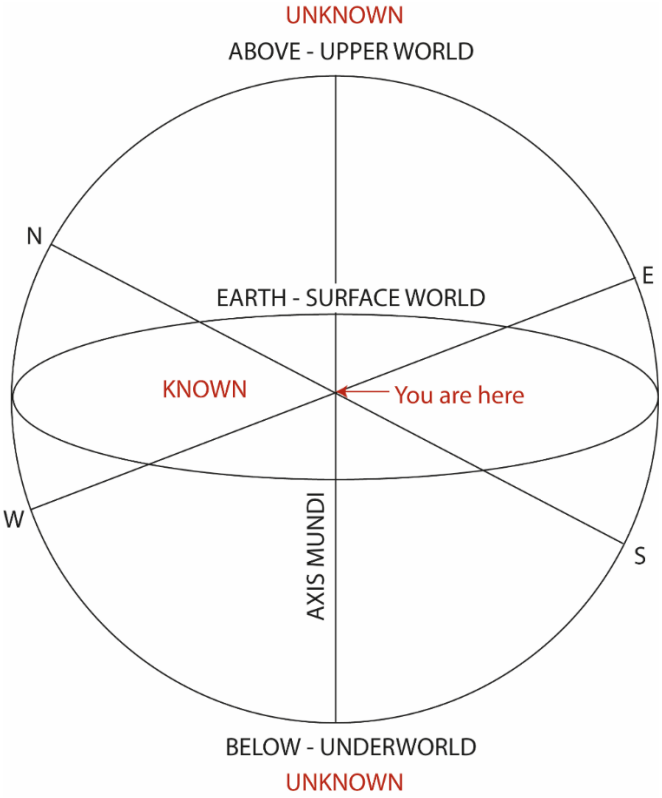


Figure 3-1 Diagram representing Eliade's (1959, 36) three cosmic levels, connected by an axis mundi or cosmic pillar

The next three chapters have been deliberately organised to avoid modern categorisations of place. They have been arranged according to the position of materials, places or events, working up through layers from an underworld of bedrock, soils and sediments (this chapter) to a surface world of vegetation and watercourses (Chapter 4) and finally to the world above, the sky (Chapter 5). This structure is not based on any specific cosmology, although it draws on the work of Eliade (1959; Figure 3-1) who recognised the wide distribution of past and present cosmologies in which the familiar world was divided into three (Tuan 1974). This is not to impose a cosmology on Neolithic Britain and Ireland but is simply a way of conceptualising different 'natural' features without resorting immediately to modern material categories.

3.2 The underworld

As explored in Chapter 2.1.5, a relational approach within archaeology has been particularly successful in conceiving of materials as active agents (McFadyen 2007; Jones 2012) by paying close attention to the affordances of those substances, especially those used to create significant objects or in the construction of monuments (Tilley 2004; O'Connor *et al.* 2009). Stone, a product of the underworld, has been a favoured material in these discussions to date and being extensively used in parts of Neolithic Britain and Ireland to build megalithic monuments. Previous accounts have unhelpfully linked the hardness and durability of stone with the concept of permanence, and thus linked it to ancestors and the dead (Parker Pearson and Ramilisonina 1998a; Thomas 1999, 218) but more recently scholars have focused a variety of other properties of stone, and the ways in which it may have played a part in specific engagements,

assemblages and relations (O'Connor and Cooney 2009; Conneller 2011; Fagan 2017) or considered alive or animate (Bradley 2009, 4; Scarre 2009, 17). It is important to remember that endurance of stone may not have been the quality that was most significant for prehistoric people. For example, our use of terminology such as 'fields' or 'beds' to describe sarsen spreads in areas like Avebury belies our conception of them as static and unchanging but they could equally have been perceived as much more active flows or rivers (Gillings and Pollard 2016).

Our modern category of stone is a wide one, encompassing such varied materials as flint, chalk, quartz and sandstone. It can range from sharp to soft, opaque to translucent and a stone's properties can change if heated, made wet or displayed in certain ways (Jones and MacGregor 2002, 8; Tilley 2007a). Uniform engagements with materials cannot be presumed (Conneller 2011, 17–18; 125). One is reminded of Irving Hallowell's famous encounter with an elderly Ojibwa man (of the Anishinaabeg group of indigenous peoples in North America) who, when asked "Are *all* the stones we see about us here alive?" gave the reply "No! But *some* are" (Hallowell 1960, 24). The properties of materials are not fixed, essential attributes but are processual and relational (Ingold 2007, 14). The properties and relations of a single pebble were explored in Figure 2-2.

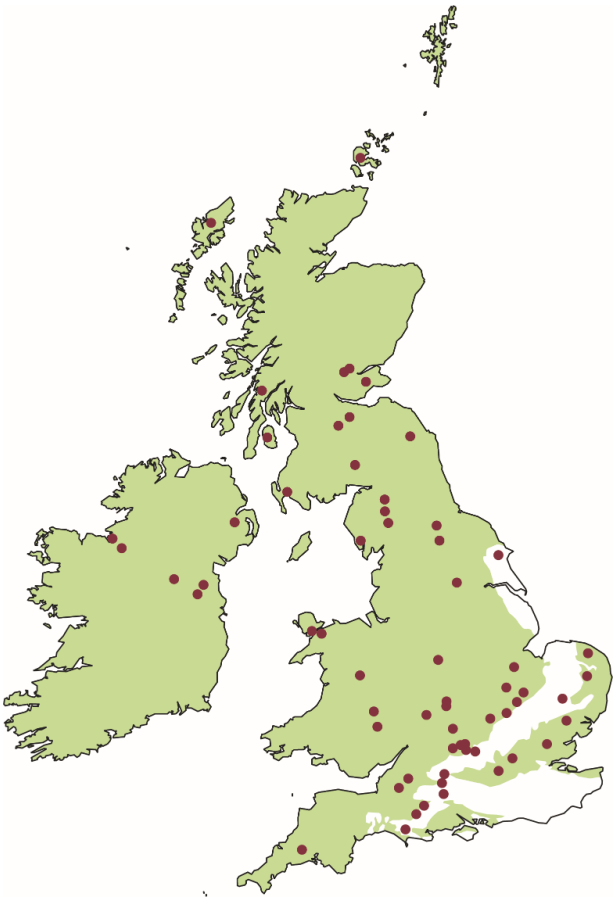


Figure 3-2 Map of chalk geology in Britain and Ireland, overlain with the distribution of monument complexes from Figure 2-6 (geological mapping obtained from British Geological Society)

The geography, topography and appearance of the landscape of Britain and Ireland are largely dictated by the underlying bedrock geology. It is likely that geological influences on soil colours, vegetation types and landscape shapes would have been well known to Neolithic people, as well as the material affordances of different types of stone. To what extent did the characteristics of this 'underworld' of rocks and sediments influence the emergence and development of monument complexes? Neolithic monument complexes across Britain and Ireland are situated on varied geologies, although there are concentrations, for example on riverine gravel terraces (Barclay *et al.* 1995b, 19) or on certain chalk uplands (Renfrew 1973, 544). Although there is a cluster of complexes on the Wessex chalk, many areas of chalkland, particular in the south-east, have none (Figure 3-2). Clearly then, there is much more to the distribution of monument complexes at a large scale than the underlying geology; other factors must be at play. Were people engaging with geological materials at monument complexes at a smaller scale?

3.3 Opening the earth

As noted by Thomas, the Neolithic heralded the start of interest in breaking open the ground in terms of pits, mines and ditches on a scale not seen in the preceding Mesolithic period (Thomas 1999, 75; Tilley 2007b, 339). The earliest activity of this type appears to have been flint mining, with deep shafts at sites like Harrow Hill on the chalklands of Sussex probably opened in the 40th century BC (Whittle *et al.* 2011, 257). The underworld would also have been encountered during many everyday activities such as growing crops or digging pits (Davies and Robb 2004) and encountered through caves and swallow holes (Peterson 2019). Cooney (1998, 114) has interpreted the deposition of stone working debris at early Neolithic axe quarries as deliberate offerings of material back to the earth. The presence of flint debitage knapped *in situ* in the ditches of cursus monuments and long barrows such as Amesbury 42 and Easton Down could be seen in a similar way (Whittle *et al.* 1993, 210; Thomas 1999, 78; Appendices A1.3.4–5 and A2.4.3). This knapping does not seem to be undertaken with the intention of manufacturing tools but as a necessary part of disturbing the ground, perhaps a placating or honouring activity.

When digging into the underworld, discoveries would have been made of a flint nodules, fossils, pebbles, balls and shaped stones, as well as layers of soil, sediments and bedrock. It seems that some of these were collected and used by Neolithic people in a variety of ways. For example, a distinctive partly knapped natural flint nodule was placed with the primary burial within the Winterbourne Stoke long barrow near Stonehenge (Figure A1-5b), flint nodules shaped like a phallus, balls and pelvis were placed in a pit at the entrance to Durrington Walls (Parker Pearson *et al.* 2006a, figs 18–9) and a large nodule shaped like an animal skull was deposited in a pit in Fir Tree Field on Cranborne Chase (Green 2000, 71). At the latter site, sandstone or sarsen fragments were also placed in pits, as well as flint casts with shells or fossils inside (French *et al.* 2007, 289). Tilley (2007b, 339–41) has highlighted similarities between the sculptural forms of flint nodules and human bones, suggesting that the presence of these gave landscapes great significance. Fossils were sometimes incorporated into the architecture of early

Neolithic monuments, such as the ammonite used for an entrance jamb at Stoney Littleton long barrow in Somerset, and later within passage tombs such as Newgrange Site L (O'Kelly *et al.* 1978, 269; Appendix A4.4.3). Sometimes discoveries were arranged outside monuments, as in the collection of unusual stones outside the passage tomb at Knowth (Case Study 3). Fossils have been found placed within other Neolithic pits and shafts, for example at Maumbury Rings and Thomas Hardye School, both in Dorchester (Bradley 1975, 25; Gardiner *et al.* 2007, 28; Appendix A3.5.3). These items are often dismissed as 'natural' and not recorded as artefacts but this practice of collecting and using fossils, nodules and unusual stones had a long history (Conneller 2011, 91–101) and continued into the early Bronze Age (Brück and Jones 2018). These objects may have been perceived as animate because of their origins below ground and unusual qualities, perhaps generative when deposited in particular places or placed in association with other things.

Often the construction of monuments involved disturbance of the underworld. Neolithic people appear to have had an intimate understanding of the silting and erosion of ditches, and particular profiles must have sometimes been deliberately chosen; a deep narrow ditch would have rapidly filled, a broad and shallow one would have stayed open for much longer (Ashbee 2004). Very short-lived monuments such as the Longstones enclosure (Figure 4-10) and the steep-sided ditches of the henge at Avebury would rapidly have filled, perhaps deliberately so (Gray 1935, 120; Ashbee 2004). In a sense, the underworld 'acted back' in reaction to interventions by people. This has been suggested for the repeated digging and back-filling of the ditches around Silbury Hill (Leary *et al.* 2013a, 216; Appendix A2.6.9). Perhaps instances of repeated digging might have included waiting until a ditch had been filled with seasonal water or until the first weathering had occurred, a signal that the endeavour had been accepted (or not), before it could be backfilled and another ditch excavated. Something comparable from the ethnographic record, albeit on a much smaller scale, has been recorded about the San people of South Africa, who see rock art panels as permeable interfaces between Ordinary and Spirit Worlds. The process of engraving exposes the lighter, contrasting rock beneath, exposing the Spirit World. Over time weathering causes the rock engravings to dull and form a patina, representing the reclaiming of engraved images by the Spirit World (Ouzman 2001).

Various underground materials were extracted, exposed and used in the construction of monuments and structures in the Neolithic. Chalk, to take just one example, is a hugely variable substance. At depth, it can form a compact block and must be prized out of the ground with considerable effort; elsewhere it is much softer. Archaeologists have drawn attention to the visibility of early Neolithic chalk constructions in the landscape, with Castleden describing the Stonehenge cursus as "two white slashes of chalk" (1993, 45). Such observations can be applied to monuments constructed from other light materials such as gravel, such as the Maxey cursus (Pryor *et al.* 1985, 301) or gypsum, such as the Thornborough henges (Harding 2013, 209–10). However, this would only be the case only immediately after construction unless

regular scouring and clearing of vegetation took place. Chalk rubble would have slumped and shifted through time; it was an active force with which the builders were entangled (McFadyen 2018). Anyone who has excavated at a chalk site or built a chalk cob building knows that it physically makes hands and bodies, clothes and tools, powdery white. This can blur the boundaries between the substance and the people who work with it (Harris 2009, 241). Chalk can be found as soliflucted 'Coombe Rock'; a material that is soft and malleable when wet, making it suitable for making plaster floors and cob walls, as in the construction of late Neolithic houses at Wyke Down and Durrington Walls (Green 2000, 75; Parker Pearson 2007; Appendix A1.5.11). The similar chalk floor of the structure excavated on the henge bank at Marden may have had a significance beyond the practical, as chalk was deliberately imported to a non-chalk area to create a plaster base for the central hearth area (Leary and Field 2012). At Silbury Hill, the sheer visual impact of the chalk used to build the enormous bright white mound both during construction and for some time afterwards must have been astounding (Figure 1-6) . Ironically, the authors of the monograph on Silbury mention chalk only once in their discussion of materials, instead focusing in detail on sarsen, antler and soils (Leary *et al.* 2013a, 210). Chalk objects such as balls, decorated plaques, perforated objects and phalli are known from many Neolithic sites (Teather 2007), ranging from finely decorated plaques or drums to scratched lumps of chalk. It has been suggested that chalk may have been regarded as a regenerative medium because of its pure colour, the ability to re-carve and re-shape it, and its use in creating objects interpreted as fertility symbols (Gillings *et al.* 2008, 223; Jones and Díaz-Guardamino 2019). Bradley (2000, 121) has argued that carved chalk objects were often deliberately returned to their source, being reburied within the material from which they came. Again, there is a sense of giving back, of appropriate deposition.

This discussion of just one geological material has provided glimpses of the idea that Neolithic people might have perceived certain underworld materials as active, animate, or perhaps powerful. Such power was not inherent in geological materials or objects but emerged through people's interactions with them (Barad 2007), through building, depositing, marking, carving, digging or moving the material.

3.4 Digging deep

At some late Neolithic monuments people went to extraordinary effort to dig deep into the bedrock. The ditches of Avebury henge were dug to 9 m below ground level (Pollard 2013, 190; Figure 3-3), the shafts at Maumbury Rings in Dorchester had an average depth of 10.4 m (Bradley 1975; Figure 3-16) and the circuit of deep pits or shafts surrounding Durrington Walls were up to 5 m deep (Gaffney et al. 2020; Appendix A1.5.8). The lower part of the enormous 123 m diameter ditch that surrounds the Ring of Brodgar in Orkney was cut through the solid sandstone using hammerstones (Figure A5-27). At 10 m wide at the surface and 4 m deep, this impressive part of the monument must have taken many weeks of labour to excavate (Downes *et al.* 2013, 107–10) and went beyond the simple need to create a circular boundary. Pollard has suggested that the great size of the ditches at Avebury "may indicate a desire to

control extreme sacredness and power" (Pollard 2013, 190). Equally the deep or rock-cut ditches may have been about reaching deep down to communicate in some respect with the powers of the underworld. Although flint mining will not be discussed in detail here, there is extensive evidence for digging mine shafts much deeper than was necessary, for example at Grimes Graves, and for ritual activities including structured deposits, careful backfilling and the creation of art both here and at earlier Neolithic flint mines. This suggests a complex engagement with extracting material from the underworld which went beyond the purely economic or practical and suggests that flint mines had complex mythologies and beliefs attached to them (Topping and Lynott 2005; Topping 2019; 2021).

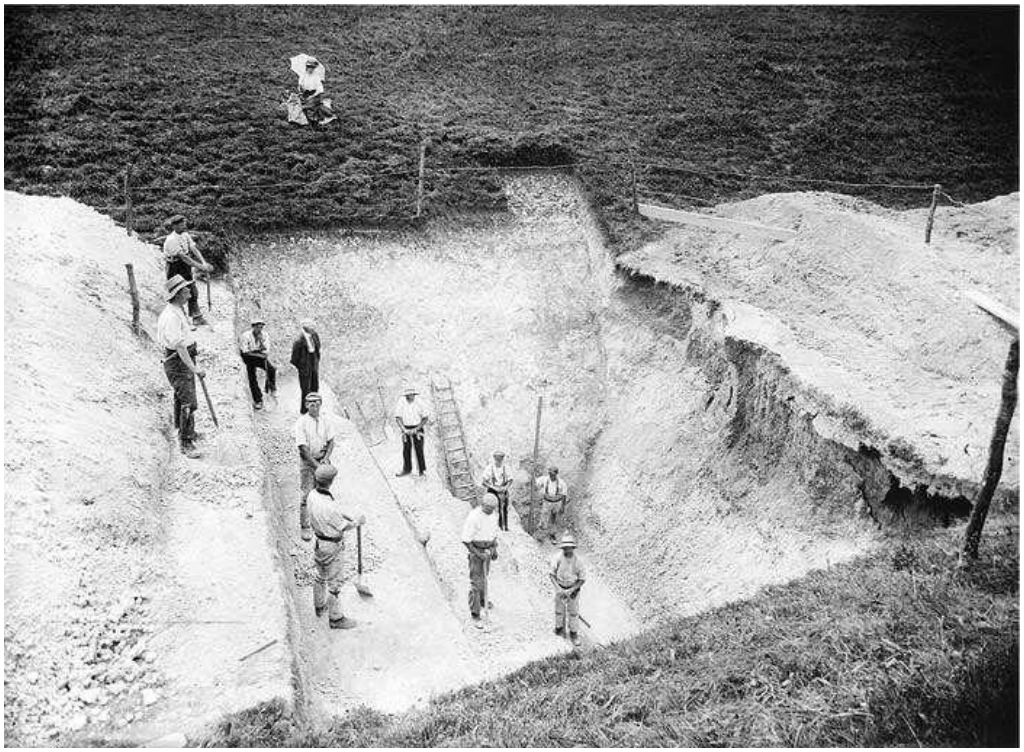


Figure 3-3 Harold St George Gray's excavations of the Avebury henge ditch in 1908 showing its great depth and near vertical sides © Historic England bb81/02751

Case Study 1: Monkton-Up-Wimborne and the Cranborne Chase complex

Although it does not form one of the major case studies of this thesis, it is worth examining the activities at the unique Neolithic enclosed pit complex at Monkton-Up-Wimborne within the Cranborne Chase complex, as it provides an example of the possible relationships that Neolithic people had with the underworld, and through that, with each other (Greaney 2019). The creators of this pit complex had an intimate knowledge of the nature of chalk. They carefully dug a large 1.5 m-deep-pit down to a subtle change in the geology, the join between the upper rubble and lower blocky chalk (Green 2000, 114–22; Figure 3-4). Four crouched burials were placed into a hollow dug into the northern side of this pit, carefully covered with rammed chalk so that their resting place was virtually indistinguishable from the surrounding bedrock (Figure 3-5). A radiocarbon date on the adult female provides an estimate of 3515–

3100 cal BC for her death (OxA-8035, 4585±50; Bronk Ramsey *et al.* 2000, 461–2; Green 2000, 154). The children buried with her had *cribra orbitalia*, likely to result from iron deficiency (McKinley 2007, 376), perhaps obvious as paler skin, and the youngest had suffered from poor health.

Figure 3-4 The pit and deep shaft of Monkton Up Wimborne under excavation in 1997 © Martin Green

Figure 3-5 The four burials from Monkton Up Wimborne pit complex © Dave Webb

From the 6.9 m-deep shaft dug down on one side of the pit, blocks of chalk were retrieved, some of which were worked and decorated, and one of which was probably mounted on a post (Figure 3-6). After the shaft had remained open for some time, people began to fill it, placing several carefully assembled

deposits within. The chalk blocks were placed back into the shaft, along with flint pebbles from the river, a stone ball, fragments of human remains, flint tools and fragments of other types of stone. It is possible to envisage periodic ceremonies at the open shaft and its nearby platform involving feasting, depositing objects and clearing out the shaft, perhaps involving the display or re-carving of the chalk blocks (Figure 3-7).

Figure 3-6 Decorated chalk block from Monkton Up Wimborne shaft. RTI image © Marta Díaz-Guardamino Uribe/ Andrew Meirion Jones

It is hard not to draw connections at this site directly to the underworld and the chalk: the deep shaft, the awareness of the different layers, the decorated and worked chalk blocks and the deposition of objects below ground. The shaft may have been dug to emulate solution hollows that were open during this period nearby (see below). The placement of the burials, hidden against the side of the pit, suggests that perhaps the chalk itself was more important than the lives of these particular people, perhaps as a place to be returned to after death. Could these have been offerings of some kind? If so, what was the underworld providing? A regular supply of chalk-derived nodular flint was being exported to groups living in the Mendips area (Bond 2004), where at least the woman and her child had lived for part of their lives (Budd *et al.* 2003). Although the shaft at Monkton Up Wimborne was probably not a flint mine, the shaft had been dug down to a thin tabular flint seam, which was removed. Could these burials and the shaft be part of a complex gift exchange mechanism, a triangle of relations between communities in the Mendips, the people on Cranborne Chase and their flint-giving potent chalk (Pollard 2012, 97)? Are there power relations here?

Figure 3-7 Reconstruction of Monkton Up Wimborne pit complex © Jane Brayne

The connection is perhaps further underlined by Old Red Sandstone from the Mendip area which was used to make saddle querns and rubbers that were deposited within the ditches of the main enclosure at Hambledon Hill (Roe 2009), an easy day's walk west of Monkton Up Wimborne. These querns were all deposited in a fragmentary state and often burnt, with the largest piece recovered from a pit with a young male burial who may have lived contemporarily with the individuals buried at Monkton Up Wimborne (Mercer and Healy 2008, 293; Roe 2008, 633, 640; Whittle *et al.* 2011, 129, table 4.2). Potentially the sandstone for these querns, together with flint from the Cranborne Chase area, were caught up in complex, reciprocal or unequal social relations. It is unlikely that sedentary and separate residential groups lived in the two areas of Cranborne Chase and the Mendips; more likely the people who frequented these landscapes were linked by overlapping networks of trade, kinship and other forms of relationship. The isotope evidence of the burials from Monkton Up Wimborne supports this more complicated picture. People taking flint away to the Mendip area may have been indebted to, or in an unequal power relationship with, the chalk of Cranborne Chase, and perhaps also to the people who controlled this resource.

A discussion of the specifics of engagements with materials, place and the underworld at one site has led to speculation about power relations or inequalities between different communities. This suggests that an approach that focuses on the potential of places and 'natural' substances involved in social relations can extend to a discussion of not only human-nonhuman power relations, but also human-human

relationships in which those materials and substances are intertwined. How does the Monkton Up Wimborne relate to the wider Cranborne Chase monument complex?

There are two clusters of monuments on Cranborne Chase: one around the Knowlton henges and another located adjacent to the central section of the Dorset Cursus (Figure 3-8). This extraordinarily long monument, probably of two or more phases of construction, stretches for 10 km across the headwaters of the Rivers Allen and the Crane. It has a close relationship with a surrounding cluster of contemporary long barrows and long enclosures (sometimes termed 'mortuary enclosures'), with some of the long barrows being incorporated into the cursus and others laid out in reference to it, particularly at the terminals (Barrett *et al.* 1991, 36). The cursus has been described as linking together parts of the landscape that were already socially or historically important, such as areas of Mesolithic activity and significant clusters of long barrows (Gosden 1994, 98; Chadwick 2004, 18) or monumentalising a pre-existing routeway (Johnston 1999). What has been less often discussed is that the central portion of the cursus crosses a "strange, contorted landscape" (Green 2000, 13) consisting of several unusual geological features, all located within the Upper Allen valley.

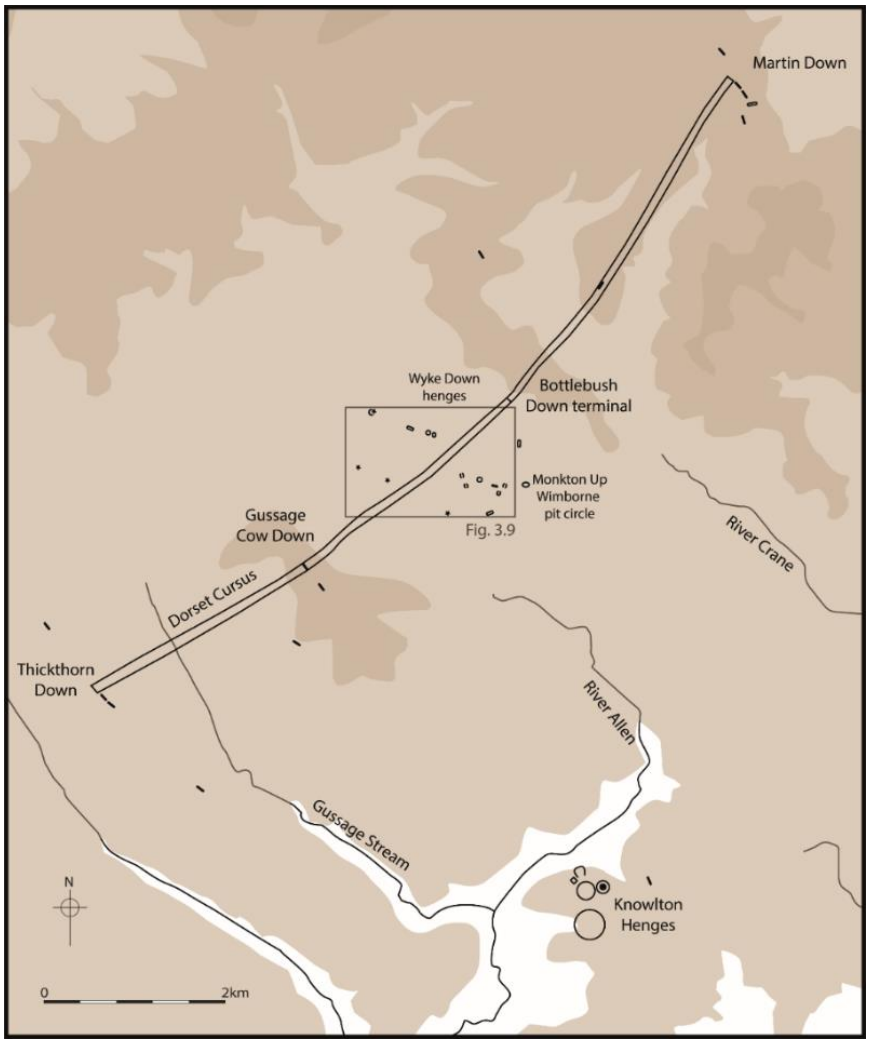


Figure 3-8 Map showing Neolithic monuments in the area surrounding the Dorset Cursus and Knowlton henges

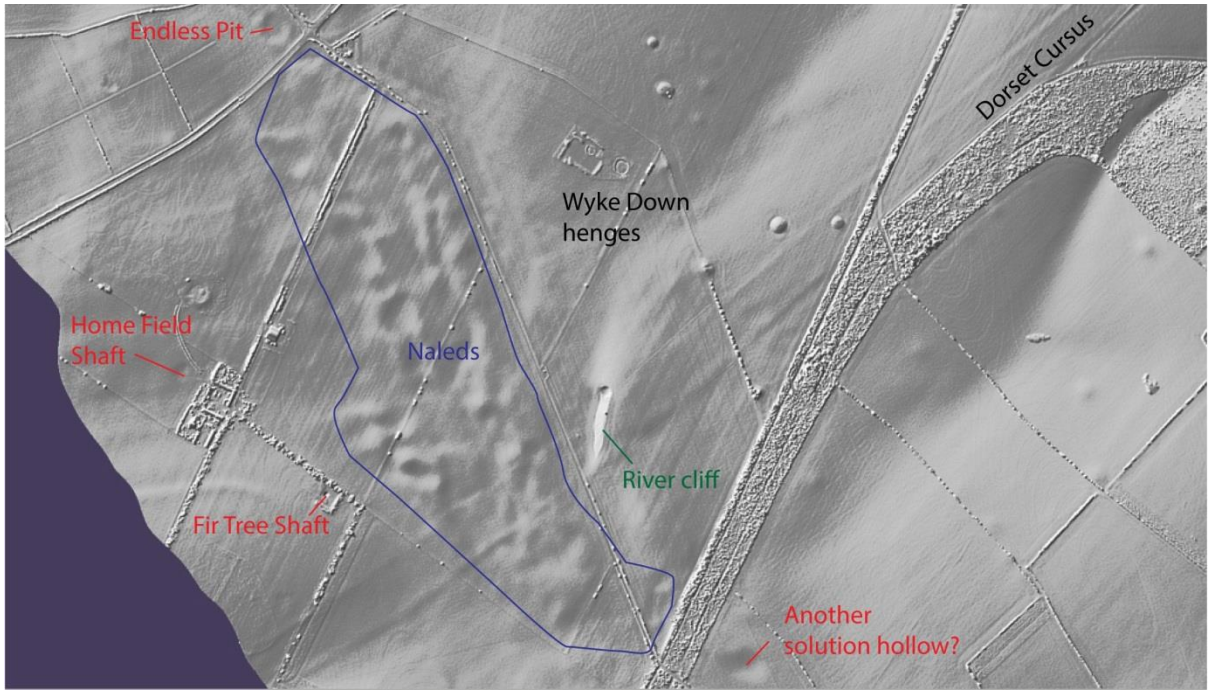


Figure 3-9 Lidar imagery of the Upper Allen Valley, showing the central section of the Dorset Cursus and its associated geological features: naleds (outlined in blue), solution hollows (red) and the river cliff (green). The parallel earthworks of the cursus can be seen crossing the image from the north-east to the south-west. Lidar © Environment Agency

Firstly, there is an area of approximately 300 sq m that is filled with a series of about 30 round and oval mounds with intervening hollows (Figure 3-9). These 'naleds', created by the collapse of small periglacial ice masses at the end of the last Ice Age, stand today up to four metres high but would have been more prominent in prehistory (Catt *et al.* 1980, 69). Naleds are not common geological features on the chalk, with other examples known only in East Anglia. One was the focus of an early Mesolithic flint scatter (Catt *et al.* 1980, 75) and the Dorset cursus appears to have been laid out to deliberately cut cross these mounds and hollows (French *et al.* 2007, 7).

To the north and west of the naleds are three deep geological shafts (dolines or sinkholes), one in Fir Tree Field, one in Home Field and the enormous 'Endless Pit' close to Down Farm (Allen 1998, fig 1). A further depression to the south-east may indicate another (visible as a hollow on Figure 3-9 and a pond on Figure 3-10). The Fir Tree Field shaft attracted considerable attention in the Neolithic period, with a series of postholes, pits and a structure all nearby and deposits placed within it, before being deliberately filled in the early Bronze Age (Green and Allen 1997; French *et al.* 2007, 82). Although the other solution shafts have not been excavated, a semi-circular crop mark partly encloses the 'Endless Pit' (Green 2000, 14) suggesting that it too was regarded as a place of significance.

To the east of the naleds is a steep river cliff, forming part of the north-east valley side for about 100 m. During winter floods, a lake forms immediately below this cliff (French *et al.* 2007, 4) which could be regarded as the source of the River Allen (Figure 3-10). The river cliff was deliberately incorporated within the banks of the cursus. A rich and extensive flint scatter associated with Peterborough Ware pottery on

top of this cliff appears to be the site of occupation bounded within the cursus (Gardiner 1985; Barrett *et al.* 1991, 71).

Figure 3-10 Aerial photograph from February 2014 showing seasonal flooding (black) in the Upper Allen Valley. The seasonal lake can be seen at the base of the river cliff in the centre © Google Earth

The area of naleds, the seasonal lake, the river cliff and the solution hollows together make this a particularly unusual geological area, an area that was deliberately selected for the construction of the Dorset Cursus. In several accounts the Dorset Cursus is described as if the monument was carefully designed and planned for a particular function, either to be processed along in order to experience revelation, myth and story (Tilley 1994, 199), or as a memorialisation of an ancestral pathway (Johnston 1999). In Tilley's account, the permanence of the cursus in the landscape is described as structuring later movement in the landscape (Tilley 1994, 202). However, the sections excavated across the ditches (all within the central Upper Allen Valley and Wyke Down portion) give a varied picture. On Wyke Down, both ditches were deliberately and rapidly backfilled shortly after construction (French *et al.* 2007, 107). Further south near Down Farm, the ditch on the north-west side of the cursus was left open to silt naturally, but the ditch on the south-east side was filled quite rapidly and later re-cut (Barrett *et al.* 1991, 43). Further south again, in the Gussage Cow Down portion of the cursus, the line of the monument is respected by Iron Age field boundaries which suggest that the ditches here lay open for some considerable time (French *et al.* 2007, fig. 2.13). It appears that the cursus only existed as a 'complete' monument for a brief period, if at all. Perhaps we should think of the cursus as the result of an event, or a series of events, rather than a long-lasting monument which structured all later activity. It is possible that the central section was laid out across the Upper Allen valley first and was only later extended to the north and south, contrary to the usual interpretation of the cursus as a two-phase monument (French *et*

al. 2007, 8). Dating for the cursus relies on a radiocarbon date from a single antler pick, which gives an estimate of 3370–2930 cal BC (BM-2438; Whittle *et al.* 2011, 156), relatively late for cursus monuments in southern England although the pick came from the stabilised top of the primary silts and may not provide a reliable estimate for the date of construction.

It was the potency of the Upper Allen valley that led to the emergence of a monument complex, as monuments such as the Wyke Down henges and Monkton Up Wimborne pit complex were built in a cluster around these geological features, rather than around the cursus itself. Gale (2017, 115–6) has noted that each of the major barrow clusters in the Lower Allen Valley near Knowlton was built close to sinkholes, as were the Knowlton henges themselves. It was the interactions between people and the active and geologically unusual Upper Allen Valley that led to construction of Neolithic monuments, some of which emulated their forms. It is possible that prehistoric people viewed these landscape features not as geological formations, but as the cultural creations of past people or ancestral beings; "it is a modern conceit to assume that past communities would have held geology and architecture apart in the same ways as we ourselves" (Barnatt and Edmonds 2002, 127). The partly infilled 'natural' shafts may have been viewed as some form of portals to the underworld, and the digging of the Monkton Up Wimborne shaft may have directly emulated these. This was a place that was storied, that was appropriate for the construction of monuments and where rituals could be performed. It was a particularly appropriate place for the negotiation of relations and payments of debt between people and the underworld, and between different groups of people. The form of the Monkton Up Wimborne monument, the carefully selected deposits, and the four people interred there, all point to social relations with different places, with flint and sandstone, with the underworld and its materials.

3.5 Portals to the underworld

In the Neolithic period, there seems to have been a wider interest in active swallowholes, 'natural' shafts, caves and fissures at monument complexes and elsewhere. Depositional Neolithic activity within caves is attested within karstic areas of Britain and Ireland, for example in the Peak District (Barnatt and Edmonds 2002, 118–9) and North Yorkshire (Hayes 1987). Peterson's (2019) work on cave burials suggests that this practice begins early in the Neolithic across southern and central Britain, with human remains being moved between caves and chambered tombs. At some sites, caves were modified or monuments built in direct relation to them, for example at Gop Hill Cairn in Clwyd, Wales where caverns beneath a large cairn were used to inter human remains and deposit objects, and limestone quarried from these caves was used to construct the enormous cairn monument above them (Barnatt and Edmonds 2002, 114–5). Elsewhere chambered tombs may have been built emulate the enclosed darkness of caves (Section 3.6).

Figure 3-11 The Carrowkeel monument complex, located on the karstic Bricklieve Mountains in Co. Sligo. One of the cairns can be seen on the hill on the left-hand side of the photograph, set above the exposed layers of limestone. In the far distance is the mass of Knocknarea, with Queen Maeve's Cairn just visible on the summit (author's photograph)

In Ireland, Neolithic burials are recorded from both swallowholes and caves (Dowd 2015) and at least two monument complexes were built in geologically active karstic landscapes. The passage tombs of the Carrowkeel group in Co. Sligo, built on the limestone Bricklieve Mountains, were deliberately located in relation to relict caves, sinkholes and other karstic features (Moore 2003). The ridges on which they are built have unusual, exposed bands or vertical cliffs of limestone, making them distinctive (Figure 3-11). The ceremonial complex of enclosures and mounds at Rathcroghan in Co. Roscommon is also built on a karstic plateau (Waddell *et al.* 2009), within a concentration of strange oblong pits, likely to be geological sinkholes (Timoney 2009; Dempsey 2012). Within the complex is the famous Oweynagat ('cave of the cats'), a narrow limestone cave at least 37 m long. The sides of this cave are covered in salt and shining rock crystals, and it has a tapering roof that appears ribbed or artificial (Fenwick and Parkes 1997). It is associated with a rich body of early Irish myths and legends, linked with the powers of chaos and disorder and is regarded as a portal to the Otherworld (Waddell 2018, 80–6). The presence of this unusual cave and other distinctive features of the karstic landscape may well have influenced the location of the prehistoric monument complex at Rathcroghan.

A close relationship between solution holes and Neolithic monuments can be seen at the Priddy circles, where a concentration of sinkholes, or swallets, appears to have been selected as the location for four circular Neolithic monuments, part of a larger monument complex (Table 2-1). These vertical shafts are formed by the cave systems in the underlying limestone collapsing or being dissolved by rainwater. They

can appear overnight and can sometimes be heard to emit strange gurgling noises, where water flows underneath the ground. There is a distinct concentration of swallets near Circles 1 and 3, which contains several ponds that are probably infilled sinkholes (Taylor and Tratman 1957; Stanton 1986; Linford *et al.* 2013b; Leary and Pelling 2016; Figure 3-12). Excavations have shown that the ditch of Circle 1 was deliberately located to incorporate at least one swallet hole (Clark 2013) and the construction of the bank comprised a central core of turf and limestone blocks (Lewis and Mullin 2011, 137), the stone conceivably extracted from below ground.

Figure 3-12 Aerial photograph from 2013 of Circle 3 at Priddy, Somerset, showing several swallets both inside and outside the enclosure, some now filled with water. © Historic England Archive, 27624_023

The major solution hollows on the Mendip plateau have been mapped as part of the British Geological Society GeoSure mapping project (Figure 3-13). The Priddy Circles are sited within one of the densest concentrations, because of their location at the junction of three distinct geologies (Lewis and Mullin 2011, 144). Prehistoric interest in these swallets is shown by placement of objects and human remains within them during the Neolithic, as well as in earlier and subsequent periods. Two swallets less than 5 km away from the Priddy Circles, Charterhouse Warren Farm Swallet and Brimble Pit Swallet were the focus for the deposition of animal bones, a greenstone axe, Grooved Ware pottery, antler and bone objects, flint tools and human remains dating from the late Neolithic or early Bronze Age (Lewis 2005, 128). Together with evidence from other swallets and caves in the Mendip area (Simmonds 2016, 26; Mullan and Chamberlain 2018), this shows that Neolithic people were deliberately lowering themselves into these confined, deep shafts and had a keen interest and active relationship with the underworld. The

layout of the Priddy Circles, and the position of a nearby causewayed enclosure and timber circle, appear to reflect the distribution of swallet holes (Figure 3-13). Between Circles 3 and 4 there is a larger gap, perhaps reflecting the gap in distribution of the swallet holes.

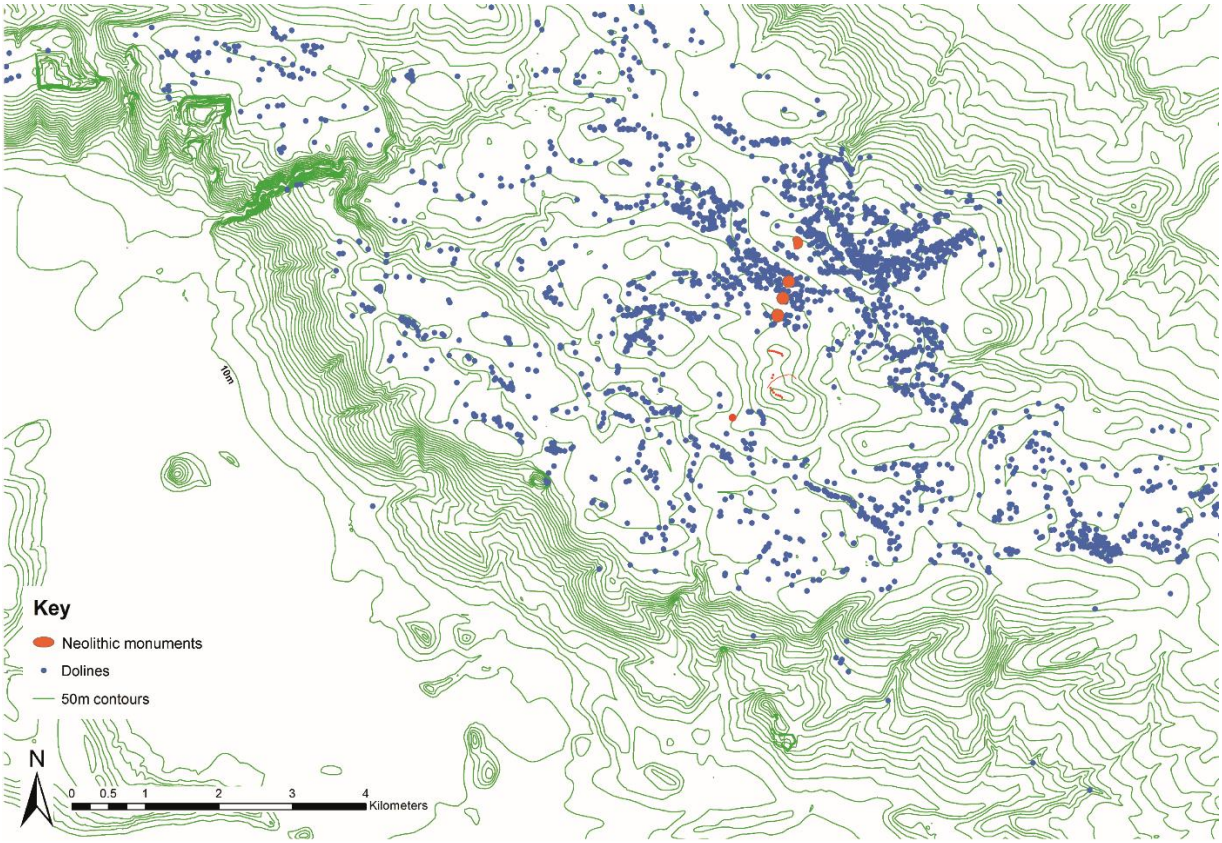


Figure 3-13 Distribution of swallet holes or 'dolines' (blue) on the Mendip plateau, showing the high concentration in the area around the Priddy Circles (red). British Geological Survey GeoSure data, license no. 2018/020

Harding (2013, 209) has noted that all six henges in the Thornborough area of North Yorkshire cluster in the most subsidence-prone part of the Gypsum Belt, between Ripon and North Stainley. Some of the many sinkholes investigated in nearby Nosterfield Quarry produced late Mesolithic or early Neolithic flint tools, and a possible late Neolithic double pit alignment was orientated on two solution hollows (Dickson and Hopkinson 2011, 199). This is another area of karst geology where swallets frequently and suddenly open, as they presumably did in prehistory (Cooper 2000). Soft white powdery gypsum, perhaps obtained from these solution hollows, was used to cover the inner banks of the Thornborough henges, transforming them into brilliant white monuments during construction. It was also used to line a small pit containing human bone at the centre of a nearby middle Neolithic triple-ditched round barrow and to line a grave within an early Bronze Age barrow (Harding 2013, 209), suggesting this was a potent material, associated with funerary rituals over a long period. The Lower Chalk blocks used as packing for the sarsen stones at the Avebury stone circles almost certainly derived from the lower levels of the henge ditch, deep underground (Smith 1965, 221; Watson 2001a, 301). It may be useful to think of materials from within caves, solution hollows or deep ditches as having a potency associated with their origins

deep below ground, enhancing other materials and places when brought into an assemblage during the construction of monuments.

It is important to note that not every area of solution holes became the focus for prehistoric activity. For example, there is a significant cluster of shafts within what is now Puddletown Forest in Dorset (Sperling *et al.* 1977). This active geological area was not the focus for any intense Neolithic activity, although it does have a scatter of early Bronze Age barrows. It is possible that this area was covered in dense forest or was not geologically active at this time, or it was not part of a wider assemblage of distinctive landscape features.

An interest in sinkholes is paralleled in other societies around the world, particularly the ancient Maya, who threw human sacrifices, burials and valuable items into water-filled sinkholes or 'cenotes', believing that these were gateways to the afterlife (Anda 2007). Some, like the Sacred Cenote in Chichen Itza, became major pilgrimage centres. Many Mesoamerican theologies and creation stories feature geological and geographic features; as conduits to the heavens, the underworld, to ancestors or even as deities themselves (Schele and Mathews 1999). Similarly, Bimin-Kuskunia people in Papua New Guinea regard sinkholes as places where "spirits of the dead find passage to the ancestral underworld and ancestral spirits return through these passages to haunt and bless this domain" (Poole 1986, 175).

Active swallow holes in the monument complexes discussed above may have been perceived as dangerous or frightening, or as evidence of underground forces, spirits or deities. In Ancient Greece, many notable temple complexes were built astride active seismic fault lines (Stewart and Piccardi 2017), and Bradley and García Sanjuán (2017) have suggested that certain monuments in France and Spain were built after significant earthquakes damaged existing monuments and sacred places. Perhaps caves and solution hollows they were viewed as portals to the underworld; liminal and otherworldly spaces with unique acoustics, temperatures and odours. No doubt entering them would be a transformative experience. That some of these shafts were used for the deposition of human remains and artefacts suggests that people were giving back to these places, for the purpose of appeasement, or using these portals as a way of communicating with another time, place or other beings. There is a pattern emerging here of the close association between active and unusual geologies and the location of monument complexes, a link that will now be explored at another complex in Dorset.

Case Study 2: Dorchester complex

The complex of Neolithic monuments at Dorchester in Dorset is located largely on a low-lying interfluve between the Frome and South Winterbourne rivers (Figure 3-14; Appendix A3). One striking feature of the South Dorset Ridgeway to the south and south-west of the complex, particularly at the highest sections of Bronkham Hill and Black Down, are the large numbers of solution holes. The densest concentration has been mapped (House 1991, fig 2) and is shown in the black rectangle on Figure 3-14,

although they can be found all along the Ridgeway between Broadmayne and Bronkham Hill. Today, together with the enormous concentration of early Bronze Age round barrows on these hilltops, they give the landscape an unusual, pockmarked appearance. These solution hollows, or dolines, are created where Tertiary strata of gravels, sands and pebbles erode into fissures in the underlying chalk. The date of their formation is unknown, but some cut into and therefore post-date the round barrows. Others seem to have influenced the position of round barrows, some of which were placed within rings of hollows (Tilley 2010, 234). The ridge today is covered by grassland, gorse and heather as the nutrient poor soils tend not to support large vegetation (House 1991, 149) and this is likely to have been similar in prehistory (Figure 3-15).

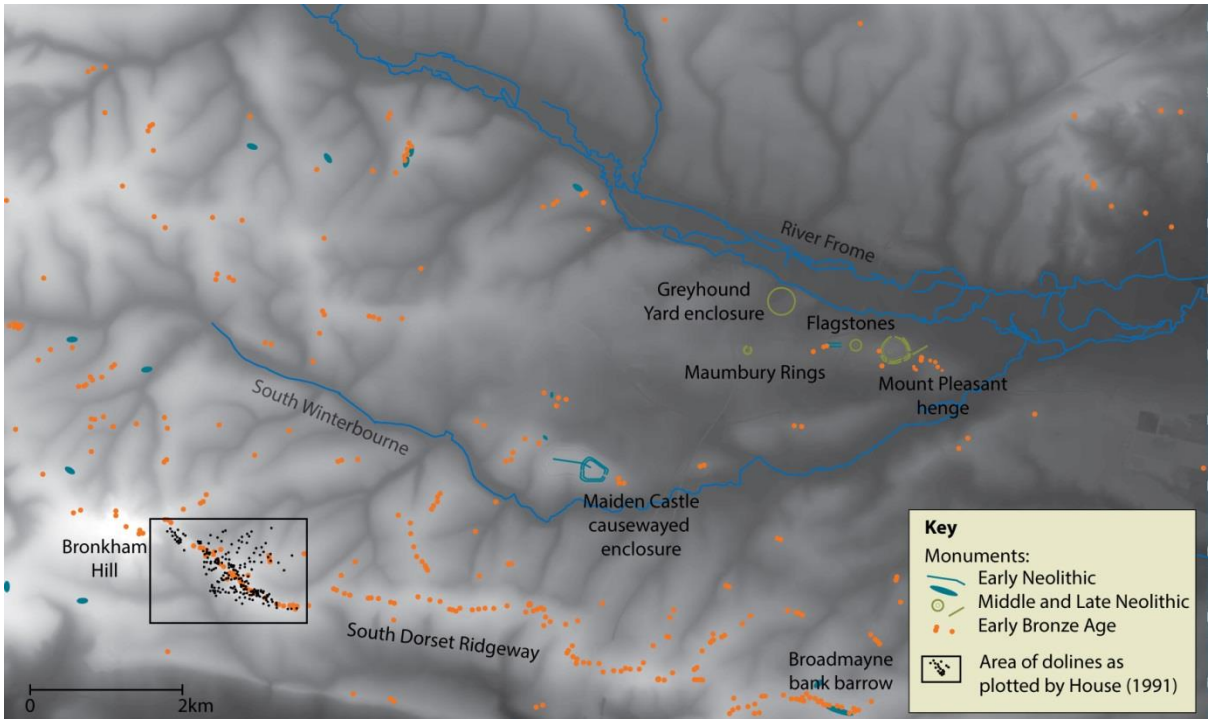


Figure 3-14 The Neolithic monument complex at Dorchester, Dorset and distribution of early Bronze Age round barrows. The densest concentration of dolines is shown (from House 1991, fig 2). Lidar imagery © Environment Agency

Some of the earliest Neolithic monuments to be built in this landscape were the causewayed enclosure at Maiden Castle, and a series of early Neolithic long enclosures and bank barrows (Appendix A3.3.3). Those at Long Bredy (associated with two short cursus monuments, located off the west of map in Figure 3-14), Broadmayne and Maiden Castle have previously been interpreted as territorial markers or symbolic barriers (Sharples 1991, 256; Woodward 1991, 131). The first two of these, located on the Ridgeway, seem to bookend the highest part of the ridge. Tilley has noted that they are located at points where Chesil Beach first becomes visible, suggesting that they were deliberately built to emulate the form of this unusual coastal feature, as "beaches in the sky" (Tilley 2010, 210). However, the bank barrows at Broadmayne and Maiden Castle are positioned on false crests, making them clearly visible from, and focused towards, the area to the north (Balaam *et al.* 1991, 40) and it is difficult to see any direct links between these monuments and the coast.

Figure 3-15 Solution hollows or dolines on Bronkham Hill. CC-BY-SA/2.0 © Nigel Mykura – geograph.org.uk/p/1022673

After the early Neolithic, monument construction shifted to the floodplain, where the middle Neolithic monument of Flagstones was built, and a series of major late Neolithic monuments (Chapter 6). Could the ridgeway with its remarkable solution hollows have been an important place? There is no clear evidence for Neolithic activity on Bronkham Hill and Black Down but perhaps, as Tilley (2010, 242) has suggested, the area was avoided as sacred, only becoming actively appropriated in the early Bronze Age. "Places that were left entirely unmodified might be among the most significant to the people who visited them" (Bradley 2000, 28). The late Neolithic henge monument of Maumbury Rings (Appendix A3.5.3) has an unusual circuit of 45 extraordinarily deep shafts (Figure 3-16) within which a variety of objects and tools were placed. These may be a reference the dolines on the ridge (Watson 2001b, 211) representing a form of negotiations with the underworld. There is a risk here of both identifying empty and monument-filled areas as equally revered, but there is merit in exploring these possible different conceptions of landscape. The concentration of early Bronze Age round barrows on the Ridgeway suggests that in this period it was considered a favoured place for the burial of the dead.

In considering the spatial layout of the Dorchester monument complex, the 'natural' features of the dolines on the Ridgeway also need to be included. Expanding the focus in this direction places the causewayed enclosure and bank barrow at Maiden Castle centrally and perhaps makes the placement of the large barrows at Clandon and Lanceborough more understandable (Figure A3-16). These are part of a string of 'aggrandised barrows' (Woodward 2000, 139), some of which may have phases dating to the late Neolithic, built in a roughly northeast to southwest curve linking the Mount Pleasant area, via the Alington Ridge to the highest parts of the Ridgeway (Needham and Woodward 2008, 5). Several of the Neolithic monuments were built along the east–west Alington ridge, with entrances suggesting east–west

movement, linking the lower river valley area with the pockmarked upland of the Ridgeway. The shift in the location of monument construction between the early Neolithic, the late Neolithic and early Bronze Age may reflect changing attitudes to these landscape features; at first as places that needed to be contained, later to be avoided and emulated and then as places that were appropriate for active monument building and the burial of the dead.

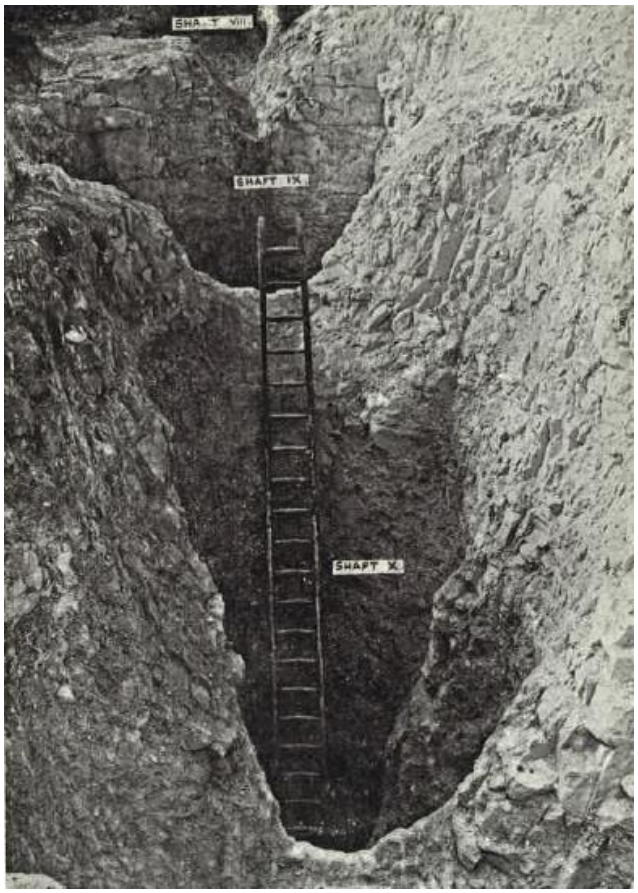


Figure 3-16 Harold St George Gray's excavations of the deep shafts at Maumbury Rings in 1912 (Gray 1913, Plate IV)

Interactions with these geological features such as dolines, naleds and caves appear to have influenced the location of prehistoric monuments, and perhaps even the spatial arrangement of whole monument complexes. They appear to have influenced the form of constructed monuments, such as Monkton Up Wimborne pit complex and Maumbury Rings. The adoption of a relational and materialist approach has enabled a focus on these 'natural' features as special places that were noticed by prehistoric people and entwined in assemblages of movement (visitation and avoidance), monument building and deposition. The fact that these active geologies apparently had such influence over the actions of Neolithic people, tells us something significant about people's beliefs or 'doings' (Fowles 2012) relating to the underworld. The power of these features was enhanced by actions that people took to actively appropriate these places and their associations through deposition and in the construction of new places, leading to the emergence of monument complexes. Here is an argument for greater attentiveness to the non-human parts of the assemblages that make up monument complexes.

3.6 Constructing the underworld

In general terms, the gathering of materials to construct monuments was a surface activity and so will be discussed in Chapter 4. However, some monuments may have been created to represent, embody or access the underworld. An enclosure comprising of a circuit of widely spaced but extremely deep pits or shafts, roughly 860 m in diameter, has been identified surrounding Durrington Walls in the Stonehenge landscape (Gaffney *et al.* 2020; Appendix A1.5.8). These appear to be artificially dug pits up to 5 m deep and 10 m across, connected by intermittent lines of stakeholes and postholes. Radiocarbon dating of material from the shafts and the postholes suggests that they were open and the post alignments standing in the late Neolithic period.

The use of deep shafts to demarcate such a large area is unusual and is a significant monumental structure, albeit one that was dug down, rather than built up. The deep pits may have emulated other geological sinkholes known in the area (Gaffney *et al.* 2020, fig 9), large pits dug earlier such as Mesolithic hunting traps (De Smedt *et al.* 2014) or wells, like the Wilsford Shaft, which was possibly dug in the middle Neolithic if the date from a wooden bucket at the base (Table A3-1: OxA-1089) is deemed reliable (Ashbee *et al.* 1989). The pit circuit created a permeable boundary, enclosing a large area that saw intensive occupation and monument construction in the late Neolithic, and deliberately incorporating the earlier causewayed enclosure at Larkhill. This circuit challenges our definitions of prehistoric monuments and shows that Neolithic people had an intense interest in digging deep, perhaps for communication with the underworld.

Case Study 3: Brú na Bóinne passage tombs

The experience of entering many early Neolithic chambered tombs, such as West Kennet long barrow, is not unlike the experience of entering a cave. Given the example of Gop Cairn (Section 3.5), and chambered tombs closely associated with nearby caves such as Parc le Breos, Glamorgan, this was a link made by some prehistoric people too. The famous middle Neolithic passage tombs in the Brú na Bóinne complex (see Appendix A4.4.2 and A4.4.3) were built using a variety of local and non-local materials, brought together and arranged in layers. Robin (2010) has drawn attention to the complex internal make-up of these passage tomb mounds, with layers of difference substances often placed in concentric rings (Figure 3-17). At Newgrange and Knowth, the central chambers were covered by cairns of water-rolled boulders, likely taken from the nearby riverbed. At Newgrange this was capped by a mound of boulder clay and a layer of turf, which was then covered again by a large earth and stone tumulus (Robin 2010, 374, fig. 15). The aim seems to have been to create a series of concentric spaces, the boundaries between them marked within the passage by a change of direction (e.g., Knowth western passage), a narrowing of the passage or a sillstone (e.g., Knowth eastern passage). Smaller tombs at Knowth had arc-like settings of stones beneath the mound, defining similar concentric spaces. As someone progressed into these tombs, these thresholds marked the different stages of their journey to the central chamber, also marked

by distinct forms of megalithic art (Robin 2010, 385). Cummings and Richards (2017, 239) have suggested that progressing into a passage tomb was akin to 'unwrapping' these material skins through traversing thresholds.

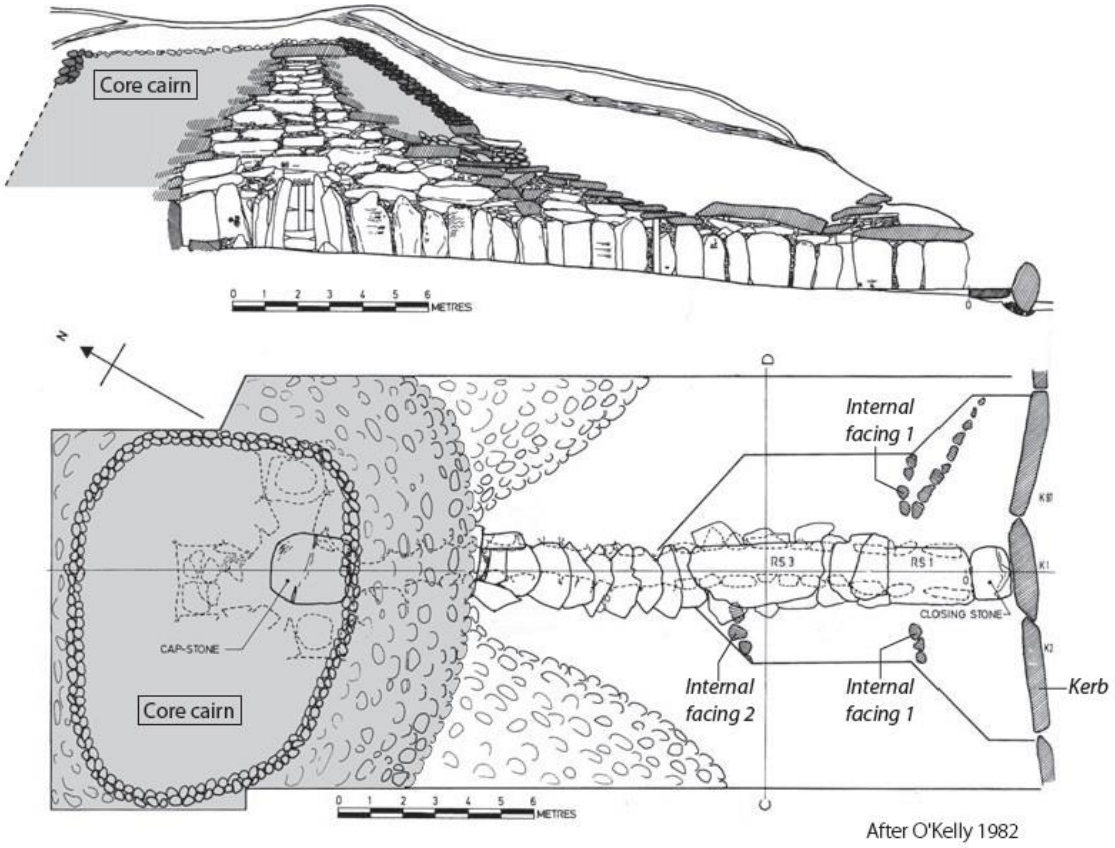


Figure 3-17 Composition of Newgrange passage tomb, showing the layered structure (Robin 2010, fig 4)

It has been suggested that the act of entering these tombs was akin to entering the underworld itself (Cochrane 2008, 20), journeying into another dimension (Dronfield 1996) or moving through a "representation of the topography of the other world as it was conceived in the Neolithic myths" (Robin 2010, 414). Garrow and colleagues have suggested a similar interpretation of Maeshowe passage tomb in Orkney, with the stratigraphy of the mound mimicking the geological formation of the land, making it "both conceptually below and physically above ground, an ambiguous place between worlds" (Garrow *et al*. 2005, 254). Similarly, Richards (1996b, 202) has suggested that the mound of Maeshowe positions the dead below the surface of the world.

By comparison with Mesoamerican worldviews, Lewis-Williams and Pearce (2005, 222–4) have proposed that the Brú na Bóinne passage tombs were part of a three-tiered cosmos in which the newly deceased, shamans and specialists could pass from the underworld to the upper world. In early Irish mythology, the Otherworld is a land under the earth or under the síd, an (otherworldly) mound. In medieval literature, the great mound of Newgrange was known as Brug na Bóinne ('the Otherworld mansion hall of the Boyne') and the dwelling place of the Tuatha Dé Dannan, the tribe of the gods (Waddell 2018, 85). This

Otherworld is sometimes portrayed as a wonderful, plentiful land and at other times as the abode of the dead with sinister and malevolent aspects, as with the Oweynagat cave (Section 3.5). It was also a timeless region and a mirror or reverse image of the human world (Waddell 2018, 86). Although we cannot extrapolate back from these medieval stories directly to beliefs held by people living in Neolithic Ireland, they do give us some idea of how these monuments were perceived in pre-Christian times and perhaps some clues about the concept of an underworld. The passage tomb materials were spatially organised within the mound to be experienced (even if not directly visible) in sequence, perhaps telling an origin myth as people moved within and around the spaces.

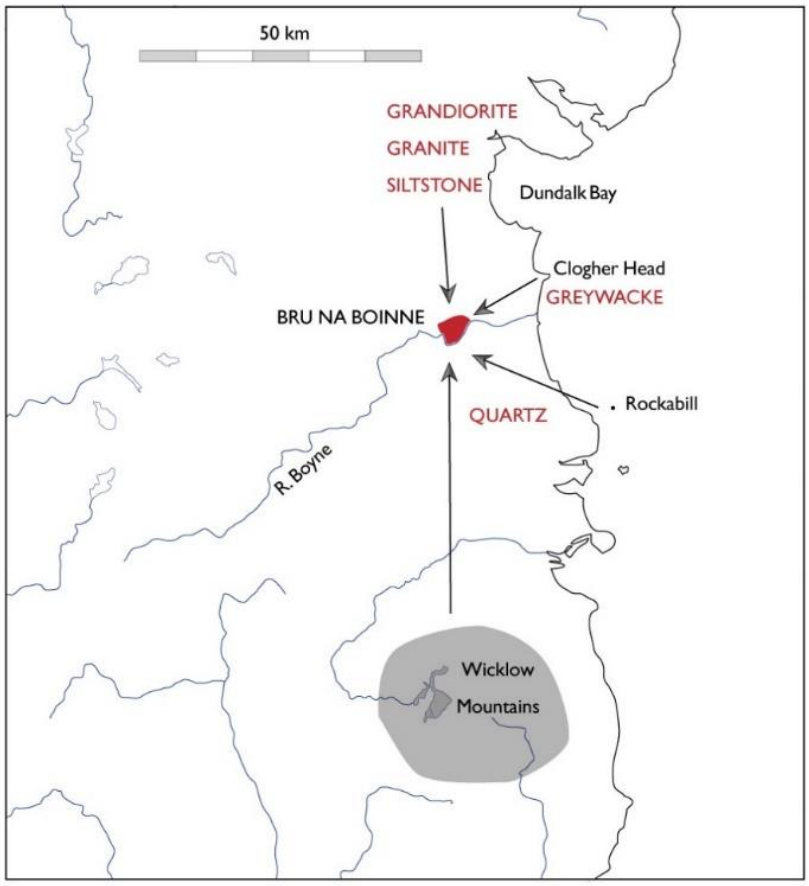


Figure 3-18 Map showing sources of key materials used in the construction and elaboration of the large passage tombs at Brú na Bóinne (after Cooney 2000a, fig 5.2)

At Knowth and Newgrange (and presumably at Dowth too) most of the orthostats used were greywacke, most likely brought from outcrops on the coast at Clogher Head, 16 km to the north-east (Figure 3-18). Greywacke tends to have a weathered buff or grey surface with a rusty red outer layer, but a conspicuously green interior, which is seen when the surface has been picked and chiselled (Corcoran and Stevastopulo 2017). Although greywacke was preferred, some of the kerbstones were of other materials, including cleaved mudrock, sandstone, limestone and a few igneous rocks, all probably from within a 10 km radius of the site. Each was carefully selected to be of a consistent size and shape, with flat surfaces placed facing outward. The greywacke may have been selected as particularly suitable for the pecking of

megalithic art, its power residing in the qualities and affordances of the material. The process of carving may have revealed and momentarily stabilised their agentic power (Alberti 2007) and the inclusion of carved stones within the fabric of the monument, sometimes hidden from human view, suggests that this potency could be directly incorporated into the monument (see Fagan 2017 for similar ideas at Göbekli Tepe).

Figure 3-19 The quartz and cobble spread, and stone settings, outside the western entrance to the passage tomb at Knowth, County Meath (author's photograph)

Outside both tombs, and possibly at Dowth as well, there were spreads of cobbles and pebbles in aprons or platforms (Figure 3-19), which at Newgrange have been famously and controversially reconstructed as a near-vertical wall (O'Kelly 1982, 68–74; Cooney 2006). However, this layer, up to 50 cm thick, was more likely a deliberately built platform as it had been laid onto ground stripped of turf (Eriksen 2008). There are three main groups of stones in these spreads: quartz, granodiorite and banded siltstone (Mitchell 1992). Angular white quartz is by far the most common and can also be seen at the entrances of several of the small passage tombs in the area. Although possibly brought from the Wicklow Mountains, there are other potential sources including Rockabill, a tiny rocky island 22 km east of the mouth of the Boyne (Meighan *et al.* 2003; Corcoran and Stevastopulo 2017, 565). The dark granodiorite cobbles and distinctive banded siltstones could all have been collected from beaches on the north side of Dundalk Bay

and seem to have been selected specifically for their dark rounded shapes (Corcoran and Stevastopulo 2017, 566), creating a striking contrast to the angular white quartz (Cochrane 2008, 174; Hensey 2015, 38).

Drawing on accounts of animist ontologies, Reynolds (2009) has convincingly argued that the use of quartz at Newgrange may have been considered by prehistoric people as fluid, animate and infused with life-force (see also Taçon 1991; Bergh 1995, 153). The animating affordance of quartz lies in its ability to produce or reflect light, and that this may have been seen by some as a regenerative act during ceremonies, particularly effective at night, dusk or dawn. Although the contrasting colours of the white, dark and striped stones could be thought to "channel and condense the significance of the spatiality of the inhabited world" (Jones and MacGregor 2002, 10), equally they may channel and condense the significance of an imagined world, an origin story or myth. For example, Turner's (1967) study of colour perception among the Ndembu of north-western Zambia demonstrated that red, black and white had significance for that community due to a belief in three mythical rivers of these colours. The black and white colours may reference darkness and light, a theme consistent with the alignment of the monument on the solstice (Case Study 7).

Outside the western passage of Knowth is a collection of unusual and varied stones. The 2 m-tall yellow sandstone pillar outside the entrance was brought from over 20 km away to the north-east and is partly polished (Corcoran and Stevastupulo 2017, 558). It forms part of a row of boulders comprised of twelve septarian nodules (fossilized mud bubbles with unusual cracks or partitions, Figure 3-20) and a large sandstone rounded boulder with herringbone cross-stratification (Figure 5-8). Similarly, outside the eastern entrance is a 1.45 m-long grey limestone standing stone (Corcoran and Stevastupulo 2017, 559). These stones may have been selected for their unusual appearance, their origin below ground or perhaps their similarity to motifs used in art and pottery decoration at the time.

Near the western entrance were two limestone blocks with natural solution hollows or basins, termed 'pulpits' (Corcoran and Stevastupulo 2017, 559). A third example stood near the eastern entrance. These unusual 'holed' stones may have been been vessels for rituals. There are also seven 'stone settings' on the eastern side of Knowth and six on the western side, all of circular or semi-circular shape abutting the kerbstones (Figure 3-19). These were created by stones set on edge, usually paved internally with small stones and quartz (Eogan 1986, 47). The largest, a circle of glacial erratics and ironstone placed directly outside the entrance to the eastern passage was covered by two successive layers of quartz chips (Jones 2007b, 207). It had a central large limestone block, which could have been used to smash the quartz as part of ceremonies at the tomb. Similarly, at the Newgrange tomb entrance there was a four-metre-long oval setting of upright stone slabs, containing a mound of water-rolled quartz pebbles, angular quarried quartz and some grey granite boulders (Figure A4-10). Lying within it was a highly polished phallus-shaped piece of sandstone (O'Kelly 1982, 76).

Figure 3-20 One of the septarian (fossilised mud bubble) nodules positioned outside the western entrance at Knowth passage tomb (author's photograph)

The stone settings, standing stones, boundary of unusual stones and hollowed-out limestones, as well as the quartz and stone spreads, show that the Neolithic builders and users of developed passage tombs in Ireland had an intense interest in geology, materials, and by implication, the underworld. Boulders with unusual cracks and splits, standing stones of specific and non-local colouration and stones with 'decoration' were deliberately selected and placed in highly visible locations near the tomb entrances. These materials may have been viewed as persons, beings, otherworldly objects, or as evidence of the activities of past ancestors or other beings. They may have been viewed as particularly powerful objects due to their unusual features, as an audience or guardians of the tomb. Some may have played a part in rituals that took place outside the tombs. This was not simply representing distant geography, "material citations or iterations of the significance of place", as Jones (2007a, 182) has suggested. The specific meanings and affordances of the materials seem more important than their place of origin. The settings at the entrances add weight to the idea that these tombs deliberately referenced the underworld, in terms of their structural composition and assembled objects. Within the north tomb at Dowth, an annexe off the right-hand recess contains a massive rectangular slab with a large natural hole that opens into the ground (Robin 2010, 395; Figure A4-12), again suggesting activities relating to the underworld.

Recently Hensey (2015) has written about the function of developed passage tombs as more than simple funerary monuments, but as spaces where other rituals and ceremonies such as initiations might be carried out. Clearly the burial of certain people within the structures was part of their purpose, but the deposition of some human remains within the sockets of orthostats suggests that the incorporation of the dead was required even during the construction of the monuments. Richards (2019) has described the burials within some long barrows as being placed up against interior stones or walls, suggesting that

during the decay of bodies their flesh flowed into the fabric of the monument, and the monument's hardness in return created hard bones. This generative process created the tombs as powerful places where other transformations could take place. We tend to elevate the importance of human remains, but perhaps they were simply one ingredient in the creation of these places.

At passage tombs human remains were brought together with objects, materials, and things, deliberately assembled and carefully placed in relation to each other. Through their juxtaposition with megalithic art and sometimes sunlight through solstice alignments (Case Study 7), people created vibrant assemblages of materiality (Bennett 2010). Concentrations of power were being created, places where significant transformations could take place. Whether these related to the funerary rites of the dead, to the initiation or life stages of the living (Hensey 2015) or to other ritual activities, there is a sense here in which these monuments were made powerful and animated by people's interactions with materials, and by the bringing together multiple different things. Power did not reside inert in materials or the architecture but emerged through the interactions that people had with them, and with their interactions as part of a wider assemblage of other materials, objects, monuments and places (Jones 2012, 88). Various intersecting groups of people would have had different relations with these things, with the monument and with each other. Such groups might include those who helped bring materials or lived close to their source, those who created the megalithic art and those who erased it, those were buried within the tomb, those who accessed the inner spaces, those who visited and witnessed ceremonies from afar. The monuments were potent node within all these intertwined relations, and would have changed with each encounter and performance, and as the monument was altered and used over time.

3.7 Summary: under the world

This chapter has explored in detail the relationships that people at three different Neolithic monument complexes may have had with the underworld. In the Upper Allen Valley on Cranborne Chase, a cluster of unusual geological features appears to have been the stimulus for the emergence of a monument complex, forming the focus for deposition and enclosure, and emulated in the form of pit monuments. At Dorchester, natural shafts or sinkholes on the Ridgeway may have influenced the location of the complex and explain the shifting focus of monument construction and the form of the Maumbury Rings henge. In the Boyne Valley in Ireland, it is possible to see an active interest in incorporating a variety of striking materials and unusual geological objects into the passage tombs, telling stories and creating powerful assemblages where potentially dangerous transformations or performances could take place.

It has been argued that megalithic art within the Boyne Valley passage tombs should be considered as performance rather than representation, as fluid and episodic, rather than static and inert (Cochrane 2005). This approach should be extended beyond just art (why separate art as something different from other forms of material engagement?) to encompass all the different forms of interaction that people had with 'natural' materials. During the construction of all of these monuments, materials and objects

were selected for their meaning and affordances and were placed in deliberate sequence, positioned or juxtaposed, each affecting the other and together creating potent places. It is only through the performative creation or alteration of these monuments, or their use during funerary or other types of ceremonies, such as the carving of motifs, the journeying into the deep shafts and the deposition of particular objects, through which these places became immanent and powerful. The assemblage of these materials and objects performed magic, created enchantment and drama, and reinforced or created beliefs, within entwined relations of power. Sacred spaces are often contested spaces, because people may try to prohibit others from using the space or disagree about the activities that can be carried out there (Kristan-Graham and Amrhein 2015, xvii). Not everyone would have been equal in their ability to interact with materials or enter spaces through constructional or performative events at the monuments, or even to witness these occasions, or to be included within burial assemblages.

There were no specific substances or places that were entwined in power relations with Neolithic people. Instead, what draws these examples together is the concept of active geology. Underworld materials and occurrences that are active, lively and have their own unique affordances and sometimes unpredictable power. Where sinkholes open, linking the surface and below worlds, where underworld materials are found on the surface, or where caves and sinkholes are found on mountains, it is the reversal or difference from the normal that seems to have drawn the attention of prehistoric people. It is possible that these features were viewed as crossing the boundary or interface between the surface world and the underworld (Tilley 2010, 245), as liminal locations or portals which involved mediation and negotiation (Davies and Robb 2004, 149). These materials and places were part of social life; people may have engaged in reciprocal relations with the substances of the earth (Thomas 1999) and with the monuments that they built. Where a number of these features cluster together in one place, these assemblages created special locales (or 'hierophanies', see Chapter 4) that developed into foci for monument complexes. Sometimes these were found or noticed, but they could also be deliberately created, for example in the construction of passage tombss. The bringing together and ordering of unusual objects and distinct substances in these locations, or the emulation of 'natural' features, appears to have been part of the negotiation with these active materials as part of power relations between humans and the underworld.

4 Place: the surface world

In the previous chapter the underworld of geology and sediments was explored. This chapter will now focus on the surface world of topography, rock outcrops, routeways, watercourses and vegetation, exploring how these aspects may have been entwined in assemblages at monument complexes and potentially involved in networks of power.

Archaeologists have for some time noted how certain monuments are orientated upon specific landscape features such as hills or rock outcrops or have proposed that the form of monuments deliberately emulated or reflected aspects of the surrounding topography (e.g., Richards 1996a; Tilley 1996; Edmonds 1999; Bradley 2000). However, generally unaltered, or 'natural', features of the landscape have been somewhat neglected in these accounts, despite ethnographic studies from a variety of places and periods emphasising the important of place and the landscape in social life (Chapter 2.2). Eliade stressed how difficult it is for us as modern Westerners to recognise these places where something sacred showed itself, which he termed 'hierophanies' (Eliade 1959, 11). These were places where it might be possible to break through the various planes of existence either upwards or downwards (Figure 3-1). What is important is that these were places marked out as something other or ontologically separate. If a large rock is singled out, Eliade argued, it is not simply because of its impressive dimensions, but rather because its imposing appearance reveals something transcendent, something relating to power, to memory, to other beings, to stories, myths, and origins (Allen 2002, 77). Taçon (1999) has noted that landscape features that evoke wonder, awe or reverence were often selected by Aboriginal Australians as significant places. Of course, not all sacred spaces are intrinsically related to geology or geography, and we may not be able to recognise more invisible or intangible places (Kristan-Graham and Amrhein 2015, xv). Is it possible to identify such hierophanies or 'power-places' (Huber 1999) for the Neolithic people of Britain and Ireland? If we can, how do monument complexes relate to them? How do monument complexes relate more generally to topographic features, the 'bones of the land' (Tilley 2010, 30)? Are there places where power relations between humans and non-humans are evident?

4.1 Topography

Visually impressive mountains have been and are regarded by various communities as spiritually or practically important, as the source of water, of local weather or of precious materials. Changing in character during the year, sometimes with active avalanches or screes, mountains can be dangerous places that might provide the abode of gods or ancestors (Saunders 2004; Helms 2012). Certain dramatic and dangerous mountain peaks in Britain and Ireland were the source of materials for axe production in the early Neolithic, particularly Pike O'Stickle in the Langdale, Cumbria (Watson and Bradley 2009) but also Tievebulliagh in north-east Ireland, Penmeanmawr, north Wales, the Preseli Hills in south Wales and Creag na Caillich, central Scotland (Cooney 2000a, 191). It has been argued that early Neolithic

monuments dolmens and tombs in the Preseli Hills area had views that were orientated towards outcrops (Tilley 1994, 76–109; Cummings and Whittle 2004, 80–1) although this work has been criticised on methodological grounds for lack of rigour and variable results (Fleming 1999; 2005). More convincing are rock art panels that appear to reference significant peaks, such as the gateway at Copt Howe near Langdale, highlighting the mountain that already had a long history of axe manufacture (Bradley and Edmonds 1993; Bradley *et al.* 2019; Figure 4-1). The attention paid to certain mountains by early and middle Neolithic people suggests that they were viewed as places of power, perhaps dangerous or otherworldly; places apart, where the land met the sky (Watson and Bradley 2009, 72).

Figure 4-1 The Langdale Pikes, the location of an early Neolithic axe production site, as seen from Copt Howe rock art boulder (author's photograph)

Direct relationships between mountains and monument complexes are much less clear. It has been noted that many passage tombs in Ireland were constructed on dramatic mountain tops, including those at the Loughcrew, Carrowkeel and Carrowmore complexes (Bergh 1995; Fraser 1998; Moore 2016). These distinctive peaks may have been imbued with mythic significance or power, 'other worlds' (Fraser 1998, 212) or 'islandscapes' (Cochrane 2012, 139). Perhaps most striking is the location of Queen Maeve's tomb on the enormous Knocknarea mountain in Co. Sligo, actively appropriating this focal point (Figure 3-11). Several cursus monuments in Ireland, and possibly some in Scotland, were located leading up steep slopes of mountains (Corlett 2014; Gannon 2021; Steve Dickinson pers. comm.).

Most monument complexes, and especially those that developed in the later Neolithic, do not seem to develop in elevated positions. For example, the cluster of monuments in the Stonehenge landscape is located on a plateau but not the highest ground in the area, which is Beacon Hill, 8 km to the north-east. There is no clear evidence that Beacon Hill was important in Neolithic times (Exon *et al.* 2000, 109). Stonehenge itself is situated at the east end of broad low spur, by no means the most dominant or

dramatic place in the landscape (Figure A1-1). The main cluster of monuments in the Brú na Bóinne complex, although placed along a ridge, were similarly not located on the highest point, which locally is Red Mountain to the south (Figure 4-2). Some monument complexes, such as Avebury, have a distinctly low-lying settings (Figure A2-1).

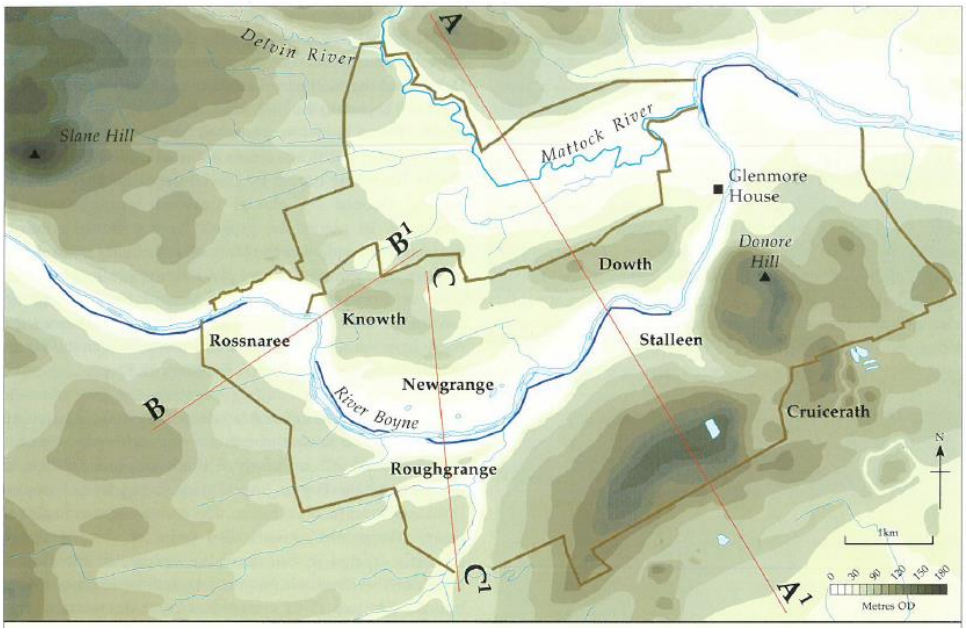


Figure 4-2 Topography of the Boyne Valley. Red Mountain is the highest area to the south-west (Stout 2002, fig 13)

If dramatic upland features such as hills and mountains were generally avoided for the construction of monuments, at least in Britain, what about smaller-scale topographic features? Could they have influenced the location and development of monument complexes? The Wittenham Clumps to the south of Dorchester-on-Thames in Oxfordshire are two low rounded hills. Their size and shape are perhaps best conveyed by their alternative names of the Berkshire Bubs or Mother Dunch's Buttocks (Figure 4-3). These prominent hillocks command extensive views over the surrounding Thames valley, overlooking the location of the Dorchester-on-Thames monument complex (Whittle *et al.* 1992; Loveday 1999). Could this pair of hills have led to the singling out of this place as important, as Loveday (1999, 59–60) has argued? Evidence of activity from this period on the hills themselves is almost entirely lacking, despite an extensive programme of geophysical survey and excavation (Allen *et al.* 2010). This lack of activity, when set in the context of intensive monument construction and activity along the whole Thames Valley (Morigi *et al.* 2011), does look deliberate. Much larger pairs of rounded hills that resemble breasts, such as the Paps of Anu in Co. Kerry, Ireland and the Paps of Jura in western Scotland were regarded as sacred mountains, at least in more recent times, as attested by their names; Anu being a mother goddess and Beinn Shiantaidh (on Jura) meaning 'enchanted mountain'. As has been argued for the South Dorset Ridgeway in Case Study 2, it is possible such hills were deemed too important or sacred for the construction of monuments, or other forms of active appropriation.

Figure 4-3 Wittenham Clumps as seen from the Dorchester-on-Thames complex (author's photograph)

Other prominent lowland hills are found in the vicinity of monument complexes but again do not form the central focus. Waden Hill is a prominent long ridge in the middle of the Avebury complex (Figure A2-1) that does not see monument construction until the early Bronze Age, when a barrow cemetery is built at the northern end. Although some causewayed enclosures were located on striking and dramatic escarpments or hills (e.g., Knap Hill in Wiltshire, Hambledon Hill in Dorset; Oswald *et al.* 2001) on the whole these do not appear to have become the locations where major monument complexes developed. Enclosures such as those at Windmill Hill near Avebury and at Robin Hood's Ball near Stonehenge are in prominent locations but again, not necessarily on the highest elevations available.

In summary, direct relationships between monument complexes and mountains, hills or high ground are difficult to identify, and it is much more common to find Neolithic clusters of monuments located within wide lowland basins (e.g., Walton, Avebury), within broad river valleys (e.g., Stanton Drew), on elevated plateaus (e.g., Thornborough, Stonehenge) or, in Wales and Ireland, along prominent ridges (e.g., Brú na Bóinne, Ballynahatty, Bryn Celli Ddu). Although mountains may have been seen as places of power and sources of potent materials, particularly in the early Neolithic, outside of Ireland there appears to be a general avoidance of mountains or high ground for the construction of monuments or as the central focus of monument complexes. Potentially there were restrictions on who could visit such high places; there are instances from indigenous North American groups where only certain shamans or medicine men could approach certain hilltops during 'vision quests' (Reeves 1994). Perhaps mountains or hills were not regarded as appropriate for the imposition of new structures. Avoidance was as much an active way of behaving towards certain places as much as direct engagement through deposition or construction.

Case Study 4: Stenness-Brodgar complex

The varied ceremonial monuments and associated settlements of the Stenness-Brodgar complex cluster in a unique topographic location (Figure 4-4; Appendix A5). They are located on a pair of narrow promontories that jut out across two joined lochs: the saltwater Loch of Stenness to the west and the freshwater Loch of Harray to the east. The two fingers of land do not meet but are separated by a narrow stretch of water, today crossed by a modern road. The lochs sit within a large shallow bowl, surrounded by the low hills of western mainland Orkney, with views west to the distinctive hills of Hoy.

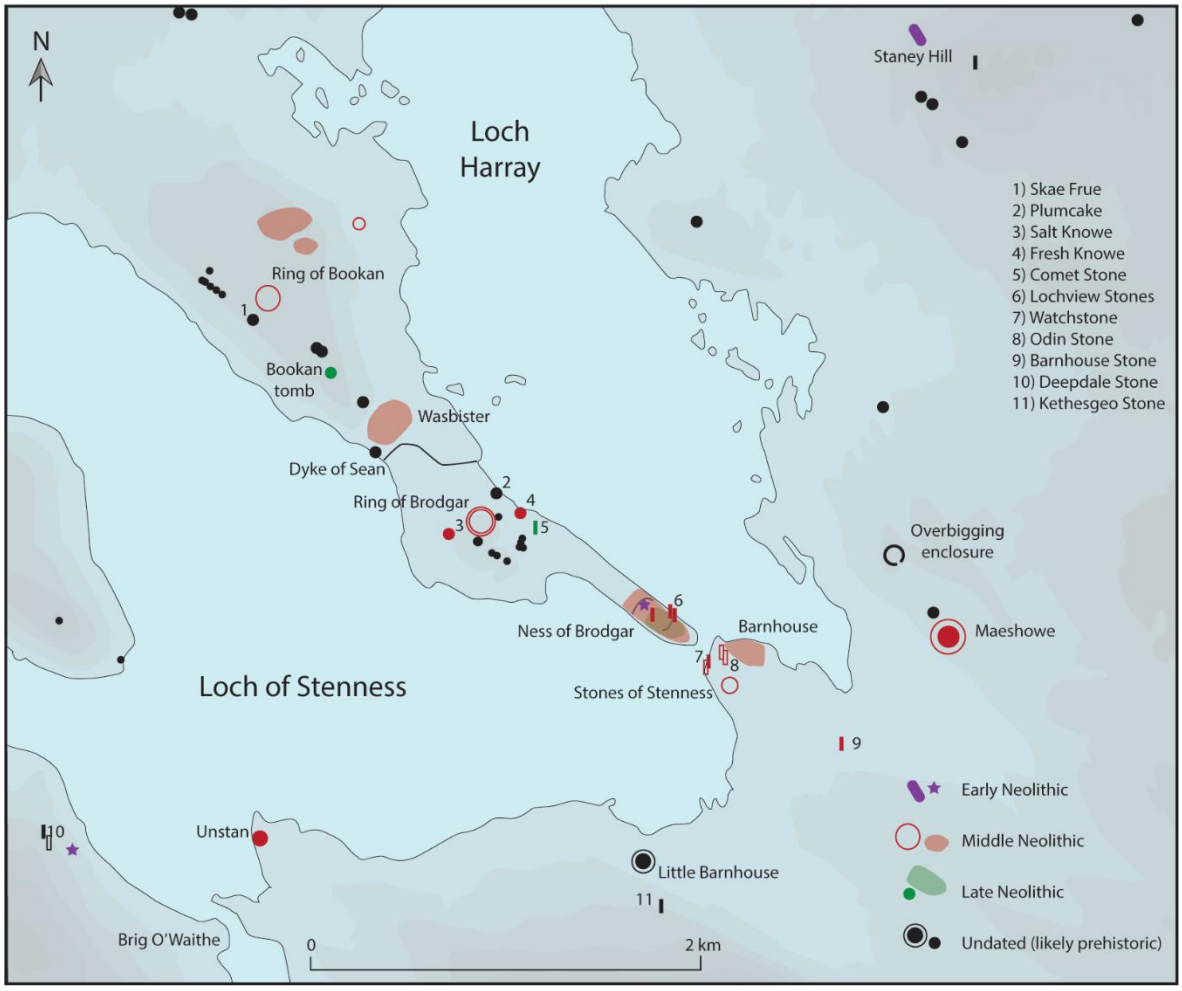


Figure 4-4 Map of Stenness-Brodgar monument complex

The narrow Stenness-Brodgar peninsulas became the focus of considerable ceremonial activity in the middle Neolithic, with monument construction peaking at *3125–2850 cal BC* (Bayliss *et al.* 2017, fig 7). This location has been described as "a place where water, land and sky had a special interwoven relationship" (Ritchie 1995, 73). Richards has argued that the complex formed the centre of Neolithic Orkney, where monuments and settlements were built according to a cosmologically based sense of order (Richards 1993a, 175). On the southern promontory, two sets of paired monoliths (the Watchstone and partner, and the Odin stone and partner; Figure A5-29) may have functioned as symbolic doorways, emphasising the sense of movement along the narrow land corridor (Richards 1996b, 199), although it is

not known whether the gap between the two peninsulas was crossed by a ford or bridge in prehistory. Crossing such a link may have been an important part of rituals on journeys between the two halves of the complex, perhaps relating to purification. The monumental walls that were constructed to the north and south of Ness of Brodgar settlement would have further controlled movement into the centre (Card *et al.* 2018, 221; Appendix 5.4.1.2).

The narrow peninsulas of land are orientated north-west to south-east, roughly the direction of the midwinter sunrise and midsummer sunset (Allen *et al.* 2016b, 999). It has been suggested that the monument complex at Kilmartin, Argyll, emerged in that location because of the north-east to south-west orientation of the valley (Jones and Watson 2011). As orientations on the solar directions were important to Neolithic people (Chapter 5.6), the sacred geography of these locations would have been obvious. More specifically, the midwinter sunset occurs directly between the two prominent hills of Hoy when viewed from the Brodgar isthmus, and the passages of both Maeshowe and Howe chambered tombs were aligned on this distinct topographic feature (Richards 1996b, 202; see Case Study 8). The hills of Hoy are by far the most dominant feature of the surrounding topography and are the highest hills on Orkney (Figure 4-5).

Figure 4-5 The twin peaks of Ward Hill and the Cuilags from the Brodgar peninsula, looking across Loch of Stenness. These hills form the only substantial hills on Orkney and are a distinctive landmark (author's photograph)

Richards (1993; 1996b, 203) has suggested that the enclosing ditches of the Ring of Brodgar and the Stones of Stenness regularly filled with water, although the evidence for this is not conclusive. However, they are positioned in a nested geographic position, surrounded by the lochs, the mainland and beyond that the sea. Perhaps their location was viewed as representing the centre of the world, or the starting point for creation. Some authors have drawn a contrast between the freshwater and saltwater lochs

(e.g., Noble 2006a, 186). Recent palaeoenvironmental studies have shown that the Loch of Stenness did not become salty, or brackish, until some point in the early Neolithic, between *3990–3660 cal BC* (Bates *et al.* 2016). This was a time of considerable change in sea levels and climatic conditions, when the narrow barrier (the Brig O'Waithe) between the Loch of Stenness and the ocean was broken, probably during a storm surge, and marine flooding of the once freshwater lake gradually took place. This would have raised the water levels in the loch considerably, narrowing the size of the Stenness-Brodgar peninsulas, changes noticeable to those frequenting the area (Bates *et al.* 2016, 406).

In summary, the Stenness-Brodgar complex emerged at a nodal point in the landscape of the Orkney Islands where several topographic features formed a potent landscape assemblage. The peninsulas, aligned on a recognised axis, provided a meeting point between north and south at the centre of the western mainland. The prominent and perhaps venerated hills of Hoy provided a constant backdrop to activities on the peninsula, providing a marker for the winter solstice and the turning year. Rapid environmental changes may have been particularly noticeable with the changes in water level at the Loch of Stenness. This assemblage of water and land, orientation and views, provided an appropriate place for the construction of the earliest Neolithic monuments or settlements. Neolithic people were aligning themselves with the wider cosmos, creating 'intimate parallelisms' (Pauketat 2012, 87) by constructing monuments that referenced the movements of the sun, the distinct topography, harnessing the power of this place for their ritual and ceremonial activities.

4.2 Rock outcrops and stones

There may be a close relationship between the location of some Neolithic monuments and certain rock outcrops. In south-west England, tor enclosures such as Carn Brea and Stowe's Pound in Cornwall deliberately incorporated dramatic rock formations (Tilley 1996; Bradley 1998). Tilley has made a specific link between these outcrops and power; "it is not hard to imagine that the fabulously weathered tors would have been great resources of potency and power" (Tilley 2010, 363). Not far from Stowe's Pound, and roughly aligned upon it, are the stone circles of The Hurlers, forming a minor complex of Neolithic and early Bronze Age monuments. The position, shape and size of the passage tomb at Bryn Celli Ddu directly emulate a large rock outcrop immediately to the east, which was embellished with cup marks (Devereux and Nash 2014). Recent excavations have shown that the passage tomb is part of a minor monument complex including a cairn and some Grooved Ware associated pits, located on a ridge of land defined by streams, with distinctive landscape features including blue schist rock outcrops and gold mica substrate (Ffion Reynolds and Seren Griffiths, pers. comm.). A free-standing pillar of this folded blue schist stands within the chamber of the passage tomb (Burrow 2010, 264–5). There are similar standing pillars within Cairn L at Loughcrew and Cairn F at Carrowkeel. At the latter complex, two other cairns that look like passage graves have no passages or chambers but were constructed around outcropping rocks or boulders. It is possible that these passage tombs were built to encase and control these powerful

stones (Cummings and Richards 2017, 238, 245). At Calanais on the Isle of Lewis, the southern stone row leads to a natural outcrop of gniess, Cnoc an Tursa, which was the site of an enclosure and activity focused on a fissure in the rock (Ashmore 2016, 1053).

The stones selected to build megalithic monuments were rarely deliberately extracted or quarried from below ground, but were obtained from outcrops, spreads, erratics or exposed cliffs (Scarre 2009). The Devil's Arrows standing stones near Boroughbridge in North Yorkshire, located at the southern end of a series of Neolithic henges and other ceremonial sites including Hutton Moor and the Thornborough Henges, are believed to have been quarried from the distinctive outcrops of Plumpton Rocks, 12 km to the south-west (Burl 1991). These outcrops are unusually weathered and contorted, displaying distinctive eroded grooves. People paid attention to these unusually shaped rocks, deliberately selecting and transporting them form part of the extended linear monument complex on the banks of the River Ure. That certain stones or outcrops were involved in relations of power is made evident by the interactions that Neolithic people had with them, including building monuments that incorporate, enclose, conjoin with, orientate towards or emulate them. Taking pillars or stones from their original places or moving them over long distances may have been for some controversial acts. In the Stonehenge landscape, individual sarsen stones such as the Cuckoo Stone and the Tor Stone at Bulford were raised upright in the Neolithic period and formed the focus for ritual and later funerary activities (Richards and Thomas 2012, 38; Appendix A1.5.5). These stones may already have been revered, individually personified or the subject of stories. These actions may have followed a long history of attending to stones as markers in the landscape with individual identities and biographies (Gillings and Pollard 1999).

Perhaps the clearest relations with surface stones at a monument complex is the Avebury area with its extensive sarsen stone spreads (Figure 4-6; Appendix A2). Moving and raising these sarsens was one of the first acts in the construction of early Neolithic monuments such as the West Kennet long barrow (Bayliss *et al.* 2007a). Some of the stones used to build West Kennet long barrow had already been used as polissoirs for the manufacture of stone axes. In the late Neolithic, people moved over 700 stones to form parts of monuments (Gillings and Pollard 2016, 539, 554), carefully selecting monoliths of particular size or colour (Marshall 2016, 106) or stones with prior histories (Pollard and Gillings 2010, 33). Falkner's Circle, which perhaps represents a hybrid monument combining sarsens in their original positions and others moved from elsewhere, was built at a key location at the end of a significant sarsen spread (Gillings *et al.* 2008, 152; Pollard and Gillings 2010, 39; Appendix A2.6.7). It is possible that the central section of the West Kennet Avenue was composed of a scatter of sarsens, only some of which were moved and set upright to create the avenue to the north and south (Gillings *et al.* 2008, 142; Appendix A2.6.6).

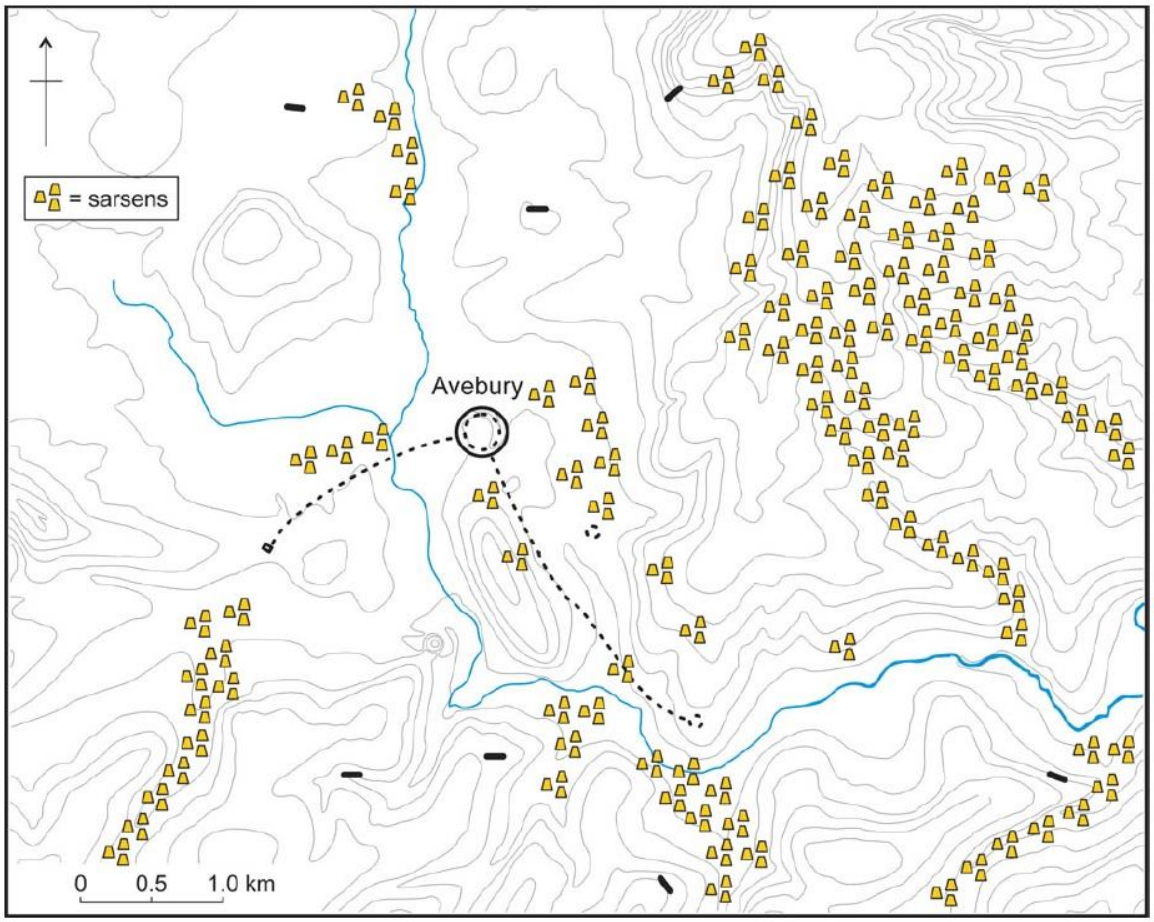


Figure 4-6 Map of sarsen spreads in the Avebury area reconstructed using archaeological and historical sources (Gillings and Pollard 2016, fig 3)

These great spreads of sarsens, unusually located on top of the soil rather than deep below ground, must have been noted as striking in prehistory, as they were even in the 18th and 19th centuries (Field 2012, 87) and they may well have been a key reason for the emergence of the Avebury monument complex (Pollard 2012, 103). From the evidence of deliberate depositions of animal bone, flint working debris and tools within hollows where sarsens had been extracted, it is likely these stones were regarded as powerful and animate beings (Gillings and Pollard 2016). These acts reveal a belief that the ground or the stone hollow needed to be placated in some way, to atone for the removal of the stone (Gillings and Pollard 2016, 551). Deposition in stone extraction hollows suggests that people's relationship with the land, which had 'given' the stone, compelled them to act in a reciprocal way (Thomas 1999, 76); these relations may have involved unequal relations of power that needed to be held in balance by action and counteraction. In turn, the constructed monuments gain some of their meaning and power from being assemblages of these powerful stones (Gillings and Pollard 2016, 556).

Case Study 5: Stonehenge

Perhaps the furthest movement of sarsens took place during the construction of Stonehenge, when about 80 large sarsens, the largest weighing over 35 tonnes, were transported 15 miles from the West Woods area near Marlborough, to Salisbury Plain (Nash *et al.* 2020; Figure 4-7; Appendix A1.5.12). The removal of such a quantity of the largest sarsen stones known in the area would have been a dramatic event, fundamentally altering this landscape and leaving behind pock-marked hollows and pits, as well as distinct traces of extraction (Whitaker 2019).

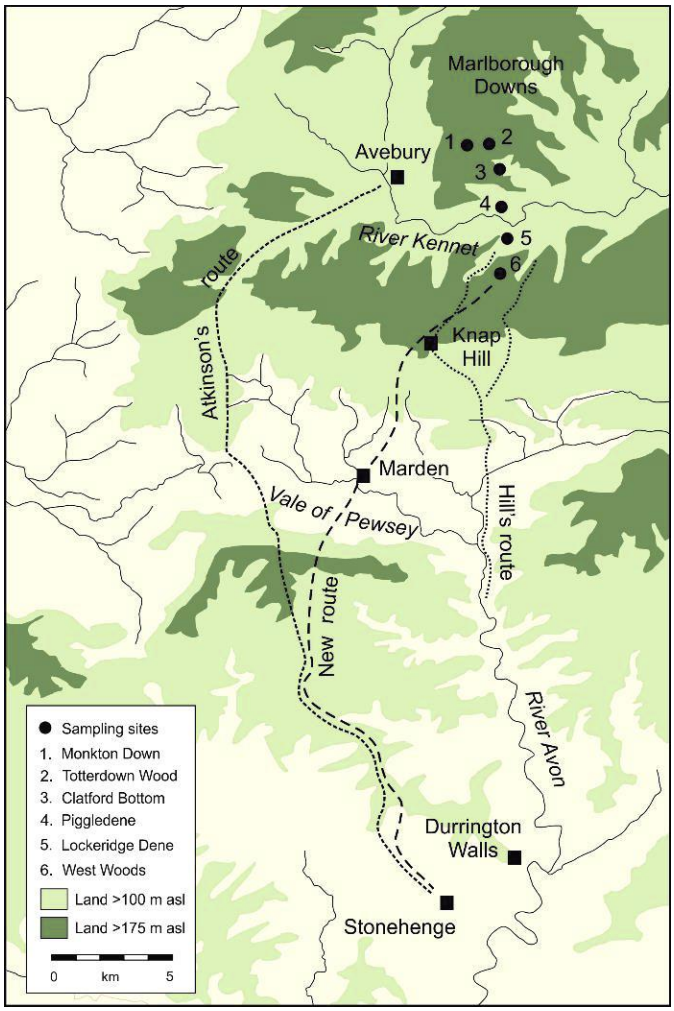


Figure 4-7 Map showing possible routes of sarsens to Stonehenge from West Woods (version of Nash *et al.* 2020, fig 1B)

Depending on who carried out the removal of these sarsens, this stone extraction and journeying may have caused conflict or division. Did the same people who built contemporary nearby late Neolithic monuments such at Silbury Hill, the Sanctuary and the West Kennet palisaded enclosures carry out this activity? Whittle (1997, 166) has suggested that these monuments might be constructed as deliberately different regional counterparts to the stone circle being built to the south, but how these communities were constituted remains unknown. Perhaps the stones were a gift or a tribute to the grand building project to the south. Or were some people horrified at the removal of sacred stones from 'their' land, by outsiders? It is possible that payments or supplications had to be made by the builders of Stonehenge to

those who occupied or frequented the West Woods area, as well as reciprocal acts to the land itself. In West Sumba, Indonesia, substantial gifts of animals and other goods, equivalent to bride price payments, are given to quarry owners to facilitate access to their quarries, and feasts accompany both the movement and erection of stones (Adams 2019). Could this explain the feasting activities at the West Kennet palisade enclosures, at Marden (along the route) and at Durrington Walls (Appendices A1.5.11 and A2.6.8)?

Sarsen was a material involved in unequal relations of power and negotiations both with the landscape and with other people. As with the materials selected for the construction of Irish passage tombs (Case Study 3) sarsens of a certain size and shape were being deliberately chosen, not as citations of a specific place, but for a specific purpose within a new architectural assemblage at Stonehenge. This assemblage combined sarsens with about 80 bluestones which were transported from the Preseli Hills area in south-west Wales (Parker Pearson *et al.* 2015; Parker Pearson *et al.* 2019a). These distinctive rock outcrops with their pillar-like stones (Figure 4-8) typically have extensive views to Snowdonia and across the Irish Sea to the Wicklow Hills (Cummings 2009) and had previously been important for the manufacture of stone axes. There was something potent about the Preseli Hills outcrops and their stones, and these beliefs resulted in them being transported over long distances.

Figure 4-8 Craig Rhos-y-felin, an outcrop near a tributary of the river Nevern, to the north of the Preseli Hills, source of some of the Stonehenge 'bluestones'. Excavations to find evidence of prehistoric quarrying by Parker Pearson and team are in progress, March 2015 (author's photograph)

The distinctive blue-grey colour with white inclusions of the spotted dolerites may have contributed to the selection of these particular stones. The argument that these stones were material citations of place (Jones 2007a, 182) is more convincing here than for the sarsens. How were different people connected to these outcrops and this transportation? Parker Pearson has suggested that the area was the ancestral place of origin for the people who built Stonehenge (Parker Pearson and Ramilisonina 1998a; Parker Pearson 2012b, 328). Recent study of isotopes from 25 cremated individuals buried at the monument suggests that three or possibly four people buried there could have been living in the area of south-west Wales in the final ten years of their lives (Snoeck *et al.* 2018; Appendix A1.5.3), although it should be noted that data is far from conclusive on this point, and these are not the earliest burials from the site. However, there are other earlier hints of connections between the Stonehenge area and the far west; a male buried within Winterbourne Stoke long barrow around 3500 BC has isotope results suggesting that he was brought up further west in Cornwall, Devon, south Wales or Ireland (Appendix A1.3.4). The same is true for a male buried in a pit at West Amesbury Farm in about 3200 BC, who appears to have spent at least some of his childhood and early adult life in south Wales or Ireland (Mays *et al.* 2018, 704; Appendix A1.4.1). The quarrying of these stones and their transport may have been undertaken by people who had strong ancestral connections to the south-west Wales, perhaps even from the time of the arrival of Neolithic people in Britain (Neil *et al.* 2017).

It is not clear if both types of stone were brought to the site at the same time; Stonehenge is the product of several phases of activity (Darvill *et al.* 2012; Darvill 2016; Appendix A1.4.3, A1.5.3 and A1.5.12). Some versions of the sequence raise the possibility that the bluestones arrived in about 3000 BC, set in the Aubrey Holes. This is apparently supported by the latest dating of quarry sites at Carn Goedog and Craig Rhos-y-felin (Figure 4-8), where some of the bluestones were obtained (Parker Pearson *et al.* 2019a). A ditch filled with angular slabs and boulders, placed across the access approach to the outcrop at Carn Goedog, has been interpreted as preventing access to the outcrop by other groups (Parker Pearson 2019, 91), suggesting that access was contested. Alternatively, this barrier could be interpreted as containing non-human sources of power, the spirits or energy of the outcrop, akin to 'henging' (Brophy and Noble 2012). This was a place that had been substantially altered or even desecrated by the removal of pillars of stone.

The bluestones have stood in several different positions at Stonehenge, with at least some previously standing in the 'double bluestone arc' in the Q and R holes (Cleal *et al.* 1995, 169–88). It has been suggested that they could also have stood in a small circle at the centre of Stonehenge (Darvill *et al.* 2012, fig 6), in the Aubrey Holes during the earliest phase (Parker Pearson *et al.* 2019a, 60) or within the West Amesbury henge (Allen *et al.* 2016b). Recent excavations at Waun Mawn in the Preseli Hills have identified a partly dismantled stone arc built of unspotted dolerites, from where it is possible that a few of the Stonehenge bluestones were removed and transported to Stonehenge (Parker Pearson *et al.*

2021). If correct (and dating of this activity remains unclear), the fact that at least four were left in place suggests that the process may not have been without conflict or controversy.

The sarsens from the Marlborough Downs, and the bluestones from Pembrokeshire, were deliberately brought together, worked and shaped, and placed in relation to each other, creating a unified and vibrant assemblage at Stonehenge (Bennett 2010). Darvill (2007; 2016) has suggested that it was the curative or magical powers of the bluestones that led them to being set within, and protected by, the larger sarsens. Parker Pearson has argued that Stonehenge may be a monument of political unification or peace between two regional communities (Parker Pearson *et al.* 2015, 1350), although that implies that groups resident in the two regions were involved equally in the construction. Perhaps those who built Stonehenge traced their stories and origin myths to two different locales. Both types of stone reference other places, perhaps sacred or ancestral, and likely other people, long distant in both time or place. Whereas the bluestones can be seen as material 'citations of place', the sarsens appear to have been selected instead for their large size. It was the assemblage and juxtaposition of the stones, along with the buried cremated bones of the dead, the older earthwork henge, the surrounding landscape of earlier monuments and an alignment with a celestial body that made Stonehenge such a vibrant monument, a concentration of power.

4.3 Routeways

The movement of stones over long distances brings consideration of another feature largely dictated by topography – that of routeways. The shape and surface of the land and sea create natural routeways, which had a direct influence on the location of monument complexes. There is growing evidence for people undertaking long-distance journeys into and across parts of the Britain and Ireland in the early and middle Neolithic period (Montgomery *et al.* 2000; Neil *et al.* 2016; Snoeck *et al.* 2016; Neil *et al.* 2017; Neil *et al.* 2018; Mays *et al.* 2018; Snoeck *et al.* 2018; Neil *et al.* 2020) and for the movement of domestic animals, and therefore by proxy people too, in the late Neolithic (Viner *et al.* 2010; Madgwick *et al.* 2012; Madgwick *et al.* 2019). These indicate that Neolithic people often led mobile lives, with travel over long distances not unusual. Travel would have had many purposes including resource procurement, grazing, trade, warfare, social negotiation or appeasement, pilgrimage, illness or adventure. It would have taken many different forms, undertaken individually, in groups, with animals or without, cyclical or point-to-point journeys (Leary and Kador 2016, 2; Reiter and Frei 2019). Many communities probably practised cyclical or 'tethered mobility', repeatedly moving between occupation sites (Whittle 1997b, 21). Patterns of regular movement create structures within the landscape but are also structured by topography, coastlines and currents. Existing paths influence routes taken by later generations and the perspectives from which they encounter and perceive the landscape (Leary and Kador 2016; Bell 2020; Leary and Bell 2020).

The presence of small-scale routeways at Neolithic monument complexes has sometimes been proposed. In the Milfield Basin, three of the henge enclosures (Milfield South, Coupland and East Marleyknowe) are linked by an avenue (Harding 1981; Edwards 2004; Passmore and Waddington 2009). Consisting of two parallel ditches, the monument can be traced over about 2 km, linking a crossing point of the River Till to the north with a large boggy area of a glacial depression to the south, respecting or passing through the entrances of several monuments (Waddington *et al.* 2011, 290, fig 2). However, this feature is not yet securely dated and could be a later droveway. Recent examination of lidar imagery from the area of Dowth within the Boyne Valley complex has identified two low parallel banks running north-west from Dowth mound towards the wetland area of Ballyboy Lake, about 700 m away (Davis *et al.* 2010, 34). Again, this feature is not dated. At Shap, an avenue of large glacial erratics was observed by antiquaries *c*.20 m wide and running over 3 km (Clare 1978). Although some of these stones were certainly set upright in prehistory, including the excavated Goggleby Stone, it remains unclear whether these were stone alignments or a true 'avenue', as many have been broken up and removed. It is much larger in scale than other avenues such as those at Avebury.

Figure 4-9 The Stonehenge Avenue as it approaches the stone circle. The periglacial chalk ridges are particularly visible as they approach the monument; one can be seen to the left of the avenue © Historic England 15041_25

Far more convincing avenues exist at other complexes, including the stone-lined examples at Avebury and Stanton Drew, and earthwork examples at Stonehenge and Durrington Walls (Appendix A1.5.3 and

A1.5.11). However, caution must be exercised about the interpretation of such avenues as routeways, despite them frequently being discussed as such (e.g., Thomas 1993; Barrett 1994; Watson 2001a). At Stonehenge, the final straight section is laid out directly over a steep bluff leading up from the dry valley of Stonehenge Bottom (Figure 4-9). If this had been a route heavily used by people processing to and from the monument, it would be expected that some form of hollowing or erosion would have taken place, but this is not evident (Bowden *et al.* 2012, 34–5). Either the avenue was not used very often or was used only by few people. The West Kennet Avenue, at least along its central section, was littered with natural sarsen stones which would have made processions difficult (Gillings *et al.* 2008, 42). Both avenues leading to Avebury have awkward approaches to the henge entrances, with the Beckhampton Avenue offset by about 10 m to the north of the western entrance (Gillings *et al.* 2008, 118) and the alignment of the West Kennet avenue turning through a distinct dog-leg (Smith 1965, fig 71). At the Sanctuary, there are three radial lines of stones leading away from the outer stone circle, with the avenue offset from the entrance into the rings (Figure A2-14). The end of the Beckhampton Avenue is also offset compared to the position of Longstones Cove (Figure 4-10).

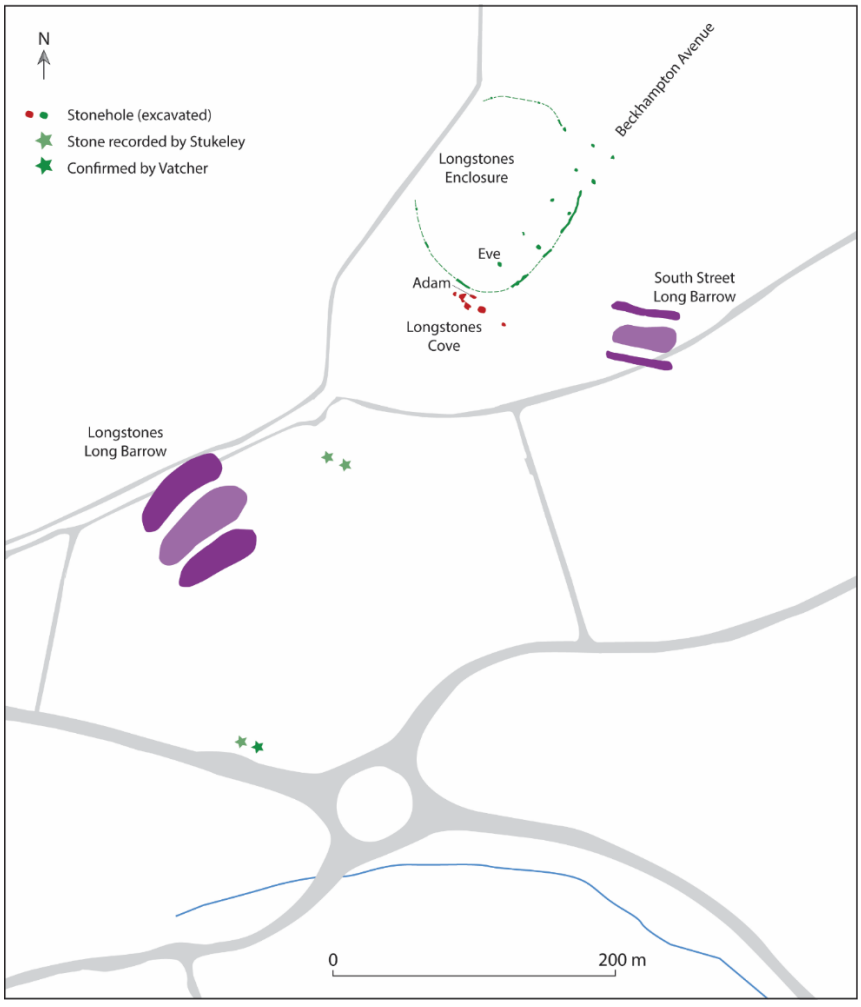


Figure 4-10 Plan of Longstones enclosure and cove, Beckhampton avenue and nearby long barrows (based on Gillings *et al*. 2008, figs 2.36, 2.76; Ashbee *et al*. 1979, fig 23). Note how the northern row of stones forming the Beckhampton Avenue is centrally aligned on Longstones Cove

These ‘kinks’ have been explained as part of an orchestrated approach that deliberately concealed views into the respective monuments (Thomas 1993b, 42). Gillings *et al.* (2008, 122) have suggested that human movement took place alongside the avenues, with the spaces between the stones left for spirits or ancestors. However, in each of these instances it can be seen that one of the lines of stones aligns with the monument or entrance gap. This implies that it is the line of stones that is significant, not the space between. The southern line of the Beckhampton Avenue is aligned centrally on the henge entrance, whilst the northern line is central to Longstones Cove. The northern line of the West Kennet Avenue is central to the entrance at the Sanctuary and to the Avebury henge entrance, although this layout is less clear. The physical lines of stones appear to make the connection linking different locales and monuments. Pollard (2013, 189) has suggested that the avenues were ‘charged’ lines connecting potent nodes; it seems human movement along these linkages was not intended, it was the physical link of a stone row to a powerful place or landscape feature that was important. Similar explanations could be applied to ‘offset’ avenues elsewhere, such as those at Stanton Drew or the single stone rows at Calanais, including that connecting the centre of the site to the gneiss outcrop (Ashmore 2016; Section 4.2). Rather than routeways, these stone rows and earthwork banks may have been important physical links between monuments and particular ‘natural’ places – springs, rivers, bogs, glacial lakes or rock outcrops, to older sites of occupation and other constructed monuments. It would perhaps be better to envisage these as connecting lines or umbilical cords. These were conduits along which energy, spirits or other sources of perceived power could move, tapping into the potent references of place and past. In addition, avenue stones at Avebury appear to have been markers for significant places – they were ‘story lines’. Stone L4 was positioned at right-angles to the main avenue axis where it crossed the Longstones Enclosure. Elsewhere deliberate gaps were left, as at the West Kennet Avenue settlement. In the outer stone circle at the Sanctuary, sarsens are placed perpendicular to the circumference at the main entrance and possibly to mark a second entrance to the north-east (Figure A2-13).

Prehistoric routeways at a larger scale are notoriously difficult to recognise, although topographic routes and crossing points of rivers can sometimes be identified. Noble (2006, 190) has argued that there is an association between Scottish monument complexes and natural routeways, often being located where routes converge at locations that were easily accessible to people coming from different regions. For example, the cluster of monuments at Meldon Bridge lies at a nodal point along the Tweed valley, at the centre of numerous land and riverine routes, and a whole series of Neolithic complexes both major (Leadketty, Forteviot) and more minor (at North Mains, Belhie and Moncrieffe) are located along the River Earn, an important routeway across central Scotland (Noble and Brophy 2011a, 788). Gillings and Pollard (2004) have suggested that Avebury henge was built at a crossroads of routes, reflected in the four opposed entrances, and it is located at the confluence of three valley systems (Pollard and Reynolds 2002, 16).

Rivers are often cited as routes; for example, Sherratt (1996, 220–2) has argued that in later prehistory the two Avon rivers of Wessex (the Bristol Avon and the Wiltshire Avon) provided easy access from southern England to the Severn estuary and the Midlands for trade networks and movement. It is worth questioning this notion. Rivers that were navigable by small craft would no doubt have provided an easier method of transporting people, animals and goods than walking on land, particularly where valley sides were densely wooded. However, it should not be assumed that all rivers make easy routes; they are often braided and marshy, and sometimes have steep river cliffs. Watercourses can form substantial barriers, especially during seasonal floods, and often do not provide the most direct route.

However, fording places and confluences of rivers do appear to have made convenient or suitable gathering places for dispersed populations and the construction of monuments (Richards 1996a, 320; Loveday 2006, 134; Leary and Kador 2016, 6). Cooney has noted that the Loughcrew complex lies at the interface between the River Blackwater, which flows east to the Boyne, and the River Inny, a principal tributary of the Shannon (Cooney 2000b, 252). The probable entrances to Mount Pleasant and Greyhound Yard enclosure at Dorchester both lead to the River Frome, the former probably to a fording point (Appendix A3.5.1). The monuments at Ballynahatty in Co. Antrim are located close to a fording point across the nearby River Lagan, the last place the river can be safely crossed before the coast, 8 km to the north-east. This means that the complex is at the centre of both north-south (land) and east-west (river) routes (Hartwell 1998, 37). The Brú na Bóinne cluster was built within a dramatic loop of the River Boyne, just at the point where the river becomes tidal (Mitchell 1995; Figure 4-2) and near an important ford, the Ford of Brow, which gave its name to the whole complex (Stout 1997, 303). Similarly, access to the passage tomb complex at Carrowkeel in Co. Sligo involved crossing either the Ford of Destruction across the River Unshin, overlooked by the large passage tomb at Heapstown or the Ford of Corraun across the Owenmore River, where a hoard of ten polished stone axes was found (Moore 2016, 56–9). Fords were thresholds on journeys towards these monument complexes and crossing them may have involved personal or group rites of transition or purification (Burl 1976, 310–11; Richards 1996a; Brophy 2000, 65; Fowler and Cummings 2003, 10; Loveday 2006, 134), as was suggested earlier for the possible ford at Stenness-Brodgar. Whether practical or spiritual, places where rivers were crossed or converged appear to have been particularly appropriate locations for monument construction.

Much discussion of possible Neolithic routes has drawn on the movement and exchange of objects, particularly polished stone axes. For example, there is an extensive distribution of early Neolithic Langdale axes to the east of the Pennines, suggesting the movement of objects, and probably also people, between these two areas at that time (Bradley and Edmonds 1993, 162–3; Schauer *et al.* 2020, fig 2). The main monument complexes in Yorkshire are located on natural routes across the Pennines. For example, the cursus monuments and henges along the middle River Ure emphasise the importance of the cross-Pennine route along Wensleydale (Harding 2000, 42). However, recent radiocarbon dating of the

axe production site on the Langdale peaks suggests that these outcrops were being worked in the early Neolithic, between *c.*3800–3600 cal BC (Edinborough *et al.* 2020, 94), suggesting that monument complexes emerged along routeways that had been established long before. Vyner (2007) has suggested that monument complexes in Yorkshire, between Ferrybridge and Catterick, are on well-drained land close to easily fordable points of rivers along a north–south route that largely follows the modern A1. This 'Great North Route' follows a shelf of magnesium limestone and marl which forms a narrow routeway connecting the English Midlands with the north, along the Vale of York and its northern extension, the Vale of Mowbray. Middle and late Neolithic monument complexes emerged where major rivers cross this elevated plateau (Moloney *et al.* 2003; Roberts 2005; Hale *et al.* 2009; Harding 2013).

Sea routes also played an important role in Neolithic communication, with interactions known across the Irish Sea and along the western coast of Britain (Cummings and Fowler 2004; Noble 2006b; Cummings 2009; Gannon 2016; see Chapter 7.4.3). The stone circle and standing stone complex at Calanais is located at the head of a sea inlet, visible from a good distance out to sea and close to suitable anchoring places (Henley 2005, 101–2). The complex of monuments at Machrie Moor on the island of Arran is located at the western end of the only east–west route across the island and close to Machrie Bay, an important landing place (Noble 2006b, 186). Scott (1951) identified two Scottish land routes across isthmuses which could have been important in prehistory; these are the location for some of the densest concentrations of Neolithic monuments in Scotland – at Dunragit, Kilmartin and within the Upper Clyde Valley (Noble 2006b, 185).

Some authors have suggested that monument complexes were places of pilgrimage or sacred journeys (Renfrew 2000, 16; Scarre 2001, 18; Bradley 2012a, 205; Harding 2012). Something like pilgrimage may have been common in Neolithic Britain; in India, going on pilgrimage is one of the most common reasons for ordinary people to travel (Eck 2012). If so, then we should remember that cosmological, ritual or religious pilgrimages do not usually follow the easiest or most direct route. For example, the camel herders of the Kenyan-Ethiopian borders undertake mass ritual pilgrimages to holy mountain or crater sites that are places of clan origin myths, on a seven-year cycle. The herders follow a prescribed walk, so that the holy sites are approached from the appropriate direction and at the appropriate time, with the right words, deeds and attitude (Schlee 1992). Some concentric timber structures such as Woodhenge and the Southern Circle appear to have been built to encourage circumferential movement, reflected in the spatial patterning of deposition at these sites (Richards and Thomas 1984; Pollard 1992; 1995a; Pollard and Ruggles 2001), rather than movement into or out of them along the axis (Ruggles 2006, 23). Radial lines of access to the centre were often blocked by posts or stones, as at the Sanctuary and Site IV (Thomas 1996, 198; Pollard 2009, 222). The way in which people approached certain sites may have differed depending on the group to which they belonged or their social status; "a Bedouin who migrated within sight of Mecca would not think it worthwhile, even once in a lifetime, to circumambulate the

shrines" (Chatwin 1987, 199). People may have travelled to articulate narratives about their relations to the landscape, to place and to each other and may have been a central element in ceremonies that took place at monument complexes (Bradley 2012a, 205).

To summarise, Neolithic monument complexes in Britain and Ireland were located at easily accessible places, often at key crossing points or the nodes of converging routeways, confirming the pattern identified by Noble (2006) for Scotland. Clearly accessibility was a key factor in their location and development; people had to be able to easily congregate at these places for building projects or ritual gatherings. Although there are no specific conclusions relating routeways to unequal relations of power between people, a discussion of avenues has shown the merit of approaches that de-centre the human and allow for the consideration of non-human forces and powers.

4.4 Watercourses

Archaeologists have noted the close relationship between the location of Neolithic monuments and watercourses, particularly for henges (Richards 1996a) and cursus monuments (Brophy 2000). All the Neolithic monument complex case studies in this thesis have a close relationship with rivers, springs, coasts or lochs. Rivers were an important source of water for daily life, including craft activities and watering cattle, as well as sometimes forming routeways. Funerary rites are often associated with rivers and parallels can be drawn with ethnographic examples of sacred rivers, for example the River Ganges in India (Eck 2012), or Egyptian and Greek cosmologies of the river as a boundary between the living and the dead (Bradley 2000, 32). The relative lack of evidence for burials in middle and late Neolithic Britain and Ireland, aside from a few individual burials and cremations at a small number of henge enclosures, suggests that people may well have been cremating their dead and placing them into rivers (Parker Pearson and Ramilisonina 1998a), an activity that would leave no archaeological trace.

The distribution of cursus monuments in Scotland is distinctly riverine (Brophy 1999), all those known in Wales are located close to rivers (Gibson 1999b, 132) and the same is true for many (but not all) sites in England, with concentrations particularly found in the Upper Thames (Barclay and Hey 1999) and Ouse valleys (Malim 1999). Cursus monuments near rivers are often built with their axes in the same direction as the direction of flow (Barclay and Hey 1999, 73), perhaps to align them with the broader landscape or cosmos. Richards has observed that henges are often located in low-lying positions near water. For example, at Milfield in Northumberland the henges are situated on slight rises or knolls within a natural basin overlooking the Rivers Till and Glen, which join to form a great loop of flowing water (Edwards 2004, fig 1; Richards 1996a, 320, 327). The Knowlton henges lie at the junction of the River Allen with the Stour, and the monuments at North Mains are located at the confluence of the River Earn with its tributary, Machany Water (Barclay 1983). At Mayburgh in Cumbria, the cluster of monuments spans the narrow isthmus at the confluence of the Rivers Eamont and Lowther (Barnatt and Edmonds 2002, 113).

Figure 4-11 Reconstruction of the stone avenues or stone rows that link two of the stone circles at Stanton Drew (and their internal timber settings) to the River Avon © English Heritage, drawing by Jennie Anderson

Several large late Neolithic henge enclosures and palisaded enclosures were built to deliberately incorporate water into their physical layout. The henge at Marden in Wiltshire lies at the headwaters of the River Avon and has a large section of its perimeter defined by the river and the enclosure encompasses several springs within it (Field *et al.* 2009). The double palisaded enclosure at Blackshouse Burn in Larnarkshire encloses two springheads and the Upper Clyde Valley in which it lies contains the sources of three major rivers: the Clyde, Tweed and Nith (Noble 2006b, 188). The palisaded enclosures at Walton in Powys and Meldon Bridge near Peebles also incorporate river courses, and at the former also a pool of water (Gibson 1998, 73). This deliberate inclusion of watercourses or springs within monuments (see also West Kennet palisade enclosures, Case Study 6) suggests that the builders were aligning their constructions with pre-existing 'natural' forces, connecting them intimately with their flow and perceived power. The avenues that link monuments like Durrington Walls, Stonehenge, Stanton Drew and Mount Pleasant to rivers might be a way of connecting these monuments to a source of power or a flow of energy. At Stanton Drew, the stone avenues link two of the stone circles to the edge of floodplain (Figure 4-11). Here, the colour of the River Chew, which turns a deep red after heavy rain due to the high iron content of the surrounding mudstones, may have marked it out as unusual. The source of the river at Chewton Mendip is marked by a pair of long barrows and the Stanton Drew complex is perhaps deliberately located at the midway point of the river between its source and confluence with the River Avon at Keynsham.

Dramatic changes in the courses of rivers, either turning through right-angles or curving in large loops as at Brú na Bóinne and Milfield Basin, seem to have been favoured as places for monument complexes. It is hard not to see the arrangement of three wooden and earthwork enclosures alongside the River Boyne as somehow involved directly in rituals relating to the river, as shown by the orientation of their entrances (Condit and Keegan 2018; Figure A4-20). The Ferrybridge complex is located on the River Aire where this east-west river flows north-south for a short distance and the Scorton/Catterick complex is near a distinct bend in the River Swale (Vyner 2007, 74–5). These riverine loops may have been viewed as boundaries that demarcated a special place or the unusual flows may have marked them out as notable locations.

At Dorchester-on-Thames, Oxfordshire, as well as the distinctive Wittenham Clumps (Section 4.1) the River Thames forms a dominant topographic feature. It flows around a great loop and then sharply bends through a right-angled turn near the confluence with its tributary the Thame. The cursus, situated on the northern side of the river, is broadly parallel to the direction of river flow at this location and spans the area between two tributaries (Whittle *et al.* 1992). Loveday (1999, 54) has highlighted how the Dorchester-on-Thames complex is ringed by other cursus monuments located on the Thames and its tributaries to the west, east and north, suggesting that these sites were centred on this central complex. Instead of the complex itself forming a 'central place', the focus may have been on this dramatic river loop overlooked by the two distinctive hills.

At Rudston in North Yorkshire four cursus monuments, a large standing stone and a henge, together with other smaller monuments, are located at a distinct bend in the Gypsey Race, which flows from the Great Wold Valley towards the coast at Bridlington (Harding 1999). This river is highly unusual; for most of its length and for most of the time, its upper course is a dry stream bed, with water only flowing permanently downstream from Rudston (Berry 1967, 434; Figure 4-12). When water does flow in the upper part of the course, it does so suddenly and in great volume, with a series of seasonal lakes forming that cascade into the next. The water levels are unpredictable and only indirectly related to the amount of rainfall, with water often disappearing down geological joints (Berry 1967, 438); 'gypsies' is the local name for unpredictable and intermittent springs or gushes (Loveday 2009, 45). Overlooking the source of this intermittent river is the great mound of Duggleby Howe, a very large round barrow with burials and cremations dating to the middle Neolithic, surrounded by a causewayed ditch (Gibson *et al.* 2014; Figure 4-13). Midway along the valley at Wold Newton is another large round barrow with early and middle Neolithic burials (Gibson and Bayliss 2010, 83) and further downstream, within the dog-leg bend of the river, a similar ditched mound, Willie Howe. Close to the cursus monuments at Rudston there is the Maiden's Grave, an oval henge located directly adjacent to the line of the Gypsey Race and aligned parallel to it (Stoertz 1997, 63).

Figure 4-12 The Gypsey Race as it flows through Rudston village, in photographs taken September 2019. To the left, looking up stream, the stream bed is dry; looking downstream the stream is flowing (author's photographs)

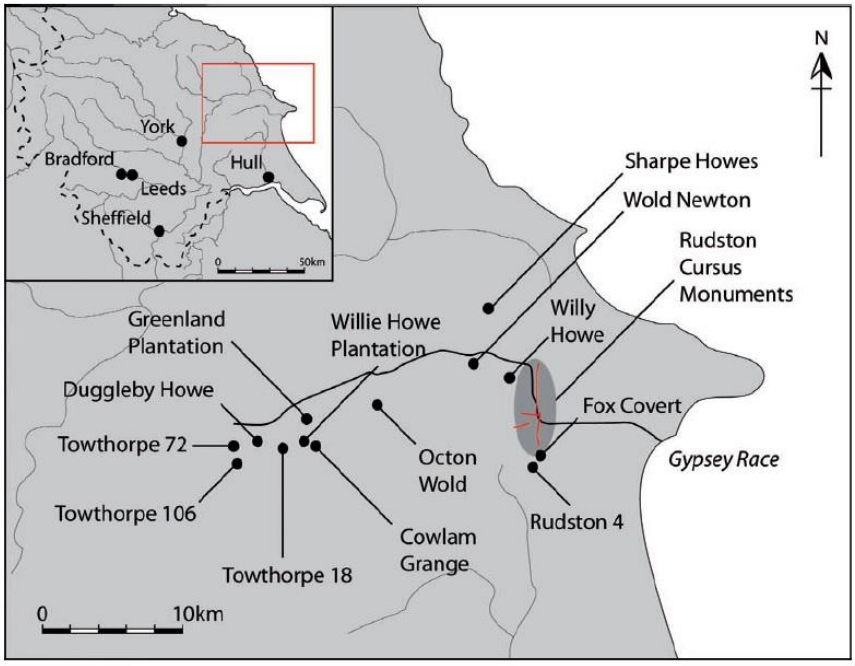


Figure 4-13 Neolithic monuments along the Great Wold Valley in relation to the Gypsey Race (Gibson *et al.* 2009, fig 1)

The unusual features of the Gypsey Race, the spate of which even in recent times was known as the Woe Waters and viewed as a bad omen predicting death or disaster (Berry 1967, 437), must be the key reason for construction of monuments along its length. The position of the Rudston cursus monuments and monolith just at the point where the river bends sharply and begins to flow permanently. The great burial mounds are spaced along the southern side of the river from the source to its first sharp bend, where the river is largely underground (Figure 4-13). The earliest burials at Duggleby Howe were in a deep shaft below the mound – could there be a conceptual relationship here between the disposal of the dead in the underworld, and the nearby underground river? The active and unpredictable nature of the river

appears to have been a source of fascination. People's interactions with the river drew attention to and accentuated its affordances and highlighted changes along its course. It is likely that the river was perceived as a source of power and sacredness.

The Great Wold Valley was probably an important routeway between the Yorkshire coast with its abundant supply of flint, and the inland Wolds (Harding 1999, 34). The mounds and cursus monuments may have marked movement along the valley, perhaps with restrictions on who could traverse these spaces, or the types of activity that could be carried out. The presence of Neolithic pits containing feasting debris along the ridges to the south-east of the Rudston cursus complex (Harding 2006; Rowley-Conwy and Owen 2011) suggests that people travelling through this area had to pause and carry out particular dedicatory acts, communal feasts or personal actions before or after progressing through the valley. These small feasts took place mainly in winter (Rowley-Conwy and Owen 2011, 349) suggesting gatherings when the river was at its most volatile.

Case Study 6: Avebury

One of the key factors determining the location of the Avebury monument complex, as well as the spreads of sarsen described above, was source of the River Kennet, a major tributary of the River Thames (Pollard and Reynolds 2002, 114; Cleal and Pollard 2012, 321; Gillings and Pollard 2016, 4). Over 50 springs are located within a 5 mile radius of Avebury henge with year-round temperatures of around 10°C (Marshall 2013; 2016). Silbury Hill was built at the confluence of the Winterbourne and Beckhampton streams where they join to form the permanently flowing River Kennet. The gravel used to build the first mounds on the site was taken from the nearby stream beds (Appendix A2.6.9). Pollard (2013, 191) has suggested this material might have been 'charged' with the agentive power of the river source itself. The large ditch around the mound and its extension or 'basin' to the west contains springs; apparently 89 of them were flowing in the wet January of 2013 (Marshall 2016, 27; Figure 4-14). To the south-east is the well-known spring at Swallowhead, described in the early 18th century by Stukeley as 'the true fountain of the Kennet', as well as the Pan and Waden springs, both of which flow nearly year-round at present. This location at the start of a powerful river may have been significant before any monument was built, only later becoming suitable for construction, a monument that developed into a unique monumental mound (Leary *et al.* 2013a, 219–20). The repeated digging of the ditch made visible the 'acting back' of this river or the underworld during seasonal floods (Chapter 3.3), may have been related to the power and animacy of water.

Figure 4-14 Silbury Hill in March 2018, with partially flooded ditch, unfrozen despite the snow (author's photograph)

In the Avebury area more widely there is a distinct correlation between the location of monuments and the distribution of freshwater springs. The Beckhampton stream is fed by springs in the area to the south-west of the Longstones, which flow into seasonal lakes during periods of high rainfall (Marshall 2016, 26); just north of this location two long barrows, the Longstones enclosure, cove and later Beckhampton avenue were all constructed (Figure 4-10). The North Kennet spring lies within the apparently real 440 m 'gap' in the West Kennet Avenue (Smith 1965, 207), perhaps suggesting that there were two separate avenues, each terminating at the spring (Marshall 2016, 100; Figure A2-1); another example of monuments being physically linked to a water source. The two lengths of the West Kennet Avenue may have been conductors connecting Avebury henge and the Sanctuary to this spring and perhaps also to a spread of natural sarsens in this area, as well as to an area of earlier occupation and to a possible cove setting (Section 4.2 and Appendix A2.6.6).

The area of the West Kennet palisaded enclosures has many springs, and Enclosure 1 encircles a major spring and the course of the river (Whittle 1997a, 57; Appendix A2.6.8). Further east the association continues: the only spring between East Kennett and Marlborough at Clatford rises near the Devil's Den monument. Where springs reappear at Marlborough, they do so close to and within the ditch of the Marlborough Mound (Burl 2002, 115; Marshall 2016, 27). This Neolithic mound lies in a similar position to Silbury Hill within the valley floor near a confluence of the Kennet with a tributary stream and has springs rising within its ditch. The construction of the mound was interrupted several times by flooding events (Leary *et al.* 2013b, 156–8); perhaps the inundation of the site, like the silting of the repeatedly dug ditches at Silbury Hill, was an important part of the process of its creation.

Research into hydrological history of the Avebury area is ongoing, as the chronology of alluvial deposits in the river valleys is not well understood. Estimates that groundwater levels were far higher in the Neolithic period (Whitehead and Edmunds 2002) are likely to be wrong as they do not consider soil micromorphological and palaeo-environmental evidence. Although Evans *et al*. (1993) identified deep layers of alluvium in the Kennet valley, recent research suggests that for the stretch north of Silbury Hill this is a result of much later Roman activity relating to the construction of the A4 causeway, although downstream of this it does suggest some form of radical change in the way the landscape was used, perhaps in the early Bronze Age or later. Research currently underway as part of the Living with Monuments Project suggests that where Beckhampton Avenue crosses the stream near Avebury, there were a series of seasonal stepped pools of water (Allen 2020; Joshua Pollard pers. comm.). While it is widely acknowledged that weather patterns in Neolithic Britain included some 'abrupt' climate changes, these have not yet been precisely dated (Schulting 2010, 167; Tipping *et al.* 2012, 12), but changes in river flow or floods would not have gone unnoticed by prehistoric communities. The rainfall, springs or streams may have been powerful forces that had to be responded to, placated or honoured by the creation of monuments, particularly when their behaviour changed unexpectedly.

In summary, Neolithic people noticed and were inspired to build monuments close to watercourses that had unusual features, including dramatic bends and loops, unusual and unpredictable flows, dramatic changes in their character and nature, and possibly strange colours. These phenomena directly influenced decision-making about the location of monuments (and therefore the emergence of monument complexes) and materials directly associated with rivers were sometimes incorporated within monuments. This suggests that there was a spiritual dimension to the relationship that people had with rivers, no doubt at least partly due to their life-giving properties and resources, but also perhaps in relation to purification, funerary rites or as links to other worlds. In addition, features such as fording places, springs and sources of rivers provided a focus for monument construction, with some monuments built to deliberately incorporate watercourses or physically linked to them by avenues. This suggests that Neolithic people perceived a life-giving force or power to the flow of water that could be harnessed for use, emphasised by their interactions with these watery places. A relational and non-anthropocentric view of landscape has provided a focus on the unusual and active properties of rivers and shows that people viewed watercourses in terms far beyond the practical, as places where relations with non-human powers could be negotiated.

4.5 Woodland and vegetation

This final part will focus on how vegetation may have influenced the location and form of monument complexes, and whether individual trees, open landscapes or forests could have been viewed as agentic or involved in relations of power. During the Neolithic period, mainland Britain and Ireland contained varied but largely wooded landscapes, with only gradual clearance and expansion of grazing activity over

the period (Whitehouse and Smith 2010; Whitehouse *et al.* 2018; Farrell *et al.* 2019). Areas such as Orkney had far fewer trees, but small amounts of woodland were retained there throughout the Neolithic, suggesting that they were given special protection (see Appendix A5.1). Elsewhere, trees were a ubiquitous component of the Neolithic landscape; moving among, managing and using them, would have been a familiar and all-pervasive aspect of life (Evans *et al.* 1999, 241; Cummings and Whittle 2004, 69–71). Plants, trees and fungi may have been entangled in a whole range of activities, used for medicine, hallucinogens, perfume, fire-lighting, cosmetics, or dyes, as well as in the making of baskets, cordage, utensils, fabrics, structures and monuments, as well as food for people and animals. They are also likely to have been entwined in a range of spiritual beliefs (Noble 2017; Richer and Gearey 2017). Equally, the forest may have been perceived as harbouring danger in the form of poisonous plants, wild animals or unpredictable spirits. Landscape archaeologists have often neglected to explore the impact of vegetation cover and woodland on the creation and experience of monuments (Chapman and Gearey 2000).

Trees and woodlands provide ample metaphors for growth, vitality, maturation and regeneration and as such are often compared to seasonal or human life cycles. A huge variety of attitudes to woodland have been recorded among historical and modern agricultural and hunter-gatherer societies (e.g., Croll and Parkin 1992; Rival 1998; Bintley 2015). The agricultural Dogon people in West African, for example, perceive the bush as the source of knowledge, power and life (van Beek and Banga 1992) whereas the Runa of Ecuador's Upper Amazon who practise both hunting and small-plot agriculture see the forest as a place of potential danger, where powerful spirits live and where humans can potentially change into non-humans (Kohn 2013). The most incisive anthropological accounts stress that these relations with trees move far beyond the metaphorical, with attentiveness, respect and careful response (Bird-David 1999; Chapman 2013); in other words, intra-actions (Barad 2007). Those living in modern Western cultures frequently refer to family trees or 'roots', plant trees to memorialise events or people, and have words that directly relate parts of the human body to the tree (e.g., trunk, limbs).

The environmental histories of monument complexes cannot be presented in simple linear narratives (Whitehouse and Smith 2010). However, a close correlation between their locations and relatively open landscapes can be observed, at least for regions such as the chalklands of Wessex, where dense post-glacial woodland did not become established (Allen 2005, 83). Extensive analysis of snail samples from the Dorchester landscape has failed to prove the existence of woodland, except at Maiden Castle (Allen 1997a, 183; Appendix A3.1). Similarly, at Priddy (Tratman 1967), Stonehenge (Allen 1997b; Figure 4-15) and on Cranborne Chase (French *et al.* 2005, 119; Allen and Scaife 2007, 24) palaeo-environmental evidence indicates that their Neolithic monuments were built in open and established grassland. This contrasts with chalklands elsewhere in southern England such as the South Downs, which had extensive woodland throughout the Neolithic and a corresponding lack of major monuments (Allen and Gardiner 2009, 62).

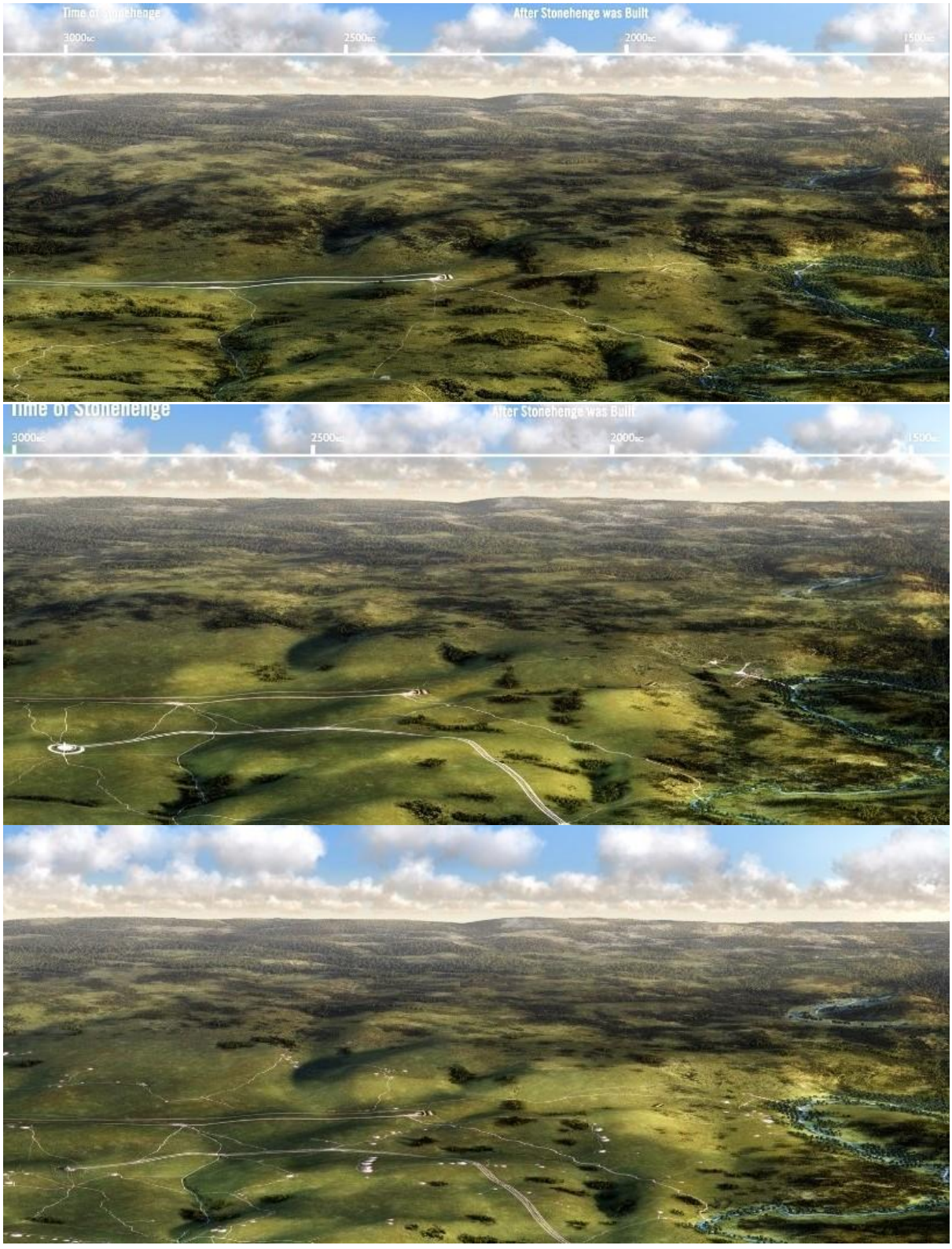


Figure 4-15 Visuals of the Stonehenge landscape, looking north, showing changing vegetation coverage. Top = early Neolithic, *c*.3500 BC; Middle = late Neolithic *c*.2300 BC; Bottom = early Bronze Age *c*.1800 BC. Note the clearance of trees from the area of Durrington Walls on the right of these images. © English Heritage, drawings by Squint Opera

The picture is complex, but it is likely that certain areas of chalk geology, with their thinner soils, supported a more open mosaic of woodland, scrub and grassland and may never have supported dense forest cover as found elsewhere (French *et al.* 2005). This lack of vegetation would have made them attractive for grazing cattle, for the gathering of groups of dispersed people and for early monument construction such as cursus monuments. Later Neolithic concerns with the heavens (Chapter 5) would have required, or were perhaps encouraged by, relatively open landscapes with clear horizons. However, not all complexes in southern England were built in entirely open landscapes. The cluster of henges at Knowlton was built in a clearing within mixed woodland (French *et al.* 2007, 64) and the locales of Avebury henge and Durrington Walls near Stonehenge (Figure 4-15) were cleared of trees sometime prior to the construction of these monuments (French *et al.* 2012; Pollard *et al.* 2012, 14).

In the early Neolithic, some causewayed enclosures such as Windmill Hill (Fishpool 1999, 127) and Maiden Castle (Evans and Rouse 1991, 119–20) were built on hills that were wooded or only partly cleared. It has been suggested that siting of Windmill Hill on a locally prominent and wooded eminence made a deliberate link to more ordinary occupation or agricultural clearings (Whittle *et al.* 1999, 384) but equally the setting may reflect the socially dangerous nature of activities carried out there (Thomas 1991, 35). The Kenyan Mijikenda build their sacred 'kaya' sites within the forest, considered to be an intrinsic source of ritual power (Mutoro 1994, 134). Some densely wooded hilltops in Wessex may have stood in relative contrast to the more open vegetation mosaics in their surroundings (Allen and Scaife 2007, 24); hilltop islands of forest perhaps regarded as powerful places that had to be approached correctly.

Beyond the Wessex chalklands, the palaeo-environmental record is less complete. At Brú na Bóinne, pollen evidence suggests a densely wooded landscape in the Neolithic, although the passage tombs were built within cleared grassland, with local scrub and cereals both represented (Appendix A4.1). Pollen and fossil beetle evidence from the Yorkshire Wolds chalklands near the Rudston monument complex suggests that the area had species-rich grasslands that had been maintained by Mesolithic people since the post-glacial period, similar to the Wessex chalklands (Bush 1988; Whitehouse and Smith 2010, 548). Excavations at Thornborough in North Yorkshire have shown that the early Neolithic cursus was built in a closely wooded environment, but this had been cleared by the time of the henges, which were constructed in a dry and open grassland (Harding 2013, 24). In Orkney, woodland declined at varying rates throughout the Neolithic period, mostly due to human exploitation and may well have been absent from the Stenness-Brodgar area (Appendix A5.1).

Is it possible to see direct relationships with particular species of tree or individual trees at Neolithic monuments? Several authors have drawn attention to the use of timber in early Neolithic monuments such as mortuary structures and cursus monuments (Brophy and Millican 2015; Brophy 2016, 186; Noble 2017). Several early Neolithic long barrows or burial mounds have timber mortuary structures that incorporate large split tree-trunks, such as Wayland's Smithy I in Oxfordshire (Whittle 1991; Figure 4-16).

The placement of the dead within a tree could relate to beliefs relating to spirits or ancestors originating from or returning to trees. At Haddenham, for example, the timber used to construct a timber box-like structure was derived from a single massive oak tree, 1.5 m in diameter and 300–400 years old when felled, with the timbers arranged to reconstitute the form of this tree (Evans and Hodder 2006). The decay of these structures may have been linked to the decay of the bodies within (Bradley 2012b, 95). Timber was used relatively sparingly within these early structures.

Figure 4-16 Reconstruction of the split-post mortuary structure of Wayland's Smithy I, Oxfordshire © Jennie Anderson

Elsewhere tree-throws appear to have provided a focus for early Neolithic activity and deposition. At Rough Leaze, to the east of Avebury, several tree-throws were found in association with early Neolithic occupation material (Appendix A2.4.1). One tree-throw was marked by a wooden post and contained plain bowl pottery and worked flint. An aurochs bone was set upright within the post-hole after the post had been extracted (Pollard *et al.* 2012, 9). This action implies a sense of specific knowledge of individual trees, of marking of this tree's place. The act of clearing areas of woodland for agriculture or monument building may have involved negotiation with the woodland, specific individual trees or associated beings. At Woodhenge, a large tree-throw hollow containing animal bone, plain bowl pottery, worked flint and ash had been deliberately sealed with compacted chalk prior to the construction of the henge bank (Parker Pearson *et al.* 2008, 157). This hollow and earlier occupation may have led people to return and choose the location for this monument.

By far the most prodigious use of felled trees is in the later Neolithic, when palisaded enclosures, concentric timber circles and square-in-circle structures were built. For example, the enclosure at

Hindwell used 1,400 posts, each weighing 4.3 tonnes; it has been estimated that the felling, debarking, trimming and transport of the trees to the site would have taken 33,276 workdays (Gibson 1998, 78). Where it has been possible to identify species, the overwhelming choice for these monuments was oak. Large, and possibly sacred, oak trees may have been reserved for ritual architecture (Pollard 2000, 367; Noble and Brophy 2011b, 81), perhaps providing protection to people or activities taking place within enclosures. The remarkable oak posts flanking the eastern entrance of the palisaded enclosure at Mount Pleasant were almost two metres in diameter, set two metres deep in the ground (Wainwright 1979, 63; Appendix A3.5.1); each is estimated to have weighed a staggering 17 tonnes (Gibson 1998, 75). While the choice of oak may reflect practical considerations relating to size, straightness or longevity, there is little evidence that these monuments were built as long-term structures (Noble and Brophy 2011b, 80; Chapter 6.5) and so it seems likely that this species held particular importance. Felling such trees would have not been undertaken lightly and may have required fasting, prayer, offerings or invocations, or negotiations with other people, as recorded elsewhere (e.g., van Beek and Banga 1992). For example, for north-west coast American Indians, the red cedar tree is particularly important. All artefacts made from cedar are alive, and trees are only cut down ('killed') when completely necessary, following fasting, prayer and food offerings (Mauzé 1998).

Many of these timber structures were built in open established grassland, so trees would have been sourced from outside the immediate vicinity, perhaps floated along rivers or dragged over land from a wide catchment area (Wainwright 1989, 152). Even for those monuments built in woodland clearings, such as the structures at Ballynahatty in County Down which required at least 500 trees, felling these trees would have had a noticeable impact on the surrounding area. Alternatively, the clearance of large areas of woodland may have been mitigated by the construction of timber enclosures or veneration at wooden temples. Any impact of this tree felling is imperceptible in local pollen records; there is a discrepancy in scale between activities at individual sites and broader scales of environmental information provided by pollen, beetle and land snail analysis (Plunkett *et al.* 2008, 188), although the development of multiple scenario approaches are overcoming this by integrating different datasets (Farrell *et al.* 2020).

At some monuments, individual timber posts were treated in quite different ways, with the burning or removal of certain posts or sections of palisade, while others were left to decay (e.g., Mount Pleasant, see Case Study 10b; and Dunragit, Figure 4-17). Such posts may have remained associated with the geographic locations or woodland where they grew, or with human individuals or groups. Perhaps each group had to provide one or more trees to contribute to the communal build, much as suggested for the stones at the Ring of Brodgar (Downes *et al.* 2013, 116; Appendix A5.4.3.2). At the palisaded enclosure at Catterick near York, the two circuits had characteristics that suggested different groups of people were involved in the construction (Hale *et al.* 2009, 270). At Forteviot palisaded enclosure in Perthshire the

outer circuit is wobbly and potentially segmented, indicating construction at different times or by different groups of people. Static plan views of these monuments can be unhelpful as they do not show the detailed development and biography of such enclosures often revealed through excavation (Noble and Brophy 2011b, 79; Brophy 2016, 233).

Figure 4-17 Feasting, ceremonies and burning taking place at Dunragit palisaded enclosures, with Droughduil mound beyond © Aaron Watson

Posts at these late Neolithic monuments may have been viewed as active and dynamic agents, ripe with potential, unpredictable and alive, perhaps requiring offerings and deposits placed against them, as at the West Kennet palisades and monuments such as the Sanctuary and Woodhenge (Figure 4-18). Timber, particularly oak, may have been perceived as having agency or even power; knowing how to respond to their changing nature, both as living trees and as part of timber monuments, may have been an important part of Neolithic spiritual beliefs. The shift in the later Neolithic to using prodigious quantities of large trees for construction suggests a change in people's relationship with woodland compared to the earlier Neolithic, when it became acceptable to fell trees that had stood for hundreds of years in the landscape.

Figure 4-18 Reconstruction of the concentric monument of Woodhenge, a forest of timbers. The posts may have been carved, painted, decorated or had objects hung from their branches. One of the four-post circle structures along Durrington ridge can be seen in the background. © English Heritage, drawing by Peter Lorimer

4.6 Summary: on the world

This discussion of how Neolithic people related to surface features of the landscape has shown that certain features had a significant influence on the location and development of monument complexes, and in the materials and form of monuments. Some of the factors examined could be characterised as practical; monument complexes emerged at places that were easily accessible along routeways, most commonly near the crossing places of rivers. Often, they were built in areas with relatively flat and open land where people could gather in large numbers, build monuments and observe the skies.

Beyond these practical concerns, there were several distinct landscape features that attracted notice. Although certain mountains or distinctive hills may have been perceived as places of power, outside of Ireland these were not selected for alteration by the construction of monuments. Certain distinctive rock outcrops and unusual spreads of sarsen appear to have been significant, either being physically linked to or incorporated within monuments. There is a direct relationship between monument complexes and rivers, but more specifically to watercourses with unusual characteristics of flow or direction. This is particularly obvious in the late Neolithic when henge enclosures and palisaded enclosures either incorporated rivers into their circuits or were linked by physical avenues to the water. These physical links between monuments and springs, watercourses or rock outcrops suggest that these were viewed as sources of power and energy. There are also indications, again in the late Neolithic, that oak trees or timber posts were perceived as an active and vibrant. In the early Neolithic trees, stones and earth were

used sparingly to construct funerary chambers and ditched enclosures; in the late Neolithic hundreds of stones and thousands of trees were used to construct extravagant monuments such as henges, stone circles and palisaded enclosures. It became more acceptable to disturb, remove or alter these significant sarsen scatters and large trees. Such activities involved risk necessitating elaborate ritual performances. As discussed in Case Study 5 for stone-moving activities for Stonehenge, these actions and changing relations may have caused conflict or division between different groups or involved complex social negotiations. Success depended not only on co-operation and persuasion with non-human materials and beings, but collaboration and negotiation between people.

Major monument complexes in Britain and Ireland appear to have developed at locations where several significant characteristics were assembled in one place, combined with practical considerations of accessibility and open land (Figure 7-2). For example, at Avebury there were unusual spreads of enormous surface sarsens and the source of a major river which may have changed significantly over the course of the Neolithic. At Stenness-Brodgar a highly unusual topographic situation of two adjoining peninsulas, adjacent to a loch that was changing over time was complimented by views towards distinctive mountains that aligned with the movements of the sun.

Some have argued that the landscape is entirely a cultural construction (e.g., Ucko 1994, xviii; Kristan-Graham and Amrhein 2015, xv) but a sacred space is not chosen, it chooses (Lane 2001). Prehistoric people would have noted characteristics of special places – strange landforms, unpredictable rivers, unusual outcrops – providing a sense of the power and otherworldly-ness, choosing these as particularly appropriate places for the location of monuments. An ontological shift, decentring the human to concentrate on the archaeology of 'natural' features and places, has enabled a clear focus on these aspects. Monument complexes emerged at special numinous locations or hierophanies (Eliade 1959), where not just the sacred world was revealed but the relations and links between different aspects of the world were made obvious and exposed. As people began to interact with these powerful places by settling there, building monuments and conducting ceremonies that aligned with and drew attention to these features and therefore the wider powers of the cosmos, people created potent and charged arenas. Although it may not have been their intention, because of these associations these became places where social relations between different networks, groups and factions were worked through, negotiated and resolved.

5 Place: the upper world

In the modern Western world, the sky and the movement of celestial bodies often pass largely unnoticed. We have largely divorced ourselves from sky watching for the practical purposes of weather prediction, timekeeping or navigation, and tend to regard the movements of the stars with a detached and neutral interest. This relationship is unusual, in contrast to the near universal concern among other recorded historic and contemporary communities who place great emphasis on the sky as a socially embedded concept; as a guide to moral action and as predictor of the future, and as closely linked to human behaviour (Thorpe 1981, 284; Aveni 2002, 174). There are some exceptions: the Achuar tribe who live in the Amazonia of the Ecuadorian and Peruvian borderlands set no particular importance on the night sky or celestial bodies, noting only the rising of Pleiades just before dawn in mid-June as an annual time marker (Descola 1998, 225). More often, the repeated cycles of sun, moon and stars help to regulate human activity as people strive to make sense of their world, ranging from seasonal subsistence cycles to complex belief systems (Ruggles 2015a, v).

Although communities perceive the sky in temporally and culturally specific ways, each draws upon the celestial vault to provide meaningful patterns for conducting life on earth. From this perspective, the sky is not ordered by mathematical abstractions but by social organisation (Iwaniszewki 2011); it can be considered within an expanded view of the social. For these reasons, "it would be unreasonable *not* to consider people's perceptions of objects and events in the sky" (Ruggles 1999, 145). This chapter will examine relationships between the location, form and development of Neolithic monument complexes and the upper world, starting from the perspective that the sky was likely to be intimately bound up within people's relational understanding of the world. It will discuss the potential of celestial bodies in the sky to have formed part of entangled social worlds and to have been involved in relations of power.

5.1 Archaeoastronomy

Although the antiquary William Stukeley recognised that Stonehenge was aligned on the summer solstice nearly 300 years ago, the fields of archaeoastronomy and ethnoastronomy are relatively young disciplines, only being recognised as distinct academic fields in the 1970s (Ruggles 2015a, v). Archaeoastronomy is the study of beliefs and practices concerning the sky in the past as evidenced in the material record, and ethnoastronomy is the study of those same beliefs among contemporary societies (Ruggles 2015b, 354); often the two fields are grouped under the term 'cultural astronomy' (Ruggles and Saunders 1993). Because of the relatively complex observations and detailed knowledge of astronomy required to undertake research in archaeoastronomy, it has developed along quite separate lines to 'mainstream' archaeology. Although some scholars have managed to successfully bridge the divide between the two disciplines (Burl 1980; Ruggles 1999), on the whole archaeoastronomers have tended to ignore detailed archaeological evidence, particularly chronologies, and are largely unaware of theoretical

developments in the discipline. In return, archaeologists have often viewed the claims of archaeoastronomers as spurious or ill-founded and many have felt unable to engage with the evidence due to their own lack of knowledge (Gibson 2005, 99). Some criticism is fair; archaeoastronomy has long acted as a magnet for sensationalism and uncritical speculation (Ruggles 2015a, vi; see Ruggles 1999, 2–10 and Silva 2015 for a fuller account of the history of archaeoastronomy).

Early archaeoastronomers were responsible for the idea that Neolithic people were much like modern scientists, with exact astronomy and advanced geometric surveying techniques (Thom 1967; Hawkins 1966), although these claims drew criticism (Hogg 1968). There has been a tendency to assume that alignments to celestial bodies were precise predictive devices but there now a growing realisation that orientation did not necessarily have to involve precision, prediction or direct observation. As Pauketat (2012, 65) wryly observes, "one does not need monuments to tell the time". Rather, relations with the sky involved the practices of people aligning themselves, their monuments and their actions with the cosmos (Pauketat 2012, 87). Silva's (2015) suggestion that we use the term 'skyscape archaeology' for archaeoastronomy, thereby extending the concept of landscapes, seascapes and taskscapes into the sky, is helpful in this respect. "Skyscapes are as much a part of the lived-in, experienced and socially constructed world as the landscapes below our feet" (Darvill 2015, 140). However, a further theoretical shift is required to fully incorporate the potential of skyscape archaeology into relational and non-anthropocentric approaches to the past.

5.2 Power and the sky

There are recorded examples of communities around the world whose relationship with the sky helps to maintain the presence of social hierarchies, with elites (shamans, priests or leaders) gaining some of their power from the celestial sphere. Hawaii'an kings acquired *mana*, or spiritual power, directly from the sky gods through their ancestral bloodline and acted as mediators between people and the forces of nature. This power had to be recharged or reinvested every year, timed by the first rising of Pleiades in the east after sunset (Aveni 2002, 166). Famously, the ancient Mayans built cities and monuments to align with celestial bodies, staging events such as inaugurations and celebrations of battle victories on particularly auspicious days and developing complex calendars (Aveni 2002, 113). The continuity of rulership was directly expressed from the sky-creator in the form of discernible subtleties in the planetary cycles (Aveni 2008, 14). Historic Pueblo Indians in the American Southwest orientated much of their ceremonial life by the sun and moon. The Sun Chief was the designated authority for the calendar, making him the principal official of the village. He observed the sky, and set the dates for ceremonies and seasonal labours, possessing an authority that relied upon his predictive abilities (Krupp 2015, 68). Celestial knowledge is often sustained by rituals, ceremonies, shared narratives and architecture (Krupp 2015, 68).

It is reasonable to suggest that Neolithic people viewed the skies within a relational worldview, with the movement of the celestial bodies intimately associated with the movement and life cycles of animals,

birds and plants, as well as with materials, tides, light, weather patterns and the changing seasons.. Wheatley (1971, 414) uses the term 'intimate parallelism' to describe Pawnee star performances and the term is applicable here; the sky, through the construction and use of monuments was intimately connected with the materials, structures, and beings on earth. Astronomical alignments could harmonise a monument with the cosmos, affirming its place at the centre of things and in tune with a perception of sacred geography (Renfrew 1984, 178–80; Ruggles 1998, 208). Associating a monument with a time of year or appearance of a celestial body may have vested it with special meaning or power (Bradley 1993, 68; Darvill 1996, 177–8).

Were celestial alignments and concerns with directionality a matter of public or private knowledge in prehistoric Britain and Ireland? Did observations of the sky unite or divide? Famously, MacKie has argued that an elite class of astronomer-priests existed in the Neolithic period, dwelling in specialist settlements such as Skara Brae on Orkney and Durrington Walls in Wiltshire (Mackie 1977; 1997; 2009). His interpretations were not dissimilar to Mellaart's interpretation of a 'priestly quarter' of highly decorated houses at Çatalhöyük, Turkey (Mellaart 1967). Unfortunately, MacKie's ideas were based on rather uncritical acceptance of the ideas of Thom and other archaeoastronomers, including the idea of a 16-date seasonal calendar (see Section 5.3.1) and a rather selective reading of the archaeological evidence (Ruggles and Barclay 2000; 2002). However, MacKie was grappling with key questions about how astronomical alignments at monuments related to the organisation of society and relations of power and his ideas underline the key point that events in the sky would not have been perceived in the same way by everyone; different people perceive different skyscapes. For Prairie-Plain peoples, the stars and planets were ancestors or deities, meaning that ordinary people averted their eyes from them (Pauketat 2012, 82). Not everyone tracked the movement of the stars, out of respect or fear. Unpredicted or sudden celestial phenomena or events may have undermined, as much as asserted, any established authority (Ruggles 1999, 152).

5.3 Sky in relation to Neolithic monuments

This chapter will proceed chronologically, but first the different celestial bodies and their potential relationships observable in the archaeological record will be explored. Relationships with the weather, winds or clouds will be near-impossible to detect in the archaeological record; rather easier are relations with the sun and moon, and particularly with the solstices and standstills (Figures 5.1 and 5.2). These can be observed in structural or architectural alignments of buildings or monuments, in the deposition of artefacts or clustering of activity and, rarely, in representations of the sun and moon in rock art or portable artefacts.

5.3.1 Sun

The solstice alignments at midwinter and midsummer (Figure 5-1) are likely to have been significant times of year for Neolithic people, not only in the turning of the farming calendar but also for changing

light, seasons, weather and resources. The solstices have remained the same since the Neolithic period, although due to gradual precession of the earth's axis, the sun has moved by roughly a solar diameter (MacKie 1997, 342).

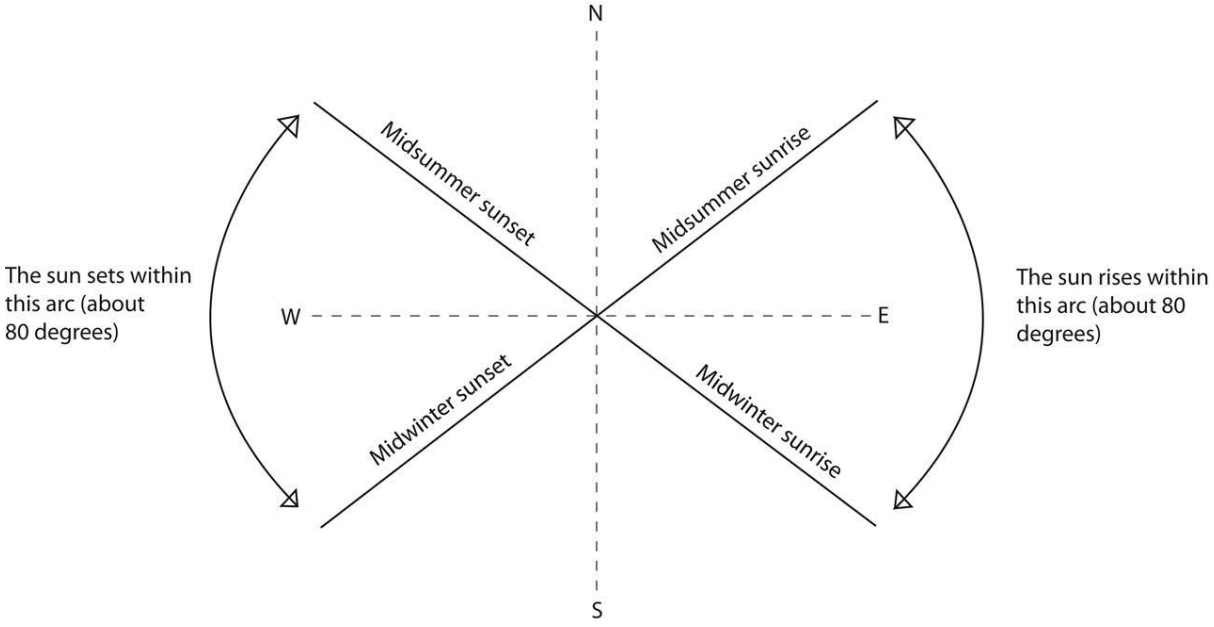


Figure 5-1 In Britain and Ireland, the annual cycle of the sun has four positions, the solstices, which are relatively straightforward to observe by tracking the movement of the sun along the horizon. The exact direction of sunrise and sunset will depend on latitude

Many communities across the world mark the solstices. At Fajada Butte, a Native American site in New Mexico, around noon on the summer solstice a shaft of sunlight shining through a gap between two slabs of rock bisects a spiral carving (Holbrook *et al.* 2010, 66). The Chumash of southern California see the winter solstice as a time of cosmological crisis, when elemental spirits determine the fortunes of the coming year and people engage in ritual activity to tip the balance in their favour (Krupp 2015, 74–6).

There are clear examples of monuments in Britain and Ireland that were aligned on the solstices, and also on the equinoxes. Ruggles (2005, 151) has previously been sceptical that equinoxes were observable and noted by prehistoric people, although now believes that equinoxes may have been estimated and marked, even it not precisely observed (Ruggles 2017). Aveni (2002, 72) notes that Mayan skywatchers associated the equinox or zenith with bees, as the insects change from moving clockwise to anti-clockwise on arrival at hives at this time. Some Irish passage tombs do seem to have been built to align with the equinox. Beyond this however, there is no evidence that the prehistoric calendar in Britain and Ireland was divided into eight or sixteen equal parts by the solstices and equinoxes. Measurements by Thom at a variety of monuments including chambered tombs, stone cairns, circles and rows, appeared to suggest this, showing clustering around the 16-fold division of the solar year (Thom 1955; 1967). However, reassessment by Ruggles has shown that Thom was highly selective in his inclusion of sites and made several incorrect interpretations (Ruggles 1999). The idea that a pagan or 'Celtic' calendar with eight annual festivals organised by the movements of the sun has somehow survived since prehistory is

not supported by historical evidence; 'the Celtic year' is a construction of the 18th and 19th centuries (Hutton 1996, 411).

5.3.2 Moon

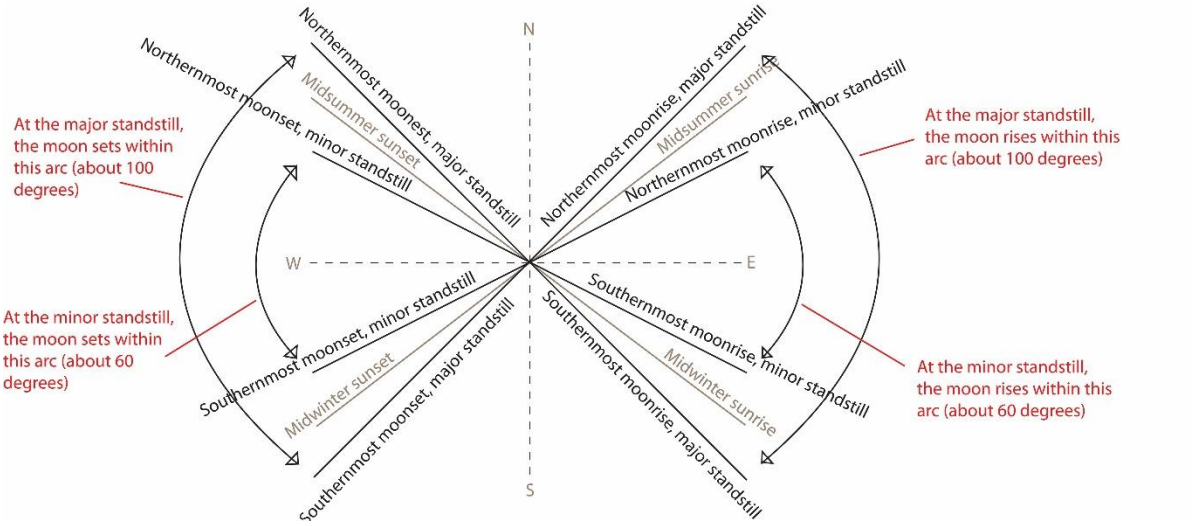


Figure 5-2 The movement of the moon's rising and setting points along the horizon follows a more complex and rapid pattern of movement than the sun, and also shifts over an 18.6-year period between the widest swing (between the major standstill limits) and the narrowest swing (between the minor standstill limits)

The waxing and waning cycles of the moon are relatively easy to observe over the short timescale of a month or *c*.29 days, associated with changes in the tides, but longer-term cycles are more varied (Figure 5-2). Lunar cycles are likely to have been observed since at least the Palaeolithic period, as evidenced by artefacts such as the Thaïs Bone from France (12,000 BP), a cattle rib with notches thought to represent day-by-day lunar and solar observations (Marshack 1972). Many societies use the cycles of the moon as a calendrical device, or as a way of timing gatherings, ceremonies or war, as with the Powhatan groups of Native Americans who timed co-ordinated attacks on Jamestown settlers as part of the 'Moon Wars' (Aveni 2002, 159). The Ngas people of Nigeria celebrate the first crescent moon of the New Year with a week-long festival of ritual cleaning, gift giving and drinking. A ceremony takes place with the 'sons of the moon', young boys whose faces are decorated with the full moon, which involves them shooting arrows into the sky to kill the old moon so that the new crescent moon can be born (Holbrook *et al.* 2010, 66).

5.3.3 Stars and planets

The stars, planets and Milky Way no doubt held significance for the prehistoric inhabitants of Neolithic Britain, and putative stellar alignments at monuments have been proposed (Burl 2002, 252; Harding 2013). However, due to the huge number of potential stars and the difficulties of the time shift of their positions in the night sky since prehistory (precession), it is very difficult to prove the precision or intentionality of these; more research is required. Our own constellations derive from 3rd millennium BC Sumeria, via Classical Greece, Islam and Renaissance Europe (Aveni 2008, 33); Neolithic people will have their own names and stories, likely related to other time markers and 'natural' events as is recorded

among Andean and Australian communities (Aveni 2008, 49–50). The Milky Way may also have held special significance; for American Pawnee people it was the path of souls, a long pole that might be climbed to reach the sky (Pauketat 2012, 83; Silva 2015, 2). The five visible planets are also likely to have been observed, with their specific pattern of movement, colour and brightness woven into stories and beliefs (Aveni 2002). Together with comets, shooting stars and other unpredictable events, it is unlikely that we will ever be able to comprehend the full extent of Neolithic relations with these aspects of the sky.

As explored in Chapter 4.5, Neolithic concerns with the heavens would have required, or were perhaps encouraged by, relatively open landscapes with clear horizons; the 'big skies' of Wessex or the islands of Orkney would have been ideal for observations. Perceptions of the sky, space and directionality would have been different for those living in densely wooded environments compared with those who could regularly observe distant horizons or the open sea (Bradley 2012, 34). The former might be more concerned with directionality, the latter more aware of the detailed movements of celestial bodies, although for Neolithic Britain the complexity and variation in woodland cover and settings for monuments (Cummings and Whittle 2003) makes it unlikely that such a clear dichotomy existed, especially as people moved between different landscapes.

5.4 Early Neolithic alignments and orientations

Although it has been claimed that the Mesolithic pit alignment at Warren Field, Crathes, Aberdeenshire (Murray *et al.* 2009) was a 'time reckoning' device framing the midwinter sun in a nearby hill pass and orientated on the minor standstill limit of the moon (Gaffney *et al.* 2013), the arguments are not convincing. The pits do not align with the pass in the hills as claimed and environmental evidence suggests a relatively wooded environment precluding detailed observations (Lancaster 2009). No other artefacts or sites are known that suggest astronomical observation in Mesolithic Britain, although both Warren Field and the pits or postholes near Stonehenge (Appendix A1-2) may indicate some interest in directionality.

Early Neolithic longhouses in Britain and Ireland do not seem to share a consistent pattern of orientation (Topping 1996; Smyth 2014, 22), as has been found for *Linearbandkeramik* (LBK) longhouses in central Europe (Vondrovský 2018; see also Bradley 2001; 2002). Contemporary long barrows or mounds do, however, show more consistency. Plotting the orientation of long barrows in the Avebury and Stonehenge landscapes (Figure 5-3; see Tables A1-1 and A2-1) shows that the higher or more elaborate ends of long barrows were consistently oriented towards the easterly side of the compass, with some clustering evident towards the north-east, east and south-east. It is possible that these correspond with the position of the rising sun at midsummer and midwinter, and with the equinox or the mid-point between these two events (i.e., to the east). Alternatively, the variability may be explained by local topography or the time of year when these monuments were initially laid out. It has been suggested that

Winterbourne Stoke long barrow (Winterbourne Stoke 1) is specifically aligned on the midsummer sunrise (Field 2006, 69; Bax *et al.* 2010, 39) and that the West Kennet Long Barrow (Avebury 22) is aligned on the equinox sunrise (Marshall 2016, 49–51) but these are part of a much broader pattern.

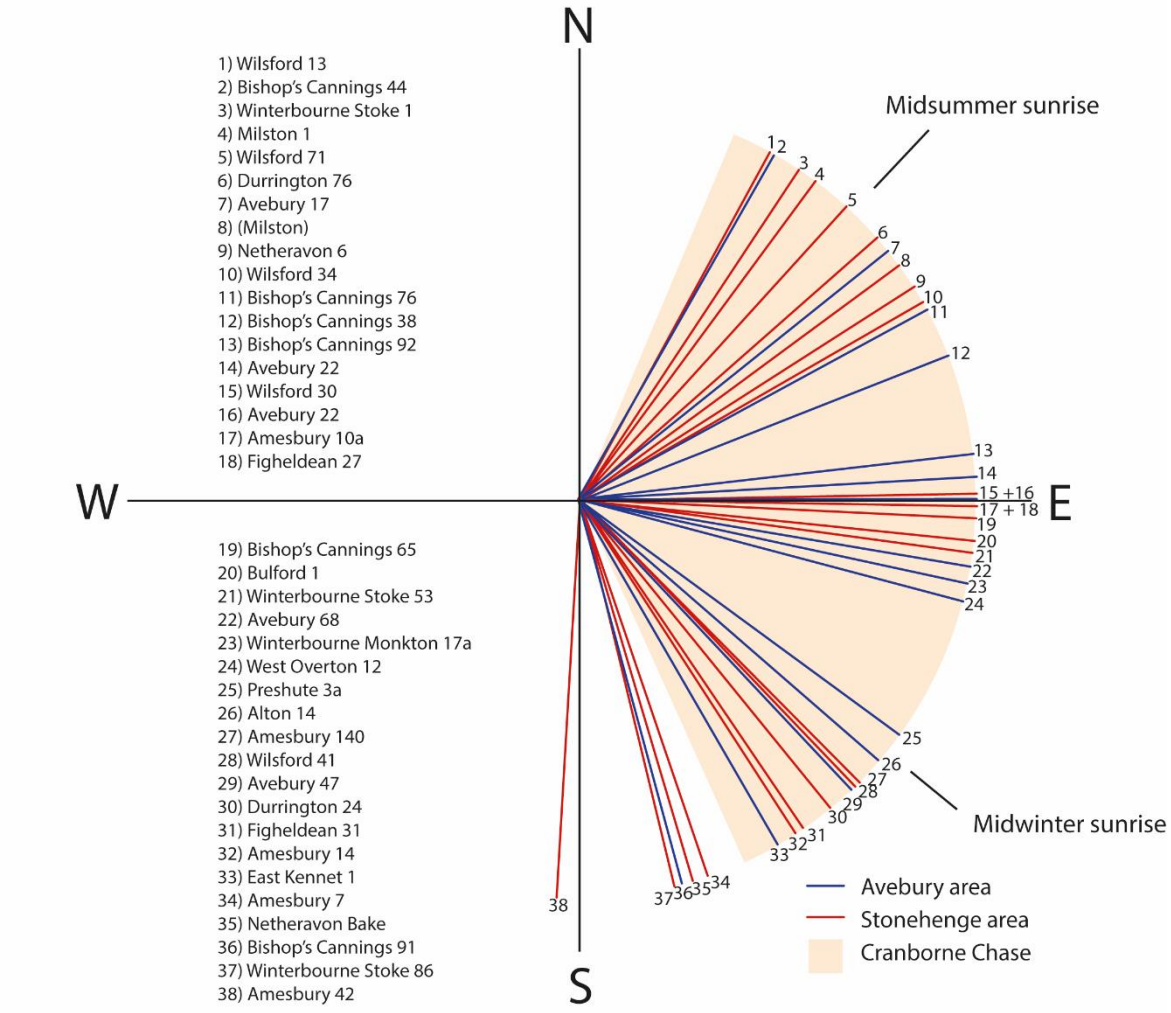


Figure 5-3 Orientation of long barrows in the Stonehenge and Avebury areas, with general orientation of Cranborne Chase long barrows (from Tilley 1994, table 5.1) shown for comparison. The Stonehenge long barrow data is based on Roberts *et al.* 2018. Note that only long barrows with clear evidence for directionality have been included

This distribution of orientations compares well with Tilley's measurements for 39 long barrows on Cranborne Chase (Tilley 1994, table 5.1), with Burl's observations for 65 long barrows on Salisbury Plain, which he found were consistently orientated between north-north-east and south (Burl 1987), and with previous observations about Avebury long barrows (Ashbee 1970, fig 20; Barker 1985). Although Tilley argued that orientations on Cranborne Chase was dictated by local topography, with barrows being located along natural ridges (Tilley 1994, 161) this does not explain the consistent orientation of the wider or higher end towards the south-east. Burl concluded that these orientations were towards the rising moon, but the groupings suggested by Figure 5-3 may suggest orientation towards the rising sun (Ruggles 1999, 129), particularly towards the direction of sunrise in midsummer, midwinter and at the equinoxes.

More work needs to be done examining these specific orientations on the ground in relation to local topography. This is not necessarily a pattern than applies to all long barrows, as Tilley's study of long cairns in the Black Mountains did not show any regular orientations with respect to the cardinal directions (Tilley 1994, 123–4). However, long barrows in central and southern England do conform to a pattern of orientation towards the eastern side of the compass, suggesting an underlying cosmology or belief relating funerary rituals to the power of the rising sun.

There have been claims that some early Neolithic cursus monuments were constructed to align with the movement of the celestial bodies. If conclusive, they suggest that there can be one-off astronomical alignments within a broader class of monument type that does not otherwise have consistent orientation. It has been suggested that part of the Dorset Cursus aligns with the midwinter sunset (Penny and Wood 1973; Barrett *et al.* 1991, 56–7). When standing at the Bottlebush terminal on midwinter's day, the sun can be observed setting behind the long barrow on Gussage Cow Down to the south-west (Wood 1978, 82–3). These two points bracket the central portion of the Dorset Cursus with its distinct geological features (Case Study 1). However, this section of the cursus is not straight but meanders significantly (Loveday 1999, 137) and it is quite possible that this alignment is entirely fortuitous, a product of the orientation of the cursus on the long barrows, which as has been noted, were orientated mainly towards the south-east on Cranborne Chase.

The cursus within the Dorchester-on-Thames complex has a north-west to south-east alignment, almost cutting off a promontory of land between a bend of the River Thames and its tributary the Thame. It has been claimed that the western section of the cursus points towards the midsummer sunset to the north-west (Bradley and Chambers 1988, 286), presumably from a vantage point somewhere in the middle of the cursus. However, as the far north-west end of the cursus has not been discovered and the alignment does not hold true for the whole length, the claims are not particularly convincing (Loveday 1999, 58). The alignment is much more likely to relate to the local topography and location of the rivers nearby (see Section 4.4).

The Greater Cursus to the north of Stonehenge (Appendix A1.3.5) is orientated roughly east–west, leading some to suggest that it could have marked the equinoctial sunrises (Burl 1987, 43-4; Bradley 1993, 62; Darvill 1996, 254). However, Ruggles (2015b, 1234) has shown that this is not the case as the orientation deviates from true east–west by some five degrees. As part of his suggested quartering of monuments and practices in the Stonehenge landscape, Darvill (1997, fig 7; 1999, 113–4) suggested that changes in the angles of the cursus ditches were on the solstice axes as viewed from Stonehenge; however, this is a much later monument. Similarly, geophysical survey has identified two 5 m-diameter anomalies within each end of the cursus, interpreted as large pits positioned on solstice alignments when

viewed from the Heel Stone (Figure 5-4, Gaffney *et al.* 2012, 154). However, the date and nature of these anomalies remain unknown; they seem too large to have been simply post-holes and appear to be examples of large solution hollows or pits found across this landscape (Gaffney *et al.* 2020, fig 9), and it is difficult to link the layout of the cursus with views from a monument that had not yet been built.

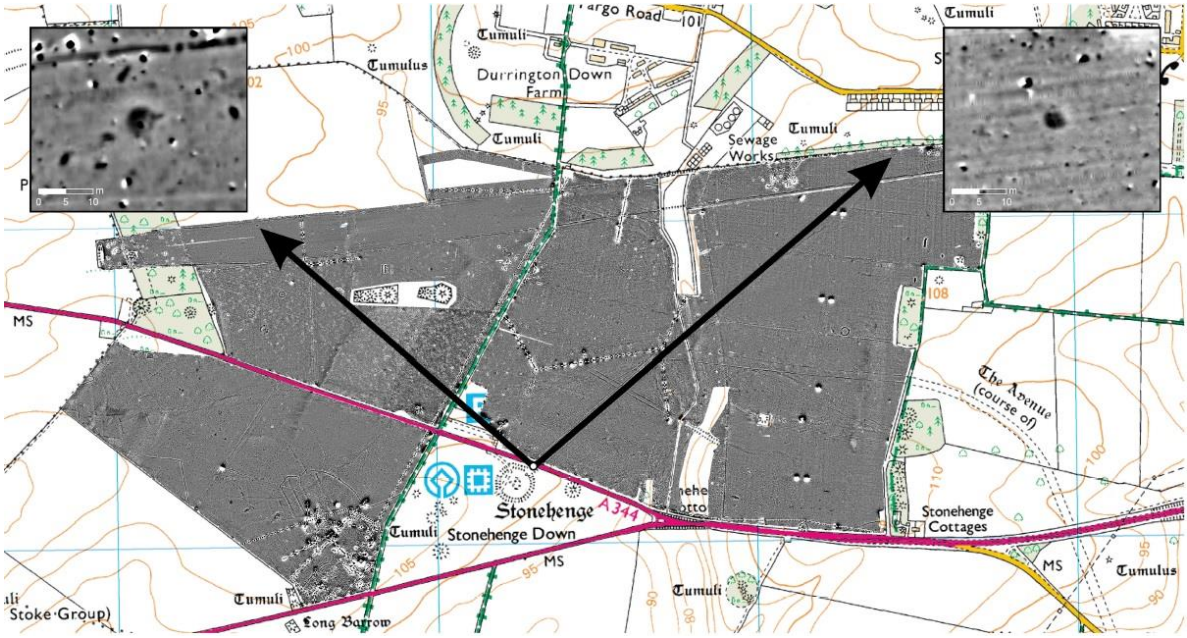


Figure 5-4 Geophysical survey of the Stonehenge Greater Cursus area showing the location of two large anomalies identified by geophysical survey, suggested to be on alignments towards midsummer sunrise and sunset (Gaffney *et al.* 2012, fig 5)

Another monument complex with a cursus asserted to have a celestial alignment is Thornborough in North Yorkshire. Harding has suggested that the open eastern end of the cursus was aligned on the rising of the bright stars Mirfak and Pollux at the time it was constructed, and that the western end framed the setting of Orion's Belt (Harding 2013, 210). This is suggested as part of a wider association with stellar alignments at the Thornborough complex (discussed further in Section 5.6) which may make it more convincing, but as an isolated example of stellar alignment it is difficult to accept. The cursus has a gradually curving sinuous shape and the eastern end may not have been open but could have continued further under the modern village of Thornborough (Harding 2013, fig 2.9). Finally, the post-defined cursus at Upper Largie, part of the Kilmartin monument complex in Argyll, has been stated to have lunar alignments but the evidence has not been fully published and currently does not appear convincing (Cook *et al.* 2010, 194–5).

Overall, the evidence for the alignments at cursus monuments on celestial bodies is not persuasive. Given the large number of cursus monuments in Britain and Ireland with a huge variety in their orientations, the fact that only the five discussed here have potential alignments suggests that these are likely to be fortuitous. Each of these alignments is very different to the others. The position and shape of cursus monuments in relation to watercourses, topographic landscape features and pre-existing monuments, as discussed in Chapters 3 and 4, provide more fruitful avenues for understanding the location, form and

significance of these enigmatic monuments. Alignments with celestial bodies have not often been suggested for other forms of early Neolithic monuments, such as bank barrows, mortuary enclosures and causewayed enclosures, although this is usually due to silence on the matter rather than careful consideration (an exception is Barclay and Maxwell (1998, 49) in their discussion of the Cleaven Dyke, Perth and Kinross). Whilst the evidence for long barrows in central and southern England orientated towards the eastern sunrise is clear, other forms of alignment in the early Neolithic are not readily apparent.

5.5 Middle Neolithic alignments and orientations

There is a clear horizon in the years around 3000 BC when passage tombs in Ireland, North Wales and Orkney were built to align with the sun, towards the end of passage tomb construction. These regions must have been closely connected by routes across the Irish Sea (Chapter 4.3). However, precise alignments at passage tombs are rare, being restricted to twenty surviving monuments in Ireland, one or two examples on Orkney, and one in North Wales (Figure 5-9). They are found only at particularly large or elaborate examples of passage tombs such as Newgrange, Maeshowe and Bryn Celli Ddu. Although much earlier monuments, such as La Hougue Bie on Jersey and Gavrinis in Brittany, also have alignments with the sun, these were built in the late 5th millennium BC, over 1000 years earlier (Patton 1995; Cassen *et al*. 2014). It is therefore difficult to draw any direct connection between the similar practices at these two groups of monuments.

Bryn Celli Ddu passage tomb on Anglesey was built between 3080 and 2950 cal BC (Burrow 2010, 262). At summer solstice, a beam of light penetrates the passage and illuminates the rear wall of the chamber, highlighting a stone with quartz inclusions (Figure 5-5; Burrow 2010, 253). In this multi-phase monument, the wide entrance passage of an earlier phase was narrowed and extended in the final phase. Blocking of the passage, leaving only a narrow slot at the top for the sunlight, suggests that the solstice alignment "was created to nourish the dead rather than the living" (Burrow 2010, 264). As explored in Case Study 3, passage tombs were potent assemblages of materials, objects and human remains, including alignments. The architecture at Bryn Celli Ddu links this site with others across the Irish Sea There are many features of these developed tombs that point to a meaning or function beyond the funerary; as "houses of spirits" (Edmonds 2019, 215).

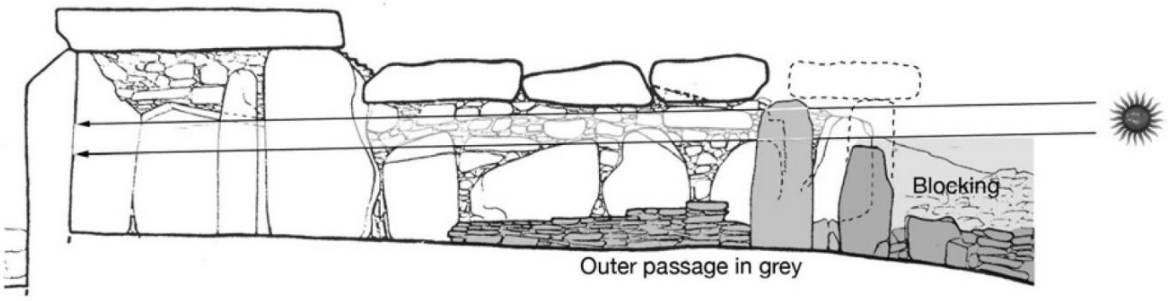


Figure 5-5 The alignment of the midsummer sunrise with the chamber at Bryn Celli Ddu (Burrow 2010, fig 10)

Case Study 7: Alignments at Brú na Bóinne

The orientation of the passage at Newgrange on the rising sun at winter solstice was discovered in 1969 by O'Kelly, with the precise alignment later demonstrated by survey and observation (Patrick 1974; Ray 1989). The final phase of Newgrange, built between *3190–2865 cal BC* and *3085–2595 cal BC* (Schulting 2014, 47; see Appendix A4.4.3), was carefully arranged around this precise alignment. The roof box above the entrance provided an aperture of exactly the right size for light from the rising midwinter sun to enter the inner space of the tomb (Prendergast 2015, 1272). Two quartz blocks set in this opening allowed control over when the light entered the chamber; the floor of the roof box had been scratched by their movement (Figure 5-6; O'Kelly 1982, 94; Williams 2019). Sunlight entering the passage and striking the decorated stone at the back of the chamber may have been perceived as a physical entity, required to re-energise and give power to the space within. Cummings and Richards (2017, 240) draw attention to the fact that the mound and chamber were built prior to the passage, leaving a gap for its construction. Although they suggest that this was because the chamber had to be immediately encased or 'wrapped', it could be that the passage had to be built last, as it provided a link to the key source of power, the sunlight that would animate the space within.

Despite assertions to the contrary, precise astronomical alignments in the architecture of other monuments of the Brú na Bóinne complex are not easy to substantiate. Prendergast (2004) has suggested that all three of the major passage tombs have orientations: Newgrange on the rising sun at winter solstice, Dowth south on the setting sun at winter solstice, Knowth west on the setting sun around the equinoxes, Knowth east on the rising sun around the equinoxes and finally Dowth north on the setting sun around the cross-quarter days in November and February. This scheme has a pleasing symmetry to it, but except for Newgrange, these were not precise orientations. The claimed alignments at Dowth have not been proven, as access to the northern passage is restricted, and although the southern passage roughly points towards winter solstice sunset, later changes to the entrance including the construction of an early medieval souterrain make the precision of this alignment unclear (Prendergast and Ray 2002, 34).

Figure 5-6 The roof-box at Newgrange prior to restoration. The quartz block (indicated by the arrow) was still in place at this time © Photographic Archive, National Monuments Service, Government of Ireland

The alignment of the two passages of the main Tomb 1C at Knowth (Appendix A4.4.2) on the equinoxes was first suggested by the excavator (Eogan 1986, 178). However, detailed survey undertaken in 2008 has shown that neither of the tombs is precisely aligned with the sun at the equinoxes (Prendergast and Ray 2018). Neither the outer nor inner section of the western passage was aligned, but the setting sun does illuminate part of the western outer passage approximately 17 days after autumnal equinox or 17 days before the vernal equinox. The eastern passage, over nine metres long and comparatively straight compared with the western, is aligned five degrees north of east, the equivalent of 10 solar diameters away from the equinox (Prendergast and Ray 2018, 267, 272). These findings concur with the general impression that precise alignments like that at Newgrange were rare. However, Brennan (1983) has noted that at sunset at the equinoxes, the standing stone outside the western tomb at Knowth casts shadows on to the entrance stone which has incised patterns including a vertical central line (Figure 5-7). As equinox approaches, the shadow of the standing stone moves closer to the line on the stone, and the beam of light penetrates further into the chamber. The same happens outside the eastern tomb at sunrise on or near the equinoxes (Brennan 1983, 101–3).

Figure 5-7 The tall standing stone at the western entrance to Knowth passage tomb, which casts shadows on to the decorated stone beyond (author's photograph)

The standing stones and decorated kerbstones at Knowth could conceivably have marked precise equinox alignments that were observable to those standing outside, rather than the passages themselves being aligned (Figure 5-7). Some of the decorated kerbstones at Knowth, particularly Kerbstone 15, have rayed designs that further suggest the importance of the movements of the sun or phases of the moon (Figure 5-8). Such public display has also been recognised at Newgrange, where one of the standing stones of the Great Stone Circle casts a shadow on the decorated entrance stone at winter solstice sunset (Prendergast 1991), again making this event observable to a wider audience, a concern that may have increased over time.

Figure 5-8 Kerbstone 15 at Knowth with 'sundial' motif (author's photograph)

Most of the smaller (Type II) passage tombs in the Brú na Bóinne complex do not appear to have been aligned with reference to the sky. Instead, the cluster of satellite tombs around Knowth have their focus inwards, towards the main tomb or its predecessor (Appendix A4.4.2). Although there was a possible roof slot or gap at the outer end of the lintelled passage of Site L (O'Kelly *et al.* 1978, 263) and a gap above the passage blocking stone at Site K (O'Kelly 1982, 125), neither appear to be aligned with the movements of the major celestial bodies.

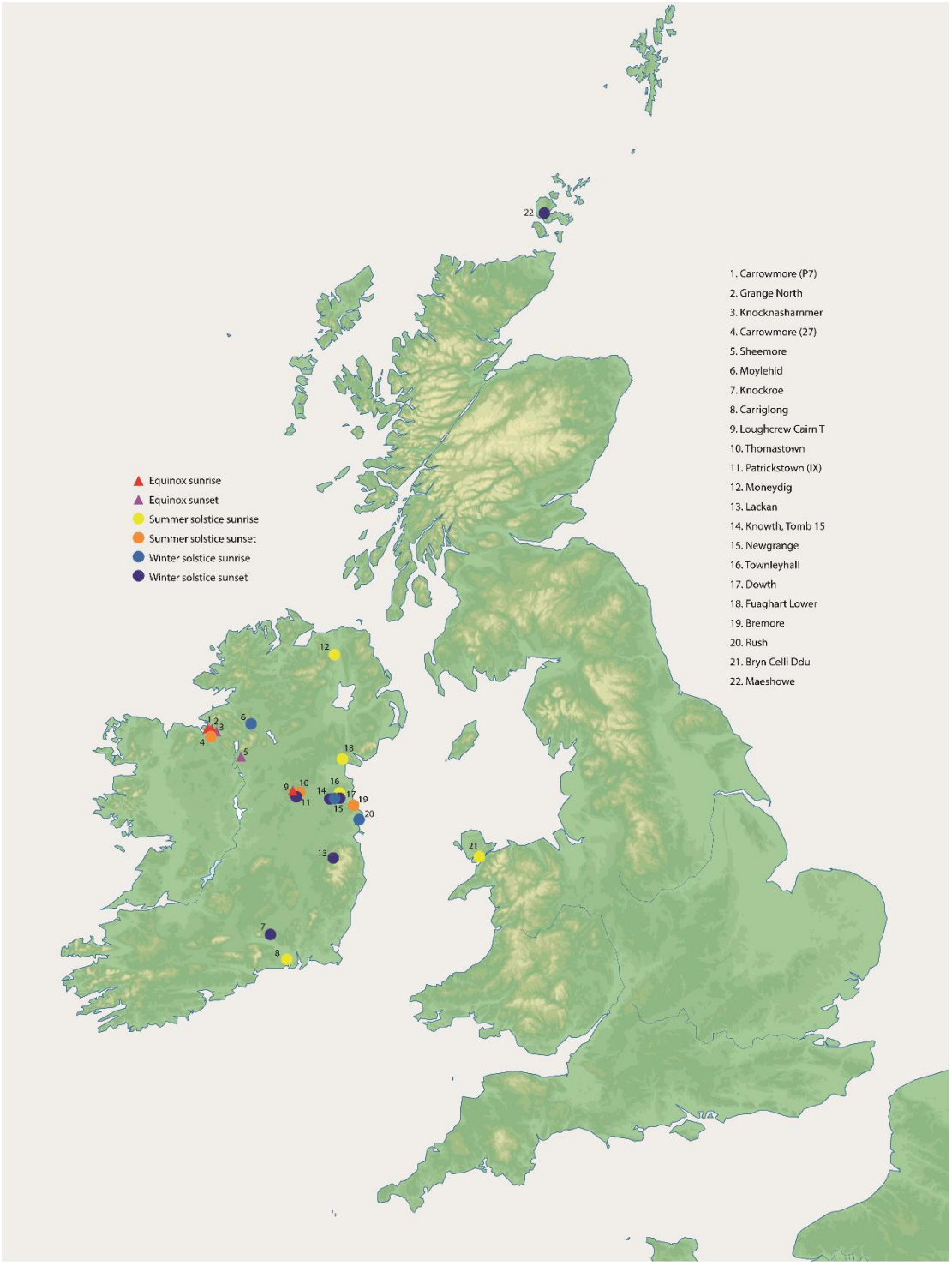


Figure 5-9 Passage tombs in Britain and Ireland with known solar alignments (Irish data from Prendergast *et al.* 2016)

A survey by Prendergast of 136 passage tombs across Ireland with extant passages showed that they are aligned around the full radial spread, with only 20 sites (17%) having a solar orientation, the majority toward the summer and winter solstices (Prendergast 2016). These include seven that align on summer solstice rising or setting, eight on winter solstice rising or setting, and five towards the equinoxes (Figure 5-9).

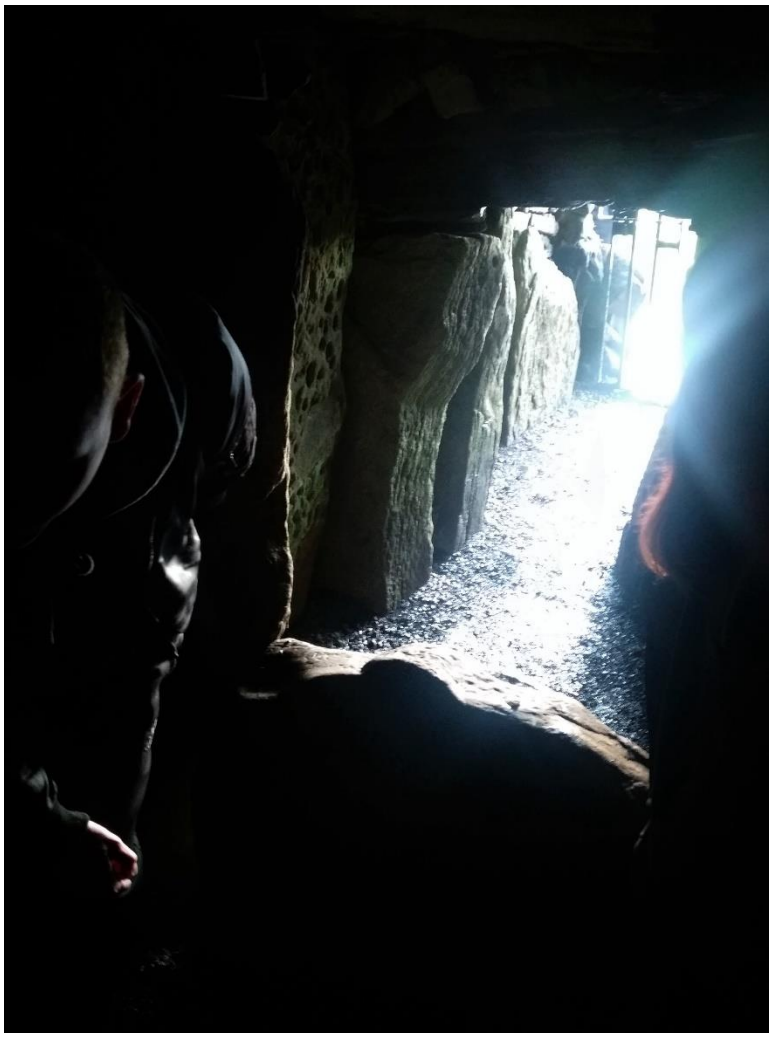


Figure 5-10 The sun shining down the passage of Cairn T, Loughcrew, on 21 September 2017 (author's photograph)

Three of the passage tombs at Loughcrew monument complex have solar orientations: Cairn XI on the winter solstice sunset, Cairn T on the rising sun at the equinoxes (Figure 5-10) and from the outlying Thomastown cairn, the midsummer sun set directly behind Cairn T (O'Sullivan *et al.* 2010, 20; Prendergast *et al.* 2017, 14). The coincidence of several potentially aligned sites at Loughcrew suggests that there was a particular interest in the movements of the sun at this complex as well as at Brú na Bóinne, combined with views and orientations referencing other locations and significant tombs.

Away from Brú na Bóinne and Loughcrew, passage tombs in Ireland appear to be more commonly orientated toward other tombs or cairns, positioned in relation to natural features or aligned with the local topography (Eogan 1986, 96–7; Cooney 2000a, 131, 155; Prendergast 2008, 6). Most of Hensey's Type III or developed tombs have alignments, some of them precise, but only a few Type II tombs have such orientations, usually combined with other features such as basins or megalithic art (e.g., Slieve Gullion) that place them at the more elaborate end of the Type II to Type III continuum. None of the simplest Type I tombs have astronomical alignments (Hensey 2015, 44, 95). If these types represent chronological development, it is possible that tombs were only oriented towards the sun later in the

Neolithic, with increasing moves towards more public performances in spaces outside the tombs (Fraser 1998), to the extent that at Knowth it was these visible alignments that were more important than the orientation of the passages themselves.

Adopting a non-anthropocentric approach and setting discussions of the funerary uses of the tomb and associations with ancestors to one side, we can envisage sunlight as a powerful non-human being. Sunlight entering the inner spaces could have activated the tomb itself, re-animating the megalithic art, the interior spaces and the objects within. Sunlight entering the inner chambers was perhaps more important than people accessing these spaces (Burrow 2010, 264). The fact that sunlight at Newgrange was closely controlled using quartz blocks suggests that certain people were orchestrating this event, intervening to accentuate the timing of light entering the space, perhaps enhancing the drama in relation to other activities within the chamber or externally (Hensey 2015, 73). The roof-box lintel is highly decorated on the external face, suggesting that it was important to observe from the outside. People at this site clearly had different abilities and relations with the sun; some were mediators with a source of power - choreographing activities and controlling sunlight, while others were observing its effect. These relations with the sun suggest that there were unequal power relations between people and the sun, and that the sun was involved in negotiations of power. Over time, the ability to demonstrate control over the movements of the sun may have become more important. Was this a democratisation of power, allowing broader access to previously secret knowledge? Or was this a shoring up of authority through public demonstration of power? Either would suggest the presence of specialist practitioners, even if they had little authority beyond the religious sphere. This was not simply a division between active participants and passive onlookers; the community chose and supported specialist leaders (Fraser 1998, 210). Such power imbalances may have become much more pronounced and unstable at the end of the passage tomb tradition, but importantly they were mediated through relations with a non-human source of power; the sun.

Case Study 8: Orkney

The midwinter setting sun shines down the tunnel-like entrance passage of Maeshowe (Appendix A5.4.2.1) to illuminate the rear wall (Burl 1981, 223–4). Although the outer and inner passages have slightly different angles, it is the once longer outer passage that is aligned with midwinter sunset, a short distance to the south of Ward Hill on Hoy (Figure 5-11; MacKie 1997). Computer modelling has shown that sunlight strikes the back of the chamber shortly before sunset for some 35 days either side of the solstice and did so for perhaps 40 days when first constructed (Ruggles and Barclay 2000, 67). The stone that originally closed off the entrance was too short to fill the passage opening and therefore acted in a similar fashion to the roof boxes at Newgrange and Bryn Celli Ddu. Interestingly the blocks that would have sealed the side chambers inside the tomb also had gaps at the top (Watson and Keatin 2000, 262), suggesting that it was important even for indirect sunlight to enter the innermost spaces.

Figure 5-11 Sunlight entering the chamber at Maeshowe down the passage at midwinter © Charles Tait photography

The alignment of Maeshowe on the midwinter solstice is unusual among chambered tombs on Orkney. The chambered tomb at Howe on the edge of the Stenness-Brodgar complex, although not precise, is towards the midwinter solstice sunset between the dramatic Hoy hills (Ballin Smith 1994, 21; Case Study 4). The cross-passage between the 'stalled cairn' and 'mortuary house' aligns on a dramatic cleft in the hills that is approximately in the position of the midwinter solstice sunset (Ruggles and Barclay 2000, 71–2). During the excavation of Crantit chambered tomb on Mainland, a possible gap between the passage lintel and upper roof slab received much publicity as a possible roof box, but the presence of this feature is not certain, and it is not orientated on an astronomical event (Ballin Smith 2014, 121). Precise solar orientations are unknown at other tombs, but there are clear preferences for directionality, with most Orkney-Cromarty group passage tombs having their entrances facing towards the east or south-east (Fraser 1983, 368–71) and a marked preference for entrances to have a wide extent of visibility to the south-east (Davidson and Henshall 1989). This is interesting given the similar pattern noted for long barrows in southern England above.

Other types of late Neolithic Orcardian architecture appear to have been orientated toward solar directions. Structure 8 at Barnhouse, built in *3000–2975 cal BC* (*68% probability;* Richards *et al.* 2016, fig 10; see Appendix A5.4.1.1), has an entrance that aligns north-west towards the setting sun at midsummer solstice (Richards 1993b, 300). In addition, a series of hearths, pits and boxes were clustered in the south-east part of the structure, between the outer wall and inner building (Hill and Richards 2005, 190), suggesting activities that took place with reference to this direction. Houses 2 and 3 at Barnhouse have entrances that face towards the south-east, illuminated by the midwinter sunrise (Jones 2012, 95).

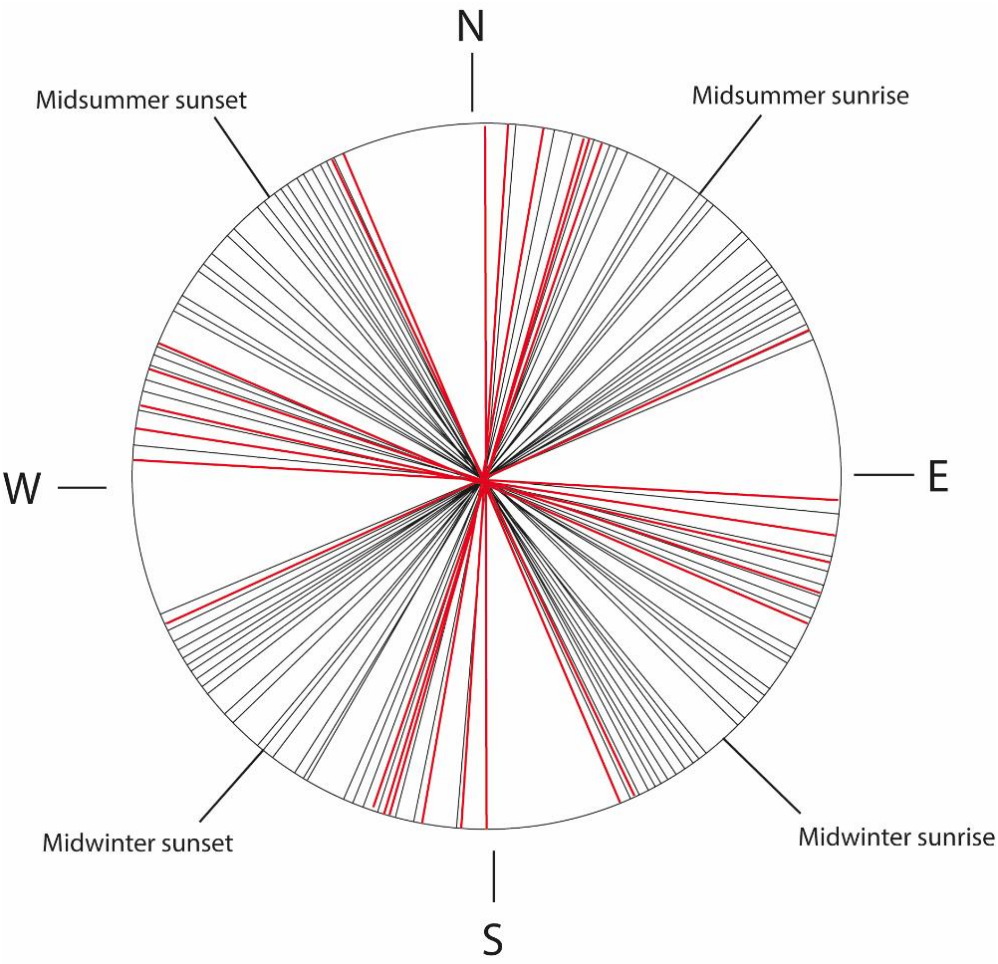


Figure 5-12 Late Neolithic hearth orientations on Orkney (after Richards 1993b, fig 6.3), updated to show hearth orientations from buildings at Ness of Brodgar (red lines) which conform to the overall pattern

The hearth within Structure 8 conforms to the wider pattern of hearth orientations in late Neolithic Orkney, which fall into four separate bands centred roughly upon the four solstitial directions (Figure 5-12). As the principal walls and orientation of the houses take reference from the hearth, this led to remarkably consistent architectural spatial ordering. The variation seen may relate to the solar alignments being affected by local topography but more likely is that precise alignment was not important. Examination of entrance orientations of houses at Barnhouse, Skara Brae and Rinyo has shown that 80% lie on a north-west–south-east axis (Downes and Richards 2005, 58). This pattern is strongly suggestive that houses were built according to cosmological principles associated with directionality and the movements of the sun (Jones 2012, 97). The house may have been a recreation of the cosmos, with different parts of the interior associated with parts of the daily or annual cycle (Downes and Richards 2005, 127). The discovery that Maeshowe possibly once had a central hearth which also conformed to this pattern (Figure 5-13), lends weight to the idea of such structuring principles. Interestingly, the monumental hearth at the centre of the Stones of Stenness, probably relocated from Structure 8, does not appear to conform, being orientated instead on the cardinal points.

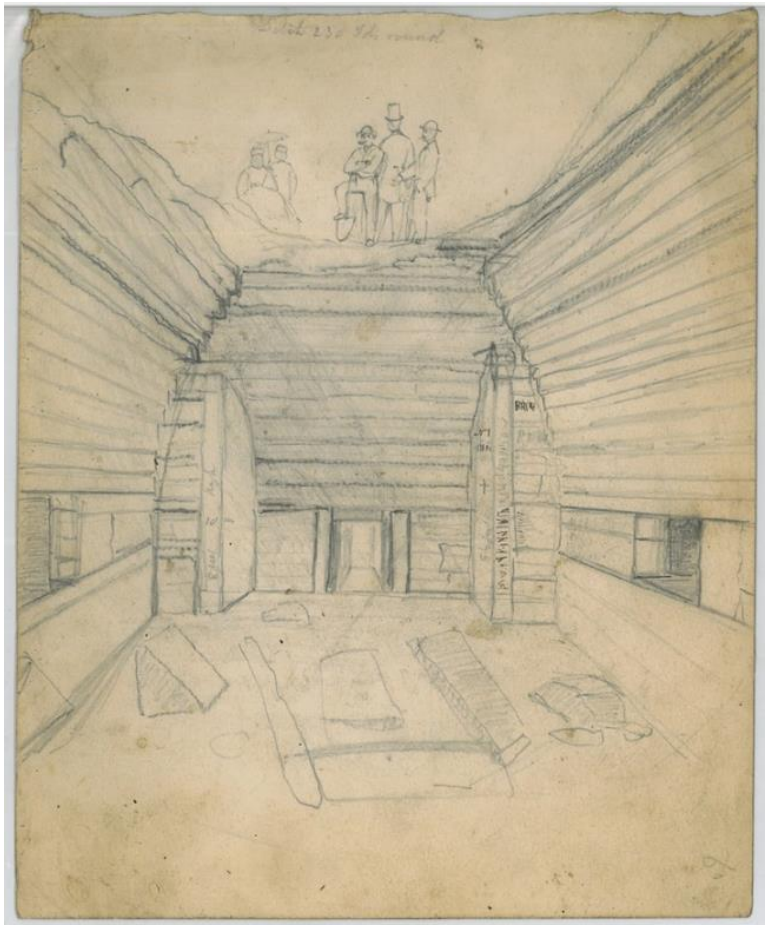


Figure 5-13 1861 sketch of Maeshowe when it was first opened by Farrer, showing a probable hearth in the centre of the floor. Orkney Library and Archive D8/3/11, artist unknown

Middle Neolithic passage tombs in Ireland, and a few in North Wales and Orkney, were built to deliberately incorporate alignments to the sun, both winter and summer solstice, and occasionally, equinoxes. As described in Chapter 3, these passage tombs could be interpreted as models of the underworld (Garrow *et al.* 2005, 254); perhaps the intersection of the underworld and the upper world was significant, a meeting of domains. Sunlight may have re-animated the tombs, creating potent places where communications with the ancestors and gods could take place. Towards 3000 BC, it became more important that these alignments were precise and were witnessed by an audience standing outside the tomb, as part of the externalising seen in the location of megalithic art and platforms outside the tombs, perhaps indicating more elaborate ritual performances. At the same time, the idea of building monuments that aligned to the sun spread to Orkney and North Wales. In Orkney, stone-built hearths and houses were already orientated with reference to the solstitial points of the compass, affiliating them with the wider cosmos, aligning them with the powers of the world. It is tempting to perceive a link between the sun and hearth fires, perhaps two of the most important aspects of life for Neolithic people, particularly in the far north. It was only with the monumental house of Structure 8 at Barnhouse, and the tombs of Maeshowe and perhaps Howe, both reworkings of earlier monumental houses, that precise alignments were built. Structure 8 was late in the sequence at Barnhouse, constructed in *3010–2955 cal*

BC (*95% probability*; Richards *et al.* 2016, fig 10: *build S8*). The dating for Howe and Maeshowe is unfortunately not precise, but they are likely to date to around 3200–3000 BC, comparable to the largest Type III passage tombs in Ireland. It is likely that the idea of precise alignment of tombs was imported from the Irish Sea region, along with larger right-hand recesses, external decoration (Bradley *et al.* 2000), high drum shapes (Schulting *et al.* 2010, 39), artefacts associated with exterior of the monument (Sharples 1985, 69) and the addition of external platforms, known at Quoyness and Pierowall (Crozier *et al.* 2016, 209). This accords with other known links between the two regions, including similar forms of Grooved Ware pottery (Sheridan 2004), maceheads and miniature carved stone balls (Sheridan 2014), and Irish style megalithic art motifs, including spirals, that decorated tombs at Pierowall, Westray and at Eday Manse (Bradley *et al.* 2000; Sheridan 2012; Carlin 2017; Figure A5-7).

The links between Orkney and the east of Ireland at the turn of the 3rd millennium BC lead us to consider the places between. Various lunar and equinoctial alignments have been claimed for the stone circle and rows at Calanais on the Isle of Lewis (Somerville 1912; Thom 1967, 96; Burl 1993, 64–5; Ponting and Ponting 1981). Although there is considerable doubt over most of these claims (Ruggles 1999, 136), the excavator of the site is convinced that the stones had some relation to the moon, particularly a 'horizon-skimming phenomenon', when the moon at its major standstill limit moves just above the southern horizon (Figure 5-14; Ashmore 2016, 1063). The avenue also aligns with the midwinter sunset behind a mountain and its gleam through a notch in the horizon (Ashmore 2016, 1064), in a similar way to the midwinter solstice sunset between the hills of Hoy on Orkney. The four stone rows may also relate to four key directions. Artefact patterns at the site hint that a cardinal quartering of the cosmos guided deposition (Ashmore 2016, 1047–9), similar to that noted for Orcadian houses; perhaps this was part of a cosmological ordering that was shared over a much wider area.

Figure 5-14 The 'horizon-skimming' phenomenon of the moon, as seen beyond Calanais 3 stone circle during the major lunar standstill on 11 June 2006 © Peter Vallance

Further connections between Orkney and Ireland might have been mediated through western Scotland and Cumbria, where monuments, practices and artefacts speak of connections to both areas. Some Hebridean passage tombs have close similarities to Irish passage tombs (e.g., Barpa Langass on North Uist), including instances of the deposition of quartz (e.g., Rudh an Dunain on Skye) and Grooved Ware (e.g., Unival chambered tomb) (Armit 1996, 70–2; Sheridan 2004, fig 5.1). Many have entrances facing towards the south-east (Henshall 1972). These connections are further underlines by the movement of raw materials and objects across the Irish Sea (Bradley *et al*. 2016). In Argyll, at the heart of the Kilmartin complex of Neolithic and Bronze Age monuments, the Temple Wood stone circles have rock art motifs comparable to those found in Irish megalithic art (Sheridan 2012). A series of complicated astronomical alignments have been claimed for this site and the nearby Nether Largie Stones (Scott 2010) that are not particularly convincing, although the complex may adhere to more general principles of solar orientation as Kilmartin Glen is aligned north-east to south-west (Ruggles 1999, 231; see Section 5.6). This orientation may have been perceived as sacred and may be the reason why it was selected for the location of so many monuments (Jones and Watson 2011, 279). Analysis of rock art there shows a preference for stones with cracks or fissures oriented on this same axis, with the lines or tails of the rock art motifs orientated most often on the opposite north-west to south-east axis (Jones and Watson 2011, 272).

For the stone circles of Machrie Moor on the Isle of Arran, from where pitchstone was widely transported to Orkney, mainland Scotland and eastern Ireland (Ballin 2015), it has been suggested that the midsummer sun would have risen at a prominent notch on the skyline at the head of Machrie Glen (Barnatt and Pierpoint 1983, 101–13). More importantly, the four-post timber structure within Site 1 timber circle has a clear orientation on a north-east to south-west alignment (Haggarty 1991, fig 5; Figure 5-18, discussed further below). Some stone circles in Cumbria and south-west Scotland, which are likely to be of comparable date to the developed passage tombs in Ireland, have astronomical alignments (Ruggles 1999, 131). For example, at Long Meg, the outlying tall stone aligns with the midwinter sunset when viewed from the centre of the stone circle (Hale 2013, 5). At Castlerigg, the tallest stone might be set axially to mark the north-west midsummer sunset (Burl 2005, 38). In the middle Neolithic Western Scotland and the Irish Sea area had overlapping and interacting regional networks of similar practices, some of which included the orientation of stone and timber monuments with solar quartering and solstitial directions.

5.6 Late Neolithic quartering and directionality

In the late Neolithic, only a few monument complexes demonstrate precise astronomical alignments. There is no clear evidence for any solar or lunar orientations at the Avebury complex (Ruggles 2016) beyond the long barrows discussed above, despite some realistic but unconvincing claims (e.g., Burl 2002, 158, 252–3) and a few outlandish speculations (e.g., Sims 2009; Marshall and Currie 2010; Sims 2021).

Nor are there any known at Marden, Cranborne Chase or Dorchester, although at the latter Maumbury Rings has single entrance to the north-east where a single large stone formerly stood (Gray 1908, 259), providing a possible orientation on midsummer sunrise. Much clearer evidence for alignments is present among clusters of early Bronze Age monuments, including recumbent stone circles and Clava Cairns in north-east Scotland (Ruggles 1999, 91–9, 130), stone rows in Ireland (Ruggles and Barclay 2000, 67) and short stone rows in Kilmartin, Argyll and nearby Mull (Ruggles 1999, 110).

Astronomical alignments are enshrined in several monuments and features in the Stonehenge area, which are explored below in Case Study 9. The only other late Neolithic monument complex with possible alignments is Thornborough, where the cursus and henge monuments have been linked with the movements of the stars, particularly Orion's Belt (Harding *et al.* 2006; Harding 2013; Section 5.4). The plateau on which the henges were built afforded a wide expanse of sky and the encircling white earthworks would have blocked all but the skies above, except the horizons visible through the wide entrances. The southern entrance of the southern henge would have framed the rise of Sirius during the Neolithic, a bright star associated with Orion's Belt. The entrances of the northern and central henges could also mark the midwinter solstice sunrise (Harding 2013, 210). These are intriguing possibilities, and although it is probably not wise to link the layout of the three henges to Orion's Belt directly (Harding 2013, 214–5), there does appear to be some relation between these henge monuments and the sky. A link between the stars and the white gypsum of the henges is possible and the timing of the rising of Orion, at the end of summer, may have related to seasonal movements and gatherings at the site (Harding *et al.* 2006, 47). However, more work is needed before these claims can be deemed conclusive.

One type of late Neolithic monument, present at many monument complexes, shows a distinct pattern of directionality, rather than precise alignment. These are timber square-in-circle monuments (or four-post structures), generally regarded as a form of monumentalised house in the form of a shrine or temple and are found across Britain and Ireland (Figure 5.15). These structures were sometimes surrounded by stone circles, but consistently include four central posts, usually enormous, monumental poles. Although dating of these sites is not clear, they are generally associated with Grooved Ware and are likely to date between 3000 and 2500 cal BC (Greaney *et al.* 2020, supp. info. 5).

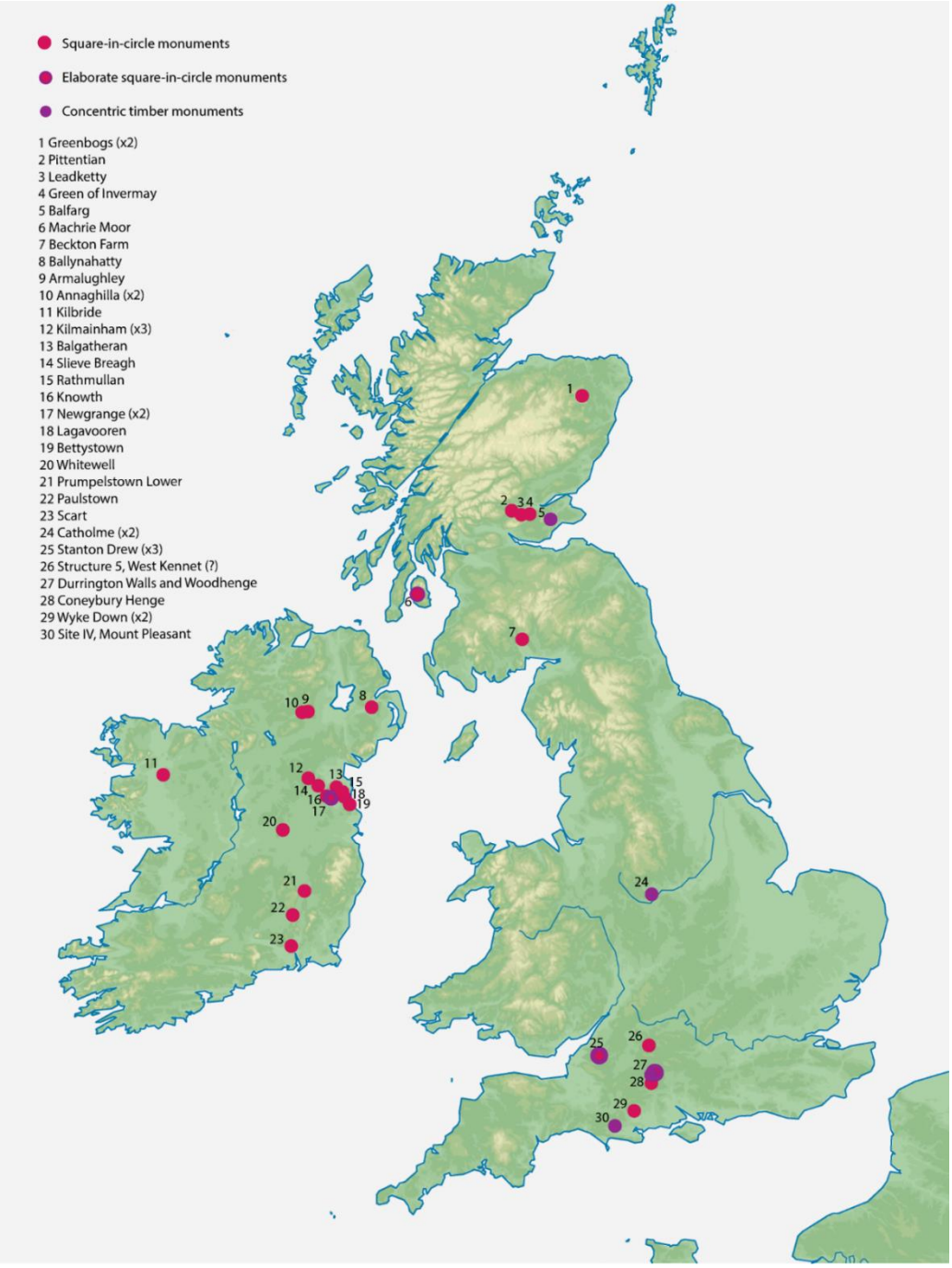


Figure 5-15 Map showing the location of known square-in-circle timber monuments and related concentric timber monuments in Britain and Ireland

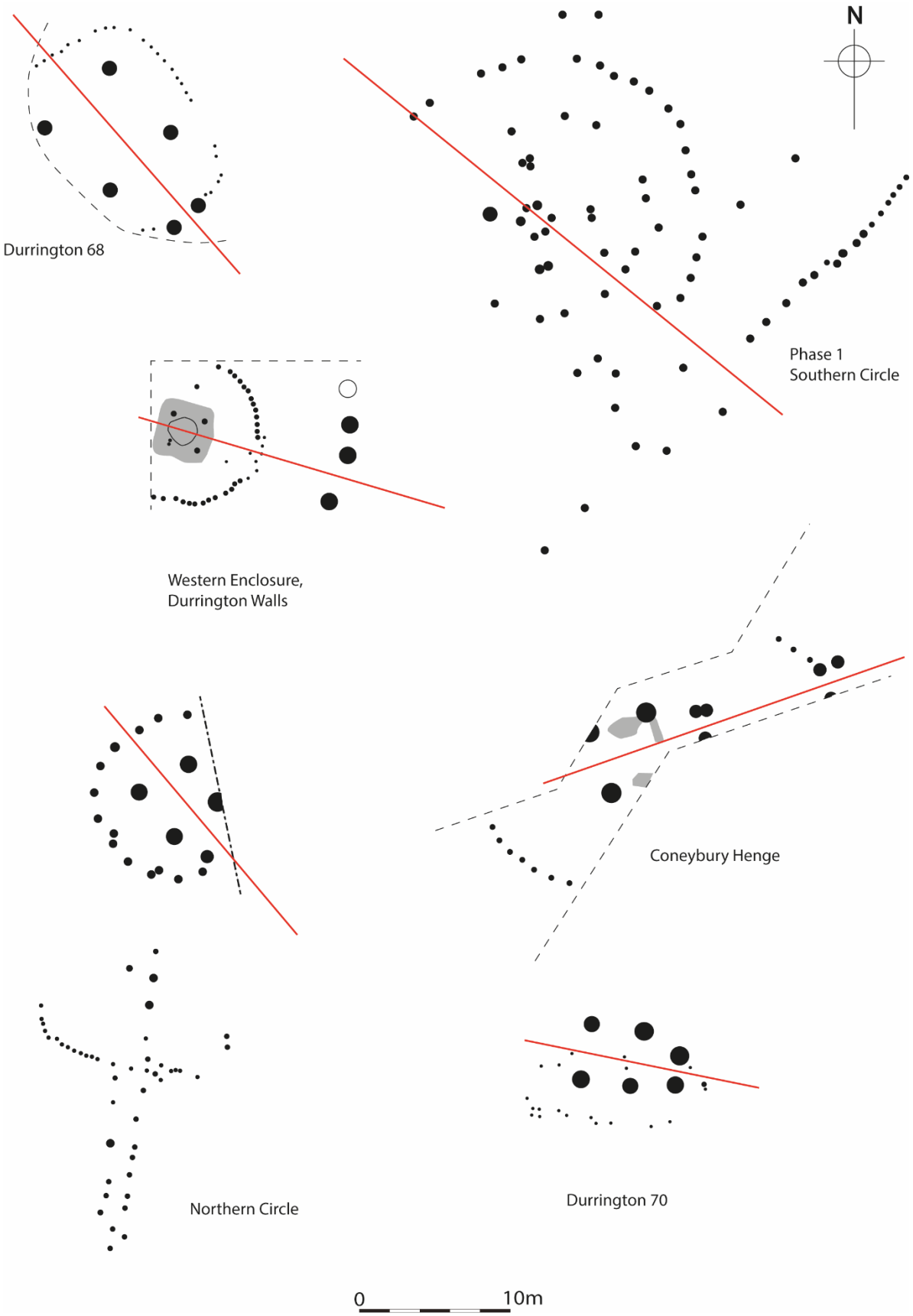


Figure 5-16 Square-in-circle structures in the Stonehenge area (after Pollard 1995b, fig 2; Wainwright and Longworth 1971, figs 9 and 17; Thomas 2007, figs 13.5 and 13.8; Richards 1990, fig 97; plan of Durrington 70 provided by Josh Pollard). See Figure A1-1 for locations

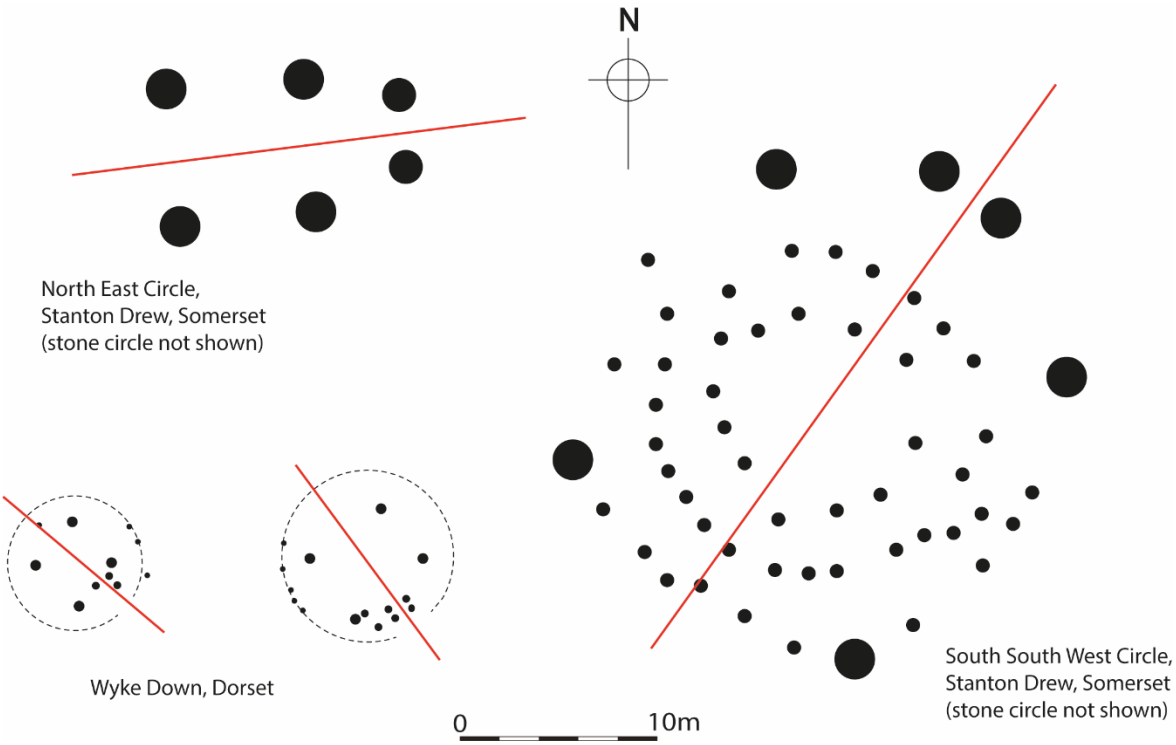


Figure 5-17 Ground plans of square-in-circle timber monuments in Southern England beyond the Stonehenge area, showing probable orientations (after Green 2000, fig 47; Linford *et al.* 2017, fig 13)

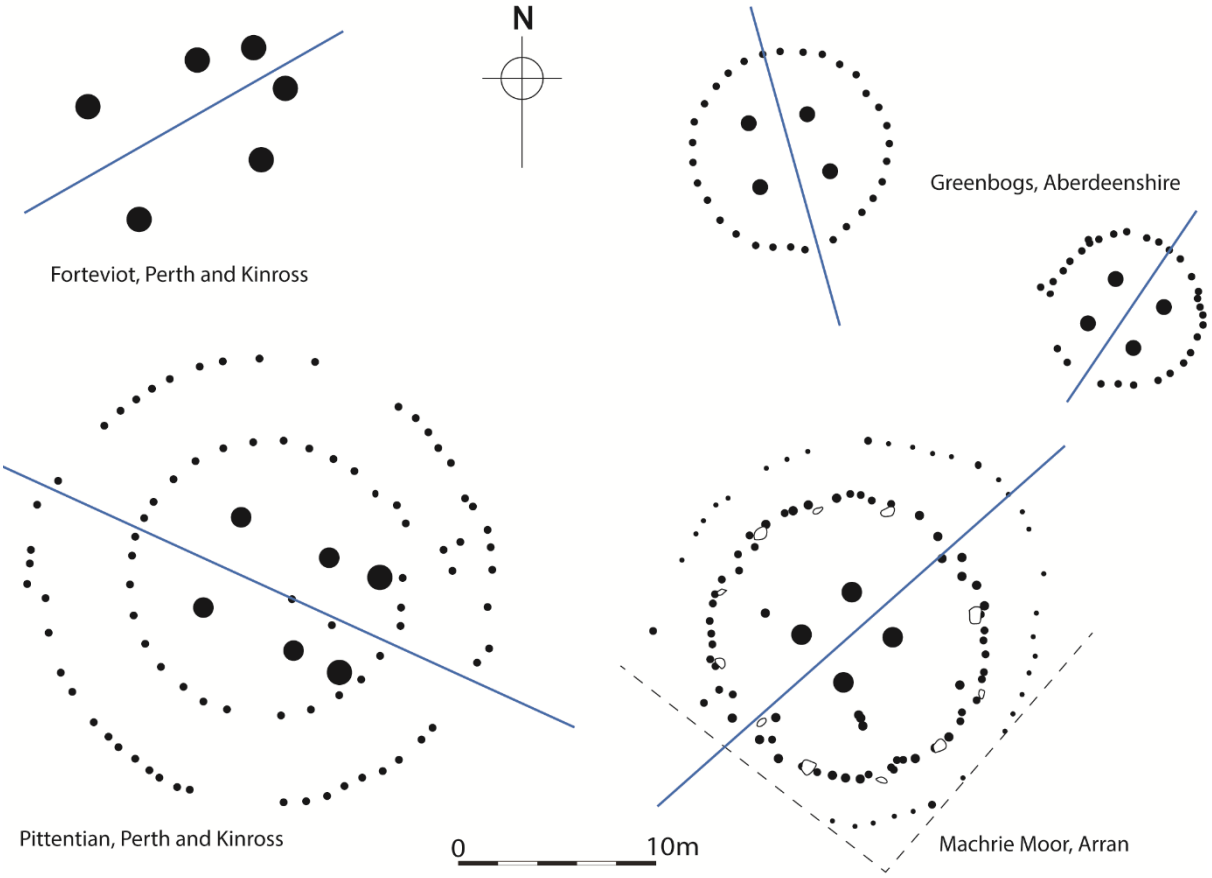


Figure 5-18 Square-in circle monuments in Scotland, showing probable orientations (after Brophy and Noble 2010, fig 3; Noble *et al.* 2011, fig 5; Becket 2012, 2; Haggarty 1991, fig 5)

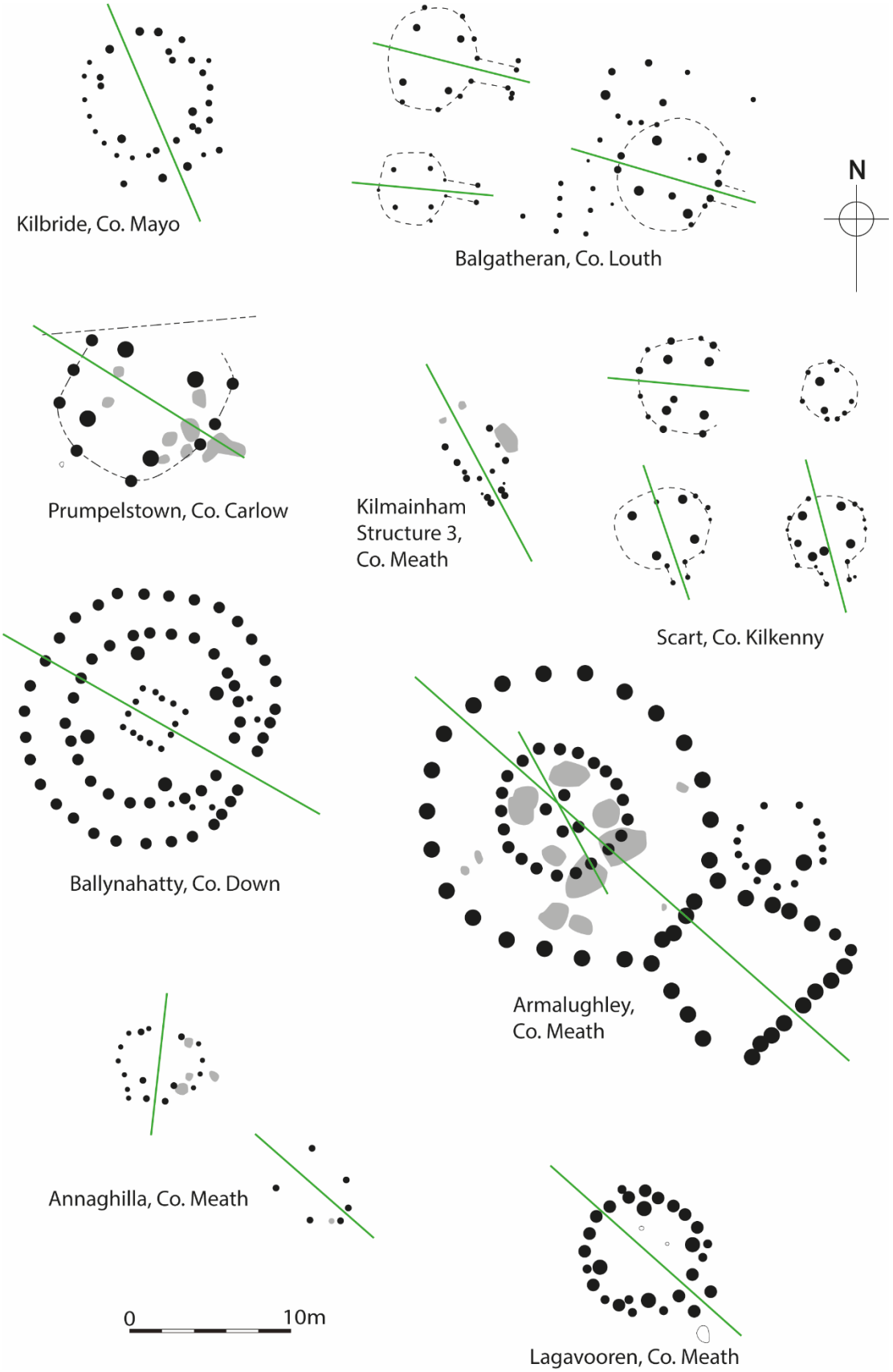


Figure 5-19 Square-in-circle monuments in Ireland beyond Brú na Bóinne, showing probable orientations (after Cotter 2008, fig A; Ó Drisceoil 2009, fig 5; Bolger *et al.* 2015, fig 2.1; Whitty 2011, fig 11; Laidlaw 2017, fig 3; Hartwell 2002, fig 1; Dunlop and Barclay 2016, 29, 38; Clarke and Murphy 2002)

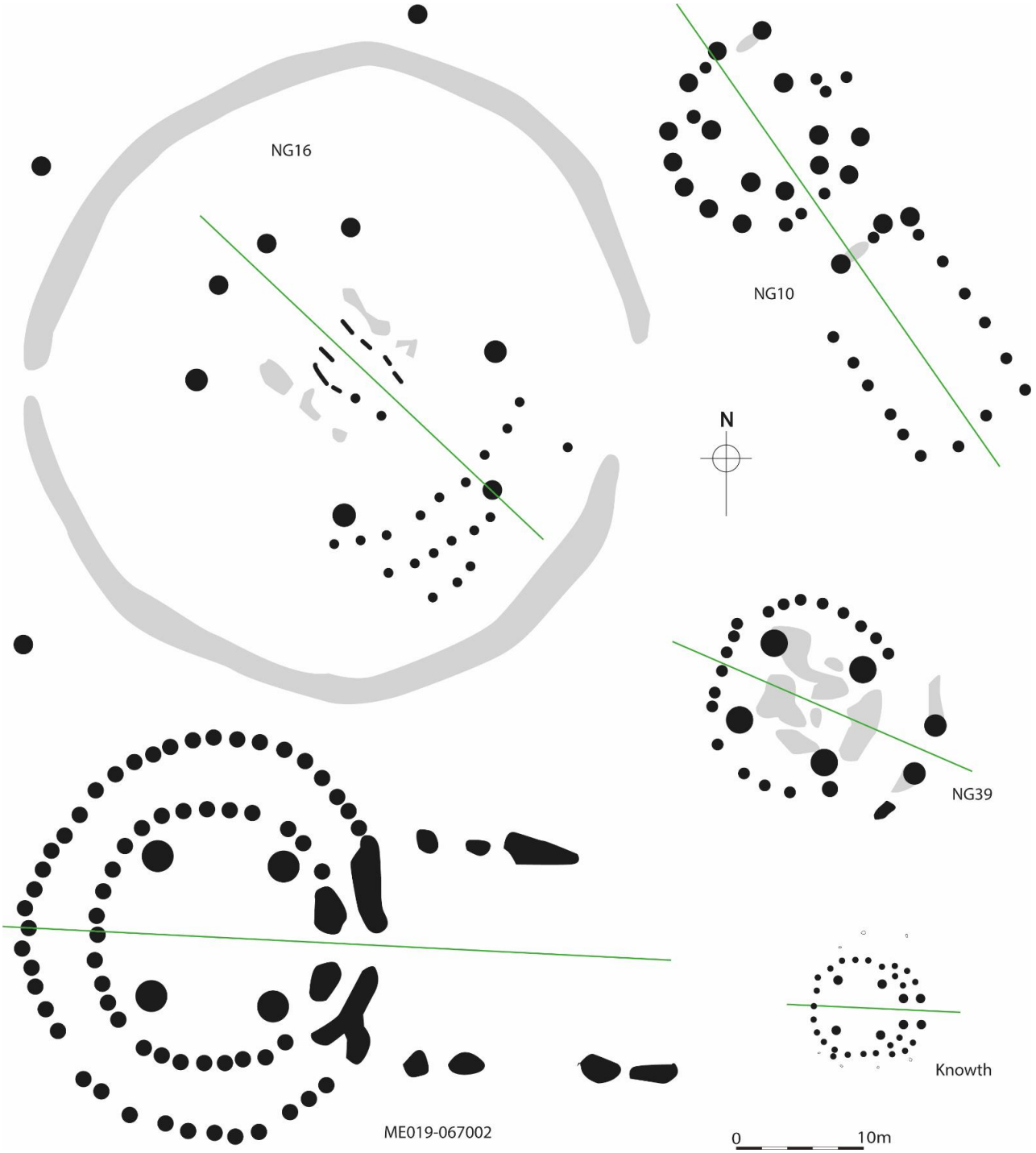


Figure 5-20 Square-in-circle timber monuments from Brú na Bóinne (after Davis and Rassman 2021, fig 11; Eogan and Roche 1997, fig 21). See Figure A5-1 for locations. Note the different scale compared to Figures 5-17–20; except for Knowth these are particularly large examples

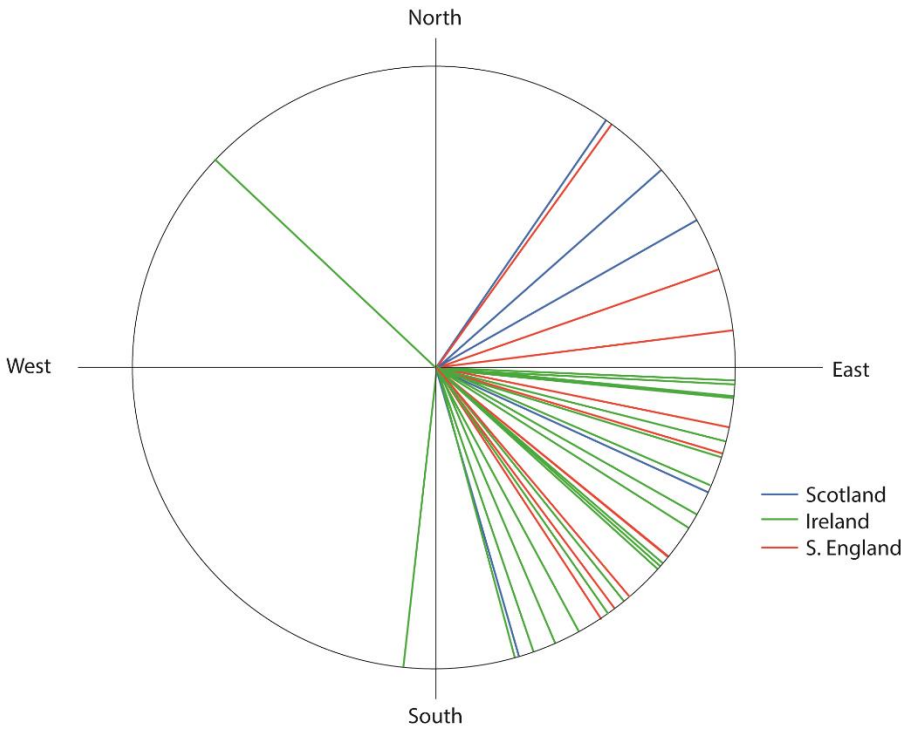


Figure 5-21 Summary diagram showing the orientations of square-in-circle monuments in Britain and Ireland

Some monumental examples, such as Ballynahatty (Hartwell 2002, 529), have central square settings reminiscent of hearths seen within similar stone structures such as Maeshowe on Orkney (Figure 5-13) or hearths within more 'domestic' timber structures associated with Grooved Ware pottery such Slieve Breagh in Co. Meath (Smyth 2014, 88–9), Wyke Down, Cranborne Chase and the western enclosures at Durrington Walls (Appendix A1.5.11). It is not known if square-in-circle structures were roofed; some certainly could be, as shown by the recreation of one found at Greenbogs, Aberdeenshire at Archaeolink Prehistory Park, when it was believed to be an Iron Age roundhouse (Noble *et al.* 2011, 154, fig 20). Figures 5.16–20 show square-in-circle monuments in Britain and Ireland which have reasonably well understood ground plans, with their principal axes of orientation marked, as defined by the two additional pits or posts, entrance gaps or a more elaborate approach or façade. It is not clear whether these were entrances or exits, or whether the pair of posts framed views outwards from the centre of the structure. It is tempting to think of some of these portals as lintelled, and perhaps the four central posts were also linked by lintels at the smaller sites.

Despite having an underlying architectural 'grammar' of four posts set within an outer ring, square-in-circle structures vary greatly in scale, from structures with a seemingly 'domestic' nature (e.g., Wyke Down, Dorset and Annaghilla, Co. Meath) to larger, clearly ceremonial, monuments (e.g., Stanton Drew in Somerset or Armalughley in Co. Meath). There is debate over whether the structures at the smaller end of this scale are simply houses (compare Ó Drisceoil 2009, fig 16 with Smyth 2014, fig 5.13), but the deposition of pottery and animal bone, often in post-holes, with areas of burning or nearby hearths could also fit patterns of ritual activity. Hartwell (1994, 13) has suggested that these were mortuary structures,

supporting an elevated platform on which bodies were left to decay. Although few human remains have been recovered, the idea of a raised platform may be supported by Pittentian, Fife, where the four internal posts decayed at an angle approximately 12 degrees from vertical away from the centre (Becket *et al.* forthcoming), suggesting that they supported some weight.

There was a clear preference for aligning the paired posts of these structures towards directions from the north-east to the south and particularly towards the south-east (Figure 5-21). This orientation has been noted by Pollard and Ruggles (2001, 81) for examples in the Stonehenge landscape, but it appears to be a more widespread pattern. The Irish examples cluster more closely in the south-east quadrant, whereas the Scottish and southern English examples show more diversity in their orientations. The one exception is NG16 near Newgrange, by far the largest example in the Brú na Bóinne landscape, which has paired postholes in the opposite direction, to the north-west. This monument is also differentiated by a surrounding enclosure ditch and outlying anomalies which may represent large post or stoneholes (Davis and Rassman 2021, 16).

The south-easterly and easterly orientation of these timber structures may relate to the rising sun, particularly during the winter months. Further site-specific topographical and landscape research is needed to help refine this picture. The wide arc of alignments suggests that a general directionality towards the south-east quadrant of the sky was the aim, rather than alignment on a specific solstice or standstill point. Interestingly, this same pattern of orientation is replicated by chambered tombs with passages on Orkney and elsewhere (Fraser 1983; Davidson and Henshall 1989) and as explored above, at much earlier long barrows in southern England (Figure 5-3). This may lend weight to the idea that these structures were also associated with funerary rites. Further radiocarbon dating will hopefully enable precise estimates for the currency of these monuments, and their development over time.

Pollard (2009, 346) has suggested that the four posts of square-in-circle monuments may refer to some scheme of cosmological quartering, perhaps referencing to the four points or pillars of the world. In Northern Caddoan (Pawnee) lodges, the four posts which support the roof represent semi-cardinal directions, each associated with animals and colours. The north-east was thunder, bear and black; the north-west lightning, mountain lion and yellow; the south-west winds, bobcat and white and the south-east clouds, wolf and red (Pauketat 2012, 84; Huffman and Earley 2014, 658). Navajo family dwellings and houses of Eastern Woodlands and Plains Indians have four central posts that represent mountains linking the earth and the sky (Bradley 2012b, 37; Pauketat 2012, 83). Perhaps the Neolithic monuments were built to encompass or create an image of the universe as Neolithic people understood it, linking together the underworld and the upper world, together with important directions.

Other late Neolithic concentric monuments found at complexes provide some support for the idea that the concept of four key directions or quartering was widespread in the late Neolithic, although these

were not necessarily consistent (Figure 5.20). At the Sanctuary near Avebury (Appendix A2.6.3) the concentric rings appear to be orientated around four radial 'corridors', with this patterning also reflected in the distribution of finds; for example, the eastern side was where most of the flint knapping debris and pottery sherds were deposited (Pollard 1992, 15–6). These corridors do not appear to align with the solstices but rather divide up the horizon into four equal parts. Something similar is seen at Site IV within Mount Pleasant at Dorchester, with four radial corridors, this time just offset from the modern cardinal directions. The four central pits in a square linked by elongated stone holes recall the hearths at square-in-circle monuments and elsewhere. As Thomas (1996, 202) noted, the south-east and north-west quadrants of this monument appear to have been appropriate places for the deposition of pottery and antler picks respectively. At both these sites the corridors were blocked by posts or stones, so these were not intended necessarily for human movement (Thomas 1996, 198; Pollard 2009, 222).

Two larger monuments, Avebury and Stanton Drew, also display four radial directions, different to those at the Sanctuary and Site IV. The four entrances to the henge at Avebury are slightly offset from the cardinal points, and the timber circles at Stanton Drew may have a radial avenue leading north-north-west, visible in the geophysical survey. Other avenues may exist but do not show up clearly on the geophysical survey. These monuments suggest that quartering and directionality were important in the late Neolithic but were not always associated directly with solstice alignments.

This discussion of square-in-circle and other late Neolithic monuments has shown that these were not sites aligned with precision towards solar events but followed broader patterns of directionality and quartering. Square-in-circle monuments and Orcadian buildings could be linked and indeed several have square 'hearth'-like arrangements at the centre. These monuments and buildings made evident key principles of the Neolithic worldview, associating them with the broader powers of the cosmos and linking together disparate worlds. These principles appear to have been shared across lowland Scotland, eastern Ireland and southern England, associated with practices spread through overlapping spheres of influence and enacted in regional distinctive ways (see Chapter 7.4). These monuments were built at the same time as perhaps the most famous astronomically aligned monument in prehistoric Britain, Stonehenge.

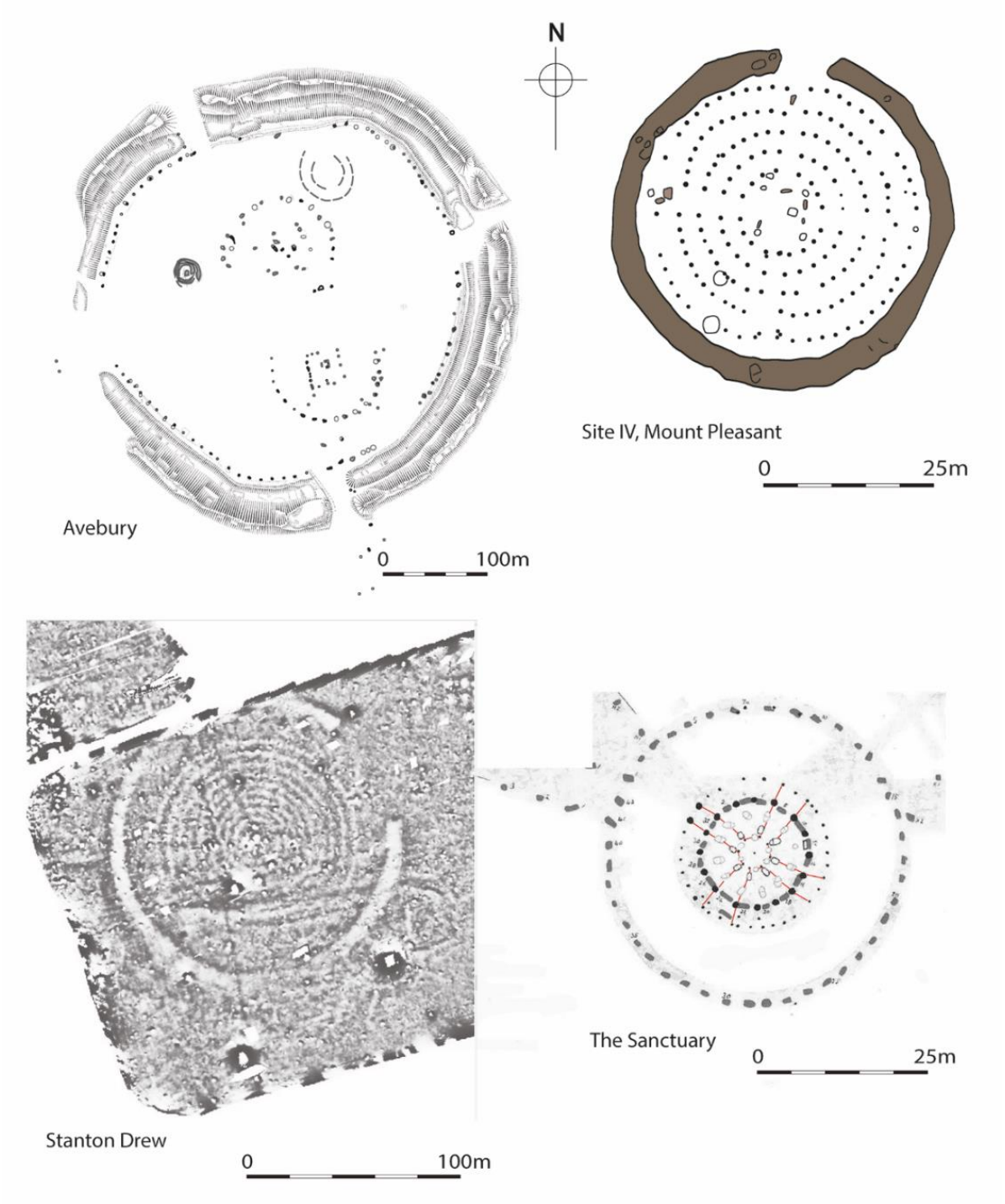


Figure 5-22 Comparisons of radially aligned monuments: Avebury, Wiltshire (simplified from Figure A2-15); Site IV at Mount Pleasant, Dorset (simplified from Figure 6-13); The Sanctuary, Avebury (Cunnington 1931, plate 1 and lines from Pollard 1992, fig 1) and the largest circle at Stanton Drew, Somerset (Linford *et al.* 2017, fig 6)

Case Study 9: Alignments at the Stonehenge complex

The solar and lunar alignments at Stonehenge have attracted much speculation, with a line of discovery and debate traceable through the work of William Stukeley, Edward Duke, Norman Lockyer, C. A. Newham, Gerald Hawkins and Alexander Thom. There is not the space to present a detailed history of these ideas; suffice to say that the claims made in the 1960s for a myriad of different alignments and the idea that the Aubrey Holes could be used to predict eclipses (Hawkins 1966; Hoyle 1966) have long since been refuted on archaeological and statistical grounds (Atkinson 1966; Ruggles 1999, 38–40).

It has been suggested that several features of Stonehenge show alignment with the movements of the moon. An array of about 40 postholes within the north-east entrance causeway have been suggested as markers of the rising position of the midwinter full moon over successive years, thereby tracking the 18.6-year lunar cycle (Newham 1972; Cleal *et al.* 1995, fig 68; Figure A1-28). However, these postholes do not align with the movements of the moon (Ruggles 1999, 136–7) and may instead have been an attempt to restrict access to the henge along two narrow entrance corridors. Secondly, the 11 m wide north-east entrance gap, which spans the azimuths +30° to +24°, is orientated towards an area of the sky where the moon sometimes rises, but not the sun. The central line through the entrance is +27°, close to the major standstill limit of the moon, but only for a period of 5 years in every 18.6-year lunar cycle (Ruggles 1999, 136). From this it seems more likely that the entrance simply generally aligned towards the north-east, rather than having a precise alignment to either the sun or the moon (Pollard and Ruggles 2001, 83). In support of this idea is the fact that other formative henges do not appear to have consistently aligned entrances (Bowden *et al.* 2015, 33).

A more convincing interest in the moon is demonstrated by the placement of human cremations in and around the Aubrey Holes and ditch during the earliest phase of the site (probably *3045–2815 cal BC*, see Appendix A1.5.3). These were clustered in the right-hand terminals of the ditches at each entrance and in the south-eastern part of the site near Aubrey Hole 14 (Figure 5-23; Pollard and Ruggles 2001, 77; Parker Pearson *et al.* 2009, fig 2). Corresponding to this south-east cluster were three postholes found under the nearby bank (Cleal *et al.* 1995, 94, 107–8, fig 56) and concentrations of flint debitage, animal bone and disarticulated human bone in the adjacent ditch. The cremation cluster and posts correspond with the direction of the maximum southern standstill moonrise, corresponding to azimuths between 134° and 142° (Pollard and Ruggles 2001, 83). From Stonehenge, the maximum southern standstill moonrise occurs at about 143°, and the midwinter sunrise about 130°, making it likely that this cluster was the result of a focus on the moonrise at or towards the maximum southern standstill (Pollard and Ruggles 2001, 82).

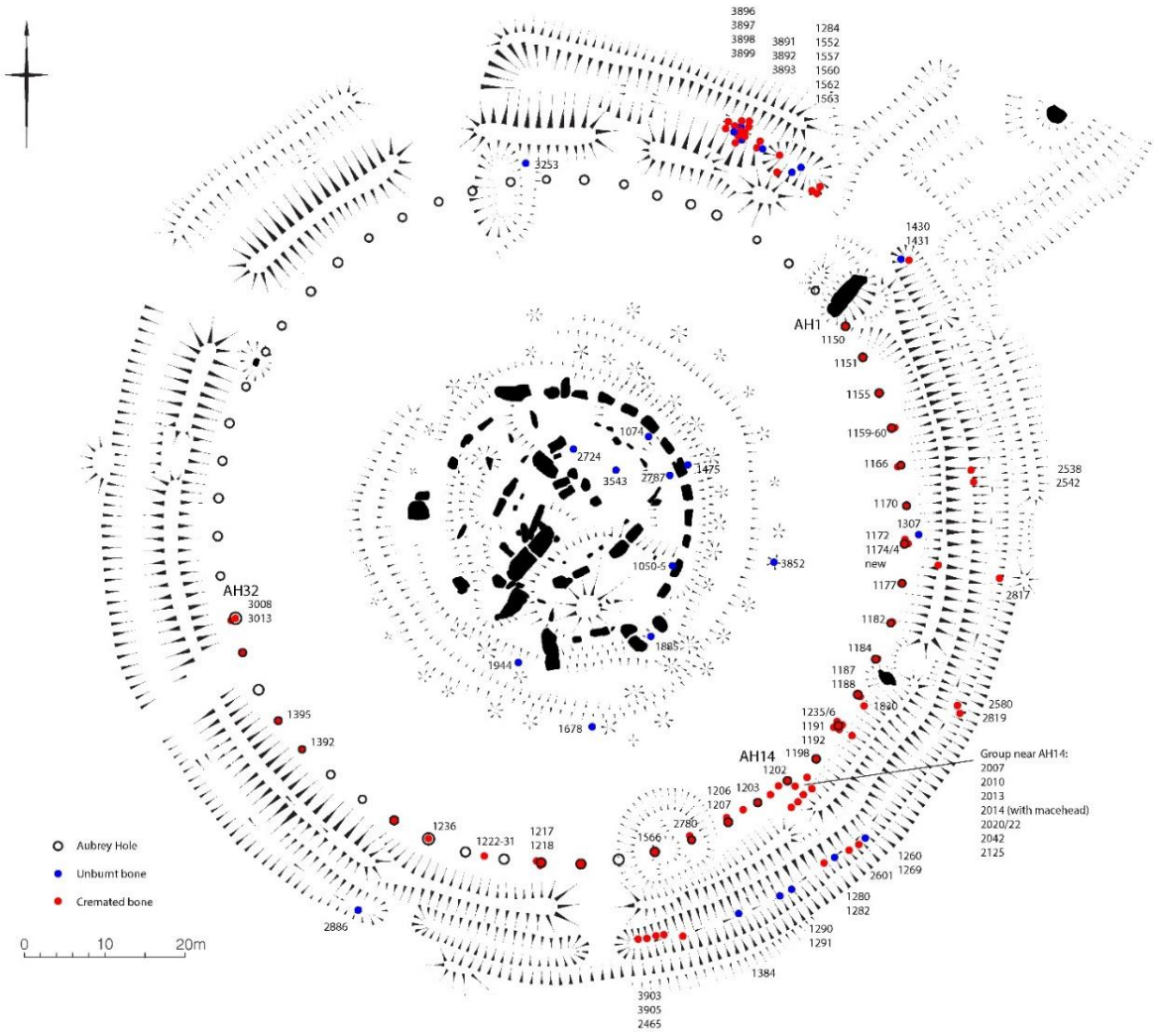


Figure 5-23 Distribution of human remains found at Stonehenge, with associated context numbers where possible. Note that the majority of the perimeter was excavated by Hawley, who did not record or retain all human remains. The concentration in the northern part of the ditch likely reflects the more thorough techniques of Atkinson, the excavator of this area. Information plotted from Cleal *et al.* 1995, 65–93, 118–139, fig 250, tables 57 and 59; Parker Pearson *et al.* 2009, fig 8. Base plan © Historic England

Although cremations may have been placed in relation to the moon, there is not enough evidence to support Bradley's postulated dramatic change from a monument based on lunar alignments to one of solar (Bradley and Chambers 1988, 286–7; Barrett *et al.* 1991, 56). As Pollard and Ruggles (2001, 87) have shown, solar and lunar-derived cosmological schemes need not be mutually exclusive and a principle of solar quartering influenced the deposition of artefacts within the Stonehenge ditch. The focus on the south-east reflects a consistent focus on this direction among late Neolithic timber monuments and funerary monuments across Britain and Ireland, as demonstrated above, and may relate to the timber structure at the site (Figure A1-28). It was only much later that precise solar alignments were created.

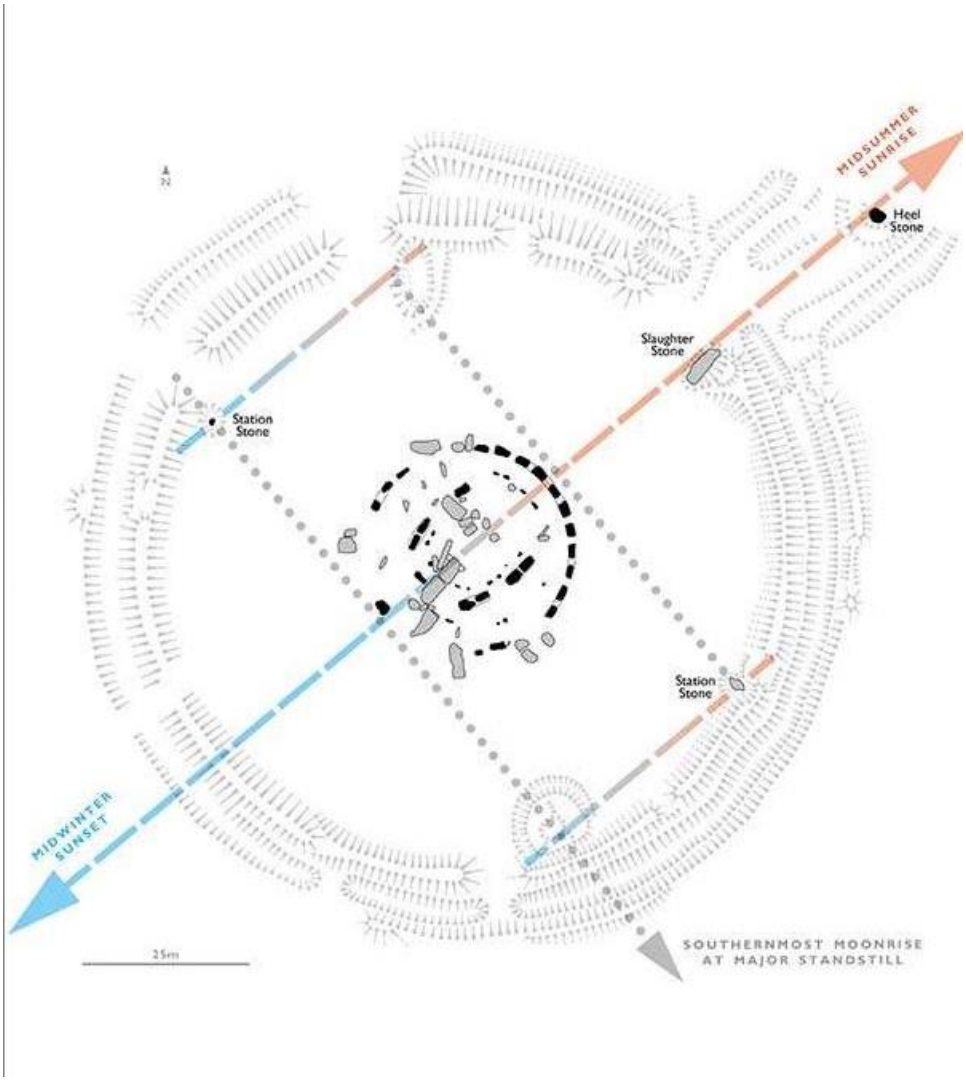


Figure 5-24 The major astronomical alignments at Stonehenge © English Heritage

The main axis of the sarsen horseshoe and the Station Stone rectangle was aligned on the summer solstice sunrise and the winter solstice sunset (Figure 5-24; Ruggles 2015b, 1229). This axis was emphasised by the arrangement of the earlier double bluestone arc, represented by the Q and R holes, which had a pair of elongated pits flanking the axis and also incorporated two bluestone trilithons that perhaps framed the solstice in each direction (Cleal *et al.* 1995, fig 81; Appendix A1.5.12). The solstice alignment was retained when the bluestones were later re-arranged, although this time simply as a larger gap between the stones. The Heel Stone (Figure 5-25) may once have had a partner which stood in Stonehole 97 (Pitts 1982) and stoneholes in the causeway across the ditch suggest that the Slaughter Stone also had at least one partner, represented by Stoneholes D and E (Cleal *et al.* 1995, 284–7), probably forming a corridor that would have framed the rising sun. Standing in the centre of Stonehenge on midwinter's day and looking to the south-west, the setting sun would have set in a narrow slot between the two stones of the tallest trilithon at the head of the sarsen horseshoe, before disappearing into the Altar Stone (Ruggles 2006, 12). The sarsen stones flanking the solstice axis were the most

carefully worked and shaped forming regular rectangular slots that framed the main north-east–south-west axis of the monument (Abbott and Anderson-Whymark 2012, 20, 50–1).

Figure 5-25 Summer solstice sunrise on 20 June 2017. The camera (bottom right) is on the true line of the solstice axis and the sun has already risen above the bank of trees on the horizon (author's photograph)

Early accounts of Stonehenge usually assumed that the significant alignment was towards the summer sunrise (Stukeley 1740, 56; Childe 1940, 109; Hawkes 1962, 168) but more recently archaeologists have favoured the midwinter alignment (e.g., Richards 1991, 127–8). The main approach along the avenue, the more regular and extensively pick-dressed north-east façade, the grading in height of the trilithons towards the head of the horseshoe and the position of the Altar Stone all suggest that the focus lay ahead, i.e., towards the midwinter sunset. In addition, analysis of pig teeth from Durrington Walls suggests that there was a peak of feasting there during the winter months (Albarella and Serjeantson 2002; Wright *et al.* 2014). Another possibility that deserves further consideration is that the shadow of the Heel Stone at midsummer solstice was deemed significant, as it penetrated the outer sarsen circle and possibly reached the interior (Meaden 1992), similar to the shadow marking alignments at Newgrange and Knowth.

A possible lunar alignment at Stonehenge was formed by the Station Stones. The four stones were located at the corners of a rectangle with its short sides parallel to the main solstice axis of the site. The other axis, running north-west to south-east, corresponds roughly to moonrise at the southern major

standstill limit and in the opposite direction, moonset at the northern major limit (Ruggles 1999, 138). It is not possible to know whether this alignment was actively exploited to observe the movements of the moon, or whether it was simply a product of creating the alignment with the sun, which happens to be at right-angles to these lunar events. However, sightlines along this axis were not blocked by the sarsen circle (Ruggles 2015b, 1235).

The section of the Stonehenge Avenue closest to the monument is aligned on the solstice axis (Appendix A1.5.13). Recent excavations have revealed that the avenue banks nearest Stonehenge were built on top of two low natural ridges aligned north-east to south-west, with an area of deep periglacial stripes between them (Allen *et al*. 2016b, 994–6; Figure 4-9). These gullies, 0.5 m deep and 0.4 m wide, were formed through freeze-thaw actions at the end of the last glacial period (Cleal *et al.* 1995, 309; Canti 2013, 7; Allen *et al.* 2016b, 993). The fissures have been found during excavations and geophysical surveys across large parts of the Stonehenge landscape (Evans 1968; Ashbee 1981; Pitts 1982; Evans 1984; Christie 1970; Allen 1995, 43; Baldwin 2010; Linford *et al.* 2012, 9) but those within the avenue banks appear deeper than elsewhere, perhaps because the ridges restricted the flow of water and ice between them (Allen *et al.* 2016b, 994). These chalk ridges might have been visible in prehistoric times, although the periglacial stripes are unlikely to have been readily discernible. Comparisons with the periglacial stripes at Grimes Graves in Norfolk (Allen *et al.* 2016b, fig 7) are not helpful as these are far larger in scale, measuring several metres across.

These natural ridges, fortuitously aligned on the solstice, might have been noticed by Neolithic people and provided an impetus for constructing Stonehenge in this location, much like the geological features of the Upper Allen Valley (Case Study 1). The orientation of the ridges may have been "an affirmation of cosmic harmony" (Allen *et al.* 2016b, 998), providing confirmation that this was a unique and powerful place. This would suggest an interest in solar orientation from the beginning of the life of the monument; alternatively, these ridges were recognised only later, stimulating the design of a monument with a precise alignment. The construction of the avenue banks and ditches at a relatively late stage in the sequence may have merely accentuated these existing natural ridges. Like the passage tombs of Brú na Bóinne (Case Study 7), there appears to be an increasing interest in marking precise alignments and making them readable by a wider audience.

Recently it has been argued that the tallest trilithon (Stones 55 and 56) and the Altar Stone were skewed by about 10° away from perpendicular to the main solar axis, to align them with the winter solstice sunrise to the south-east (Daw 2015). This is an intriguing idea, although any views along the alignment would have been blocked by the outer sarsen circle. It is possible that this was a general principle of alignment rather than for observation, although there are some clues that later changes to the monument in *c*.2200–2200 BC allowed for more precise observations. These include a possible notch cut into the side of Stone 58 (Banton 2011), the right-angled orientation of Bluestone 33e (Pitts 2001, 263–5)

and the irregular positions of the Y and Z holes which suggest that Stones 8 and 9 fell, or were dismantled, early (Atkinson 1956, 34; Cleal *et al.* 1995, 256; Pollard *et al.* 2017, 290). This may have been part of a major and late re-arrangement of the site which emphasised the other solstice events.

The solar alignments at Stonehenge are echoed at other late Neolithic monuments within the same complex (Table 5-1). The concentric timber ovals at Woodhenge were orientated in the same direction, aligned with midsummer sunrise and midwinter sunset (Cunnington 1929, 9–11; Ruggles and Chadburn 2007, 45). The timber Southern Circle was precisely aligned south-east towards midwinter sunrise; midsummer sunset is not visible in the opposite direction due to the uphill slope (Ruggles 2006, 19; Ruggles 2015b, 1232). The Northern Circle, the structure within one of the Western Enclosures and Durrington 68 also had orientations towards the south-east, like other square-in-circle monuments (Pollard 1995b, Thomas 2007, Ruggles 2015b, 1233; Figure 5-16). Coneybury Henge differs in that it has an east-north-east orientation (Ruggles 2006, 17). The short avenue at the eastern entrance to Durrington Walls was aligned on the midsummer solstice sunset towards the north-east (Ruggles 2006, 19–20; Parker Pearson *et al.* 2007, 630). Like the Stonehenge Avenue, this artificial roadway was laid upon a deposit of frost-shattered flint that may formed a 'natural' route along the bottom of the dry valley and was only later accentuated (Allen *et al.* 2016b, 999).

Table 5-1 Orientations of late Neolithic monuments in the Stonehenge complex

Monument or activity	Alignment	Event	Date estimate (cal BC)
Cremation cluster at Stonehenge	South-east	Southernmost moonrise at major standstill	3045–2815
Station Stone long axis at Stonehenge	South-east	Southernmost moonrise at major standstill	Probably 2480–2200
Central stone settings at Stonehenge	South-west and north-east	Midwinter solstice sunset and midsummer solstice sunrise	2585–2400
Stonehenge tallest trilithon, Altar Stone and Bluestone 33e	South-east	Midwinter solstice sunrise	2585–2400 (made clearer 2240–2030?)
Woodhenge	North-east	Midsummer solstice sunrise	Before 2580–2460
Southern Circle	South-east	Midwinter solstice sunrise	2670–2460
Northern Circle	South-east		*c*.2500
Durrington 68	South-east		*c*.2500
Durrington Walls Avenue	North-east	Midsummer solstice sunset	*c*.2500
Western enclosure	South-east		*c*.2500
Coneybury henge	North-east		*c*.2800–2500
Stonehenge Avenue	South-west and north-east	Midwinter solstice sunset and midsummer solstice sunrise	2500–2270

Deposition at these monuments provides further support for solar quartering principles and a focus on the south-east. At the Southern Circle, which developed from a simpler square-in-circle structure, there was a distinct concentration of Grooved Ware pottery, worked flint and antler in the south-east quadrant of the timber rings, around the entrance from the avenue (Pollard 1995a, fig 13). At Woodhenge deposition, particularly of chalk objects, focused on the south-east part of the monument (Appendix A1.5.10). It is possible that spiral and curvilinear motifs on Grooved Ware pottery from this site and others nearby were related to the sun (Pollard 1995a, 139–41; Parker Pearson 2007, 141). It has recently been suggested that a row of six posts close to the Lark Hill enclosure also have a solstitial alignment towards midsummer sunrise (Ruggles et al. 2021). However, the line is slightly curved, and the wider context shows they were part of a much larger intermittent circuit of posts surrounding Durrington Walls and associated with very large pits or shafts (Appendix A1.5.8).

Parker Pearson and colleagues have suggested that this cluster of monuments aligned on the solstices built in the Stonehenge landscape around 2500 BC were planned and constructed as part of a single grand scheme. At midwinter people could have processed from Durrington Walls downstream beside the river to Stonehenge and at midsummer from Stonehenge upstream along the river to Durrington Walls (Parker Pearson *et al.* 2006, 239). These journeys could be envisaged taking place over a single midwinter's day, observing sunrise at the Southern Circle and witnessing sunset at Stonehenge. Ruggles has suggested that those approaching Stonehenge along the avenue at midwinter would have seen the sun set into the monument on approach, perhaps endowing it with sacred power (Ruggles 2006, 21). However, the primacy of human movement along these avenues has been questioned (Chapter 4.3).

Based on the woodworking joints and similarity of plan to Woodhenge and other timber monuments, the sarsen components of Stonehenge comprise a stone version of a timber monument (Whittle 1981; Whittle 1997c; Bowden *et al.* 2015, 47). The sarsen monument, and its probable timber predecessor (Figure A1-28) has clear similarities with square-in-circle monuments (Pollard 2009). The timber phase of Stonehenge had an entrance setting to the south-east and the trilithon horseshoe echoes the four posts and entrance portal of a square-in-circle layout. These do not form an entrance but precisely frame the setting midwinter sun, suggesting that perhaps framing south-easterly events in the sky was important at other square-in-circle monuments. Stonehenge can be placed within this wider late Neolithic continuum of practices but also as distinctly new; such precision had not been attempted since the middle Neolithic constructions of *c*.3000 BC in Ireland, Orkney and North Wales.

The creation of precise alignments at Stonehenge may have created ripples of discontent, of awe and wonder, or of envy. The restricted interior of the monument limited the number of people who could observe the key solstitial events. This was not public spectacle, but a private and exclusive event, or

perhaps one reserved for non-human beings or deities. Darvill has suggested that the spotted dolerite bluestones were specifically brought to Stonehenge because the patterns of white spots looked like stars (Darvill 2015, 12); part of the sky found here on earth. Perhaps that made them particularly appropriate for incorporation into a place where geological features were aligned with the movements of the sun, where the upper world was connected to the underworld. This was a place of communication, an 'axis mundi', where the power of the skies and celestial bodies could be harnessed in ritual and ceremony.

5.7 Conclusion

In the early Neolithic period, long barrows in central and southern England were usually built facing towards the sun rising part of the solar cycle, towards the east. Other forms of early Neolithic activity and monuments (including cursus monuments) do not have a clear and consistent relationship with directionality or the movement of celestial bodies. In the middle Neolithic in Ireland there was a general tradition of aligning some passage tombs towards the solstices and equinoxes and in Orkney, chambered tombs were generally orientated towards the east or south-east. These patterns developed further around 3000 BC when a few large and elaborate passage tombs in Ireland, North Wales and Orkney were built with precise alignments towards solstice events, most of them incorporating features that made these alignments visible to a gathering audience. At the same time, the first phase of Stonehenge was being constructed and used. The activities that took place there during the early phases of the site may initially have referenced the moon.

In the late Neolithic, similar orientation practices emerged in several regions, suggesting a shared wider cosmology across large parts of Britain and Ireland, influencing the orientation of houses and hearths, as well as timber and stone monuments. These communities were also linked by the shared use of Grooved Ware pottery (Thomas 2010). The construction of square-in-circle monuments in the second quarter of the 3rd millennium BC was guided by a strong principle of directionality and orientation to the south-east quarter of the compass. It is striking that early Neolithic long barrows, middle Neolithic Orcadian tombs and late Neolithic square-in-circle structures, built over a period of some 1000 years, all focus towards the south-east. By aligning these structures with a wider cosmic order, places were created that linked to wider principles of place and time, embodying powers that derived from other worlds or beings (Gillings *et al*. 2008, 128). In about 2500 BC, these directional principles were focused and developed in the Stonehenge area in a unique way, with the creation of elaborate and precise alignments (Figure 5-24). It is possible that the idea of precise alignments was revived from older monuments to the north and west.

Figure 5-26 Reconstruction of winter solstice at Stonehenge © English Heritage, drawing by Peter Lorimer

The two horizons of precisely aligned monuments built around 3000 BC and 2500 BC both came at the end of architectural traditions and appear to have been short-lived practices, perhaps representing fragile or unstable social periods. It has been suggested that astronomical alignments helped to make the power of those who constructed or controlled Neolithic monuments unchallengeable, thereby affirming ideological structures and political control (Barrett *et al.* 1991, 56). If this was so, why did these practices not endure for longer? Perhaps those orchestrating these events over-reached themselves in the eyes of the wider community (Figure 5-26). It is tempting to think of these periods as tipping points; certain groups or individuals claiming control over the power of the sun may have been a step too far. It was not simply that the sun or sun-related deity was perceived as powerful by Neolithic people, but that relations with the sun were entangled within complex relationships between different people, mediated through monument building and ritual activities.

6 Time

The previous three chapters have examined questions of power at Neolithic monument complexes by focusing on place; now it is time to focus on chronology. Aspects of time have been touched upon already, including the marking of calendrical time by solar and lunar calendars in Chapter 5, and the suggestion that certain 'natural' surface features might have been perceived as the creation of past beings in Chapter 3. Although monument complexes themselves developed over long periods of time, individual monuments were often rapidly constructed. This contrast raises interesting questions about continuity, and perceptions of time and history among Neolithic people.

This chapter starts from the premise that the archaeological methods that we use to study time profoundly affect the narratives that we write. Our methods deeply affect the types of narratives that we can write about the past; they are not passive observing instruments but are in themselves productive (Barad 2007, 142). The rigorous application of Bayesian chronological frameworks to the interpretation of radiocarbon dates can help us construct detailed and robust chronologies. These have led to sophisticated explorations of human and linear timescales (e.g., Whittle 2018) but there is scope to expand these to include non-human material timescales and non-linear relational temporalities. Philosophical discussions of time and ethnographic examples of how people perceive time will be explored, as well as the relationship between power and time.

Bayesian chronological modelling has huge potential for the creation of detailed narratives for the development of Neolithic monument complexes, as hinted by the early application to Raunds in Northamptonshire (Harding and Healy 2008). Unlike the preceding chapters, which have drawn on evidence from a range of monument complexes from across Britain and Ireland, this chapter will use a single case study, the Dorchester monument complex in Dorset, for which a new and precise narrative will be presented (Figure 6-1) In three nested sections, this exploration will work from a short timescale to the much longer development of the whole monument complex. Starting at the micro-scale (Case Study 10a) by focusing on one monument, it will move outwards to situate this monument within the medium scale of late Neolithic monument construction (Case Study 10b), before concluding at the macro-scale encompassing the emergence and development of the whole complex (Case Study 10c).

6.1 Beyond the revolution?

During the past 30 years, archaeologists have seen major improvements in the precision and statistical modelling of radiocarbon dates, with recent advances characterised as a 'third radiocarbon revolution' (Bayliss 2009; Manning 2015). Bayesian modelling was first applied to archaeology in 1987 on dates from Danebury hillfort (Naylor and Smith 1988) and the approach was developed by Buck and colleagues at sites including Runnymede Bridge and Skara Brae (Buck *et al.* 1991; 1992; 1996). Buck's methodology was reproduced in the first iteration of *OxCal*, released in 1994, and was rapidly adopted as the principal

methodology for radiocarbon dating analysis at English Heritage, now Historic England (Bayliss and Bronk Ramsey 2004, 26). The methodology has since been applied widely in British and Irish archaeology including Neolithic sites such as Stonehenge (Bayliss *et al.* 1997), long barrows (Bayliss and Whittle 2007) and causewayed enclosures (Whittle *et al.* 2011; Bayliss *et al.* 2017; Whittle 2018).

Figure 6-1 Dr Peter Marshall sampling an antler pick from Mount Pleasant henge, as part of the radiocarbon dating project described in this chapter (author's photograph)

Bayesian statistics provide an explicit, quantitative method which combines calibrated radiocarbon dates with archaeological 'prior beliefs' relating to context, stratigraphy and sample type. This gives a model, or sometimes several alternative models, of the chronology of an event, site, artefact type or occurrence (Figure 6-2). The importance of sample selection cannot be over-emphasised, as well as a clear understanding of taphonomy and context. The material dated must be closely related to the archaeological event or context in question, with preference for articulated human and animal bones, worked antler picks directly associated with construction events, or charcoal associated with *in situ* burning or the outer sapwood of charred posts (Bayliss 2015).

Despite some problems with the application of Bayesian statistics and sample selection (Bayliss 2015; Pettitt and Zilhão 2015), such chronological modelling has radically moved forward our understanding of the past, with some surprising results. For example, the construction and funerary use of long barrows in southern Britain was considerably shorter in duration than had been previously assumed (Bayliss and Whittle 2007). Traditional methods of constructing chronologies (pottery, site and monument typologies, and calibrated radiocarbon dates) have tended to smooth over variation and smear out rapid change, leading to a generalised and timeless view of the past, especially for prehistory (Whittle 2018, 14, 166). Now, dates of events can be estimated to within the timescale of a human generation (about 25 years), leading to calls for the abandonment of the term prehistory in favour of history (Whittle 2018, 248; Beck

et al. 2007, 835). As archaeology is uniquely focused on the material record of the human past across all periods, it does not need to claim to be 'history before history' (Olivier 2011, 34) but these methods do provide a level of precision that allows the writing of narratives focused on actions, choices and decisions of people set in specific and contextual networks of knowledge, practices and beliefs (Whittle 2018, 252).

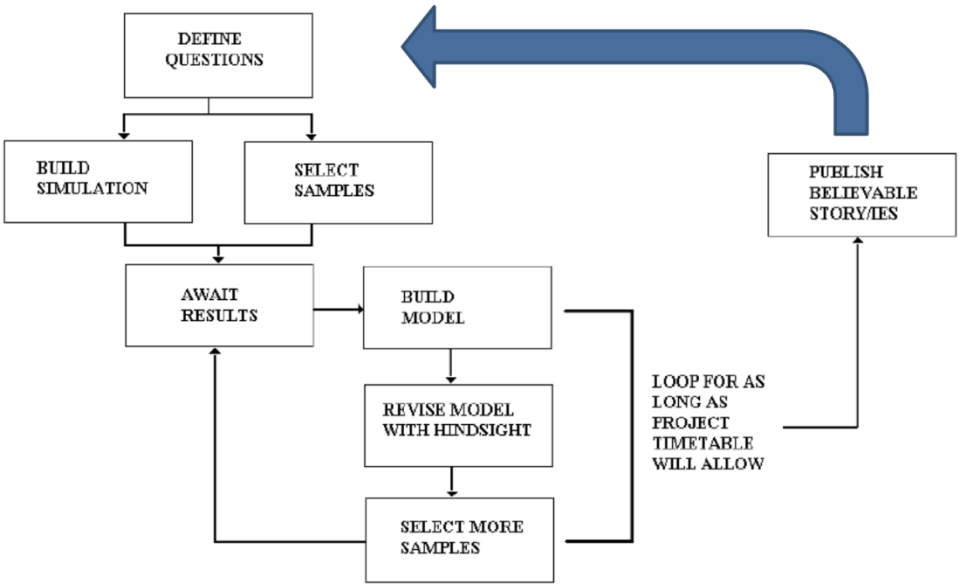


Figure 6-2 Diagram showing the stages in building a Bayesian chronology (Bayliss 2009, fig 9) with feedback loop added to show that published models can lead to new questions or can be further refined

The results of Bayesian radiocarbon dating projects provide a more precise estimate for the duration and longevity of monuments and the tempo of construction. These have been used to estimate the number of human lifetimes or generations involved in projects (Whittle 2018). One evocative narrative developed from this work imagines a traveller walking across Wessex in the 3630s cal BC, meeting groups laying out the middle enclosure at Windmill Hill, witnessing the last elderly mourners at West Kennet long barrow and the burning of Fussell's Lodge (Bayliss and Whittle 2018). However, the logic of 'absolute' chronologies and the search for ever more precise dating is attractive (Karlsson 2001, 51), but might sometimes be misleading. The perspective that time is a uniform, linear phenomenon can be unsatisfactory when dealing with the complexities of the material record (Lucas 2004, 24–31; 2015, 10). Precise radiocarbon dating presents a past composed of discrete packets of time, a succession with transitions between them (Jones 2015). Do these linear and generational timescales accurately reflect how prehistoric people perceived time? We need to consider not only human linear timescales of generations, but also non-linear relational and non-human concepts of time. How do the timescales of materials affect the process of monument construction and decay, and decisions made by the builders and users of these monuments? How might time exist in the relations between monuments, landscape and people? For many Aboriginal Australian groups, time is cyclical and closely related to solar rhythms,

plants, animal behaviour and seasonal changes in climate. Telling time is done by both human and non-humans equally (Strang 2015, 104).

The search for the start of monuments, construction events or the origin of a particular practice often drives the production of radiocarbon chronologies, as they are relatively easy to identify using these methods. Were these the most important temporal moment for those who conceived, built and used monuments? The meaning of a monument became established over time by common readership, rhythms of use and re-use, visitation and patterns of deposition and abandonment. The meaning and significance of a monument does not lie in the reason for its construction "but was emergent through the struggle to interpret the significance of that place within its landscape, a struggle that predated the building of the monument and encompassed the consequences of its construction" (Barrett 1999, 27–8). The most important element was not necessarily the final form, but the stages and activities that took place at a monument (Bradley 2020, 3). By constructing a chronology for an entire monument complex, these prior activities, and episodes of later re-use, will become clearer and can be used as an orientating device (Gosden 1994, 15; Bradley 2002, 7). A sense of how the past, materials and non-linear time might have structured decisions and relate to power will hopefully emerge.

6.2 Thinking through time

A useful point for starting to think about time is the work of Bergson, a French philosopher who distinguished between lived time as personally experienced, which he termed 'real duration', and the mechanistic time of science and clocks (Bergson 2013). Mechanistic time, he argued, was based on misperception: it consists of superimposing spatial concepts on to time, which then becomes a distorted version of the continuous flow of time; as soon as we measure or represent time, we betray it (Lucas 2004, 22). This stands in contrast to our own qualitative or 'lived' experience of time; we experience a very different concept of time stood on a cold platform waiting for a train, compared to a convivial evening in the pub. More memories are laid down during a traumatic, stressful or emotional event, so the brain perceives these moments as slowed down (Eagleman 2009). Time is a quality of human involvement with the world (Gosden 1994, 1); it is therefore relational.

Bergson's concepts of time were adopted and expanded by other phenomenological philosophers. Heidegger (1996) critiqued the idea of time as uniform, linear and infinite. Again, he was not concerned with 'clock time' but with 'lived time', as an interlocked combination of future, present and past. Humans look and act towards the future, but what comes out is their past, their personal and cultural baggage, their 'having-been-ness' (Critchley 2009). Ricoeur (1988) attempted to reconcile these categories in his notion of 'human time', in which time is experienced as both a linear progression but also grouped into past, present and future. He argued that individuals construct their own subjective narrative milestones, based on the prioritising and selection of certain events. Husserl (1964) coined two useful terms: retention, the sedimentation of past experiences as the active starting point for the present, and

protention, the shape and direction of actions related to intention for the future. These two terms represent intention, which gives shape to time. Merleau-Ponty emphasised that these terms do not necessarily simply relate to the perspective of an individual person but also to their surrounding environment and perceptual field; “time is not a line, but a network of intentionalities” (Merleau-Ponty 2002, 484). These ideas are supported by the multiple and varied ways in which people perceive time. There is no one way of relating to the past and future, and there are multiple narratives in every society that encompass the passage of time and knowledge of the past (Bloch 1998, 80, 108). Geertz (1966) in his study of Balinese culture and Itéanu (1999) who researched the Orokawai of Papau New Guinea, both found that time in these societies was not linear but qualitative and subjective, and closely related to notions of personhood, social status and role. Time for these people is a quantity that can be manipulated by social actors, exemplified by the Orokaiva man with a wristwatch, who explains “Yes, a watch is very handy. That way, when I look at it and I see that it reads four o’clock while I think it is seven, I know that someone has bewitched the time” (Itéanu 1999, 277).

A useful metaphor to capture these interlocking perceptions of time was used by Serres in conversation with Latour (Serres and Latour 1995, 60). He asks us to imagine a handkerchief that has been carefully folded into a pocket. Each layer of the handkerchief is a date or period (the Neolithic or 2458 BC) with contemporary events occurring on each separate layer. Now imagine that the handkerchief, instead of being neatly folded, is completely scrunched up. Contemporaneity is now defined as the relation between two or more points of the fabric, across past, present and future (Lucas 2015, 10). This is a useful way of imagining how objects, monuments and landscape features persist through time, how they collapse the past so that it touches the present. Time is non-linear, entangled and relational. Witmore has taken this metaphor further by adding disorder and turbulence to time, suggesting that it is better understood as a fluid – passing and turning back on itself in a series of eddies and counter-currents (Witmore 2006, 279). In this way, the surviving materialities of the past are still with us; to use another of Seres’ terms, they ‘percolate’ through time (Seres 1997, 15). Different events, objects and structures have different ‘echo’ or retention lengths; events further back in time might have more impact than something more recent (Lucas 2004, 26; Jones 2007a, 57). “Understanding that the space inhabited by the past is not the past itself but the present, and only the present, is a fundamental realisation” (Olivier 2011, 49). As a first step towards exploring relational, non-linear and non-human properties of time, the first part of the case study will focus on Greyhound Yard palisaded enclosure.

Case Study 10a - Greyhound Yard palisaded enclosure

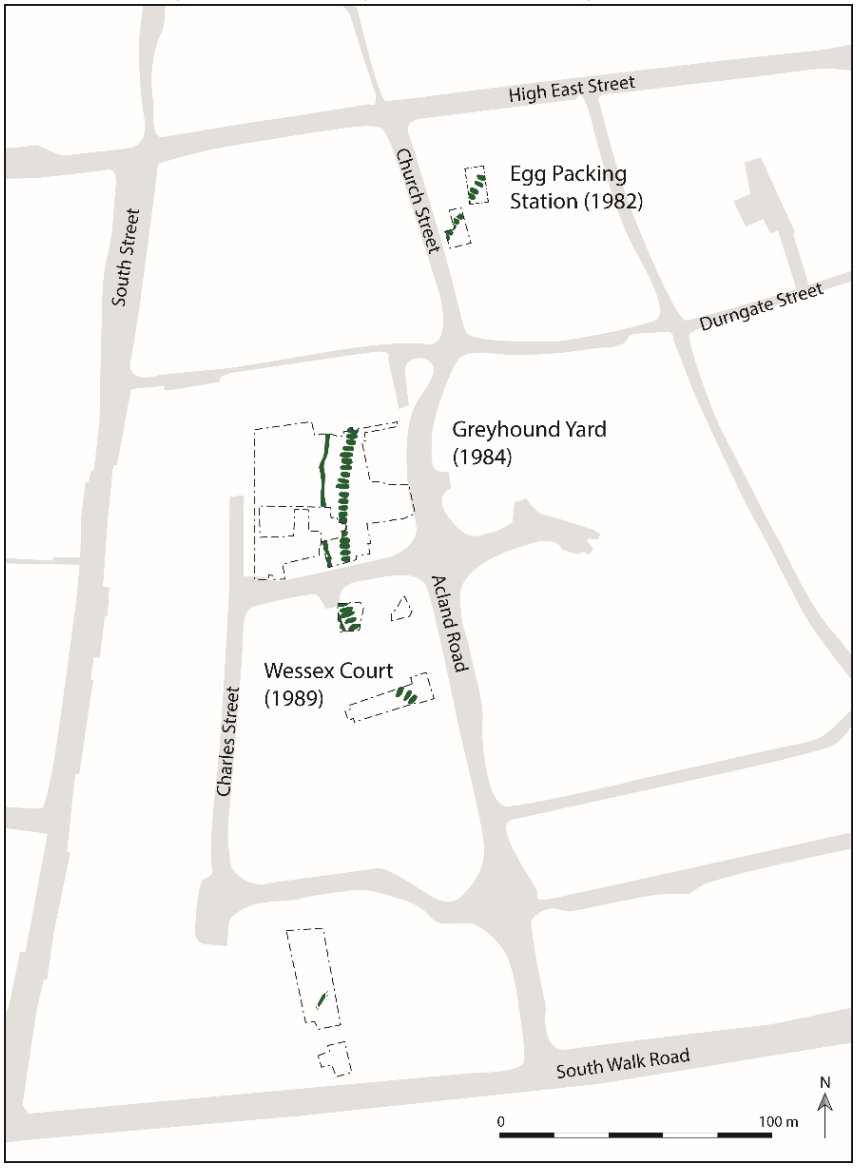


Figure 6-3 Plan of all excavated post-pits and external gully forming part of the Greyhound Yard palisaded enclosure (after Adam *et al.* 1992, fig 2)

A full description of Greyhound Yard, a *c*.380 m diameter palisaded enclosure constructed of large timber post (Figure 6-3), is provided in Appendix A3.5.2. Twelve new radiocarbon dates on red deer antler picks have been obtained as part of this thesis, which are likely to be functionally related to the digging of the post pits and ramps, and on five pieces of oak charcoal from the posts themselves, mostly sapwood. Using Bayesian statistics, modelling of these radiocarbon dates together with six previously obtained dates, has provided a precise estimate for the construction of this palisaded enclosure (Figures 6-4 and 6-5). The trees were felled and set upright in *2485–2420 cal BC* (*95% probability*, Figure 6-5a: combine *build_dorchester*), probably in *2470–2445 cal BC* (*68% probability*). The dates match well with the Grooved Ware and flint assemblage found in the post-holes (Woodward *et al.* 1993, 315).

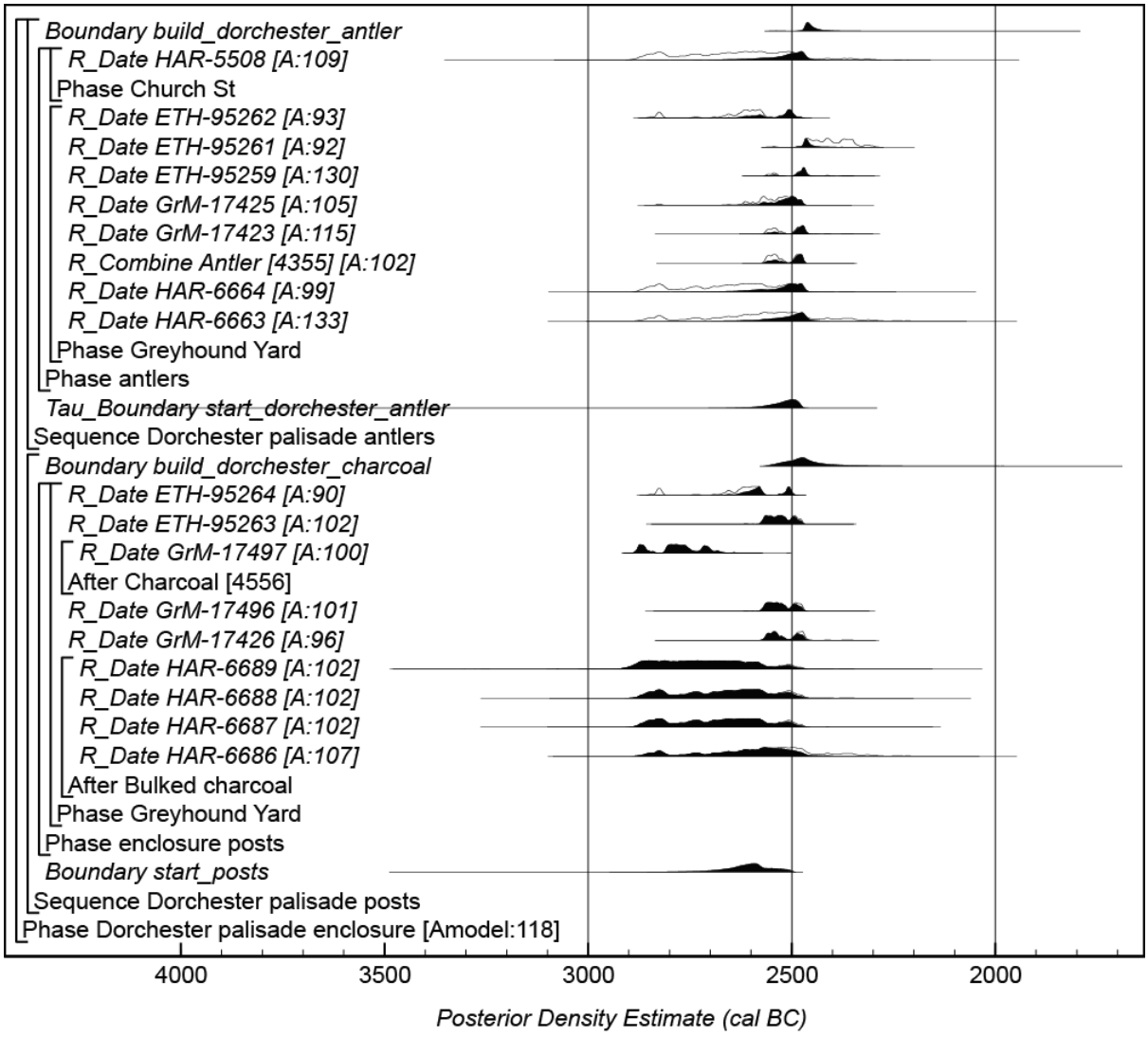
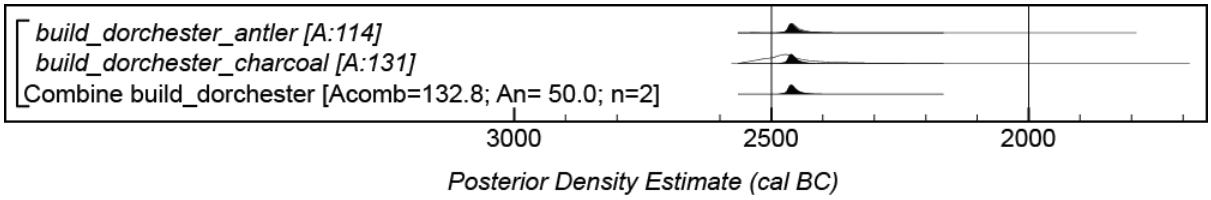


Figure 6-4 Probability distribution of dates from Greyhound Yard. Each distribution represents the relative probability that an event occurs at a particular time. For each of the dates two distributions have been plotted: one in outline, which is the result of simple radiocarbon calibration, and a solid black one, based on the chronological model. The large square brackets down the left-hand side of the diagram, along with the OxCal keywords (e.g., sequence, phase, after), define the overall model exactly. With thanks to Dr Peter Marshall

This is the first palisaded enclosure in Britain to be dated with such precision and provides an orientating device for further exploration of the temporalities bound up in its construction and use. The date estimate places Greyhound Yard into the latest Neolithic or Chalcolithic period, a time when major changes were on the near horizon, if not already underway, in southern England (Case Study 10c). The dating suggests that at least the excavated portion of the enclosure is likely to have been built in one episode, within the duration of a single human lifetime and probably considerably less, perhaps even within one year or season. This is supported by close similarities in the form of each post-pit (Woodward *et al.* 1993, 24, 30). A shallow gully outside the post-pits (Figure 6-3) was rapidly infilled and may have been a method of laying out the circle. This also implies that the design was conceived as a unified whole, rather than the monument emerging from the repeated erected of posts at different times.



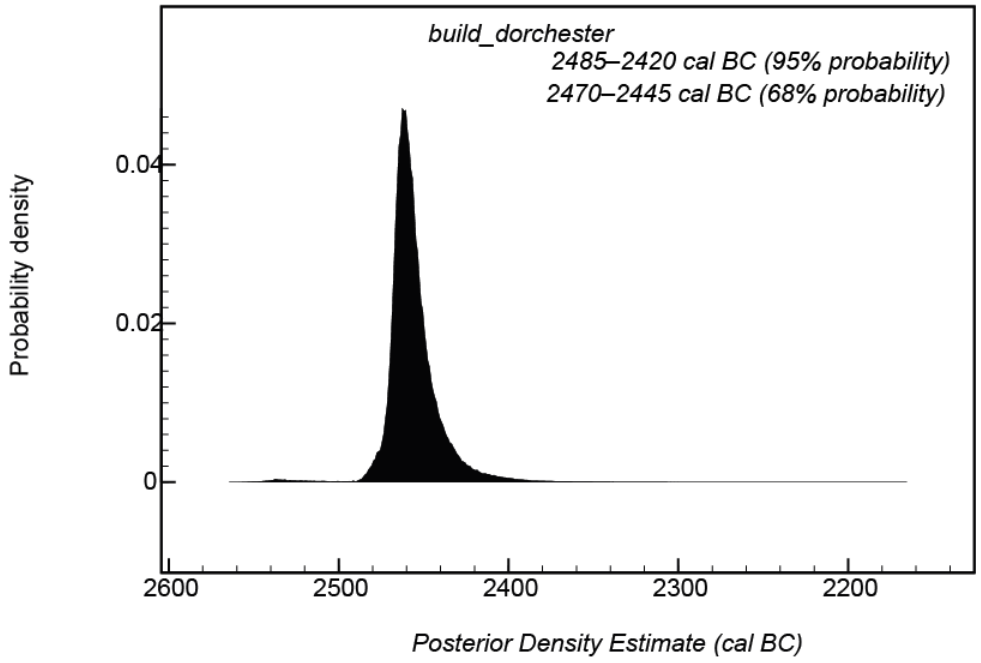


Figure 6-5 Probability distributions for the estimated date of construction of Greyhound Yard (the distribution is derived from the model shown in Figure 6-4). (a) Probability distributions for the construction of Greyhound Yard, as modelled from antler picks and post charcoal, showing the close match between the two types of sample (b) Probability distribution of the construction of Greyhound Yard palisaded enclosure. With thanks to Dr Peter Marshall

The construction would have been a memorable and vivid occasion for those involved (Figure 6-6), requiring forward planning to gather the antler picks, make ropes, and dig each posthole. Based on the plentiful pig bones found at the site, the site has parallels with nearby Mount Pleasant (Case Study 10b), as well as the late Neolithic settlement and feasting sites of Durrington Walls and Marden (Woodward *et al*. 1993, 315). These bones were concentrated in the backfill of the post ramps and in the post-pipe infill suggesting that feasting took place at the time of the monument's construction. Ethnographic accounts of feasting suggest that these occasions may have involved the negotiation of power relations, involving elements of political and social competition (Nairn 1976; Hayden 2014). The preparation work for such feasts and the debts thereby created would have stretched over a much longer period, both into the past and the future. In this sense there was no separation between everyday time and ritual or sacred time (Ingold 1993, 160, *contra* Durkheim 1912).

Building the palisade drew on knowledge of other similar practices and monuments elsewhere that had come before (Gell 1998, 234); retentions from the past (Husserl 1964). The monument was constructed very shortly after the building of a similar palisade within Mount Pleasant henge, where there is also evidence for feasting – was this a replacement of one structure with another, or were the two used contemporaneously? Greyhound Yard may have been a reaction to past activities within the dry coombe that it surrounds – perhaps it monumentalised or wrapped (Richards 2013b) a potent place, closing off or changing the way it could be approached or used. Alternatively, it may have created an arena suitable for future rituals and feasts or to subsequent movements or behaviour; protentions aimed at the future (Husserl 1964).

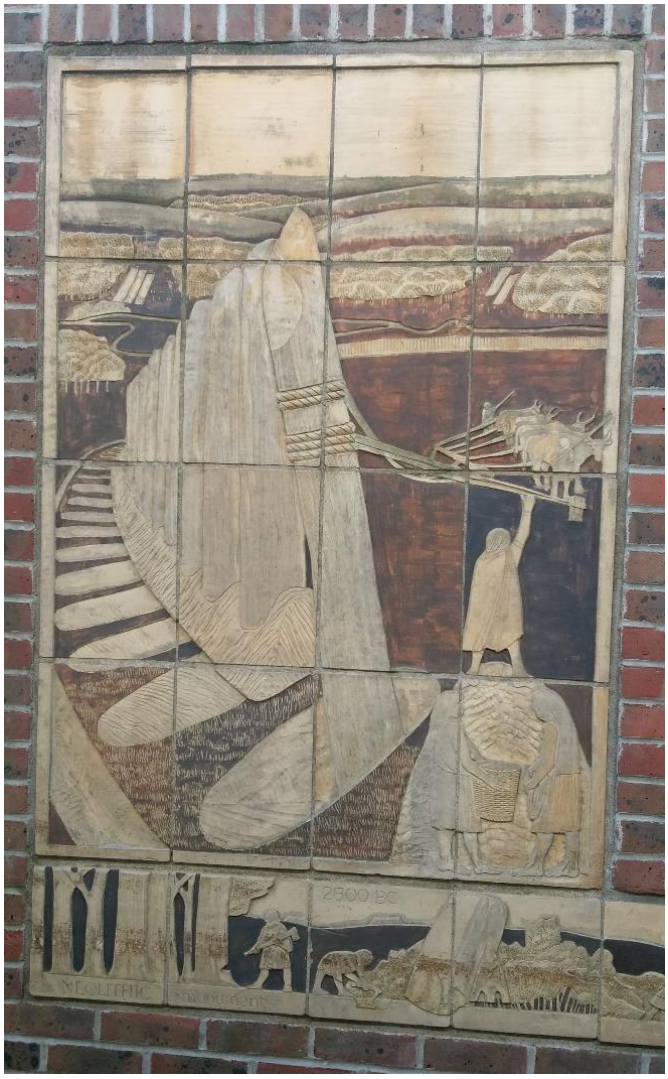


Figure 6-6 A mural on the wall of the supermarket built over Greyhound Yard provides an artist's impression of the construction of the palisaded enclosure (author's photograph)

Like most palisaded enclosures in Britain, the standing posts of the enclosure at Greyhound Yard were charred, with the postholes containing large quantities of charcoal. If this burning took place in one episode, such a conflagration would have provided a 'flashbulb memory' in the minds of people present; either a positive communal experience or a negative association of loss, conflict and destruction, or

perhaps both depending on the person (Thomas 2000; Noble 2006b, 58; Brophy *et al.* 2017). The charcoal extended through the length of the post-pipes (Woodward *et al.* 1993, 24), which would have required intense burning and high temperatures. The smell and sound of the conflagration, although transient, would have remained long in the memory (Witmore 2006; Jones 2007a, 157). An alternative explanation is that the charring was undertaken deliberately during the construction of the enclosure, either to preserve the posts against rotting or for aesthetic reasons (Figure 6-7).

Figure 6-7 King and Queen, 1991 by David Nash. Sculpture, charred oak, 3.55m tall. If carried out beforehand, black charred posts against the white chalk would have formed a dramatic visual impression © David Nash

So far, the temporalities discussed have been focused on human timeframes: decisions, planning, debts and memories. But Greyhound Yard also enfolds non-human temporalities. The estimated diameter of the mature oak posts of 0.8–1.2 m (Woodward *et al.* 1993, 349), tells us that the trees were between 100 and 180 years old when felled; they had prior histories stretching back well beyond individual human memories. Appropriate ceremonies may have needed to take place before felling these ancient trees. The choice of materials for monuments provided a means of marking temporal spans in different ways, choosing durability or impermanence (Jones 2007a, 50). Materials are vibrant and have different timescales contained in their production and decay (Gosden 1994, 125). As a substance, wood changes – it rots, crumbles and decays, mapping the passing of time (Fowler 2003; Thomas 2004, 183). Those building this monument in timber would have known that it would not endure as long as the nearby henge banks and ditches of Mount Pleasant.

Animals, birds and insects will inhabit rotten wood, gnaw at the bark or dig at the base of posts. Moss, lichens and fungi grow. The decay of a free-standing timber monument would not have been gradual. Vertical timbers, if left, will eventually rot through at ground level and collapse quite dramatically, possibly setting off a domino effect with several posts falling at once. Among Ponca and Omaha Native American communities, wooden poles could be revered as sacred mysteries, embodied ancestors and living beings. As they decay, the posts lean and therefore point; they receive offerings, are routinely attended to, and are provided with their own sacred bundles (Pauketat 2012, 83). It is possible that these dramatic changes at Greyhound Yard were carefully interpreted by later visitors to the monument. The falling of a post might reveal something about the past or even predict the future; it might be thought of as having agency or power. An episodically decaying monument would have been an active and dynamic place, ripe for interpretation and potentially influencing human actions. In return, people may have actively intervened to speed up or extend this process of decay, thereby influencing the passing of time. The decision to char the posts may have been a deliberate method to prolong the life of the monument.

Beyond a single new estimate for the construction of the Greyhound Yard palisaded enclosure derived from radiocarbon dates, the human and non-human temporalities entangled in the life of this monument can be explored. These extended back into the past and forward into the future, and through human intra-actions with these materials (Barad 2007), time itself could be altered and the power of non-human materials made evident.

6.3 The power of time

Temporality is a condition of social practice and closely related to power relations. It is not neutral but related to social control (Shanks and Tilley 1987, 127–36), through performance of commemorative ceremonies, repeated bodily practices or public rituals (Connerton 1989; Rowlands 1993, 142). These ceremonies would have been crucial for the perpetuation of traditions and social memory. This aspect of time has been characterised as ‘ritual time’ (Durkheim 1912), ‘sacred time’ (Eliade 1959, 68) and ‘public time’, as “the main area for the operation of forms of power” (Gosden 1994, 137). Although many cultural rituals provide a sense of atemporality, by opening access to other intangible worlds, through song, dance, storytelling, trances or performances (Strang 2015, 115), there is a danger in separating out these forms of time from the everyday, as they were clearly intertwined – for example, in the long-term planning for ceremonial feasts at Greyhound Yard. The synchronised times of feasts and gatherings, and the events of monument construction, would have been occasions that memorably punctuated the lives of late Neolithic people, but their planning and impact would have operated over far more extended timescales. In this sense any power relations would also have extended out beyond the monuments and specific events.

Monuments were not built in isolation. The presence of earlier monuments, settlement sites and activity areas influenced the decisions of later people to build monuments in the same or nearby places, leading

to the emergence of monument complexes. Older monuments might be incorporated within, surrounded, deliberately overlain or in other ways referenced through the location, form or alignment of later monuments. Bradley (2002, 147) has identified three processes that are important in this process: legitimation, confrontation and interpretation. Legitimation is the seeking of authority from the past, by emphasising links to ancient sites. Interpretation is the re-inscription of monuments with altered meanings and new purposes, often with the invention of new traditions to make the present seem natural and timeless (Hobsbawn and Ranger 1983; Shanks and Tilley 1987, 181). For example, the Iron Age royal capital at Tara gained its power from being formed out of the surviving remains of earlier prehistoric monuments, no doubt re-interpreted (Figure 6-8). Confrontation comprises building practices that undermine authority, assert different values or enact resistance. For example, the breaking up and re-use of decorated stone menhirs in Brittany within megalithic tombs could be interpreted as iconoclasm (Bradley 2002, 36–41). Something similar could be proposed for the destruction of passage tomb Site Z near Newgrange (Appendix A4.4.3), the transport of part of a standing bluestone monument from the Preseli Hills to Salisbury Plain (Case Study 5) or the destruction of Site IV at Mount Pleasant (see below).

Figure 6-8 The Neolithic passage tomb of the Mound of Hostages, Tara, in Co. Meath, Ireland, seen here in the background, was used for burial in the late 4th millennium BC (Bayliss and O'Sullivan 2013). A series of timber and earth monuments were built here from the Neolithic to the Iron Age, the site later enshrined in Irish mythology as the inauguration place and seat of the High Kings of Ireland. The stone in the foreground once stood just outside the main tomb and was later moved (author's photograph)

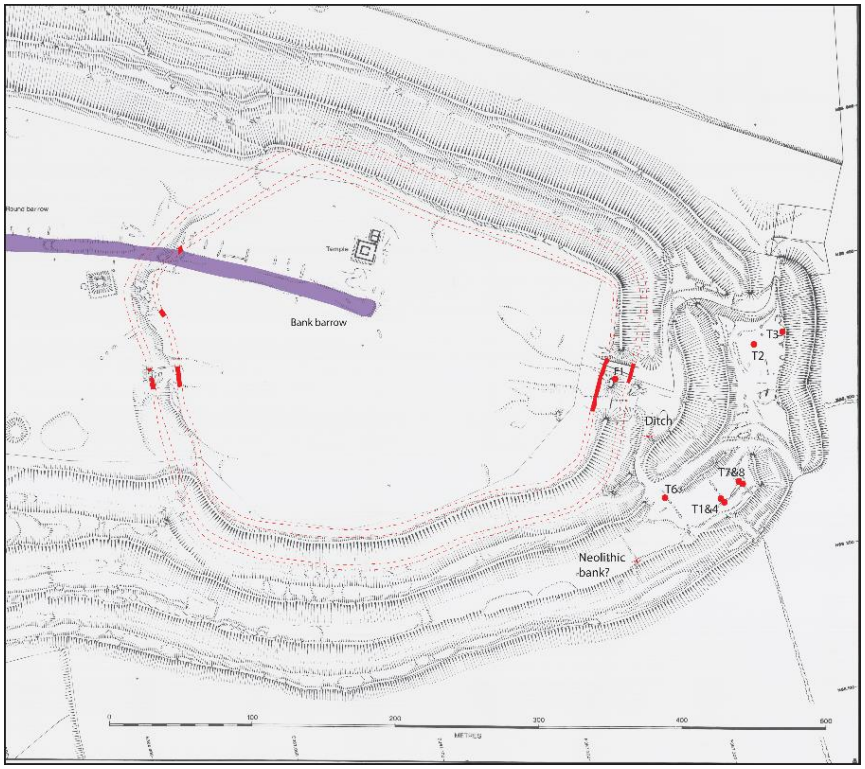


Figure 6-9 Part of the RCHME earthwork survey of Maiden Castle hillfort, showing the position of the Neolithic causewayed enclosure that encompassed the eastern end of the hilltop. The earthworks of the ditches have only been uncovered for short stetches, although the shape of the enclosure was fossilised in the plan of the eastern end of the later hillfort. The bank barrow or 'long mound' and Neolithic pits outside the eastern entrance are also marked on this plan © Historic England Archive 832716

One radical change that could be made to a monument was the imposition of an entirely different form over another. This rarely occurred suggesting that respect and avoidance was more common, but examples include the construction of a bank barrow over the causewayed enclosure at Maiden Castle in Dorset (Sharples 1991; Figure 6-9), the construction of cursus monuments over earlier enclosures at Etton and Maxey in Cambridgeshire (Pryor 1999) and the construction of a henge monument directly over the cursus monument at Thornborough in North Yorkshire (Harding 2013). Whether these superimpositions comprised confrontations or were "a symbolic means of transferring the ideological importance of the old site to its successors" (Pryor 1999, 373) is unknown; the interval between construction events might be crucial in interpreting these actions (see Case Study 10c). In either case, the new monument gained some power from its position directly over the older site.

Some authors (Rowlands 1993; Gosden and Lock 1998) have emphasised that something very old derives its contemporary power from age and obscure origins. Although we cannot assume a modern sense of linear time existed in the past (Bradley 2002, 123), due to their familiarity with constructing monuments Neolithic people would have been able to recognise when something was built in times before their own. This patina of time, evident as eroded and subtle earthworks, collapsed structures or the hollows of old pits, may have been viewed as powerful places. Examples may include the early Neolithic tree throw hollow and pits selected as the locations of Woodhenge and Flagstones, or the varied activities the preceded the construction of long barrows in the Avebury landscape (Table A2-1). However, people may

not have seen these remains as dating from a specific period of history or even deriving from human time at all; they may equally have been associated with other beings or mythical ancestors. Equally, when people were constructing or altering monuments, they would have been familiar with the properties of materials and slopes, knowing that steep-sided narrow ditches or deep shafts would have soon become rapidly backfilled through natural processes of erosion. In Chapter 3.3 it was suggested that these may have been dug on purpose, to allow the 'acting back' of the underworld to be observed. People would have known that incredibly deep and large ditches such as those surrounding Marden henge, or large carefully built mounds such as Silbury Hill would have lasted for an extremely long time, whereas narrow shafts like those at Maumbury Rings would have filled more quickly. Communities were making deliberate choices to mark temporal spans not only through the materials employed (Jones 2007a, 50) but also the forms of monuments.

Parker Pearson and Ramilisonina (1998a and b) have equated the stone monument of Stonehenge with a place of the ancestors, contrasting it with the timber monuments of nearby Durrington Walls which they suggest were connected to the ceremonial activities of the living (Appendix A1.5.14). The theory draws on analogy with understandings among people in present-day Madagascar who build stone monuments for the ancestors and timber houses are for the living. It relates materiality closely to duration; stone as durable, long-lived and unchanging, versus timbers that alter dramatically over time. Although stone as durable appears obvious to our modern sensibilities, it is not always seen as a single material category and uniform engagement with materials cannot be presumed (Conneller 2011, 125; Richards 2013a, 26; Section 3.2). "A sacred stone is venerated because it is sacred, not because it is a stone" (Eliade 1959, 118). Some stones were set into perhaps deliberately shallow stoneholes and may not have stayed upright for long, for example at Arbor Low stone circle in Derbyshire. Although Stonehenge was built using stone, it was constructed in the form of a timber monument, using joints and methods from woodworking. The site plays with, or reverses, normal ideas of material time (Harris and Crellin 2018), suggesting that these categories were recognised and could be subverted. The monument probably replaced an earlier concentric timber structure (Appendix A1.5.3) and therefore its material affordances are not as clear cut as Parker Pearson and Ramilisonina's theory implies. Although Stonehenge was used as a cremation cemetery for the first few hundred years (Parker Pearson *et al.* 2009) it is difficult to know whether this funerary understanding of the monument was retained and modified throughout its long use and multiple phases.

6.4 Categorising time

Do archaeological ways of categorising time into different scales help in understanding how time may have been perceived by prehistoric people? Archaeologists have taken inspiration from the work of Braudel and the French *Annales* School (e.g., Hodder 1990; Knapp 1992). Braudel distinguished between the rapidly changing history of events taking place over months or years, the medium-term trends of

social and economic cycles over two to three centuries and the *longue durée*, slow environmental changes at the landscape scale of many centuries or even millennia (Braudel 1972). Braudel was reacting against histories that focused only on events; he was trying to get at the macro-scale of history, *total history* (Olivier 2006, 91) or in recent parlance, 'big history' (Robb and Pauketat 2013). Whittle (2018, 30) has suggested that Bayesian analysis of radiocarbon dates allows us to finally perceive Braudel's middle term 'conjunctures', events at the scale of lifetimes and generations. However, Braudel's schema is not without its problems. Individual human agency tends to be relegated to the short-term, having no effect on longer-term structures (McGlade 1999, 146) and the *longue durée* appears to privilege biological and geographical factors over the social (Gosden 1994, 135). Employing different concepts at different scales prevents a genuinely multi-scalar past from emerging and it can be difficult to perceive how the short-term and long-term interact (Knapp 1992, 9). "Something happens even to the most stable structures. In particular, it happens that they die" (Ricoeur 1988, 225).

Commonly cited is Gosden and Lock's (1998) proposed division of time into short-term genealogical history, and long-term mythical history. Unfortunately, this rather simplistic division is not borne out by ethnographic studies, including among Australian Aboriginal societies where this schema supposedly originated (via Rumsey 1994). A more detailed categorisation has been devised by Whittle (*et al.* 2011; Figure 6-10). Here social memory is suggested as transmission over five to six generations, with myths over much longer timescales, or outside of time altogether (Whittle *et al.* 2011, 912). The idea that mythical time might be non-linear, and existing outside or alongside of human timescales is important, but there might not be a hard and fast division between these two 'types' of time or history.

How do social memories, principles or understandings persist? How long does the past endure? Many archaeologists have found the concept of memory useful in discussing time (van Dyke and Alcock 2003; Jones 2007a; Mills and Walker 2008; Olivier 2011; Pollard 2012; De Nardi *et al.* 2019). Most follow the influential ideas of Halbwachs (1950) and Connerton (1989), that memory is not simply individual and abstract, but social and collective, something that is performed and participatory (Jones 2007a, 26–30; Souvatzi *et al.* 2019, 9). However, Connerton's (1989, 1) statement that "control of a society's memory largely conditions the hierarchy of power" can be questioned. Memory's mutability makes it possible for multiple and conflicting versions of events to co-exist (van Dyke and Alcock 2003, 3). Each recollection or retelling has the capacity to alter and adjust the story (Halbwachs 1950; Middleton and Edwards 1997; Olivier 2011, 70). Social memories emerge not through coercive power but through common readings within a set of accepted principles (Barrett 1999, 29).

Bradley (2002, 8) proposed a maximum period of 200 years for the active remembrance of past events through oral transmission. This has since been cited by Müller (2018, 9) who suggests that social memories become unstable after 150–200 years. However, far shorter, and far longer examples of social memory or oral histories exist, with the recall of genealogical lineages sometimes stretching back over

extremely long timespans. Whittle *et al.* (2011, 912) cite the cases of 14–17 generations in the case of the Tiv of west Africa and 34 in the case of the Maori of New Zealand. Several Australian Aboriginal groups have stories relating to coastal drowning that took place around 7000 years ago, an event that transcends time (Nunn and Reid 2016; Nunn 2018). However, other societies have no interest in recalling the passing of generations. For example, the Achuar who live in the rainforests of the Ecuador-Peru borderland only recall back two generations at most, showing "a remarkable indifference towards the past" (Descola 1998, 223). These examples show that there no universal method of being in time, of conceiving of the past, nor relating the past to the present. For this reason, it is important that we do not impose our own categories or assumptions on the perception of the past and future onto the Neolithic but work from the archaeological evidence.

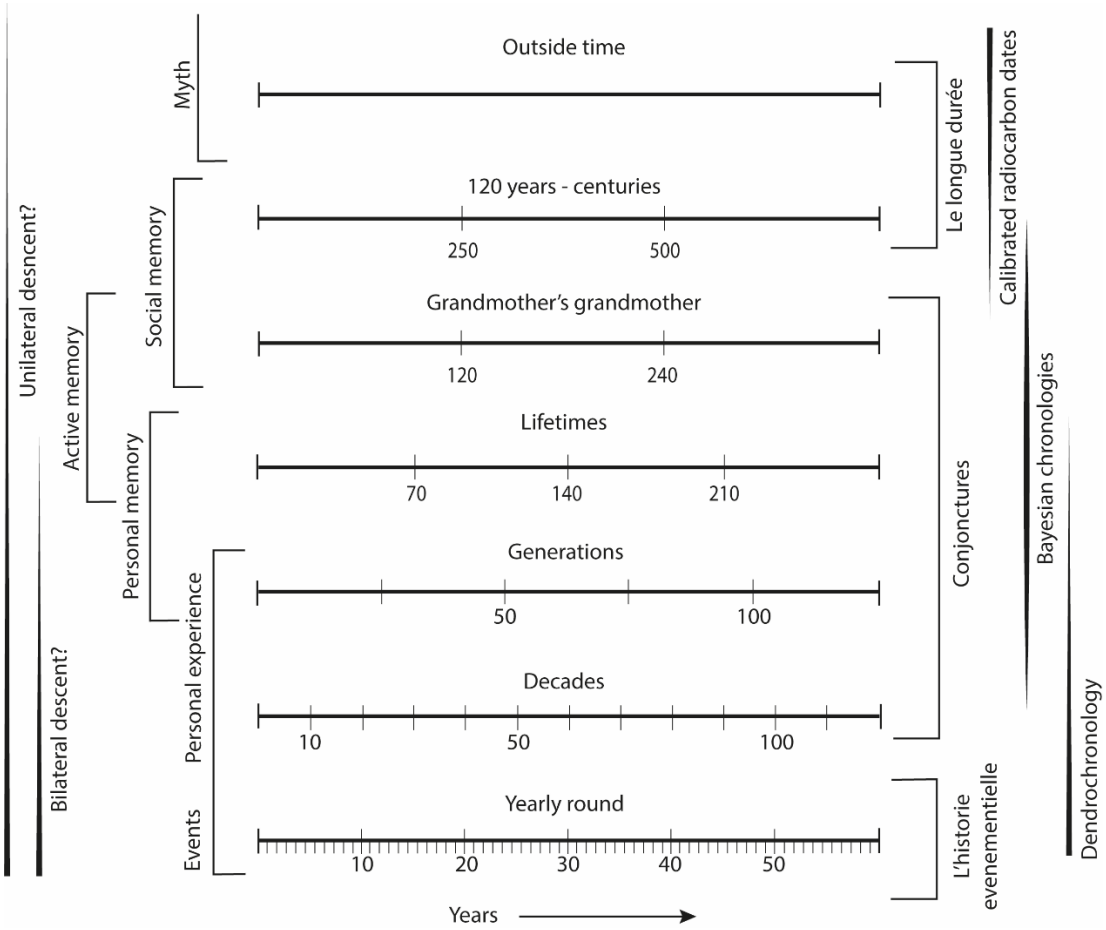


Figure 6-10 A diagram of human timescales (Whittle *et al.* 2011, fig 15.28). Braudel's time categories are shown alongside timescales obtained by different methodologies, and against several categories of personal and social time

Other methods of categorising time, such as Bailey's 'time perspectivism' (Bailey 2007), Gosden's harmonious, disjointed and concatenating time (Gosden 1994, 126) and Corfield's 'trialectical' dynamic between deep continuity, gradual change and discontinuous change (Corfield 2007), all help to draw our attention to the unevenness and multi-layered aspect of time. More useful from a relational perspective is Olivier's discussion of the princely grave of Hochdorf where he identifies three types of timescales: the long-term funerary dynamics of the Hallstatt period; the medium-term dynamics of the arrangement of

the corpse and grave goods according to local practices of around 100 years duration and the short timescale of recently imported grave goods (Olivier 1999, 117–8). These are not proposed as universal time categories but are site- and context-specific, emerging from a detailed assessment of the archaeological evidence.

Müller (2018) has mapped potential chronological categories on to the durations of monuments and activities. He gives the example of the Albersdorf-Dieksknüll causewayed enclosure in northern Germany, where re-cutting of segmented ditches took place every 1–3 generations, with the intervals between episodes getting longer into the middle Neolithic, eventually reaching a 220-year time interval. Müller interprets this as a shift from ancestral memorialisation to social and perhaps mystical memory. However, caution is needed. These are not universal categories and do not adequately reflect the non-linear and relational nature of time, nor of non-human material timescales such as the erosion and filling of ditches or the rotting of posts. A multitude of other reasons could have influenced the frequency with which the causewayed enclosure ditches were re-cut, relating to wider social and ritual requirements for this re-invigoration or re-inscription of the site, or material processes of decay and movement.

Case Study 10b - Late Neolithic Dorchester

Greyhound Yard palisaded enclosure was not isolated; it formed part of a wider complex. New radiocarbon dates for all the major monuments of this Dorchester cluster have been obtained as part of this study. With the help of Dr Peter Marshall, these have been analysed using Bayesian statistics to produce detailed models for the date of their construction and where possible, episodes of alteration and the duration of their use. There are now precise estimates for the construction dates of not only Greyhound Yard, but also nearby Maumbury Rings, Flagstones enclosure and Mount Pleasant henge. The full radiocarbon date list for these sites can be found in Table A3-1. A more detailed discussion of the sample selection and model construction has been published for Mount Pleasant (Greaney *et al*. 2020) and similar papers are in preparation for the other monuments.

Figure 6-11 plots the probability of the construction dates of the constituent parts of the Dorchester monument complex that were built in the late Neolithic period, including Greyhound Yard. It shows that their construction took place over a relatively restricted period in the centuries either side of 2500 BC, during an intense 'building boom'. The estimated difference between the Mount Pleasant henge, likely the earliest construction event in this period, and Maumbury Rings, likely the final construction, is 45–255 years (*95% probability*), probably 105–195 years (*68% probability*). This provides an estimate for the duration of this burst of construction activity of perhaps four to eight generations, people whose lives must have been dominated by sustained and regular monument construction and alteration.

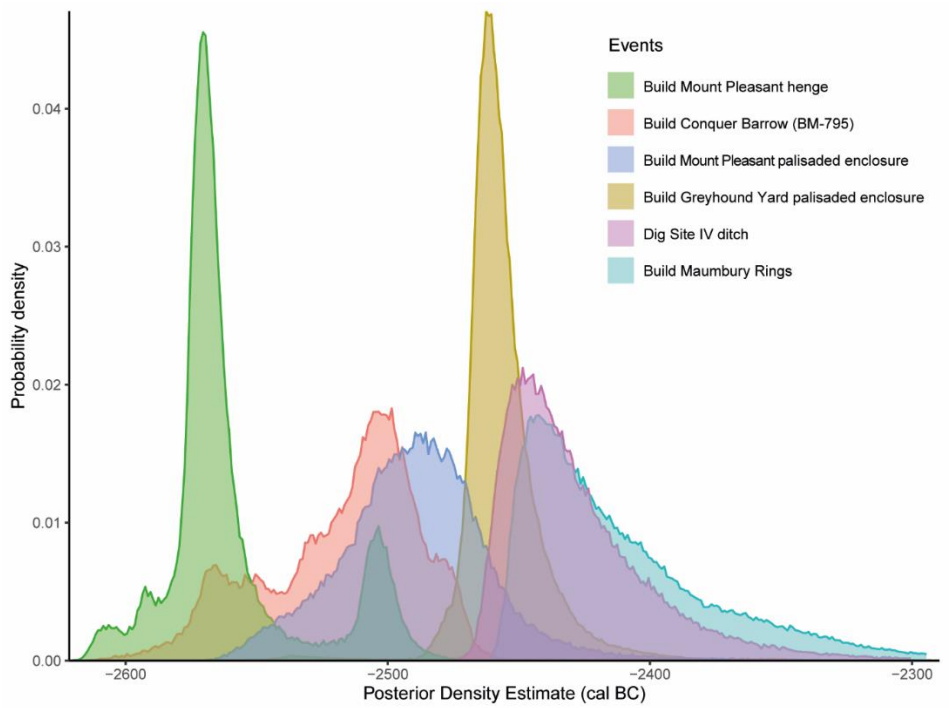


Figure 6-11 Probability distributions of the construction dates of late Neolithic monuments in the Dorchester complex. With thanks to Dr Peter Marshall

The first major construction activity in this late Neolithic period was probably the digging of the enormous henge ditch and bank at Mount Pleasant (*80% probable*; Figure 6-12). The enclosure was built to separate off the westerly end of the Alington ridge, overlooking a fording point of the River Frome (Figure A3-1). The henge was constructed in *2610–2495 cal BC* (*95% probability; build_henge*; Greaney *et al.* 2020, fig. 12), probably *2580–2530 cal BC* (*62% probability*). The construction of the earthwork enclosure was a major undertaking which, contrary to Wainwright's (1979, 44) initial interpretation now appears to have been created in one episode, albeit with a possible heightening of the southern bank later (Barber 2014, 27). The choice to build a substantial earthwork at Mount Pleasant suggests that people wanted this to be a monument that lasted as a visible marker in the landscape long after their own lifetimes.

The building of the henge heralded the beginning of an intense and frenetic period of monument construction in the Dorchester area. It is difficult to know the impetus for this; it could have been increasing religious fervour, the result of migration of people or groups into this area, the adoption of ideas from elsewhere or even a process initiated by a particular individual, a founding figure or prophet (Whittle 1997a, 149). Unfortunately dates and models for the construction of other mega-henges such as Durrington Walls are not yet available for comparison, but it will be interesting to see any ordering in their sequence. Due to the need to persuade and gather large numbers of workers together and equip them with enough tools, particularly antler picks, the decision to build Mount Pleasant may have been made a few years before the start of construction. There is evidence for occupation of the Alington ridge prior to the construction of the henge, so this may already have been a known locale. Short periods of

earlier Neolithic occupation are attested by the presence of Plain Bowl pottery, and immediately prior to construction by two transverse arrowheads, Grooved Ware pottery and associated carbonised material, all from beneath the henge bank (Wainwright 1979, 8).

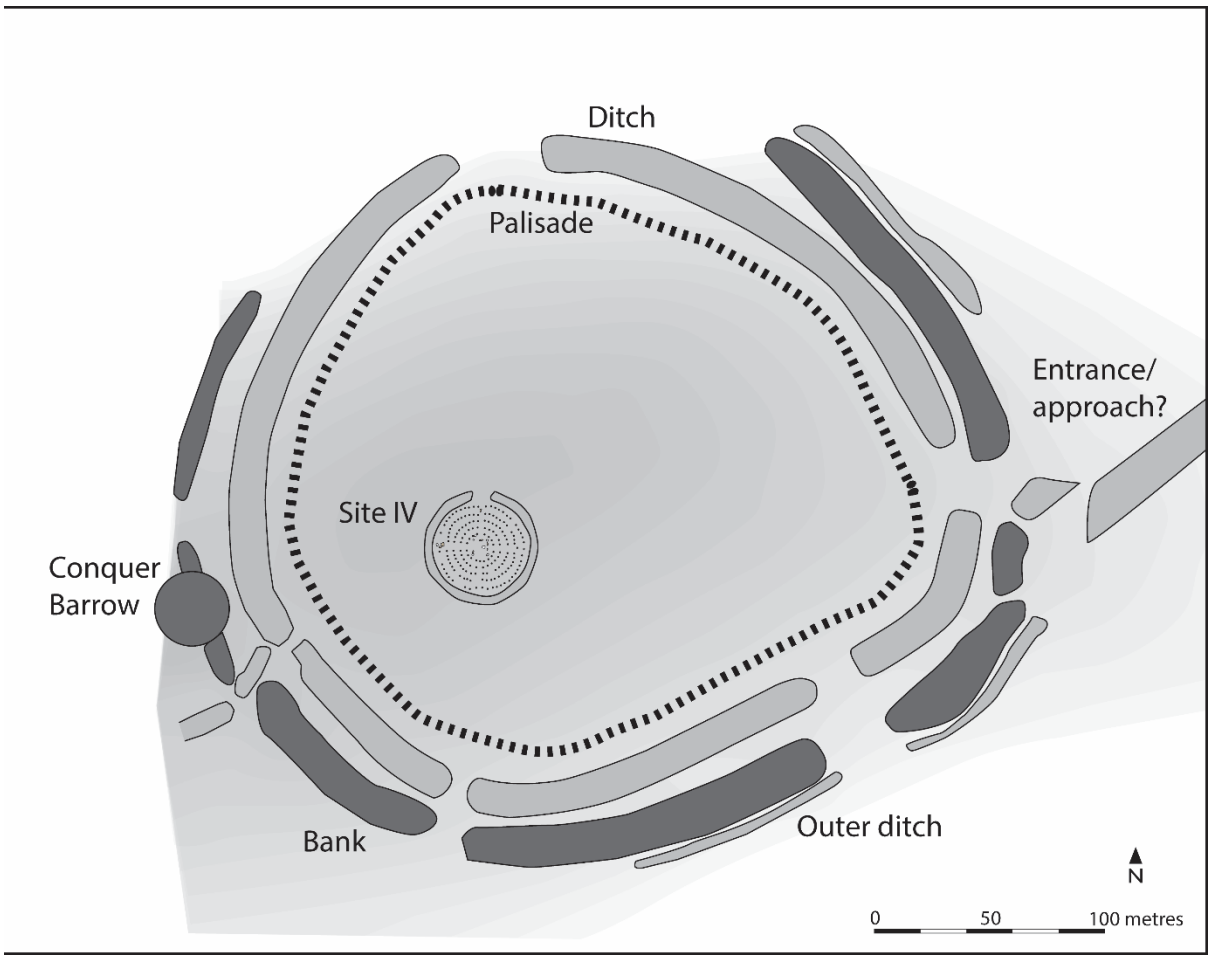


Figure 6-12 Plan of Mount Pleasant (after Wainwright 1979, fig 3 and Barber 2014, fig 6)

The construction of the Conquer Barrow, a large mound at least 7 m high, apparently located on top of the henge ditch on the west side of the enclosure (Figure 6-12), is associated with only one radiocarbon date (BM-795) on an antler pick from the barrow ditch; no other samples were available for new dating. The preferred published model adheres to the stratigraphic sequence evident in the earthworks (Piggott and Piggott 1939, 158; RCHME 1970, 591), which shows that the barrow was likely constructed after the henge bank. This places it probably next in the sequence (Figure 6-11). The mound would have provided a distinct vantage point from which it would have been possible to view activities taking place within the interior of the henge.

The palisaded enclosure within the henge was constructed in *2560–2440 cal BC* (*95% probability*; *build_palisade*; Greaney *et al*. 2020, fig 12), probably *2515–2440 cal BC* (*68% probability*). It is tempting to link the construction of Conquer Barrow and the palisaded enclosure together, with the restricted entrances and more convoluted routes towards the centre now requiring the construction of a viewing

platform. This may also be the date that the henge bank along the south was heightened (Barber 2014, 27), again providing a possible vantage point over activities in the interior. Perhaps the aim was to elevate certain people above others, providing commanding views over nearby enclosures or spaces for performance (Barrett 1994, 31; Whittle 1997a, 151; Thomas 2015, 173). By itself this evidence does not provide proof of any kind of permanent authority, but if this interpretation is correct, it does suggest that some form of social differentiation during gatherings at the site. Alternatively, the Conquer Barrow may have been built as a prominent marker in the landscape, emphasising the location of Mount Pleasant within the region to those approaching the site or living in the locality.

At least two of the original henge entrances were blocked by the erection of the palisade, probably only *15–100 years* after the henge was constructed (*68% probability*; Greaney *et al.* 2020, table S12.b). For the duration it stood, those entering the henge using these entrances would have had to circumnavigate the palisade to the north-east or north-west to access the interior of the henge (Figure 6-12). The close-set nature of the posts (Wainwright 1979, fig. 33) suggests that access would not have been possible directly through the palisade at any point. Cummings and Richards (2017, 238) have likened this type of approach to controlled unwrapping. The henge entrances left open were those that led northwards to the river, emphasising the importance of arrival or departure by the river or across the ford, or the role of the river in rituals or ceremonies.

The difference in date between the construction of the twin palisaded enclosures at Mount Pleasant and Greyhound Yard is probably *1–65 years* (*68% probability*) and it is *88.1% probable* that the Mount Pleasant palisade was built earlier than Greyhound Yard. This suggests that they were built within one or two generations of each other, interesting given the clear differences in the morphology of these enclosures. Whereas the posts at Greyhound Yard were erected in individual post-holes, associated with large ramps and set around a dry coombe, the posts at Mount Pleasant were set within a continuous trench with no ramps, enclosing a hilltop ridge. It may be that Greyhound Yard was built to replicate or replace the Mount Pleasant enclosure, but this time using a more expedient method of construction. This pair of palisaded enclosures, located along the same river, is paralleled by the enclosures of Forteviot and Leadketty located only 4 km apart on the River Earn in Scotland (Brophy and Noble 2012; Brophy and Noble 2021). These two sites also have contrasting patterns of deposition and different styles of timber construction. While these pairs of monuments may look similar, the reasons for their construction may have been different (Pauketat and Alt 2003, 163). The two palisaded enclosures at Dorchester have very different back stories; one was a new type of monument in this area, a radical departure, while the other was following a locally established template (McGlade 1999, 142). One might speculate that the partial destruction by fire or spatial restrictions at Mount Pleasant necessitated the construction of a new enclosure nearby on a fresh unenclosed site, albeit still connected to the river. Perhaps this also hints at divisions or social differentiations within the larger group involved in creating monuments at Dorchester.

After the construction of Greyhound Yard, it is likely that the next phase of activity saw the digging of the incredibly deep shafts at Maumbury Rings and the construction of the henge there, as well as the digging of a ditch around the concentric timber and stone monument within Mount Pleasant, Site IV (Figure 6-13). Mathematical modelling of the new radiocarbon dates from Maumbury Rings provides an estimate that the digging of the deep shafts that make up the henge took place in *2460–2330 cal BC* (*95% probability*), probably *2455–2400 cal BC* (*68% probability*). It is *93.3% probable* that Greyhound Yard was built earlier than the shafts at Maumbury Rings.

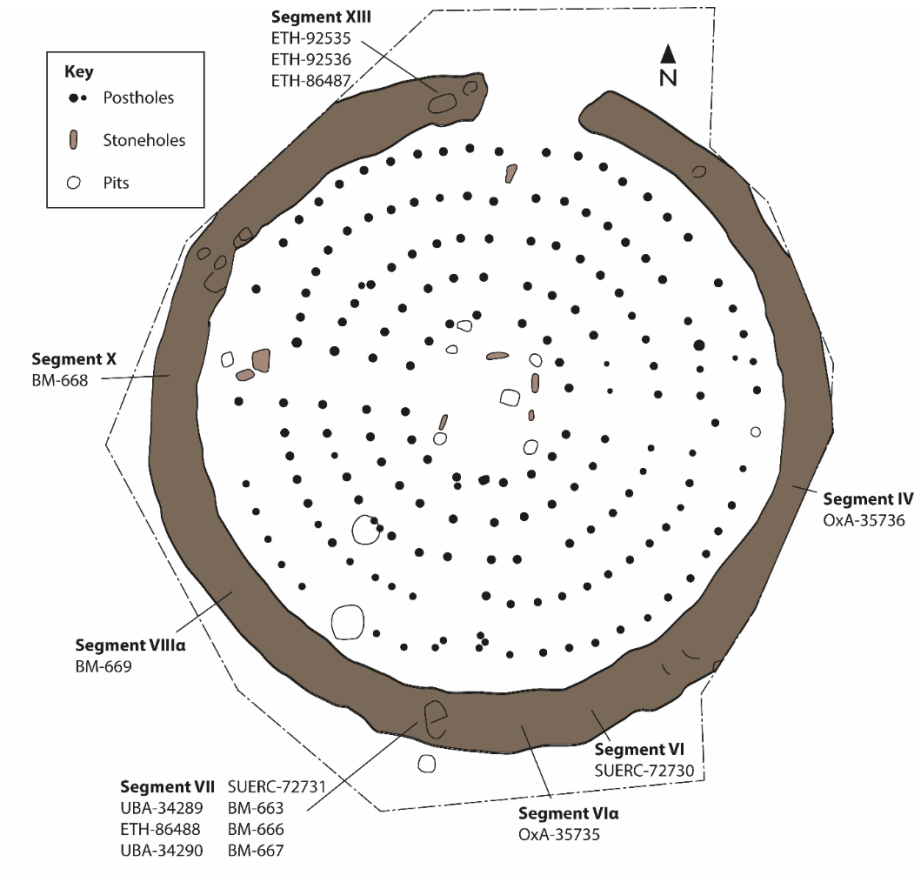


Figure 6-13 Plan of Site IV timber and stone monument within Mount Pleasant (after Wainwright 1979, fig 6 with radiocarbon sample locations marked)

The ditch surrounding Site IV within Mount Pleasant is estimated to have been constructed in *2555–2400 cal BC* (*95% probability*; *build_site_IV_ditch*; Greaney *et al.* 2020, fig 12), probably *2515–2440 cal BC* (*68% probability*). This was the last major construction activity at Mount Pleasant. The concentric timber monument itself has not been dated, and may well pre-date the enclosing ditch, as sequences at similar monuments elsewhere such as Woodhenge, would indicate. This 'henging' or 'wrapping' of the site may derive from a strategy of containment for the timber structure, the dangerous or powerful nature of deposits made within or the activities that took place there (Brophy and Noble 2012; Cummings and Richards 2017). The act closed the site, restricted access, contained and separated off the charged location within, although some access was retained across the causeway.

The concentric timber circle was constructed on the highest point of the ridge, perhaps to provide the most impressive view to those approaching from lower ground. Although the timber structure has four 'avenues' or pathways which lead towards the centre of the site (Chapter 5.6), patterns of movement as indicated by the blocking stones and the deposition of Grooved Ware and other objects at the site instead appear to be circumferential (Thomas 1996, 198–202).

Each of the late Neolithic monuments at Dorchester could be broken down to more detailed scales of temporality, as was done for Greyhound Yard in Case Study 10a. Each will have had prior periods of planning and gathering of materials for construction, feasts and ceremonies, and each had subsequent periods of use, deposition, visitation, decay and perhaps destruction. Importantly, the decisions taken relating to materials and forms suggest that there were major differences in the future trajectories that people envisaged for the different monuments. The henge ditches at Mount Pleasant were so enormously wide and deep that they remained open and substantial earthworks at least until the Iron Age, when two child burials were placed in the ditch (Greaney *et al*. 2020, table 1). The henge enclosure must have been deliberately constructed to endure over the long term. In contrast, the timber palisaded enclosure, like Greyhound Yard, may only have been intended as a short-term monument, lasting until the timbers were deliberately burnt or rotted and fell. There is no evidence for any repair or rebuild of the palisade. Based on calculations that oak rots at a rate of 15 years for every 50 mm of post diameter (Wainwright 1989, 155), those palisade posts that were not burnt or removed could have stood for an estimated 90–150 years, the duration over which other monuments were built nearby (Figure 6-11). As described above for Greyhound Yard, the charring or burning of the posts of the palisade at Mount Pleasant would have been a visceral and memorable occasion for those who witnessed it, enduring in personal, and perhaps social, memory long after the monument physically stood (Harris and Sørenson 2010, 161).

Unlike the palisaded enclosure, the posts of Site IV were mostly deliberately removed, as only two post-pipes were found during excavation (Wainwright 1979, 26). Only two or three centuries after the ditch around Site IV had been dug, it had silted up considerably (Figure 6-21); aside from the small standing stones, this was not a monument built to last. The contrast between the temporalities envisaged for the component parts of Mount Pleasant suggests that the henge enclosure was planned as a permanent space within which other shorter-lived monuments and their associated rituals and ceremonies could be appropriately and safely constructed again and again. However, only the palisade and Site IV were built; the long-term expectations for the enclosure were perhaps never realised.

At Maumbury Rings, Neolithic people would have known that the deep shafts would have rapidly backfilled through erosion, but this process was sped up by regular backfilling with chalk rubble, seemingly after the deposition of objects (Bradley 1975, 33). These were shafts that were dug to be backfilled; they were not to remain open long-term. However, the henge bank and ditch remain an

imposing monument today, and the enormous bank must have been constructed with longevity in mind. Again there seems to have been a combination of both short-term and long-term aspirations towards the future.

Radiocarbon dating and Bayesian analysis have provided a detailed chronology and relative sequence for the late Neolithic monuments at Dorchester. Over a period of roughly probably 100 to 200 years, there were regular and repeated episodes of construction. In human timescales, the great-grandchildren of those who helped to excavate the enormous ditches of Mount Pleasant henge could have cut down the trees and erected the posts of the palisaded enclosure at Greyhound Yard. Perhaps this sort of timber monument was envisaged by their predecessors. It may have been the children of those people who decided to dig the enormously deep shafts at Maumbury Rings, a more radical departure and perhaps linked to nearby sinkholes (Case Study 2). The selection of materials and forms gave these monuments vastly different durations, although similar practices of deposition took place at all of them (Woodward *et al.* 1993, 357; Thomas 1996, 315). For example, carved chalk objects were placed in the palisade and henge ditches at Mount Pleasant and into the shafts at Maumbury Rings (Bradley 1975; Thomas 1996, 218–222). Prescribed and distinctive patterns in deposition occurred at Site IV and Maumbury Rings, where Bradley (2000, 123–7) has suggested that object types were placed into the shafts in a prescribed sequence, perhaps representing stages in the retelling of origin myths.

Based on these close links, it seems reasonable to assume that the people who built these late Neolithic monuments were part of the same community, with similar beliefs and worldviews, although not necessarily a local population. Evidence from stable isotope analysis of teeth from 18 pigs found at Mount Pleasant henge shows that only a small proportion (four) were raised on local geologies, with most being brought from some distance, probably from southern and eastern coastal regions (Madgwick *et al.* 2019, 6–7). The geographic area from which these animals were drawn appears to be larger than the 'catchment area' of monuments built in the earlier part of the Neolithic. For example, isotope evidence from Hambledon Hill suggests that most people buried at the enclosure came from areas visible from this location; the people involved in feasts at Mount Pleasant were travelling to the monument from further afield. The changes made to the monument increasingly restricted movement and visual access into the centre over time, which suggests at least some social differentiation within the wider group or unequal power relations, even if this was only on a temporary basis. Perhaps that explains the much smaller size of the monument at Maumbury Rings, built later in the sequence for a more select audience. Among these communities, seasonal time would have had been synchronised as planning for such feasts would have taken place up to a year ahead. Perhaps, as in Melanesian societies such as the Oro of Orokaiva, hosting a successful feast relied on careful time synchronisation (Itéau 1999). Producing enough food at the peak of seasonal pastoral and agricultural cycles, and gathering everyone at the right

place and time, may have been a daring and risky feat. The conjunction of diverse and different time spans in such feasts could be a source of social power, for the individual or group who organised it.

6.5 Time emplaced

Archaeologists have long turned to the concept of ancestors to think through the relationship between time, place and power (Renfrew 1976; Tilley 1994; Ray and Thomas 2018; see Chapter 1.2.3). The internment of deceased people forms a link between a particular location and dead predecessors (whether direct genealogical ancestors or simply those who came before), making past people present in the landscape and perhaps legitimising claims to land or resources. However, we must also be careful not to over-play the concept (Whitley 2002; Chapter 1.2.3). We gravitate towards or even fetishise human remains, but sometimes they were no more than an audience (Edmonds 2019, 92) or were just one of many substances assembled to create a place of power (Case Study 3). Through radiocarbon modelling, it is becoming increasing clear that many Neolithic funerary monuments, such as long barrows and cremation cemeteries (Whittle *et al.* 2007; Noble *et al.* 2017), have relatively short initial periods when they were used for the internment of the dead, but long subsequent histories of non-funerary re-use.

Many communities do not consider that the relationship of the present to a mythic or ancestral past as one that is affected by the passage of time (Gell 1992, 22). Australian Dreamtime is not an 'earlier' or 'past' time (James 2015). Instead, it is an active and constantly created time, through narratives attached to the land told through stories, songs, and dances at sacred sites. In this sense, Aboriginal Australian time is non-linear, where events exist alongside each other – relatively modern events are adjacent to ancient stories; Seres' crumpled handkerchief in action. Dreamtime spectacularly collapses time (Paton 2015). One narrative that helps to unseat modern Western perspectives about time is related by Hughes (2015, 88) about an experience in south-east Arnhem Land. She relates travelling with Rosalind Munur, a *djungaiyi* (ceremonial guardian), when the party stopped at some large sandstone tors. Rosalind identified three large, rounded tors as her mother and two aunts (Ngangigee, Hannah and Mungranjyajua), each ancestor embodied in these geological features. Two decades later, on another trip, the author was surprised to meet Mungranjyajua, one of Rosalind's aunts, who was still alive! This shows how Aboriginal time is intricately folded-in and intimately bound into the landscape, with no great chasm dividing the living from the ancestors, the present from the past, or either from the future.

In this account, the importance of place to the conception of time is clear. In describing Dreamtime, Aboriginal Australian people do not say 'when' but 'where', because time is created through the transformation of ancestral beings into place (Strang 2015, 113). Certain places are living archival repositories, kept alive by tending them with storytelling, singing, dancing and rituals (McGrath 2015, 6). In his account of the western Apache landscape in America, Basso (1996, 55) notes that places possess a marked capacity for animating thoughts and feelings, inspiring familiar stories, thoughts of past actions and present self-reflection. In traditional Fijian societies history is described in terms of places and

landmarks that function as reference points; 'time emplaced' (Toren 1995). Orokaiva genealogies recall the distance between present social groupings and an original undifferentiated mythical time, not in terms of quantifiable time but as a matter of ritual space (Itéanu 1999, 275). The history of social engagement with the landscape is thus bound up with memory and time, creating emotionally charged places (van Dyke and Alcock 2003, 5–6).

Monuments have been interpreted through the prism of social memory, as places of remembrance and enactment, memory prompts, and tools for maintaining authority and power (Bradley 1998; Tilley 1994; Edmonds 1999, 133; Pollard 2021, 104). One might interpret the building of monuments at complexes in the same locale over hundreds of years as the continuity in social memory of the importance of place. Certainly, that might be the case for the 100–200 years of late Neolithic Dorchester. But that is likely to be too simplistic over the longer term. Social memory is not merely accumulated and 'stored' in monuments (Borić 2003, 47) but is mutable; it exists in acts of remembering and forgetting according to the needs of the present. The use and form of monuments changed over time, becoming inscribed with new meanings, and perhaps becoming places of contested and conflicting power relations (Bender 2002, 104). Where monuments such as causewayed enclosures were re-occupied, or the decayed postholes of timber circles were the focus for repeated acts of deposition, these actions might re-activate or renew the power of the structure itself and give it new existence, making it a monument of the present rather than the past (Olivier 2011, 68; Edmonds 1999, 134).

It is worth stepping away from Dorchester for a moment to work these thoughts through with reference to a place that saw prolonged use, deposition and alteration. West Kennet long barrow near Avebury (Figure 6-14) had a short initial use as a burial monument in the early Neolithic period (probably in *3655–3635 cal BC* (*68% probability;* Bayliss *et al.* 2007a, 93). After the burials there followed a period of non-disturbance, perhaps showing closure or respect, probably lasting between *95–320 years* (*68% probability;* Bayliss *et al.* 2007a, 94), during which at least two of the chambers were sealed by walling. This period might reflect the time when the original purpose of the monument was remembered, or even the identities of those buried within. This was followed by a long period of about 1000 years when the chambers and passage were the focus of multiple depositions, including large quantities of pottery, animal bones (including dogs, pig, sheep/goat and cattle), chalk, earth, burnt material and human remains, including at least five child burials (Thomas and Whittle 1986, 141). Entering the chambers became acceptable, any taboo forgotten, the passage of time eroding older principles of appropriate action.

Figure 6-14 Reconstruction of the West Kennet long barrow being built in the early Neolithic. The construction and funerary use of the monument was only a short period in its long history of use © English Heritage, drawing by Peter Urmston

This activity continued until at least the end of the Neolithic period, ending probably in *2475–2225 cal BC* (*68% probability;* Bayliss *et al.* 2007a, 94), a date supported by the inclusion of Beaker pottery within the infill. This was when major late Neolithic monuments nearby such as Silbury Hill, the Sanctuary and the West Kennet palisaded enclosures had already been constructed (Appendix 2). This prolonged and repetitive activity may reflect a different understanding of the power of this monument, the place now perceived as timeless, otherworldly or even a 'natural' part of the landscape. A possible parallel is provided by the standing stones in Madagascar, erected in memory of specific individuals, but over time becoming places for offerings made by anyone who disturbs or profits from the land in which they are situated, irrespective of their connection to the dead (Bloch 1995, 73–4). West Kennet long barrow may have become the centre of a cult of placation of the land, acknowledging the power of this place and people's indebtedness to it. The barrow was finally sealed off and closed by the erection of the large blocking stones at the entrance façade. Although the date of this episode is not clear, it may reflect dramatically changing attitudes, an example of deliberate forgetting coinciding with the arrival of Beaker-using people from the Continent.

The concept of forgetting can be useful in thinking about the power of time. Forty (1999, 8–12) identifies four ways in which material objects can be agents of forgetting. The first is separation, whereby objects separate what is to be remembered and what can be forgotten – the bounding off of spaces, as places set apart. This might include the closing of West Kennet long barrow, or the 'henging' of powerful or charged timber structures like Site IV (Case Study 10b), marking the end of sequence of rituals and gatherings that took place within them (Brophy and Noble 2012). Another is where objects depict the tension between

remembering and forgetting. Kuchler's (1999) account of *malanggan* mortuary rituals in Papua New Guinea shows how the temporality of materials can be used to depict or enshrine such forgetting in objects. Complex effigies are carved in wood or woven in vine to portray and contain the souls of recently deceased people, and the gradual decay of some of these effigies occurs in parallel with the decay of the remains of the dead. Such effigies fix a version of that person in social memory. Such engagement with wood or other materials that decay and change over time can be observed in the timber circles and palisaded enclosures of the late Neolithic, as discussed above.

The third and fourth types of forgetting described by Forty (1999) are the exclusion of multiple memories in favour of one dominant one, and iconoclasm, the destruction of buildings and monuments. It might be possible to see such enforced forgetting in the burning or dismantling of monuments, or the superimposition of one monument type onto another (Figure 6-9). Although Connerton (1989, 12) argued that "the more total the aspirations of the new regime, the more imperiously will it seek to introduce an era of forced forgetting", as Forty (1999, 10) points out, these were occasions that would have the opposite effect; intense and perhaps even shocking events that would be seared into the memory, rather than the forgetting that was intended. Remembering and forgetting are not polarities but exist in a state of tension (Buchli and Lucas 2001, 81); the imposition or enactment of power results in resistance. Real forgetting might be visible in the archaeological record in the regeneration of woodland cover or the uninterrupted silting up of ditches over long periods, suggesting abandonment, although equally this might imply avoidance or taboo.

The timespan over which the late Neolithic 'building boom' occurred in the Dorchester area was one of personal memory and inherited social memories over a few generations. It was not likely to be a period over which appropriate patterns of movements or depositional practices were forgotten, misremembered or radically re-interpreted. The monuments were placed at some distance from each other; their plans do not overlap or superimpose. Although there may have been some divergence and subtle change in locations as monuments were constructed over time, there is no sense of conflict, at least not until the Chalcolithic (see below). Within this period people were deliberately constructing monuments (Mount Pleasant henge and Maumbury Rings) of materials and forms that were envisaged to last well beyond their lifetimes into the distant future. There must have been expectations that these places would endure and that generations who followed would continue to use and alter them; these were monuments largely orientated towards the long-term future. How did they relate to the past activities and already existing monuments of the Dorchester complex? What processes of remembering and forgetting can be identified?

Case Study 10c - The Dorchester monument complex

In this final Dorchester case study, activities will be explored at an expanded temporal scale. The late Neolithic monuments described in Case Study 10b were built near two earlier monuments, the Alington

Avenue long mound and the Flagstones enclosure. The Alington Avenue long enclosure was laid out along the ridge to the west of Mount Pleasant (Appendix A3.3.2; Figure 6-15). Two new radiocarbon dates have been obtained on a partially articulated cattle skull deliberately placed in the base the ditch (Figure 6-16), giving an estimated date for the construction of this enclosure in *3635–3380 cal BC* (*95% probability*).

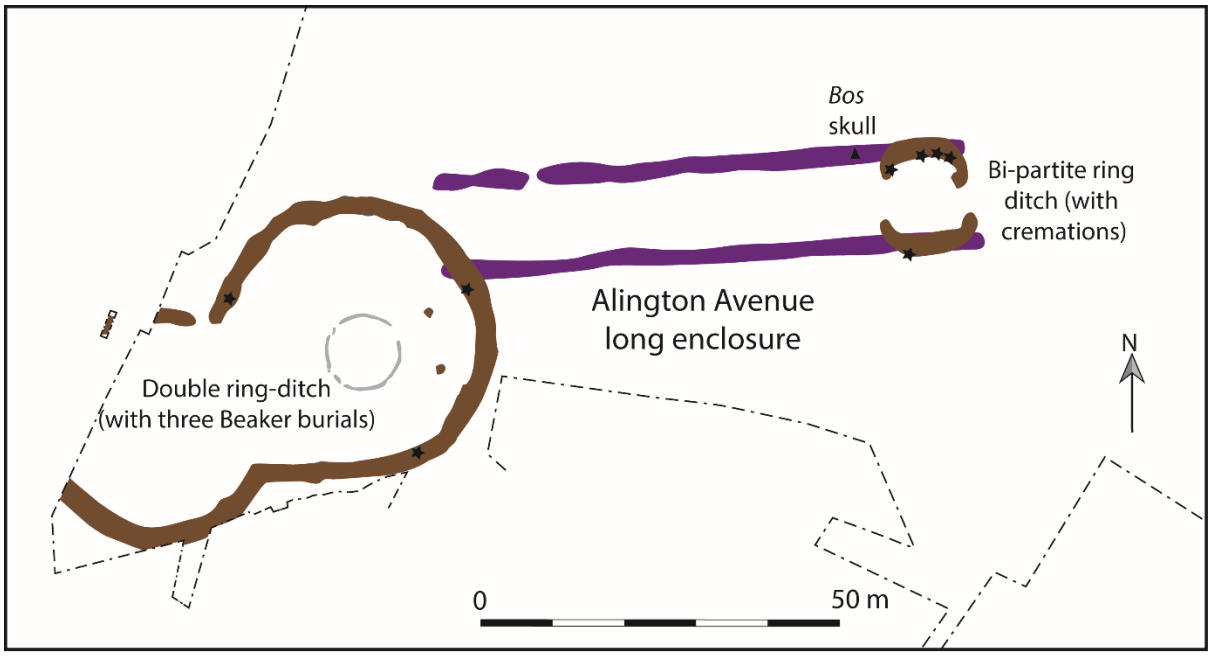


Figure 6-15 Plan of Alington Avenue long enclosure and associated later ring ditches (after Davies *et al.* 2002, fig 4)

Figure 6-16 The Alington Avenue ditch under excavation in 1991, showing the position of the dated cattle skull on the base of the ditch. Courtesy of Dorset Museum, 1991-8932154

Between Alington Avenue and Mount Pleasant lies the Flagstones enclosure (Appendix A3.4.1; Figures 6-17 and 6-18), a 100 m diameter circular enclosure of unevenly spaced pits. Three primary burials of a cremated adult and two child inhumations were placed on the base of the ditch under or associated with large sarsen stones, and slightly later a further burial of an older child was placed into the ditch. Within the enclosure, three pits surrounded by a gully each contained the partial cremated remains of an adult (Healy 1997).

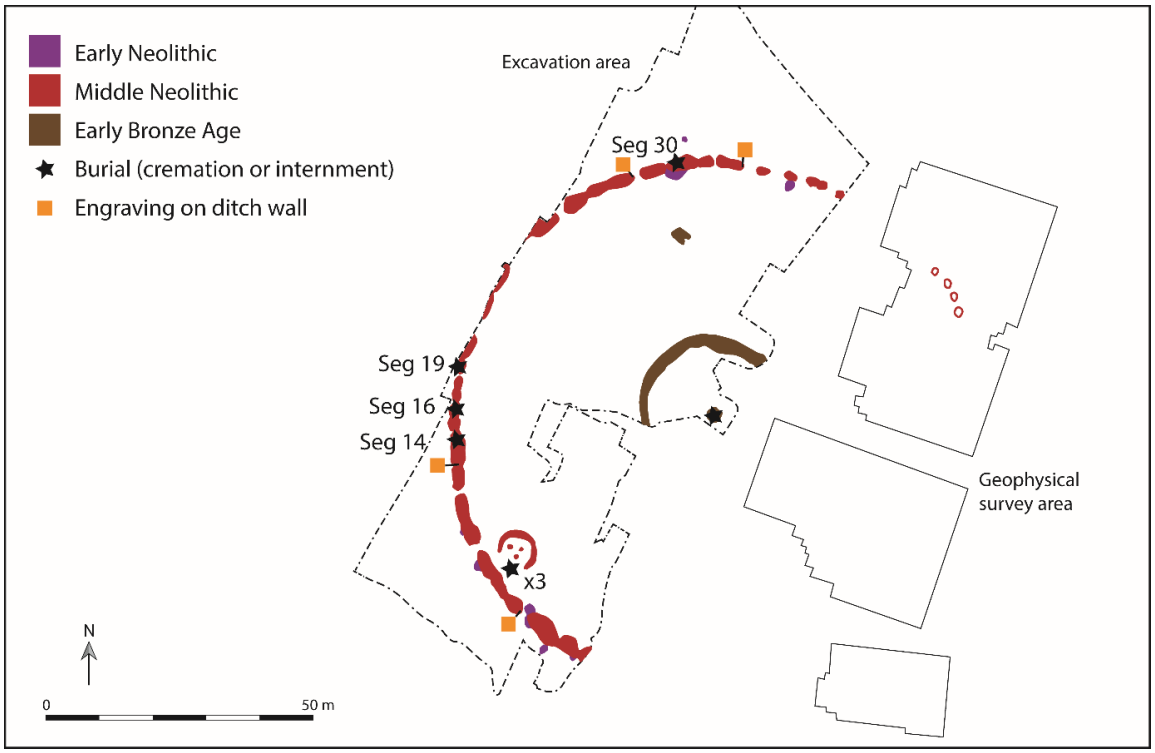


Figure 6-17 Plan of Flagstones enclosure (after Smith *et al.* 1997, figs 17 and 18)

New radiocarbon dating of antler picks and human burials from the ditch show that it was constructed in *3265–3105 cal BC* (*95% probability,* Figure A3-7: *build_flagstones*), probably *3205–3120 cal BC* (*64% probability*). This means that it was built an estimated *560–775 years* (*98% probability*), probably *605–725 years* (*68% probability*), before the construction of the henge at Mount Pleasant. The henge, Flagstones and the long enclosure all share a principal alignment along the Alington ridge, but the earliest, and the first to accentuate this axis, was the long enclosure. By the time that Mount Pleasant henge was constructed, likely at least 600 years later, both this and Flagstones enclosure are likely to have been weathered and eroded earthworks (Figure 6-19).

Flagstones enclosure was used for adult cremations and child burials from *3270–3120 cal BC* (*95% probability*), probably *3195–3135 cal BC* (*68% probability*), until *3175–3055 cal BC* (*95% probability*), probably *3155–3110 cal BC* (*68% probability*). This provides an estimate of the duration of funerary activity at the site of *1–105 years* (*98% probability*), probably *1–45 years* (*68% probability*). This funerary use of the monument does not seem to have been extended practice but may have formed part of the

initial dedication of the site, investing the newly constructed enclosure with the power of the dead. Like West Kennet long barrow, and other monuments such as passage tombs, the integration of the dead with the monument animated and made powerful these new constructions (Cummings and Richards 2017, 243). Flagstones enclosure may really have been 'new'. It can be compared with other 'proto-henges' and cremation cemeteries such as the earliest phase of Stonehenge and Llandegai A (Noble and Brophy 2017), but it appears to be earlier than these other examples (although see Appendix A1.4.3). The engravings of passage tomb style motifs on the chalk walls (Woodward 1988) and the different treatment of child burials from adult cremations may indicate links with similar practices in Ireland.

Figure 6-18 The west side of the Flagstones enclosure under excavation in 1987 (photograph by Niall Sharples)

How did late Neolithic people frequenting the Dorchester area regard these earlier monuments, which were at least 600 years old by the time they took the decision to begin building again? They may have regarded them as vestiges from the distant past, but importantly they were distinctive features still visible in their present (Olivier 2011. The familiarity of creating ditched enclosures means that they probably regarded them as the works of past people, but whether these were direct, real, or fictional ancestors cannot be known. In Chapter 4 it was argued that Neolithic people paid attention to unusual landscape features and selected them for the construction of monuments. Likewise, they would have noticed places with extant earthworks, or signs of abandoned settlements and earlier clearances, choosing them as appropriate for new monuments.

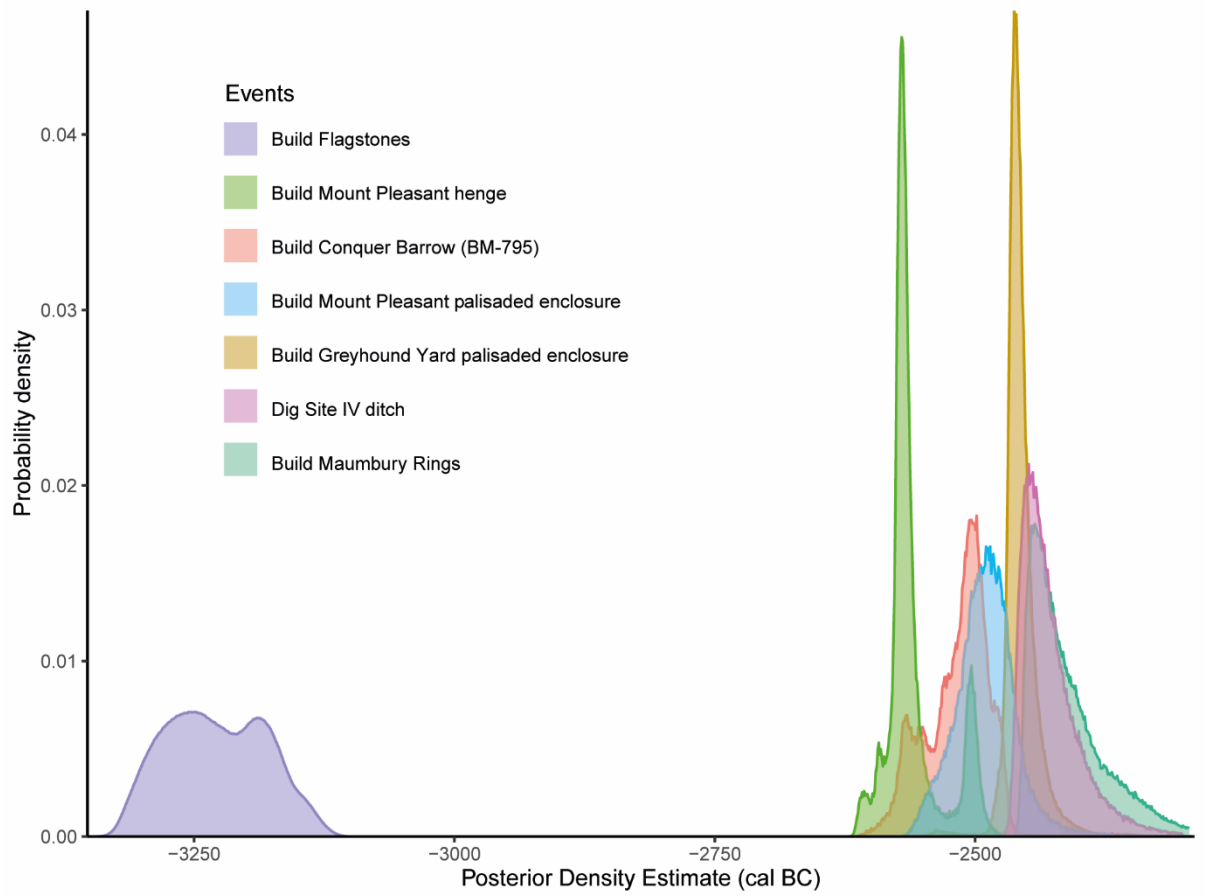


Figure 6-19 Probability distributions for the construction dates of later Neolithic monuments in the Dorchester complex, showing the long gap between Flgastones and the intense activity around 2500 BC. With thanks to Dr Peter Marshall

A complete lack of late Neolithic material from the Flagstones ditches (Healy 1997, 38) suggests that not only was the enclosure left entirely unmodified, but it may have been avoided entirely. This was not an appropriate place for the deposition of objects, perhaps an instance of deliberate forgetting or taboo (Küchler 1999). The ditches of the Alington Avenue long barrow did contain a small quantity of later Neolithic sherds, animal bones and flint (Davies *et al.* 2002, 17) suggesting that level of any such avoidance did not extend equally to both monuments.

Despite this, the major monuments built in the centuries around 2500 BC described in Case Study 10b appear to have been built to gradually enclose the earlier long enclosure and proto-henge, almost 'wrapping' these earlier structures in a layer of ritualised spaces (Figure A3-1). Any movement between the later monuments would have necessitated the circumnavigation around these older features. Alington Avenue and Flagstones enclosures structured later activity, with the new monuments gaining some of their power and being legitimated by being located close to, but at a discrete distance from, these powerful places. It is possible that social memory preserved some indication of the purpose and use of Flagstones and the significance of this earlier place as a site of funerary activities. At Raunds in Northamptonshire, a similar long-term 'memory' of burial practices appears to have been retained, with burials in the early Bronze Age only taking place at sites where early Neolithic unburnt burials had been

buried (Harding and Healy 2008, 223). However, continuity over such a long period cannot be assumed. There does not appear to have been prolonged use of Flagstones enclosure for funerary purposes or re-use of the enclosure for burials in the later Neolithic. Perhaps then, it is more likely that there was re-inscription and re-interpretation of these monuments by the people who constructed the later Neolithic monuments, the "active creation of pasts for contemporary needs" (Evans 1997, 105).

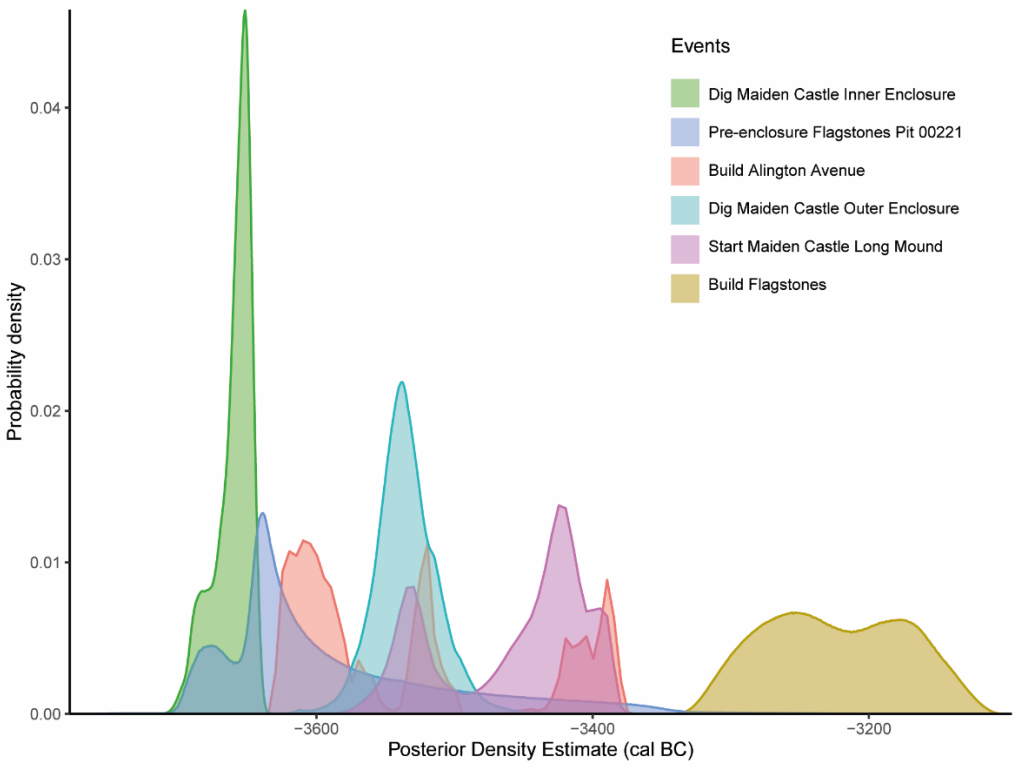


Figure 6-20 Probability distributions for the construction dates of Flagstones compared to earlier Neolithic monuments in the Dorchester complex, including the inner and outer causewayed enclosures, and long mound at Maiden Castle. Note that the estimate for Alington Avenue is a single radiocarbon date, hence the tri-modal distribution. With thanks to Dr Peter Marshall

Looking backwards in time, the first major Neolithic activity in the Dorchester area was the construction of the inner causewayed enclosure at Maiden Castle. A revised dating sequence places the construction of the inner circuit in *3695–3640 cal BC* (*95% probability;* Greaney *et al.* 2020, supp info 1), probably *3670–3640 cal BC* (*68% probability*). This was shortly followed by the construction of the long enclosure at Alington Avenue and probably with contemporary occupation prior to the construction of Flagstones enclosure (Figure 6-20: Pit 00221). The outer causewayed enclosure circuit at Maiden Castle was created in *3580–3525 cal BC* (*95% probability,* Whittle *et al.* 2011, fig 4.42: *dig Maiden inner*) probably *3560–3525 cal BC* (*68% probability*). The two circuits were therefore constructed *75–145 years* (*95% probability*) apart, during which time there appears to have been intensive occupation and activity on the hilltop, as attested by the artefact-rich midden debris that filled the inner ditch, as well as some occupation on the floodplain.

After the outer enclosure had been built, a 500 m long mound or bank barrow was superimposed, following a false crest to the north of the hill summit, apparently designed to be most visible from this

lowland area (Figure 6-9; Balaam *et al.* 1991, 40). The eastern and central parts of the long mound were constructed in *3550–3500 cal BC* (*40% probability*; Whittle *et al*. 2011, 188) or *3480–3385 cal BC* (*55% probability*). The building of the long mound ensured the end of further ditch building or re-digging, ending the activities that had previously taken place there. This was a decisive break with the past (Sharples 1991, 255) and the short timescale involved suggests that the purpose and use of the older enclosure had not been forgotten but was being deliberately transformed and erased by the construction of entirely new form of monument. Perhaps the linear monument at Maiden Castle emulates the construction of the long enclosure in the valley below.

Together with the construction of bank barrows and cursus monuments at Long Bredy and Broadmayne, which appear to bracket the highest part of the South Dorset Ridgeway with its distinctive dolines (see Case Study 2), these linear monuments appear to dominate or encompass areas of previous activity, perhaps marking out a particularly important area of land (Sharples 1991, 256; Woodward 1991, 131). Although the bank barrow and causewayed enclosure endured as earthworks, woodland began to regenerate soon after the long mound ditches had begun to silt (Evans and Rouse 1991); it seems that activities on the hilltop ceased in a case of real avoidance or forgetting. Like the 'natural' sinkholes on the Ridgeway, it was perhaps deemed inappropriate for occupation or alteration.

The construction of Flagstones enclosure was much closer in time to these early Neolithic events, than to the explosion of monument construction in the centuries either side of 2500 BC (compare Figures 6-19 and 6-20). The Dorchester monument complex therefore developed in two quite distinct and intense periods – one in the early-middle Neolithic and one in the late Neolithic, with a lengthy gap between when no new monuments were constructed. This gap is difficult to explain; are there monuments or activities from this period waiting to be discovered under Dorchester town? The fact that the late Neolithic monuments were built in established grazed grassland suggests that people were not entirely absent from the area. This gap in monument construction will be compared to chronologies of other monument complexes in Chapter 7.

Turning back towards the end of the Neolithic, how did the construction of monuments at Dorchester relate to the arrival of Beaker-using people from the Continent? The first burials of people with Beakers in England began shortly after the construction of the final monuments in the sequence, in *2450–2325 cal BC* (*95% probability*; Jay *et al*. 2019, fig 2.2: *first_england*), probably *2390–2340 cal BC* (*68% probability*). Studies of ancient DNA and stable isotopes have shown that an influx of new arrivals began at this time, travelling from a variety of European locations to dispersed parts of Britain and Ireland (Parker Pearson *et al.* 2019b; Olalde *et al.* 2019). At Site IV, a layer of sarsen chips and burning associated with Beaker pottery was deposited in the ditch. This is likely to relate to sarsen stone breaking and destruction (Pollard 1992), perhaps an example of iconoclasm. Date estimates for this layer shows that it was deposited in *2360–2200 cal BC* (*95% probability;* Greaney *et al.* 2020*,* fig 9: *seg_XIII_layer_5*), probably

2335–2280 cal BC (*47% probability*) or *2250–2205 cal BC* (*21% probability*). The early Beaker pottery styles (All-Over-Comb vessels, Maritime vessels and a sherd of Cord-Zoned-Beaker) from this layer have direct parallels with mainland Europe and are found in early Beaker graves (e.g., with the 'Amesbury Archer'; Fitzpatrick 2012). This activity took place *5–220 years* (*95% probability*), probably *45–160 years* (*68% probability*) after the first appearance of Beaker pots in burials in England (Greaney *et al.* 2020; Figure 6-21).

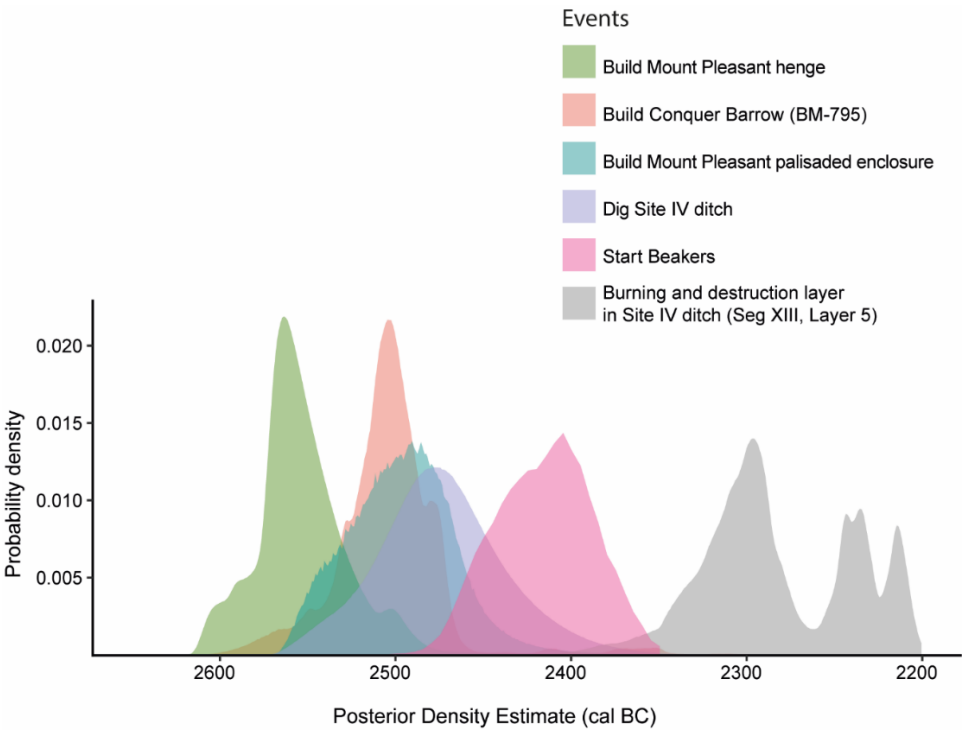


Figure 6-21 Probability distributions of dates of major archaeological events (note some of the tails of these distributions have been truncated to enable detailed examination of the highest area of probability) from Mount Pleasant, and for the first use of Beakers in burials in England (derived from the model described in Jay *et al.* 2019 figs 2.2–2.8). With thanks to Dr Peter Marshall

This act of destruction targeted the most visible parts of this monument; the partly silted ditch and any remaining decayed timber posts were already rapidly disappearing. It suggests a radical transformation of attitudes and activities in the Dorchester complex shortly after the intense period of late Neolithic construction, perhaps instigated by new arrivals. At this time all major monument construction ceased and there was a distinct break or disjuncture, a 'tipping point' (Robb and Pauketat 2013, 26) in the trajectory of history. Nevertheless, the henge remained significant for some people into the early Bronze Age, as attested by further deposition of Beaker pottery and a bronze axe in the henge ditches.

Much later, these changes came full circle when in around 2000 BC a man was buried at the centre of Flagstones enclosure, under a large sarsen stone and sealed below a mound quarried from a surrounding ring ditch (Healy 1997, 39; Figure 6-17). There is a dizzying compression of time scales here – people were returning to the Flagstones enclosure around 1000 years after it had been first constructed, a monument that had been respected but left untouched during the intervening late Neolithic and again burying one

of their dead under a large stone. Could the social memory of earlier funerary traditions at this site have lasted over this long a timescale, without any return to similar practices in the meantime? Or was it simply coincidence that early Bronze Age inhumation practices echoed those of long ago?

Early Bronze Age people also returned to Alington Avenue long barrow, constructing a sub-circular enclosure across the eastern end, with five cremation burials cut into its ditch sides (Davies *et al.* 2002, 24). Another enclosure and timber structure with three inhumation burials at the western end also dates from this period, when the long barrow would have been an early further weathered earthwork and the ditches mostly silted. Several long and bank barrows in the wider area had round barrows superimposed on them at this time, including Lanceborough, Broadmayne and Bradford Peverell 12a (Davies *et al.* 2002, 193), some forming part of a linear group of 'aggrandised' round barrows discussed in Case Study 2. This early Bronze Age re-use of monuments dating from the early and middle Neolithic suggests that these 'timeless' or forgotten monuments were appropriate places to return to for contemporary purposes. The more recent monuments at Mount Pleasant, Maumbury Rings and Greyhound Yard were not suitable; their history was too recent, too raw, too well-remembered. Gosden (1994, 127) has suggested that continuity and antiquity of monuments gave them their power, but here it is proposed instead that discontinuity and forgetting allowed certain places to be placed outside of time, or 'at the beginning of time' (Harding and Healy 2008, 223), as blank slates on which to write new histories. These intriguing and evocative landforms transcended time, reaching across those handkerchief folds of history.

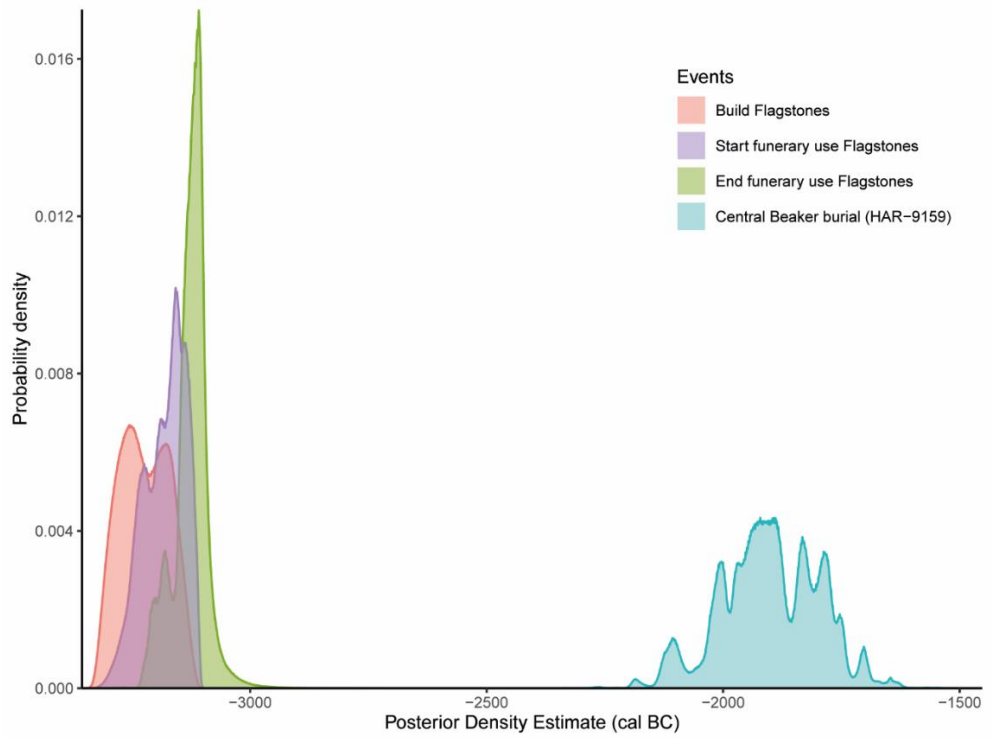


Figure 6-22 Probability distribution of activities at Flagstones enclosure, contrasting the construction and funerary use of the enclosure with the later Beaker at the centre in the Beaker period. With thanks to Dr Peter Marshall

6.6 Conclusion

The Neolithic sequence at Dorchester has emerged as one of discontinuous and uneven activity, with peaks of intense construction activity, periods of quiet and clear temporal disjunctures. With Bayesian methods creating an orientating timeline, it has been possible to discuss not only the human temporalities in terms of generations and memories, but also non-human material temporalities, and how intra-actions with these materials had major implications for the longevity, duration and people's intentions for these spaces. Exploring time as relational and non-linear has helped to draw out those occasions when time appears to be folded or collapsed. Situated within purely linear timeframes, the re-use of monuments after extended periods of abandonment appears confounding, but when these monuments are relocated to the present 'now' of the later Neolithic, such choices appear less extraordinary. Only by comparing the detailed biographies of monument complexes, can we begin to pinpoint wider tipping points, thresholds and periods of instability and show how ideas and practices spread across Britain and Ireland (Chapter 7).

Extremely old monuments, the worn and eroded earthworks created by long-forgotten people, could be involved in relations of power, due to the ease with which they could be re-interpreted and given new purposes. The enclosure or 'wrapping' of monuments and structures suggests that these were powerful or dangerous places with non-human powers that needed to be contained and controlled. The possible destruction of Site IV may suggest that such places were enormously important to the identities and beliefs of people, but also that such enforced 'forgettings' may have not played out as intended. Monument complexes almost always emerged and developed in places where previous monuments and activities had occurred; a sense of the past was important, but equally people acted to build monuments and conduct rituals that looked towards their future.

7 Discussion

Discussion and analysis of monument complexes and potential power relations has ranged over time and place, from the micro-scale to the macro-scale. This concluding chapter will summarise the key findings distilled into several themes and discuss how they advance our understanding of the Neolithic period. The relational and assemblage-based theoretical approach adopted in this thesis will then be evaluated alongside more traditional means for investigating power relations in the Neolithic. Finally, future research directions are identified, and broader conclusions made.

One of the stimuli for this thesis was dissatisfaction with current archaeological narratives about competition and collaboration at monument complexes and a lack of theorisation about concepts of power in debates surrounding the Neolithic (Chapter 1.3.3). These explanations, like all those explored in Chapter 1, largely conceive of power as something possessed by, or circulating among, humans, usually in the political sphere. They often rely on out-dated and inadequate categories of social stratification based on evolutionary categories and rest on assumptions about territories, residency and communities. Monuments have remained either implicitly or explicitly linked to elite power, with their construction legitimising existing social structures, or creating them (Bradley 1984; Barrett 1994, 27–9). This stasis has remained despite sophisticated developments in archaeological theory based on relational and assemblage thought, that attempt to reject such categories and to de-centre the human by considering all potential agents within social networks.

These theories provide a new way of examining monument complexes as entangled nodes or assemblages, where people and places emerge through their relations. De-centring the human has allowed for the affordances and characteristics of places and materials to be foregrounded. Foucault's (1980) concept of power as something not possessed by people, but existing in the unequal and entangled relations between people, places and things, has been adopted. As shown in Chapter 2, few archaeologists have applied the methods of the 'ontological turn' to an examination of relations of power (an exception is Crellin 2020). This is partly because of a focus on materials and things, which has shifted attention away from relationships between people, but also because these theories have not adequately considered power differentials in the relations between people and things. De-centring the human does not mean that all human relations are equal or egalitarian; not all people are capable of interacting with materials, things or beings in the same way. People were involved in a myriad of changing relationships with other people (family, kin, communities, strangers; heterarchies) that were constantly being negotiated, with flows of power shifting and flowing between people, as well as between people and non-human beings and things. To this end we can revisit Figure 2.1 (Figure 7-1).

Figure 7-1 Rather than seeing the human as entirely equal with non-human beings and things (as with the flat ontology depicted in Figure 2.1), humans have relations with places, materials and objects but importantly also with a whole range of other people.

This thesis has attempted to investigate Neolithic monument complexes from relational, new materialist and assemblage thinking, while retaining a focus on differential power relations, and how these are mediated through things and places. Monument complexes have been shown to be places where dispersed non-human and human powers were gathered and drawn upon by people to create and dismantle political and social configurations.

7.1 Power-places

The adoption of a relational and non-anthropocentric approach has shown that unusual geological features, outcrops, stone scatters and rivers may well have been perceived as active and lively agents in the Neolithic world, entangled in power and debt relations. In Chapters 3 and 4, case studies were presented that demonstrated that the location of monument complexes, and in sometimes the form of the monuments constructed, was influenced by geological and earthwork features in the landscape. Distinct landscape features such as rock outcrops and unusual stone spreads, such as the sarsen spreads in the Avebury area (Chapter 4), appear to have held the attention of Neolithic people, either being physically linked to, or incorporated within, monuments. In the Upper Allen Valley on Cranborne Chase (Case Study 1), an unusual and active landscape featuring naleds, sinkholes and a seasonal lake, was an appropriate place for actions that mediated the relationship between the chalk underworld (and its vital gifts of water, sandstone and flint) and the human communities who lived in or frequented this area, being chosen for the construction of the enormous Dorset Cursus, and over time the development of a monument complex. The presence of distinctive sinkholes along the South Dorset Ridgeway may have

influenced the location and the forms of monument built in Dorchester (Case Study 2), reflected in the deep shafts dug at Maumbury Rings in the final part of the late Neolithic.

Mountains and hills were generally not selected as appropriate locations for the creation of monuments, perhaps because they were regarded as too important or sacred or were less easily accessible (Chapter 4.1). However, people living in the middle and late Neolithic period had a sustained interest in caves, sinkholes and karstic landscapes. These liminal spaces which may have been perceived as dangerous or frightening, evidence of underground forces, spirits or deities; portals to the underworld (Chapter 3.5). At Priddy in Somerset, four circular enclosures were built at a concentration of sinkholes, and in the Thornborough landscape in Yorkshire monuments were built on the subsidence prone gypsum belt. The practice of bringing underground materials such as gypsum, chalk or limestone and incorporating them into monuments suggests that their origins below ground imbued them with perceived power and significance (Chapter 3.5). The power and associations of such materials might have been used in other ways including carving or incising blocks, infilling decoration on pots or painting bodies.

The fact that swallow holes, shafts and caves were used for the deposition of human remains and artefacts suggests that people were giving back to these places, in the sense of offerings or appeasement, or using these portals as a way of communicating with another time, place or other beings. The active interest shown in the underworld and unusual geological objects by the builders and users of the Brú na Bóinne complex (Case Study 3) is demonstrated through the carefully layered and curated assemblages of materials, objects, and human remains at passage tombs. These structures were creations of the underworld, invested with, and aligned to, the power of the land and its materials.

There are indications that rivers had a spiritual dimension for people from the earliest Neolithic onwards, with long barrows being constructed for example at the source of the River Chew upstream from Stanton Drew (Chapter 4.4), but it is in the later Neolithic that a close relationship with rivers becomes more evident, with all monument complexes near rivers or bodies of water. At the Stonehenge complex, a focus for activity on the looping course of the River Avon was maintained throughout the middle and late Neolithic (Appendix 1). Watercourses with unusual features such as dramatic bends or loops, unpredictable flows or strange colours were particularly selected for the construction of monuments (Chapter 4.4), such as the Gypsey Race at Rudston. The Avebury monument complex (Case Study 6) developed at the headwaters and springs of River Kennet. Fording places and springs provided a focus for monument construction, and there are many examples of monuments built to deliberately incorporate watercourses, such as Marden henge, or physically linked to them by rows of stones or avenues (e.g., Stonehenge, Stanton Drew and Mount Pleasant). Rivers may well have been regarded as a source of power, a flow of energy, and a link to wider stories and meanings, perhaps closely related to the afterlife.

It is likely that Neolithic people viewed strange landforms, unpredictable rivers and unusual outcrops as locations where power relations with other beings or things could be negotiated and worked through. Where a number of these features were assembled or overlapped in one location, these were powerful places where the workings of the world were revealed, a power that emerged from the interaction between their constituent parts and the people who frequented them (Figure 7-2). These places of convergence can be characterised as non-human assemblages, power-places, hierophanies (Eliade 1959) or bundles (Pauketat 2012), highly appropriate for the construction of monuments. "The more pathways that converge in that place, the more durable the associations, the most cosmically powerful and the more religious, the relationships appear" (Pauketat 2012, 28). These assemblages were active and lively, always in a process of becoming, with sinkholes opening, rivers and stone spreads 'flowing' and monuments being constructed. In the late Neolithic attitudes changed from respectful veneration and prudent use of materials to profligate and extravagant alteration of the landscape, and more active use of landforms and watercourses through incorporation and citation within monuments. These activities involved risk and ritual performance, and perhaps conflict or division. Success depended on co-operation between different people and with the stones, trees or land itself. Through the process of intra-acting (Barad 2007) with these places and features, people entangled themselves within assemblages, and brought themselves deeper into relations with the world.

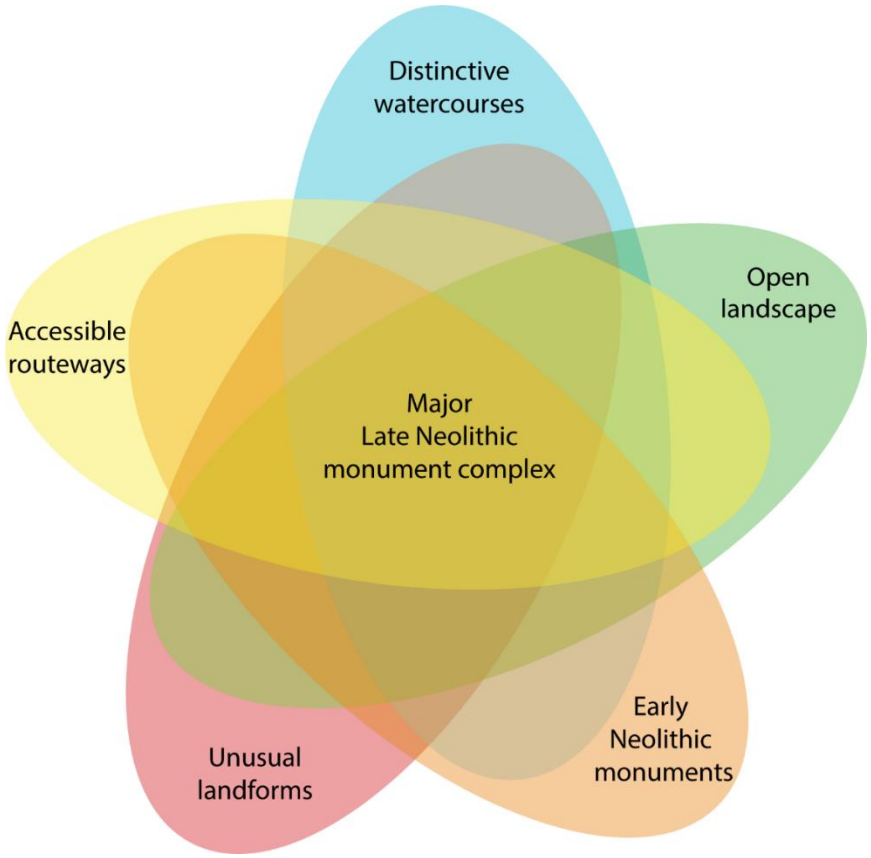


Figure 7-2 A Venn diagram showing the various landscape components that increase the likelihood of a monument complex emerging in the late Neolithic

Where these assemblages of unusual features were easily accessible by routeways, particularly at key crossing points or the nodal points of converging routes (Chapter 4.3) and were largely open in terms of woodland cover (Chapter 4.5), monument complexes would emerge. Relatedness to place can be seen as a central theme in the lives of Neolithic people.

7.2 Alignment with the cosmos

The examples explored in Chapter 5 suggest that late Neolithic people positioned themselves not just within an agentic landscape but also aligned themselves with key solar directions. Patterns of alignment and directionality were an important influence on the location of monuments, their architecture and associated depositional practices. When places and practices were aligned to a wider cosmic order, these actions were linked to wider principles and powers that derived from other worlds or beings.

The Stenness-Brodgar complex (Case Study 4) was located at a highly unusual topographic situation of two adjoining peninsulas, adjacent to a lake that was noticeably changing in size and salinity, and with views towards two distinctive hills that aligned with the movements of the sun. This assemblage of features provided an appropriate place for the construction of Neolithic monuments and important settlements; a meeting point between earth, sea and sky. Similarly at Stonehenge, natural ridges and periglacial stripes aligned on the solstice axis may have been seen as a place where earth and sky met in harmony, features later accentuated by the construction of the Stonehenge Avenue (Case Study 9). Both topography and materials such as spotted dolerite, gypsum and quartz might have been closely connected to beliefs about the skies.

Patterns of alignment and directionality were integral to the design and use of monuments across much of Britain and Ireland, particularly for long barrows in southern England in the early Neolithic, for chambered tombs in northern Britain and passage tombs in Ireland in the middle Neolithic, and for timber monuments across Britain and Ireland in the late Neolithic (Case Study 8). In this period, widespread similar solar quartering principles emerged that must relate to a shared cosmology and worldview across large areas, influencing the orientation of houses, timber and stone monuments from Orkney to southern England (Chapter 5.6). In particular, the construction of square-in-circle timber structures in the second quarter of the 3rd millennium BC was guided by strong principles of directionality and orientation to the south-east quarter of the compass.

The construction of Neolithic monuments with precise alignments falls into two key periods, around 3000 BC for Northern Scotland and Ireland, and around 2500 BC at Stonehenge, towards the end of certain architectural traditions. It is possible that the sunlight or shadows entering these structures were seen as powerful non-human beings that re-animated the power of the tombs or monuments or provided proof of cosmic alignment and acceptance by deities or other beings. It is also possible that precise astronomical alignments helped to make the power of those who constructed or controlled these

Neolithic monuments seem natural, with certain people harnessing powerful forces for political gain, affirming or creating unequal relations (Barrett 1994; Brück 2001). The fact that these were short-lived practices suggests that these were unstable relations and structures, open to resistance and challenge. Claiming control over the sun beyond general principles of orientation may have been a step too far. Celestial bodies were not simply perceived as powerful by Neolithic people, but relations with them were part of a complex relationship between different groups of people, mediated through orientation, observation, and sometimes perceived control or prediction of their movements.

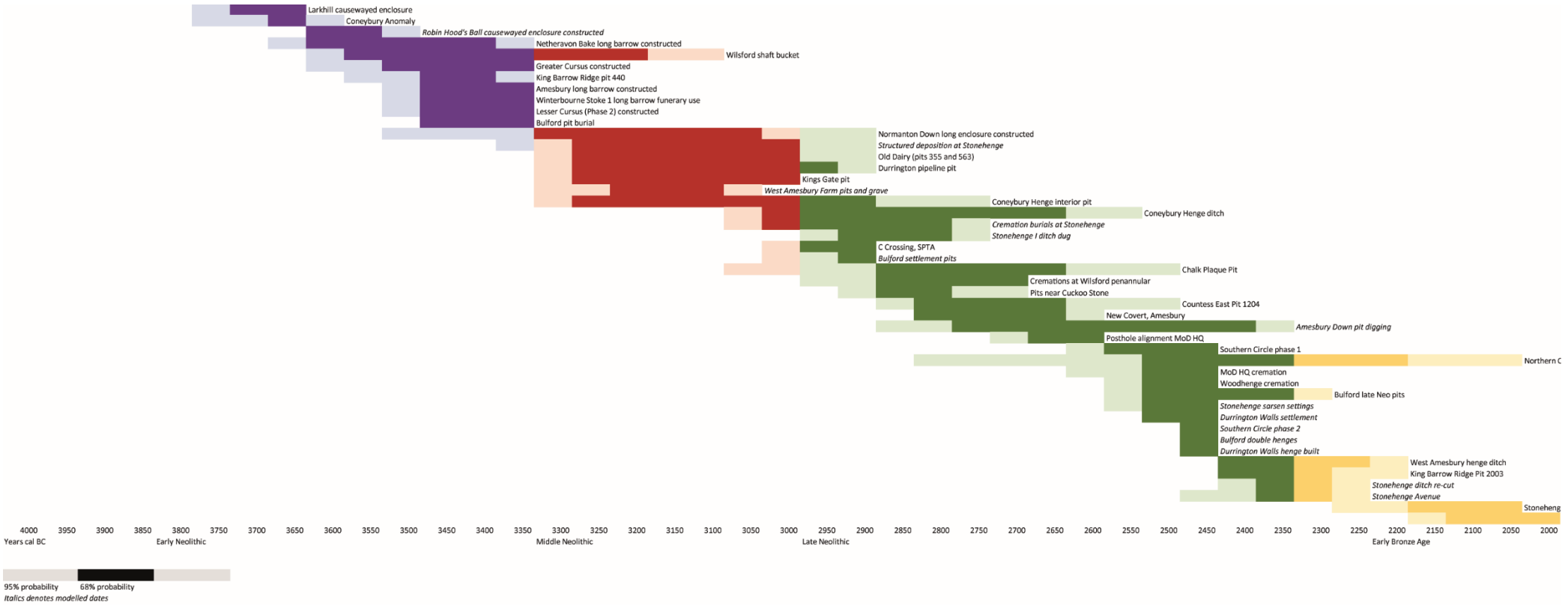
7.3 Connections across time

A new precise radiocarbon chronology for the development of the Dorchester monument complex has provided an orientating device that has enabled discussion of the specifics of Neolithic monument construction in relation to power, memory, time and place (Chapter 6). In particular, concepts of non-linear relational time, and an exploration of non-human timeframes, has deepened our understanding of the ebb and flow of this complex and its entangled assemblage of materials, decisions and time. People were deliberately choosing to build new monuments and conduct rituals that gained some of their power from being located close to, but at a discrete and respectful distance from much older monuments. A non-linear approach to time has helped to relocate these places to the present 'now' of the late Neolithic, with earlier monuments more likely to be re-inscribed and re-interpreted to suit the present. By situating the Dorchester monument complexes into wider nested scales of temporality it was possible to pinpoint larger scale tipping points and moments of instability, as well as periods of pause and relative inactivity. How does this sequence compare to other monument complexes, and changes at regional and inter-regional levels? Although the chronologies for other monument complexes (Appendices 1–5) compiled for this project are biased and partial, due to the imbalances in the way that the archaeological record is created, nevertheless they are a good starting point for comparing the development of these case studies across time (Figure 7-3).

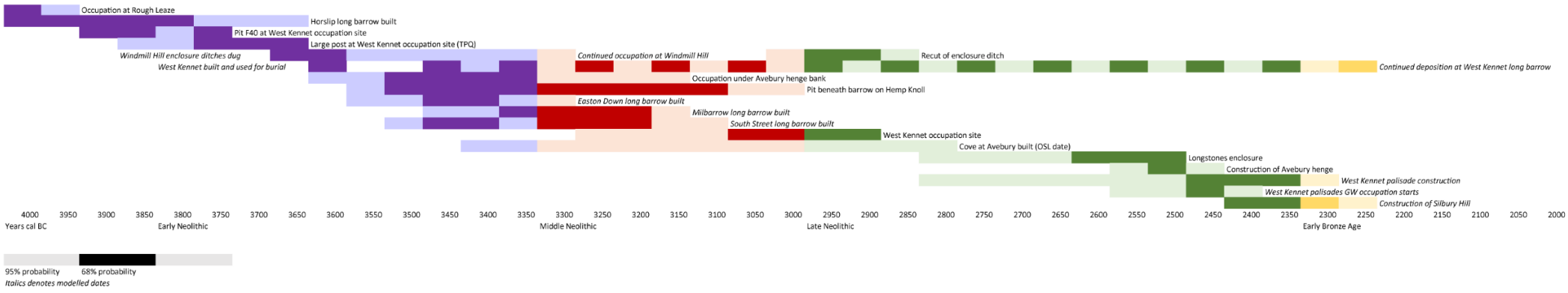
7.3.1 Emergence

Although all five monument complexes examined have some evidence for Mesolithic occupation, usually indicating visits focused on river valleys or bodies of water, activity levels were low-level, except for the Stonehenge landscape. Here, the Avon valley saw relatively intense activity with significant Mesolithic occupation at Blick Mead, as well as possible hunting traps and large postholes or pits in upland areas (Appendix A1.2). This is the only complex where Mesolithic occupation may have influenced the construction of monuments and gathering of people here in the early Neolithic, although direct continuity is not proven and there is still a long gap before monuments were constructed. Elsewhere, any sense of continuity of occupation is mainly a product of bias in recovery of archaeological evidence, and there is no sense in which the locations of other complexes were significant in the Mesolithic period.

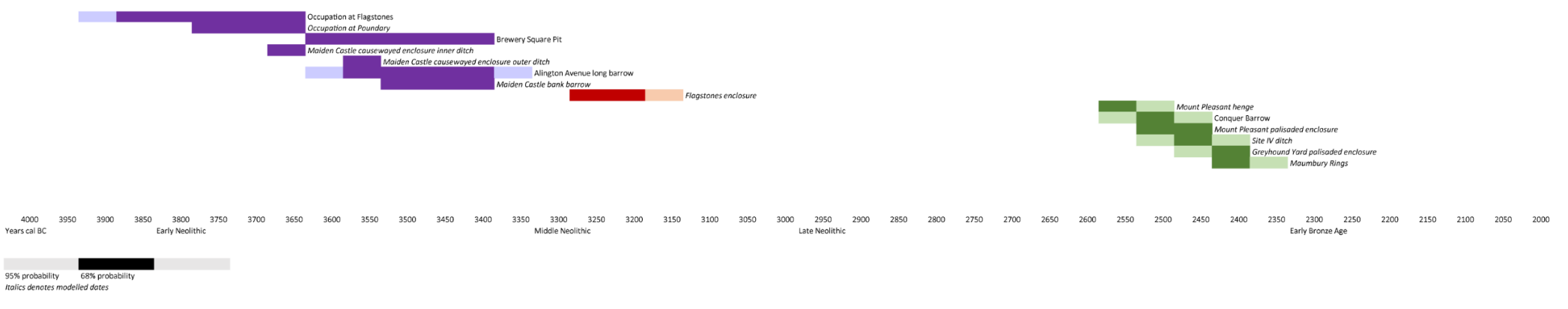
Figure 7-3 Overall chronology models for case study monument complexes



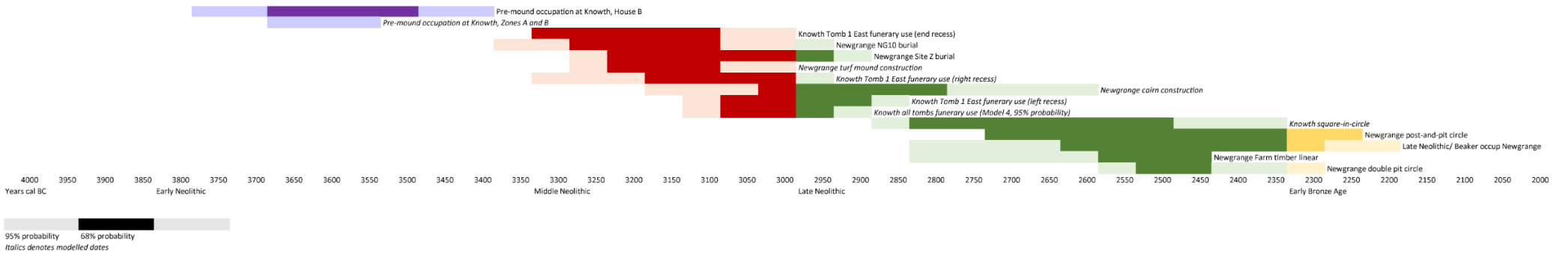
Stonehenge, Wiltshire



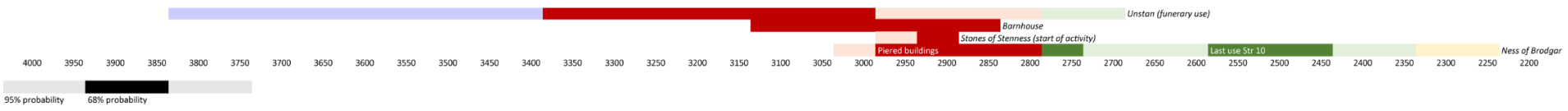
Avebury, Wiltshire



Dorchester, Dorset



Brú na Bóinne, Co. Meath



Stenness-Brodgar, Orkney

All the case studies except the Stenness-Brodgar area, where there does not yet seem to be a major concentration of early Neolithic monuments or settlements (although there are hints of earlier Neolithic activity emerging at the Ness of Brodgar (Appendix A5.3.1)), have significant early components. Whilst the construction of causewayed enclosures, long barrows and cursus monuments was widely scattered across Britain, there are some distinct concentrations. In the Stonehenge area were two causewayed enclosures, two cursus monuments and a cluster of long barrows concentrated around the Wilsford valley, as well as contemporary settlement activity; this was a place of repeated gatherings (Appendices A1.3). At Dorchester, the causewayed enclosure at Maiden Castle formed an important focus, and then bank barrows, cursus monuments and long enclosures were built at scattered locations across the area (Appendix A3.3). In the Avebury area, the major focus for settlement and construction was the enclosure on Windmill Hill, and a dispersed concentration of long barrows were built around the headwaters of the River Kennet and the chalk escarpment overlooking the Vale of Pewsey (Appendix A2.3). At Brú na Bóinne, early Neolithic activity was focused on the ridge overlooking the River Boyne, with the palisaded enclosure and settlement at Knowth and probable cursus and further settlement further to the east at Newgrange (Appendix A4.3). The presence of early Neolithic activity, and particularly loose clusters of early Neolithic monuments, was influential in the development of monument complexes.

7.3.2 Development

In the early part of the middle Neolithic, fewer monuments were constructed at monument complexes but towards the end of the period, there was major monument construction and associated occupation at both Brú na Bóinne and Stenness-Brodgar, and the likely construction of circular monuments at the southern complexes including Stonehenge I, Flagstones and the primary phase of Avebury.

The three major passage tombs of Newgrange, Knowth and Dowth were built at Brú na Bóinne, as well as many smaller passage tombs and areas of middle Neolithic settlement nearby (Appendix A4.4). Each of the tombs was built at a location that was already important but were also deliberately positioned as visual beacons along the Boyne Valley. Newgrange was built close to an area of earlier occupation area and the cursus, and Knowth was laid out adjacent to, but not encroaching upon or overlapping, the ditches of the earlier palisaded enclosure. The time difference between these events was in the region of 400 years, perhaps enough for these vestiges or memory sites to be re-interpreted and re-inscribed for the present. At Stenness-Brodgar the settlements, stone circles, henges and other monuments were built in the middle Neolithic at a previously empty area. This was a transitional period in Orkney, when settlements became increasingly nucleated, sometimes with larger and elaborate structures within them. Although burial continued within chambered tombs, mostly within Quanterness-Quoyness (Q-Q) and hybrid types, on the whole new chambered tombs do not appear have been constructed in large numbers. Large circular henges and stone circles, elaborate settlements with monumental houses, and passage tombs like Maeshowe were all built on or near the Stenness-Brodgar peninsula.

In southern Britain, monument building activity during the middle Neolithic was far less intense, although there is considerable evidence for occupation in the Stonehenge and Avebury areas, associated with Peterborough Ware ceramics. This period saw a greater reliance on pastoral rather than mixed farming (Stevens and Fuller 2012). In the Stonehenge landscape, occupation continued in areas that had been a focus for early Neolithic settlement, such as King Barrow Ridge in the Stonehenge area but also occurred in new locations such as Larkhill Camp and West Amesbury Farm (Appendix A1.4.1). Comparable settlements have not yet been identified at Dorchester, although a few pits with sherds of Peterborough Ware have been found under the town (Appendix A3.4). At Avebury there is widespread evidence for occupation in the middle Neolithic, including the West Kennet Avenue settlement, occupation at Windmill Hill and at later monuments such as the Sanctuary (Appendix A2.4.2). The practice of building long barrows and enclosures ceased, although some monuments such as the Normanton Down mortuary enclosure and long barrows in the Avebury area such as Millbarrow and South Street continued to be constructed, and older monuments such as West Kennet long barrow continued to be foci for deposition.

The time between 3200–3000 BC is a key transition period, with the emergence of the use of Grooved Ware pottery and the development of a distinct funerary tradition, with cremation the preferred (but by no means exclusive) mortuary practice and the deposition of the dead most commonly at circular monuments (Willis *et al.* 2016; Noble *et al.* 2017). The revised dating for Flagstones places this monument early within the tradition of larger circular 'proto-henges' or 'formative henges' which includes the first phase of Stonehenge and probably the primary phase of Avebury henge. The construction of these circular monuments appears key to the subsequent emergence of monument complexes, and the start of wider connections to these places; these were crucial 'pivot-points'.

After the construction of proto-henges, there was a gap in monument construction at the three complexes in southern Britain, until the mid-3rd millennium BC. The period between 2900 and 2600 cal BC is a particularly 'blank' period in terms of new monuments, although deposition at earlier monuments such as West Kennet long barrow continued, and cremations were interred at Stonehenge until around 2850 BC. At Dorchester, the gap between the construction of Flagstones and the beginning of the henge monument at Mount Pleasant was 605–725 years (Case Study 10c), suggesting that for many generations people did not feel it necessary or appropriate to build new monuments; whatever motivations drove the creation of monuments, or the social structures necessary for their construction, were not present. Monument building became irrelevant or incomprehensible.

Nevertheless, these final middle Neolithic circular monuments had long-term resonances in the places where they were built. Whereas the enclosure at Flagstones became a focus around which later monuments were constructed but was itself avoided, the enclosures at Stonehenge and Avebury were both directly altered, embellished, and transformed in the late Neolithic. The presence of these circular

enclosures, and perhaps also their associated burials, created focal points of power that directly influenced later developments.

7.3.3 Culmination

In the late Neolithic there were increasing episodes of monument construction across much of Britain and Ireland, focused particularly on places that had both early and middle Neolithic monuments. These places with earlier histories of gathering and building exerted a gravitational pull or 'stickiness' (Hodder 2012) for people who positioned themselves in relation to these physical traces and special connections, re-inscribing them with their present needs and meanings. This was also the period that saw a more explicit focus on rivers and watercourses and a culmination of foci on unusual geological or topographic landscape features (Section 7.1). People were paying particular attention to the land, identifying both traces of past human or other activity, and tapping into powerful places; perhaps these were one and the same.

In general, late Neolithic activity was undertaken at some distance away from earlier monuments, and did not encroach or cover them, suggesting that they were referenced and respected. Super-imposition of one monument over another is rare, and so was destruction or confrontation (although the dismantling of Site Z at Newgrange is a possible example; Appendix A4.4.3); respect and veneration was more common. For example, the middle Neolithic settlement, a spring and a sarsen spread were incorporated into the route of the West Kennet Avenue at Avebury (Chapter 4.3), new monuments including the pit-and-post-circle were laid out adjacent to Newgrange (Appendix A4.5.3) and sites of earlier occupation in the Stonehenge landscape were marked by the construction of monuments such as the Bulford double henges and the pit circle on Amesbury Down (Figure A1-1). The earlier monuments of the Greater Cursus and Amesbury 42 long barrow were also re-dug and whitened. Any movement between the later monuments would have necessitated the circumnavigation of these, in the same ways as Flagstones and Alington Avenue at the centre of the complex at Dorchester.

Some earlier monuments were incorporated into later constructions. The Larkhill causewayed enclosure was included within the enormous circuit of pits dug around Durrington Walls, suggesting that the ancient site was re-inscribed with new meanings and brought into power relations, perhaps being viewed as a predecessor to the later henge. It was not necessarily continuity but rather discontinuity that made these places suitable for reappropriation and repurposing (Bradley 1993, 113). The patterns of re-use and negotiation with earlier places are rather different at the Stenness-Brodgar complex, due to the more compressed and uncertain timescales. It is difficult to identify relationships to earlier monuments, although tombs such as Unstan are likely to have continued to be frequented, and monuments such as Maeshowe are likely to have had earlier phases (Appendix A5.4.2.1).

There is no doubt that the presence of earlier monuments at monument complexes imbued these landscapes with power and influenced later development. People may not have seen these grassed-over earthworks as deriving from a specific time or even built by humans, instead they may have been associated with the supernatural and with mythical or cosmic time, making them as much part of the present and future as the past. Actions at these places may have re-activated or renewed their power, reminding the community of its identity through retelling of collective histories and group memories. People acted with embedded knowledge and earlier experiences but were also looking forward. People dug ditches or erected timber structures knowing that these would change over time; protensions (Husserl 1964) into the future. The repeated digging and back-filling of the ditch around Silbury Hill may have made visible the 'acting back' of the underworld during seasonal floods (Chapter 3), permitting or allowing the continuation of the larger project. The falling of a post at Greyhound Yard in Dorchester might have revealed something about the past or even predicted the future. An episodically decaying monument would have been an active and dynamic place, ripe for interpretation and potentially influencing human actions. Temporality is a social practice and closely related to power relations; late Neolithic people were negotiating relationships between the past, with time, with materials and with each other.

Towards the end of the Neolithic, it could be argued that there is a distinct shift to less reciprocal or balanced relations between people and place, when something of an apogee of monument construction at complexes was reached in the centuries around 2500 BC. Elaborate concentric timber monuments were built at southern British monument complexes including Stonehenge (Southern Circle and Woodhenge), Avebury (The Sanctuary and West Kennet palisaded enclosures) and Dorchester (Site IV), developing from earlier and simpler square-in-circle monuments with their consistent patterns of directionality (Chapter 5.6). In the Brú na Bóinne complex, elaborate timber and earthwork monuments were built, including henge monuments, square-in-circle and concentric structures, and gatherings of large numbers of people and feasting activities took place (Appendix A4.5). The deliberate deposition of animal bones, flints and pottery in pits and post-holes at these monuments paralleled activities at other late Neolithic sites across Britain and Ireland. In Orkney, whatever drew people to the Stenness-Brodgar complex to gather and create spectacular monuments ceased to be relevant by the late Neolithic, and a much more dispersed settlement pattern is in evidence (Appendix A5.5). However, there was major ceremonial feasting events at Structure 10, seemingly episodes that marked the closure of the Ness of Brodgar.

Larger timber palisaded enclosures, including those at Greyhound Yard and Mount Pleasant in Dorchester, Durrington Walls near Stonehenge, and the West Kennet Palisaded Enclosures at Avebury were built in the final Neolithic period, making prodigious use of thousands of trees. Closely associated

are the 'mega-henges' which replaced the enclosure at Durrington Walls and preceded the example at Mount Pleasant. All these have evidence for intense occupation and large-scale feasting events. Despite their wide geographic spread across Britain and Ireland, both mega-henges and palisaded enclosures exhibit remarkable similarities in overall plan, associated depositional practices and types of structures and activities; our monument typologies that separate them based on the material used (timber vs. earth) may not be helpful. The final part of the Neolithic also sees the construction of round mounds in several places, including the Conquer Barrow at Mount Pleasant, the Marlborough Mound, Hatfield Barrow at Marden and Silbury Hill at Avebury. Stone circles, which had been built throughout the late Neolithic, became particularly complex (e.g., Stonehenge) or large (e.g., Avebury) at this time.

There was a desire to on building monuments that encircled or contained at this time, giving the impression that activities and rituals carried out in certain places were extraordinarily powerful, needing to be separated off from the rest of the landscape, marked and memorialised. Recent discoveries of extremely large enclosures, such as the palisade surrounding the Newgrange ridge, and the pit circuit at Durrington Walls, both likely to be late Neolithic in date, surrounded entire areas where intense occupation and monument building had taken place. It has been suggested that for both Avebury and Stonehenge that these complexes were brought together in the final Neolithic as part of single unified scheme (Thomas 1999, 220; Parker Pearson *et al.* 2006, 229), with monuments linked together by the construction of avenues. A unified scheme may imply a dominant power or controlling authority. However, a non-anthropocentric approach to these avenues has shown how they connect monuments to rivers, springs, sarsen spreads and sites of earlier occupation; they were not necessarily human routeways (Chapter 4.3). These complexes were not planned or deliberately created as ritual landscapes by an elite, but rather emerged cumulatively through the interactions of people with shared worldviews and principles, engaged in negotiations and relations with powerful places. Alongside this, social relations between people also emerged and developed, sometimes leading to instability or conflict.

It is beyond the scope of this thesis to look at the continuing, albeit significantly different, development of monument complexes in the Chalcolithic and early Bronze Age, although it is worth adding a few lines on the subject here, as these changes might indicate something about power relations at the end of the Neolithic. The earliest change in practices occurs at Stenness-Brodgar, where Barnhouse was abandoned in the 29th century BC, and no new structures were built at the Ness of Brodgar after perhaps the 28th century BC (Card *et al.* 2018). It is quite possible that the building of monuments and structures, and their associated rituals, placed an increasing strain on communities who had to provide food, labour and equipment for such projects. Such demands may have led people to question their communal principles, their beliefs about non-human agents and to resist, down tools or move away. This is much earlier than the arrival of Beaker-associated practices in Britain and there is sparse evidence for Beaker pottery on Orkney (Sheridan 2013), so the change cannot be attributed to the arrival of newcomers.

Elsewhere, intense monument construction in stone, timber and earth, and mass labour mobilisation, peaked at monument complexes around 2500 BC. This was when innovative and radical monuments were built; the enormous stone version of a timber monument at Stonehenge, and shortly afterwards the construction of an enormous mound at Silbury Hill. Maumbury Rings, where deep shafts were dug in a seemingly unique monument, was one of the final major components of the Dorchester complex (Case Study 10b). At Avebury, these practices lasted slightly longer than at other southern British complexes, with construction activities at the monumental Silbury Hill not ceasing until *2335–2285 cal BC* (Leary *et al.* 2013a, 104). These may not have been competitive monuments built in emulation of each other, but simply the varied responses of communities to build bigger and more elaborate monuments in the face of change (Bayliss *et al.* 2007, 50).

An obvious explanation for this peak of monumental construction and subsequent cessation of monument building is the arrival of Beaker-using people from the Continent, bringing with them new ideas and practices, including the use of the earliest metals (Case Study 10c). Needham (2012) has noted that early Beaker burials were placed close to, but at a reserved distance from, major ceremonial centres. The Amesbury Archer and Boscombe Bowmen were cautiously buried *c*.5 km from Stonehenge, for example (Pollard *et al.* 2017, 282). Perhaps these new arrivals made people turn more vigorously to their own communal projects and 'doings' in even more intensive and elaborate ways. The relative lack of early Beaker burials in the Avebury area (Cleal 2012) may suggest that the people in this area held onto their principles and beliefs longer than elsewhere. However, there is a danger in equating correlation with causation. If the frenzy of monument building around 2500 BC created tension, conflict or rebellion, external concepts and new ideas may have fallen onto fertile ground. Did resource-hungry projects and religious zeal lead to a collapse in shared ideas and traditions, allowing new arrivals to fill something of a power vacuum? As more detailed chronologies are built for the latest Neolithic, we will be able to write fuller histories of this dramatic period.

7.4 Connections across space

In the late Neolithic, communities across widely dispersed parts of Britain and Ireland chose from a limited repertoire of monument types that together often developed into ceremonial complexes. The similarities between the architecture constructed, as well as ritual practices, suggest varying degrees of contact and shared worldviews between people across overlapping regional and inter-regional networks. It should be stressed that this does not suggest any form of 'pan-British' connectivity as there are large parts of Britain and Ireland where certain forms of monument or activity are absent or different. However, there were overlapping spheres of influence and networks along which ideas, people and objects could flow with some considerable rapidity. These were not necessarily continuous networks that spread gradually over time and space but were connections between relatively far-flung nodal points,

with monument complexes providing key links or jumping off points in these networks. As with Serres and Latour's scrunched handkerchief of time (Chapter 6.2), the same type of assemblage thinking can help us think of space as topological; what matters is not metric distance but how closely connected entities in a network are (Latour 1996, 371; Müller 2015).

There are three main ways in which these far-flung connections and long-distance movements can be identified in the archaeological record: 1) material culture, including raw materials and portable objects, 2) life histories of people and animals, and 3) close similarities in ritual practices and architecture. A few examples will suffice to show the extent of these overlapping connections.

7.4.1 Material culture

At the Ness of Brodgar and Barnhouse settlements at Stenness-Brodgar there is pitchstone brought from the Isle of Arran, Lewisian gneiss used to make maceheads, and Den of Boddam flint cobbles from Aberdeenshire (Anderson-Whymark 2020a and b), this latter link underlined by the presence of carved stone balls (Clarke 2020, fig 18.20), much more commonly found in north-east Scotland. The pitchstone had been worked using a type of blade manufacture not normally found in Orkney, suggesting that long-distance travellers who knew how to work this material brought it with them. At Brú na Bóinne there are porcellanite axes and flint from the chalklands of Northern Ireland (O'Kelly *et al.* 1983, 41; Eogan and Roche 1994, 324; Eogan and Roche 1999, 101), the famous Knowth flint macehead was made of raw material from northern Britain, possibly Orkney (Carlin 2017, 6), and two miniature amber beads also from Knowth are reminiscent of carved stone balls from north-east Scotland (Sheridan 2014). Further south, the gneiss macehead that accompanied one of the cremations at Stonehenge was likely made with raw material probably from the Outer Hebrides (Cleal *et al.* 1995, 394; Anderson-Whymark 2020b, 245) and Grooved Ware pottery from this area, particularly from Woodlands and Bulford, has close parallels with that found at Barnhouse in Orkney (Leivers 2019). The bluestones themselves connect the monument to south-west Wales, and the sarsens to the Marlborough Downs not far from Avebury. At the West Kennet palisaded enclosures, a large flint core is thought to be of East Anglian origin (Appendix A2.5.8), two ripple-flaked arrowheads made of grey flint probably come from north-east Britain and a large block of grandiorite may derive from the Cheviot Hills (Josh Pollard pers. comm.). Similarities between the Grooved Ware pottery found at this site and assemblages from the Rudston area of east Yorkshire suggest further long-distance connections, particularly to eastern areas of Britain (Pollard *et al.* 2019, 8). Dorchester has less evidence for transported material culture, although a ceramic dish probably from Flagstones incised with Grooved Ware-style decoration (Appendix A3.4.1) has close parallels to one found associated with a cremation at Stonehenge, underlining the link between the two sites. It can be seen that each of the complexes, even those located in relatively close geographical proximity, have quite different sets of connections, although Grooved Ware provides a key link between them all. On current evidence the style was developed in Orkney by 3200 BC and then spread rapidly across much of Britain

and Ireland. These rapidly spread along earlier Neolithic networks connecting places via coastal sites, particularly across the Irish Sea and along western seaways (Garrow and Sturt 2011; Bradley *et al. 2016*).

Although it is possible to identify objects, such as the Knowth macehead, that were clearly highly valued and transported over long distances, these are relatively few and do not have to be interpreted as the possessions or trading items of an elite (*contra* Sheridan 2014). There appear to have been traditions or restrictions relating to the production and use of certain objects, such as the manufacture and destruction of maceheads within the interiors of the Ness of Brodgar structures, but these objects could be deposited in a variety of places: in passage tombs, accompanying cremations or inhumations, or placed into rivers, lakes and bogs (Carlin and Cooney 2020). There is no indication that the exchange and display of these objects was controlled only by an elite, or that their meanings and affordances remained static in different social arenas and contexts. Rather than evidence of social stratification, these objects and materials can help to map networks of connection and circulation.

7.4.2 Life histories

Where human remains do survive from Neolithic Britain and Ireland, it is possible to catch glimpses of social divisions and different identities. These include the division of the dead by age and sex in the chambers of West Kennet long barrow (Appendix A2.3.3), the differential diet between sexes of individuals buried in Orcadian tombs (Lawrence 2012), the selection of people with unusual diseases or deformities within Wor Barrow (Allen *et al.* 2016a) and the treatment of children after death at causewayed enclosures such as Hambledon Hill (Mercer and Healy 2008). Close genetic relationships have also been identified between men and women people buried at geographically distant Irish passage tombs (Cassidy *et al.* 2020). Whether this was a hierarchical elite as claimed is difficult to know for sure, as other burials from non-tomb contexts are scarce; it is equally possible that these people held power in terms of their specific roles or situated networks as temple oracles, shamans or a line of sacred artists. Due to a lack of surviving human remains, and only recent development of isotope techniques applicable to cremations, at present osteo-biographical information for people from the late Neolithic is sparse. At Flagstones, children were clearly treated differently (Appendix A3.4.1) and analysis of material from late Neolithic cremation cemeteries suggests a prevalence of female burials at some sites (Willis 2019). We should expect this osteo-biological evidence to confound or surprise, rather than reinforce, expectations of social structures.

As discussed in Chapter 4.3, there is growing evidence for people undertaking regional-scale or even longer journeys in the early and middle Neolithic. Regional-scale movement has been identified for individuals buried in Irish court tombs (Snoeck *et al.* 2016; 2020), the long cairns of Penywyrlod and Hazleton North (Neil *et al.* 2016; 2017) and certain individuals involved in conflict at Hambledon Hill (Neil *et al.* 2018). The male buried at West Amesbury near Stonehenge has strontium and oxygen values that

suggest he spent his childhood much further west, possibly in Ireland (Mays *et al.* 2018, 705) as does the primary burial from Winterbourne Stoke long barrow. Movement between the Mendips and Dorset is reflected in isotope results from individuals buried at Monkton Up Wimborne (Case Study 1). It cannot be assumed that monuments were necessarily built by local communities, nor that people buried within tombs lived locally. However, not all human remains from sampled sites have shown long-distance travel or origins; those buried at Ty Isaf long cairn in south Wales appear to have lived relatively locally (Neil *et al.* 2017), most individuals buried at Hambledon Hill were brought up within 30 km of the monument (Neil *et al.* 2018) and only one of the individuals sampled from Poulnabrone portal tomb in Ireland could be classed as 'non-local' (Ditchfield 2014). The evidence suggests movement and travel patterns were variable.

At Stonehenge, sampling of middle–late Neolithic cremations has shown that although the majority were 'local' and could have lived on the chalk, others had lived a considerable distance away and either travelled, or were brought after death, to Salisbury Plain (Snoeck *et al.* 2018; Appendix A1.5.3). Studies on domestic pig and cattle bones from the henge enclosures at Mount Pleasant, Durrington Walls, Marden and the West Kennet palisaded enclosures show diverse origins for the animals eaten during feasts at these sites (Viner *et al.* 2010; Madgwick *et al.* 2012; 2019), suggesting that people were moving them over relatively long distances for feasting events in around 2500 BC. The lack of permanent late Neolithic settlements in the archaeological record in many regions of Britain and Ireland suggests that people led relatively mobile lives. The annual or cyclical journeys of these people may have revolved around synchronised times of feasts and gatherings, and the events of monument construction, occasions that memorably punctuated the lives of late Neolithic people. The fact that women and children also made these journeys (as evidenced at Monkton Up Wimborne and Stonehenge) does not concur with Sheridan's (2014, 311–2) hypothesis of a "male-dominated theocratic elite" undertaking long-distance travel and bringing back exotic objects, ideas and practices. Equally not all may have had access to the provisions, clothing, health and knowledge needed to undertake long journeys (Leary and Kador 2016, 4). The interpretation of osteo-biographical data can be problematic when social constructs such as identity and inequality are assumed and when old models of social evolution are employed, as seen in some of the recent discourse on ancient DNA (Frieman and Hofmann 2019; Cassidy *et al.* 2020). These techniques reveal the messy and entangled nature of our world and must be interpreted using relational approaches that do not separate nature and culture, human and non-human, science and humanities.

7.4.3 Monumental architecture and ritual practices

Finally, connections are shown by the close parallels between monumental architecture and ritual practices at widely dispersed monument complexes across parts of Britain and Ireland. For example, timber square-in-circle structures are a type of monument found many areas of Britain and Ireland

(Chapter 5.6), which develop in some places into more elaborate concentric monuments. Although these are not yet closely dated (see Greaney *et al.* 2020, supp info, table S5), recent radiocarbon dates on ceramic residues from Grooved Ware pots deposited at two of these monuments suggest that they had a long currency. The timber square-in-circle monument on Machrie Moor on Arran is associated with Grooved Ware deposited around 3000 BC (Copper 2021), whereas the structure at Knowth had deposition much later, probably around 2600 cal BC (Eogan and Roche 1997, 136).

Chambered tombs on Orkney show close connections with Caithness and mainland Scotland from the earliest Neolithic. Similar tombs built here and in eastern Ireland (Case Study 8) indicate connections between the people who built developed Irish passage tombs such as those in the Boyne Valley. Megalithic art found at Orkney and Irish passage tombs connects them to a wider network of Atlantic coastal places; linked by sea routes across the Irish Sea, including to Northern Britain and Wales. Other monuments in the Brú na Bóinne complex, particularly the geometric enclosures, post facades and timber rectangular structures appear to be unique and may be distinctly Irish traditions (Appendix A4.5.3), although recently a circular enclosure on the Cumbrian coast has been discovered that has clear parallels with those built along the Boyne floodplain (Steve Dickinson pers. comm.).

The cremations at Flagstones and Stonehenge, and particularly the different funerary treatment of adults and children at Flagstones, links with contemporary practices at other cremation cemeteries in Britain and at passage tombs in Ireland. The motifs carved into the walls of Flagstones (Appendix A3.4.1), the carved chalk from Monkton-up-Wimborne (Case Study 1) and the spiral rock art found at Knowlton all suggest connections to the megalithic art styles found more commonly found along the Atlantic coast. Late Neolithic palisaded enclosures, timber 'square-in-circle' monuments, concentric circles, round mounds and henge enclosures were often built in close association and occur across Britain and Ireland (Figure 7-4). It seems likely that these monuments were all constructed in a relatively restricted time period in the middle of the 3rd millennium BC, and their similarities suggest close connections between disparate regions at this time. Although there were not geographic territories along the lines of Renfrew's Thessian polygons (Chapter 1.1.1), different complexes do appear to have interactions with people in other specific regions of Britain and Ireland. Throughout the Neolithic period there were overlapping and changing spheres of interaction, as well as a diversity of regional traditions. Monument complexes were places connected by historical ontologies, "loosely bounded cultural worlds that provide…. general repertories of potential meanings, techniques and forms of action" (Robb and Pauketat 2013, 24).

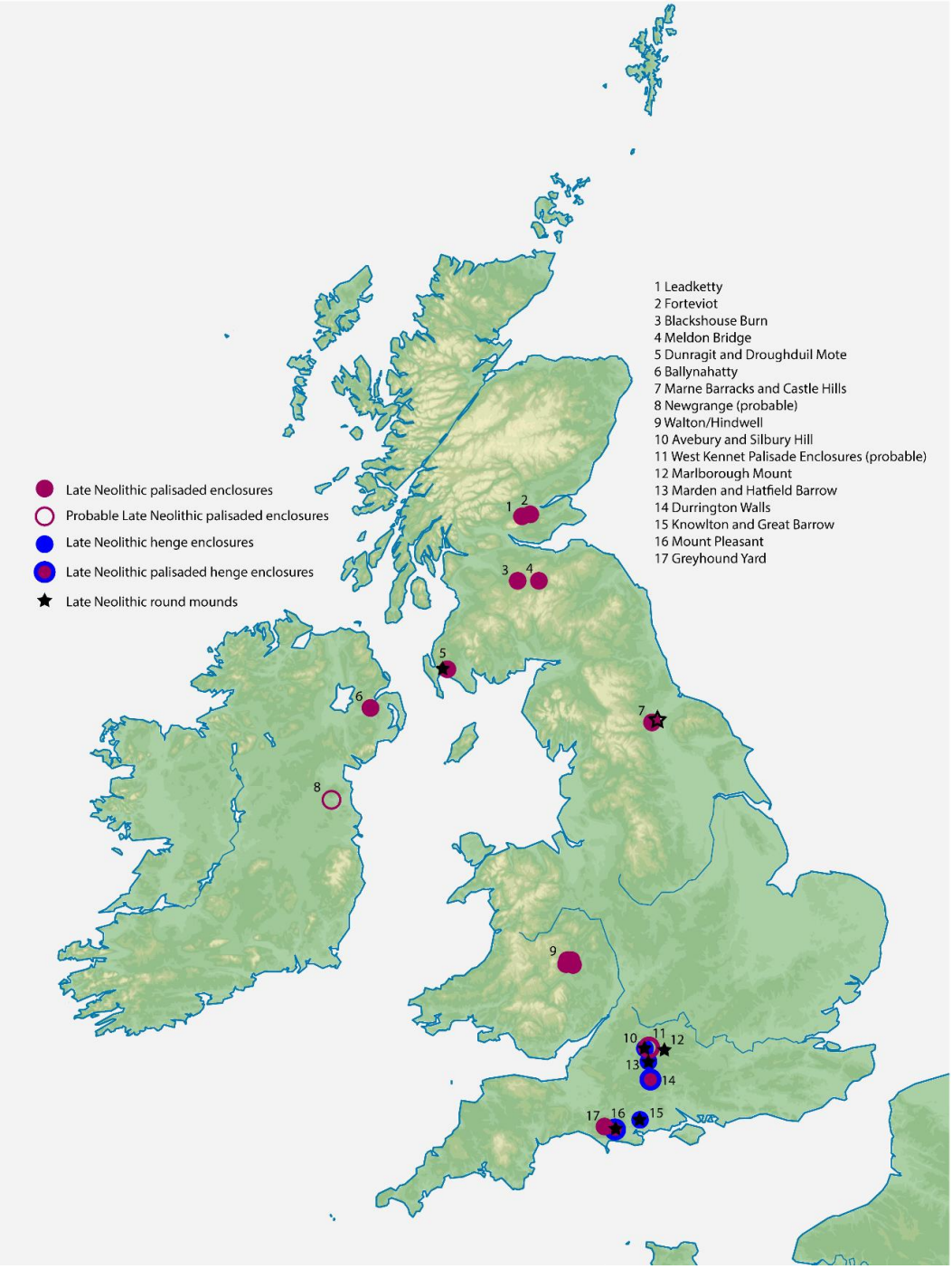


Figure 7-4 Map showing the distribution of late Neolithic large henge enclosures, palisaded enclosures and round mounds. Compare with Figures 5-9 and 5-15 to see some of the overlapping spheres of influence

Archaeologists have often searched for beginnings – the earliest henge, the first stone circle, the origins of Grooved Ware. But these shared practices emerged through the interactions between different people and places, and also with non-human agencies; places, materials and things. The challenge is to map these connections over space and time, capturing the overlapping and multi-dimensional ways in which people were involved in relations in the past.

7.5 Relational approach to power

Although we can map the distribution of artefact types, occurrence of practices or monument types, these do not capture the messy, entangled, socially embedded ways in which people would have interacted with each other, and with places and things. This thesis has separated out place (Chapters 3, 4 and 5) from time (Chapters 6), a somewhat false division because monument complexes enfold time and space together. They are places that are connected by encounter, movement, memory and return. Pinpointing the construction date of components of monuments is useful and perhaps the easiest type of 'event' to identify using radiocarbon dating, but the duration of these monuments through visiting, deposition, use and abandonment is equally important. Mapping time-space relationships at monument complexes is an essential first step, but it is also important to understand them as inhabited spaces, moved through by people with earlier experiences and with the ability to interpret and know how to act. History does not emerge "through the ordering of material residues, [but] through writing about how different ways of occupying the world may have been possible" (Barrett 1999, 29).

Combining detailed mapping of monument complexes with a relational approach that focuses attention on non-human materials and beings has proved stimulating and productive. Through alertness and attention to detail, examining specific configurations of assemblages, more nuanced understandings of Neolithic relations have emerged. It has been argued throughout this thesis that power does not reside inert within materials or places but emerges through the interactions and relations that people have with them. A specific focus on the circulation of power within Neolithic monument complexes, has shown the importance of religious beliefs or 'doings' (Fowles 2012) as an integral part of worldview and ontology, and has been constructive in exploring how various non-human agents may have been accorded supernatural powers and great reverence. In particular, the notion of reciprocity, of materials and things 'acting back' (Gibson 1979) has been enlightening, with evidence that the movement of stones and the digging of ditches necessitated some form of reciprocal action, suggesting an intimate relationship that involved negotiation, placation and mediation with powerful non-human entities. However, these activities also involved discussion, collaboration and negotiation between human communities. This is illustrated well by the extraction of the Cuckoo Stone near Stonehenge, where the hollow was marked by a post and various objects deposited in nearby pits, but also feasting took place associated with this – there are relations here with both the land and with other people.

These relationships are not always equal; people can become indebted or obligated in continuing acts. Expanding the social beyond the human (Latour 2005) to include places and materials has on occasion helped to elucidate not only human-nonhuman power relations, but also human-human relationships in which those materials and places were intertwined. At Monkton-Up-Wimborne (Case Study 1), exploring these relations brought into a focus a possible triangle of relations between different human

communities and non-human materials. It was suggested that people taking flint away to the Mendip area were indebted to, or in an unequal power relationship with, the chalk of Cranborne Chase, and perhaps also to the people who lived more permanently in this location. With the felling of trees in great numbers, movement of hundreds of large stones and earth moving activities on a grand scale came risk, potential conflict and division, necessitating appropriate ritual performance and deposition to placate relations both with the world and with other people. It is quite possible that the enormous feasting events at Durrington Walls were directly related to negotiations involved in the transport of the sarsens from the Marlborough Downs (Case Study 5).

Despite the benefits of the relational approach adopted, it has not been possible to find conclusive evidence for social hierarchies or unequal relations of power between people. Rather than assuming Neolithic societies had institutionalised authority, and that their monuments were used to legitimise social domination and the control of knowledge, these places could be interpreted and experienced in different ways by different people at different times. However, people were embedded within, and sometimes constrained by, their social networks and their shared worldviews, included the importance of power relations with non-human entities. Only by expanding the social to include these non-human agents is it possible to begin to understand the Neolithic worldview.

7.6 Alternative approaches to power

How does this relational approach and ontological shift compare to more traditional approaches to exploring power at monument complexes that were outlined in Chapter 1? There are a range of proxies thought to be associated with increasing social inequality and hierarchies of power that can be identified archaeologically, including population growth, intensive agriculture and associated landscape development such as field systems, defences and fortifications associated with territorial groups and differentials in settlement sizes, house sizes or grave goods. There is no clear evidence that any of these were present in Neolithic Britain and Ireland, or they are difficult to assess due to the partial nature of the surviving evidence. Although it could be argued that the monumental houses at Barnhouse and the Ness of Brodgar, or the structures within the Western Enclosures at Durrington Walls, were the houses of an elite, but it is not known whether these were domestic spaces, sacred temples or buildings used by portions of the wider community. Although the evidence for widespread late Neolithic feasting events could be interpreted as building the prestige of certain 'host' groups through competition and gift-giving, the fact that people appear to have come from a wide range of distant locations with their own contributions suggests that these occasions created solidarity among participants and were closely related to collaborative monument construction, rather than necessarily orchestrated by an elite.

Analysis of architectural spaces, patterns of movement and practices of inclusion and exclusion at monuments can provide hints of social organisation but will never be conclusive. It is difficult to know whether it was the movement of people that was being controlled, or the containment and separation of

charged, sacred or powerful beings or actions. The evidence is also contradictory; compare the small interior of Stonehenge with the enormous area enclosed by the pit circuit and henge enclosures at Durrington, or the tiny arena at the centre of Site IV, compared to the large hilltop enclosed by the palisade and henge ditches. While the interior spaces within passage tombs at Brú na Bóinne were restricted, ceremonial activities and megalithic art were increasingly displayed on the exterior of the monuments to potentially large, gathered audiences.

The human labour and organisational abilities required to build the large and composite structures of the late Neolithic provide some indications of the complex social organisation involved, but it cannot be assumed that 'least effort' models were preferred (Adams 2019). The fact that so many people were involved in these projects either direct or indirectly, suggests there were shared expectations of what could be achieved and shared understandings of the purpose behind such activities (Barrett 1999, 27). These people found a common voice in architectural expression but lived through a diverse range of experiences according to gender, age, position, religion or social grouping such as moiety or clan (Bender 1992). It is not enough to rely on the idea that ceremonial landscapes were deliberately created by elites or that unified schemes were created by social leaders to promote their own interests and power. Monument complexes emerged through the accumulation of people's interactions with the affordances of place, both with the land and with previous activities in that location. Such landscapes were not always 'contested' (Bender 1993) – at certain times there was harmony, if only partial and temporary, visible in the agreement and co-operation required to build monuments. These were collective responses based on a common set of principles of understanding and knowledge, to events and agencies. Competition between different human communities does not always need to be invoked; it is far too simple an explanation. Power differences and inequalities were fluid; they ebbed and flowed depending on context, location and time. Monument building activities were certainly contested and may have sometimes involved conflict, but these relationships were entangled in wider relations with non-human and active powers, embedded in the worldview of those involved.

7.7 Future research

In a single PhD research project, it has not been possible to capture the full complexity of Neolithic monument complexes, nor to fully explore the temporal and spatial connections between them. Further work to further map and chart these connections and overlapping spheres of influence would be valuable. It has been outside the scope of this thesis to look to continental Europe, but clearly these connections and spheres extend there too, at least in some periods of the Neolithic. The case studies selected were biased towards those where extensive archaeological research has been undertaken and detailed radiocarbon dating available. Even so, the chronologies provided in the appendices are provisional, and further work is needed to establish much finer-grained narratives that can be compared

more easily. A brief comparison between the radiocarbon dates available for components of the Stonehenge complex and those available for Stenness-Brodgar (Figure 7-3) shows the stark difference in quantity and quality of dating information. With better chronological detail, biographies of other monument complex case studies could be written; efforts must be focused on regions of Britain such as northern England and mainland Scotland that have been somewhat neglected. More work could be targeted at 'cursus-focused' complexes of southern and eastern Britain, which seem to have evolved along quite different trajectories to the major monument complexes examined here. Further work could focus on how we write narratives for those parts of Britain and Ireland where monument complexes did not emerge, where settlements and monuments appear to be more widely dispersed and different in character. Many questions remain, but the questions are more detailed and nuanced than before.

Specific projects that would be valuable to pursue include:

* Mapping and targeted radiocarbon dating of Grooved Ware ceramics from England, Wales and Ireland, similar to that achieved for Scotland (Copper 2021)

* Targeted radiocarbon dating of square-in-circle monuments, and further excavations at selected examples to tease out individual site sequences, date them as a coherent phenomenon and provide more information as to their use

* Excavation at Stanton Drew to tease apart the sequence of timber and stone circles there, and to obtain precise dating evidence

* Dating of archive material at Avebury to obtain a more precise estimate for the construction of the henge enclosure, and further excavations to gain new material to date the construction of the earlier henge bank and various megalithic settings

* Excavation at the Ring of Brodgar, perhaps targeting the ditch terminals, with the aim of obtaining material suitable for dating

* Excavation of the recently identified monuments in the river valley at Brú na Bóinne to elucidate their form and chronology

* Further work on late Neolithic directionality and the orientations of monuments, assessing sites in the field.

* Collation of anthropological case studies from historical and contemporary societies across the world that undermine widespread assumptions about the links between agriculture, social hierarchies and monuments, allowing for different worlds to be imagined.

7.8 Concluding remarks

At the start of Chapter 2, the question was asked whether the adoption of a non-anthropocentric, relational approach to power could reveal new insights about monument complexes and social relations in Neolithic Britain? Research has shown that detailed and nuanced narratives of the past can be developed using a relational theoretical approach that includes non-human materials, objects and places. The approach has highlighted the interconnectedness of people, places and things in Neolithic Britain and Ireland, and emphasised the role of monument complexes as nodes of communication and innovation. Relational and assemblage approaches must not lose sight of unequal relations between people in the past, otherwise major parts of human history are neglected, and out-dated categories and notions of elites remain. Understanding the archaeology of power involves a focus on unequal relations between humans, and how these are mediated through relations with things and places.

In order to begin to document power relations in the Neolithic, sophisticated theoretical approaches within the 'ontological turn' must be combined with detailed and accurate chronologies from Bayesian analysis of radiocarbon dates, as well as osteo-biographical information including isotope and DNA studies. It is important to work upwards from the detailed archaeological evidence, documenting the messy and varied relations between people, places and things in order to write sophisticated narratives of people's actions in the past. By considering and including non-human aspects of the world, including rivers, topography, landforms, directionality, alignments and concepts of past, present and future, it has been possible to unearth why particular places were appropriate for the construction of monuments, and how these developed over time. A perspective that includes the non-human has shown how people living in the Neolithic period understood their debts and obligations to the earth and to their world, within a complex and changing wider set of wider beliefs. They understood that they were involved in reciprocal relationships, both giving and taking.

Neolithic people lived within changing and complex societies, with power inequalities, but not necessarily static hierarchies. The construction of monuments and the development of monument complexes did not require the presence of a powerful elite, nor was one required to maintain the worldview and principles that structured communities and drove them to create these places. There were certainly social clusters, lineages, personas and roles but these will have changed over time and place. People acted within multiple overlapping networks of power, which existed in the relations and actions, rather than held by powerful individuals. Relying on long-dismissed evolutionary social models and master narratives of progress limits our interpretation of the past and makes extreme social inequality seem natural and inevitable, both in the past and today. These are fundamental issues for how we reconstruct prehistoric society, and how we tell stories about the past and our own future.

Bibliography

A

Abbott, M. and Anderson-Whymark, H. 2012. ***Stonehenge Laser Scan: Archaeological Analysis Report***. Swindon: English Heritage Research Report 32-2012

Abercrombie, N., Hill, S. and Turner, B. S. 1980. ***Dominant Ideologies***. London and Boston: Unwin Hyman

Adam, N. J., Butterworth, C. A., Davies, S. M. and Farwell, D. E. 1992. ***Excavations at Wessex Court, Charles Street, Dorchester, Dorset, 1989***. Unpublished report, Wessex Archaeology

Adams, R. 2019. Household ethnoarchaeology and social action in a megalith-building society in West Sumba, Indonesia. ***Asian Perspectives*** 58(2), 331–65

Albarella, U. and Serjeantson, D. 2002. A passion for pork: meat consumption at the British late Neolithic site of Durrington Walls. In P. Miracle and N. Milner (Eds). ***Consuming Passions and Patterns of Consumption***, 33-49. Cambridge: McDonald Institute

Alberti, B. 2007. Destabilizing meaning in anthropomorphic forms from north-west Argentina. ***Journal of Iberian Archaeology*** 9/10, 209–29

Alberti, B., Fowles, S., Holbraad, M., Marshall, Y and Witmore, C. 2011. 'World's otherwise': archaeology, anthropology and ontological difference'. ***Current Anthropology*** 52(6), 896–912

Alberti, B. and Marshall, Y. 2009. Animating archaeology: local theories and conceptually open-ended methodologies. ***Cambridge Archaeological Journal*** 19(3), 344–56

Albone, J., Massey, S. and Tremlett, S. 2007. ***The Archaeology of Norfolk Coastal Zone: Results of the National Mapping Programme***. Dereham: Norfolk Landscape Archaeology and English Heritage Report

Allen, D. 2002. ***Myth and Religion in Mircea Eliade***. London: Routledge

Allen, M. J. 1995. Mesolithic features in the car park. In R. M. J. Cleal, K. E. Walker and R. Montague (Eds). ***Stonehenge in its Landscape: Twentieth-Century Excavations***, 43–7. Swindon: English Heritage

Allen, M. J. 1997a. Land-use history: land molluscan evidence. In R. J. C. Smith, F. Healy, M. J. Allen, E. L. Morris, I. Barnes and P. J. Woodward (Eds). ***Excavations Along the Route of the Dorchester By-pass, Dorset, 1986–8***, 166–84. Salisbury: Trust for Wessex Archaeology

Allen, M.J. 1997b. Environment and land-use: the economic development of the communities who built Stonehenge: an economy to support the stones. In B. Cunliffe and C. Renfrew (Eds). ***Science and Stonehenge***, 115–44. Oxford: Proceedings of the British Academy

Allen, M. J. 1998. A note on reconstructing the prehistoric landscape environment in Cranborne Chase: the Allen Valley. ***Proceedings of the Dorset Natural History and Archaeological Society*** 120, 39–44

Allen, M. J. 2005. Considering prehistoric environmental changes on the Marlborough Downs. In G. Brown, D. Field and D. McOmish (Eds). ***The Avebury Landscape: Aspects of the Field Archaeology of the Marlborough Downs***, 77–86. Oxford: Oxbow Books

Allen, M. J. 2020. ***Looking in to the Avebury landscape; re-interpreting 60 years of landscape reconstruction***. Paper presented to Avebury and Stonehenge Archaeology and History Research Group, 10 January 2020.

Allen, M. J., Chan, B., Cleal, R., French, C., Marshall, P., Pollard, J., Pullen, R., Richards, C., Welham, K. and Parker Pearson, M. 2016b. Stonehenge's avenue and 'Bluestonehenge'. ***Antiquity*** 90(352), 991–1008

Allen, M. J. and Gardiner, J. 2009. If you go down to the woods today: a re-evaulation of chalkland postglacial woodland: implications for prehistoric communities. In M. J. Allen, N. Sharples and T, O'Connor (Eds). ***Land and People: Papers in Memory of John G. Evans,*** 49–66. Oxford: Oxbow Books, Prehistoric Society Research Papers 2

Allen, M. J. and Scaife, R. 2007. A new downland prehistory: long-term environmental change on the southern English chalklands. In A. Fleming and R. Hingley (Eds). ***Prehistoric and Roman Landscapes: Landscape History after Hoskins***, 16–31. Macclesfield: Windgather Press

Allen, M. J., Smith, M., Jay, M., Montgomery, J., Bronk Ramsey, C., Cook, G. and Marshall, P. 2016a. ***Wor Barrow, Cranborne Chase, Dorset: Chronological Modelling***. Swindon: Historic England Research Report 9-2016

Allen, T., Cramp. K., Lamdin-Whymark, H. and Webley, L. 2010. ***Castle Hill and its Landscape: Archaeological Investigations at the Wittenhams, Oxfordshire***. Oxford: Oxford Archaeology

Althusser, L. 1971. ***Lenin and Philosophy and Other Essays***. London: Monthly Review Press

Anda G. A. 2007. Sacrifice and ritual body mutilation in postclassical Maya society: taphonomy of human remains from Chichen Itza's Cenote Sagrado. In V. Tiesler and Cucina, A. (Eds). ***New Perspectives on Human Sacrifice and Ritual Body Treatments in Ancient Maya Society***, 190–208. New York: Springer

Anderson, K. 2013. Mind over matter? On decentring the human in Human Geography. ***Cultural Geographies*** 21(1), 3–18

Anderson-Whymark, H. 2020a. Maceheads. In N. Card, M. Edmonds and A. Mitchell (Eds). ***The Ness of Brodgar: As It Stands,*** 244–53. Kirkwall: Kirkwall Press, University of the Highlands and Islands Archaeology Institute Research Series 3

Anderson-Whymark, H. 2020b. Ness of Brodgar flaked stone assemblage: 2004–2018. In N. Card, M. Edmonds and A. Mitchell (Eds). ***The Ness of Brodgar: As It Stands,*** 208–23. Kirkwall: Kirkwall Press, University of the Highlands and Islands Archaeology Institute Research Series 3

Archaeological Services Durham University 2016. ***Long Meg and Her Daughters, Little Salkeld, Cumbria: Post-Excavation Full Analysis***. Unpublished report, available online at: https://altogetherarchaeology.org/reports.php

Armit, I. 1996. ***The Archaeology of Skye and the Western Isles***. Edinburgh University Press

Ashbee, P. 1981. Amesbury barrow 39: excavations 1960. ***Wiltshire Archaeological and Natural History Magazine*** 74/75, 1–34

Ashbee, P. 1970. ***The Earthen Long Barrow in Britain***. London: Dent

Ashbee, P. 2004. Early ditches: their forms and infills. In R. Cleal and J. Pollard (Eds). ***Monuments and Material Culture: Papers in Honour of an Avebury Archaeologist Isobel Smith***, 1–14. Salisbury: Hobnob Press

Ashbee, P., Bell, M. and Proudfoot, E. 1989. ***Wilsford Shaft: Excavations 1960–62***. London: English Heritage

Ashbee, P., Smith, I. F. and Evans, J. G. 1979. Excavation of three long barrows near Avebury, Wiltshire. ***Proceedings of the Prehistoric Society*** 45, 207–300

Ashmore, P. J. 2016. ***Calanais: Survey and Excavation 1979–88***. Edinburgh: Historic Environment Scotland

Ashwin, T. 1996. Neolithic and Bronze Age Norfolk. ***Proceedings of the Prehistoric Society*** 62, 41–62

Atkinson, R. J. C., Piggott, C. M. and Sandars, N. K. 1951. ***Excavations at Dorchester, Oxon: First Report, Sites I, II, IV, V and VI.*** Department of Antiquities, Ashmolean Museum: Oxford

Atkinson, R. 1956. ***Stonehenge***. London: Hamish Hamilton

Atkinson, R. J. C. 1966. Moonshine on Stonehenge. ***Antiquity*** 40, 212–6

Aveni, A. 2002. ***Conversing with the Planets: How Science and Myth Invented the Cosmos***. Boulder, CO: University of Colorado Press

Aveni, A. 2008. ***People and the Sky: Our Ancestors and the Cosmos.*** London: Thames and Hudson

B

Bailey, G. N. 2007. Time perspectives, palimpsests and the archaeology of time. ***Journal of Anthropological Archaeology*** 26, 198–223

Balaam, N. D., Corney, M., Dunn, C. and Porter, H. 1991. The surveys. In N. Sharples (Ed). ***Maiden Castle: Excavation and Field Survey 1985–6***, 37–42. London: English Heritage

Baldwin, E. 2010. ***Stonehenge Hidden Landscapes interim geophysical survey report, field season 1 (2010–2011)***. Unpublished interim report, University of Birmingham

Ballin, T. B. 2015. Arran pitchstone (Scottish volcanic glass): new dating evidence. ***Lithic Studies*** 2(1), 5–16

Ballin Smith, B. 1994. ***Howe: Four Millennia of Orkney Prehistory***. Edinburgh: Society of Antiquaries of Scotland Monograph Series 9

Ballin Smith, B. 2014. ***Between Tomb and Cist: The Funerary Monuments of Crantit, Kewing and Nether Onston, Orkney***. Edinburgh: Historic Scotland

Bakhtin, M. 1984. ***Problems of Dostevsky's Politics***. Minneapolis: University of Minnesota Press
Banton, S. 2011. ***Winter Solstice Sunrise Alignment at Stonehenge***. Blog post. Available at: http://community.novacaster.com/showarticle.pl?id=11160 [Accessed 1 May 2020]
Barad, K. 2007. ***Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning***. Durham, NC: Duke University Press
Barad, K. 2008. Posthumanist performativity: toward an understanding of how matter comes to matter. In S. Alaimo and S. Hekman (Eds). ***Material Feminisms***, 120–56. Bloomington, IN: Indiana University Press
Barber, M. 2007. The blank country? Neolithic enclosures and landscapes in the West Midlands. In P. Garwood (Ed). 2007. ***The Undiscovered Country: The Earlier Prehistory of West Midlands***, 79–96. Oxford: Oxbow Books
Barber, M. 2014. ***Mount Pleasant, Dorset: A Survey of the Neolithic 'Henge Enclosure' and Associated Features.*** Swindon: English Heritage Research Report 70–2014
Barclay, A., Bradley, R., Hey, G. and Lambrick, G. 1995b. The earlier prehistory of the Oxford region in light of recent research. ***Oxoniensia*** 61, 1–20
Barclay, A., Gray, M. and Lambrick, G. 1995a. ***Excavations at the Devil's Quoits, Stanton Harcourt, Oxfordshire, 1972–3 and 1988***. Oxford: Oxford University Committee for Archaeology
Barclay, A. and Halpin, C. 2012. ***Excavations at Barrow Hills, Radley: Volume 1, The Neolithic and Bronze Age Monument Complex***. Oxford: Oxford Archaeological Unit
Barclay, A. and Hey, G. 1999. Cattle, cursus monuments and the river: the development of ritual and domestic landscapes in the Upper Thames Valley. In A. Barclay and J. Harding (Eds). ***Pathways and Ceremonies: The Cursus Monuments of Britain and Ireland***, 67–76. Oxford: Oxbow Books
Barclay, G. 1983. Sites of the third millennium BC to the first millennium AD at North Mains, Strathallan, Perthshire. ***Proceedings of the Society of Antiquaries of Scotland*** 113, 122–281
Barclay, G. 1999. Cairnpapple revisited: 1948–1998. ***Proceedings of the Prehistoric Society*** 65, 17–46
Barclay, G. 2001. Neolithic enclosures in Scotland. In T. Darvill and J. Thomas (Eds). ***Neolithic Enclosures in Atlantic Northwest Europe***, 144–54. Oxford: Oxbow Books, Neolithic Studies Group Seminar Papers 6
Barclay, G. 2004. 'Four nations prehistory': cores and archetypes in the writing of prehistory. In H. Brocklehurst and R. Philips (Eds). ***History, Nationhood and the Question of Britain***, 151–9. London: Palgrave
Barclay, G. 2009. Introduction: a regional agenda? In K. Brophy and G. Barclay (Eds). ***Defining a Regional Neolithic: Evidence from Britain and Ireland***, 1–4. Oxford: Oxbow Books
Barclay, G. and Maxwell, G. 1998. ***The Cleaven Dyke and Littleour: Monuments in the Neolithic of Tayside***. Edinburgh: Society of Antiquaries of Scotland Monograph Series 13
Barclay, G. J. and Russell-White, C. J. 1993. (Eds). Excavations in the ceremonial complex of the fourth to second millennium BC at Balfarg/Balbrine, Glenrothes, Fife. ***Proceedings of the Society of Antiquaries of Scotland*** 123, 43–210
Barker, C. T. 1985. The long mounds of the Avebury region. ***Wiltshire Archaeological and Natural History Magazine*** 79, 7–38
Barnatt, J. 1989. ***Stone Circles of Britain: Taxonomic and Distributional Analyses and a Catalogue of Sites in England, Scotland and Wales***. Oxford: Archaeopress, British Archaeological Reports British Series 215
Barnatt, J. and Edmonds, M. 2002. Places apart? Caves and monuments in Neolithic and earlier Bronze Age Britain. ***Cambridge Archaeological Journal*** 12, 113–29
Barnatt, J. and Pierpoint, S. J. 1981. Field monuments on Machrie Moor, Arran. ***Glasgow Archaeological Journal*** 8, 29–31
Barnatt, J. and Pierpoint, S. J. 1983. Stone circles: observatories or ceremonial centres? ***Scottish Archaeological Review*** 2(2), 101–16
Barrett, J. C. 1994. ***Fragments from Antiquity: An Archaeology of Social Life in Britain, 2900–1200 BC***. Oxford: Blackwell
Barrett, J. C. 1999. Chronologies of landscape. In P. J. Ucko and R. Layton (Eds). ***The Archaeology and Anthropology of Landscape: Shaping your Landscape***, 21–30. Routledge: London
Barrett, J. 2014. The material constitution of humanness. ***Archaeological Dialogues*** 21(1), 65–74

Barrett, J., Bradley, R. and Green, M. 1991. ***Landscape, Monuments and Society: The Prehistory of Cranborne Chase***. Cambridge: Cambridge University Press

Basso, K. H. 1996. Wisdom sits in places: notes on a western Apache landscape. In S. Feld and K. H. Basso (Eds). ***Senses of Place***, 53–90. Santa Fe, NM: School of American Research Press

Bates, C. R., Bates, M. R., Dawson, S., Huws, D., Whittaker, J. E. and Wickham-Jones, C. R. 2016. The environmental context of the Neolithic monuments on the Brodgar Isthmus, Mainland, Orkney. ***Journal of Archaeological Science Reports*** 7, 394–407

Bax, S., Bowden, M., Komar, A. and Newsome, S. 2010. ***Stonehenge World Heritage Site Landscape Project, Winterbourne Stoke Crossroads: Archaeological Survey Report***. Swindon: English Heritage Research Report Series 107–2010

Bayliss, A. 2009. Rolling out revolution: using radiocarbon dating in archaeology. ***Radiocarbon*** 51, 123–47

Bayliss, A. 2015. Quality in Bayesian chronological models in archaeology. ***World Archaeology*** 47(4), 677–700

Bayliss, A. and Bronk Ramsey, C. 2004. Pragmatic Bayesians: a decade integrating radiocarbon dates into chronological models. In C. E. Buck and A. R. Millard (Eds). ***Tools for Constructing Chronologies: Tools for Crossing Disciplinary Boundaries***, 25–41. London: Springer

Bayliss, A., Bronk Ramsey, C. and McCormac, F. G. 1997. Dating Stonehenge. In B. Cunliffe and C. Renfrew (Eds). ***Science and Stonehenge,*** 39–59. Oxford: Oxford University Press, Proceedings of the British Academy 92

Bayliss, A., McAvoy, F. and Whittle, A. 2007b. The world recreated: redating Silbury Hill in its monumental landscape. ***Antiquity*** 81, 26–53

Bayliss, A., Marshall, P., Richards, C. and Whittle, A. 2017. Islands of history: the late Neolithic timescape of Orkney. ***Antiquity*** 91(359), 1171–88

Bayliss, A. and O'Sullivan, M. 2013. Interpreting chronologies for the Mound of the Hostages, Tara, and its contemporary contexts in Neolithic and Bronze Age Ireland. In M. O'Sullivan, C. Scarre and M. Doyle (Eds). ***Tara: From the Past to the Future***, 26–104. Dublin: Wordwell

Bayliss, A. and Whittle, A. 2007. The times of their lives: from chronological precision to kinds of history and change. ***Cambridge Archaeological Journal*** 17(1), 21–8

Bayliss, A. and Whittle, A. 2018. What kind of history in prehistory? In S. Souvatzi, A. Baysal and E. L. Baysal (Eds). ***Time and History in Prehistory,*** 123–46. London: Routledge

Bayliss, A. Whittle, A. and Wysocki, M. 2007a. Talking about my generation: the date of the West Kennet long barrow. ***Cambridge Archaeological Journal*** 17(1, suppl.), 85–101

Beck, R. A., Bolender D. J., Brown J. A. and Earle, T. K. 2007. Eventful archaeology: the place of space in structural transformation. ***Current Anthropology*** 48(6), 833–60

Becket, A. 2012. Circling the square: Northlight Heritage excavations at Pittentian, Crieff, Perth and Kinross. ***Northern Archaeology Today*** 1, 1–3

Becket, A., Carson, S., Jorge, A., Whyte, R. and Wright, D. forthcoming. A four-post and timber circle structure at Pittentian, Perth and Kinross***.*** In: Sneddon, D. (Ed). ***Archaeology on the Beauly to Denny 400kV Overhead Line Project***. Scottish Archaeological Internet Reports

Bedford, S. 2019. The complexity of monumentality in Melanesia: mixed messages from Vanuatu. In M. Leclerc and J. Flexner (Eds). ***Archaeologies of Island Melanesia: Current Approaches to Landscapes, Exchange and Practice***, 67–79. Canberra: Australian National University Press

Bell, M. 2020. ***Making One's Way in the World: Identifying and Dating Prehistoric Routeways***. Oxford: Oxbow Books

Bell, M. and Leary, J. 2020. Pathways to past ways: a positive approach to routeways and mobility. ***Antiquity*** 94(377), 1349–59

Bender, B. 1978. Hunter-gatherer to farmer: a social perspective. ***World Archaeology*** 10, 203–22

Bender, B. 1992. Theorising landscapes, and the prehistoric landscapes of Stonehenge. ***Man*** 27(4), 735–55

Bender, B. 1993. Cognitive archaeology and cultural materialism. ***Cambridge Archaeological Journal*** 3(2), 257–60

Bender, B. 2002. Time and landscape. ***Current Anthropology*** 43(S4), 103–12

Bennett, J. 2010. ***Vibrant Matter: A Political Ecology of Things***. Durham, NC: Duke University Press
Benson, D., and Miles, D. 1974. ***The Upper Thames Valley: An Archaeological Survey of the River Gravels***. Oxford: Oxford Archaeological Unit Survey 2
Bergh, S. 1995. ***Landscape of the Monuments: A Study of the Passage Tombs of the Cúil Irra Region.*** Stockholm: Bureau for Archaeological Investigation
Bergh, S. and Hensey, R. 2013. Unpicking the chronology of Carrowmore. ***Oxford Journal of Archaeology*** 32(4), 343–66
Bergson, H. 2013. ***Time and Free Will: An Essay on the Immediate Data of Consciousness***. Translated from the French by F. L. Pogson. London: Routledge. (Originally published in 1910)
Bernbeck, R. and McGuire, R. H. 2011. Ideology and archaeology: between imagination and relational practice. In R. Bernbeck and R. H. McGuire (Eds). ***Ideologies in Archaeology***. Tuscon: University of Arizona Press, 1–12
Berry, K. 1967. Gypsey Race, a very intermittent stream of the Yorkshire Wolds. ***Weather*** 22(11), 434–9
Binford, S. R. and Binford, L. R. (Eds). 1968. ***New Perspectives in Archaeology***. Chicago: Aldine Publishing Company
Bintley, M. 2015. ***Trees in the Religions of Early Medieval England***. Woodbridge: Boydell and Brewer
Bird-David, N. 1990. The giving environment: another perspective on the economic system of gatherer-hunters. ***Current Anthropology*** 31(2), 189–96
Bird-David, N. 1999. Animism revisited: personhood, environment, and relational epistemology. ***Current Anthropology*** 40, 67–91
Bloch, M. 1971. ***Placing the Dead: Tombs, Ancestral Villages and Kinship Organisation in Madagascar*.** London: Seminar Press
Bloch, M. 1977. The disconnection between power and rank. In J. Friedman and M. J. Rowlands (Eds). ***The Evolution of Social Systems***, 303–40. London: Duckworth
Bloch, M. 1995. People into places: Zafimaniry concepts of clarity. In E. Hirsch and M. O'Hanlon (Eds). ***The Anthropology of Landscape: Perspectives on Place and Space,*** 63–77***.*** Oxford: Oxford University Press
Bloch, M. 1998. ***How We Think They Think: Anthropological Studies in Cognition, Memory and Literacy***. Boulder: Westview Press
Bolger, T., Moloney, C. and Shiels, D. (Eds). 2015. ***A Journey Along the 'Carlow Corridor'***. Bray: Wordwell, NRA Scheme Monograph
Bond, C. J. 2004. The supply of raw materials for later prehistoric stone tool assemblages and the maintenance of memorable places in central Somerset. In E. A. Walker, F. Wenban-Smith and F. Healy (Eds). ***Lithics in Action, Papers from the Conference Lithic Studies in the Year 2000***, 124–39. Oxford: Oxbow Books, Lithic Studies Society Occasional Paper No. 8
Booth, T., Brück, J. Brace, S. and Barnes, I. 2021. Tales from the supplementary information: ancestry change in Chalcolithic-Early Bronze Age Britain was gradual with varied kinship organisation. ***Cambridge Archaeological Journal*** 31(3), 379–400
Borić, D. 2003. 'Deep time' metaphor: mnemonic and apotropaic practices at Lepenski Vir. ***Journal of Social Archaeology*** 3, 46–74
Bowden, M., Field, D. and Soutar, S. 2012. ***Stonehenge World Heritage Site Landscape Project: The Avenue and Stonehenge Bottom***. Swindon: Historic England Research Report
Bowden, M., Soutar, S., Field, D. and Barber, M. 2015. ***The Stonehenge Landscape: Analysing the Stonehenge World Heritage Site***. Swindon: Historic England
Bowser, B. J. and Zedeño, M. N. 2009. ***The Archaeology of Meaningful Places***. Salt Lake City, UT: University of Utah Press
Bradley, R. 1975. Maumbury Rings, Dorchester: the excavations of 1908-13. ***Archaeologia*** 105, 1–97
Bradley, R. 1984. ***The Social Foundations of Prehistoric Britain: Themes and Variations in the Archaeology of Power***. London and New York: Longman
Bradley, R. 1992. The excavation of an oval barrow beside the Abingdon causewayed enclosure, Oxfordshire. ***Proceedings of the Prehistoric Society*** 58, 127–42
Bradley, R. 1993. ***Altering the Earth: The Origins of Monuments in Britain and Continental Europe***. Edinburgh: Society of Antiquaries of Scotland

Bradley, R. 1998. Ruined buildings, ruined stones: enclosures, tombs and natural places in the Neolithic of south-west England. ***World Archaeology*** 30(1), 13–22
Bradley, R. 2000. ***An Archaeology of Natural Places***. London and New York: Routledge
Bradley, R. 2001. Orientations and origins: a symbolic dimension to the long house in Neolithic Europe. ***Antiquity*** 75, 50–6
Bradley, R. 2002. ***The Past in Prehistoric Societies***. London: Routledge
Bradley, R. 2009. Dead stone and living rock. In B. O'Connor, G. Cooney and J. Chapman (Eds). ***Materialitas: Working Stone, Carving Identity***, 1–8. Oxford: Oxbow Books, Prehistoric Society Research Paper 3
Bradley, R. 2012a. Journey to the centre of the earth. In Gibson, A. (Ed). ***Enclosing the Neolithic: Recent Studies in Britain and Europe***, 203–6. Oxford: Archaeopress, British Archaeological Reports, International Series 2440
Bradley, R. 2012b. ***The Idea of Order: The Circular Archetype in Prehistoric Europe***. Oxford: Oxford University Press
Bradley, R. 2014. The Neolithic and Early Bronze Age resource assessment. In G. Hey and J. Hind (Eds). ***Solent-Thames Research Framework for the Historic Environment: Resource Assessments and Research Agendas***, 87–110. Oxford: Oxford Archaeology, Oxford Wessex Monograph 6
Bradley, R. 2017. ***A Geography of Offerings: Deposits of Valuables in the Landscapes of Ancient Europe***. Oxford: Oxbow Books
Bradley, R. 2020. Time signatures: the temporality of monuments in early and middle Neolithic Britain. ***Proceedings of the Prehistoric Society*** 86, 1–11
Bradley, R. and Chambers, R. 1988. A new study of the cursus complex at Dorchester on Thames. ***Oxford Journal of Archaeology*** 7(3), 271–89
Bradley, R., Cleal, R., Gardiner, J., Green, M. and Bowden, M. 1984. The Neolithic sequence in Cranborne Chase. In R. Bradley and J. Gardiner (Eds). ***Neolithic Studies: A Review of Some Current Research***, 87–105. Oxford: British Archaeological Reports, British Series 133
Bradley, R. and Edmonds, M. 1993. ***Interpreting the Axe Trade: Production and Exchange in Neolithic Britain***. Cambridge: Cambridge University Press
Bradley, R. and García Sanjuán, L. 2017. Sudden time? Natural disasters as a stimulus to monument building. In P. Bickle, V. Cummings, D. Hofman and J. Pollard (Eds). ***The Neolithic of Europe***, 188–99. Oxford: Oxbow Books
Bradley, R., Philips, T., Richards, C. and Webb, M. 2000. Decorating the houses of the dead: incised and pecked motifs in Orkney chambered tombs. ***Cambridge Archaeological Journal*** 11(1), 45–67
Bradley, R., Rogers, A., Sturt, F. and Watson, A. 2016. Maritime havens in earlier prehistoric Britain. ***Proceedings of the Prehistoric Society*** 82, 125–59
Bradley, R., Watson, A. and Style. P. 2019. After the axes? The rock art at Copt Howe, north-west England, and the Neolithic sequence at Great Langdale. ***Proceedings of the Prehistoric Society*** 85, 177–92
Braidotti, R. 2013. ***The Posthuman***. Cambridge: Polity
Braithwaite, M. 1984. Ritual and prestige in the prehistory of Wessex *c*.2200–1400 BC: a new dimension to the archaeological evidence. In D. Miller and C. Tilley (Eds). ***Ideology, Power and Prehistory***, 93–110. Cambridge: Cambridge University Press
Braudel, F. 1972. ***The Mediterranean and the Mediterranean World in the Age of Phillip II***. London: Collins
Brennan, M. 1983. ***The Stars and the Stones: Ancient Art and Astronomy in Ireland***. London: Thames and Hudson
Britnell, B. 2017. ***Walton Basin: Archaeology and Conservation.*** Welshpool: Clwyd-Powys Archaeological Trust
Britnell, W. J. and Jones, N. W. 2012. Once upon a time in the west: Neolithic enclosures in the Walton basin. In Britnell, W. J. and Silvester, R. J. (Eds). ***Reflections on the Past: Essays in Honour of Frances Lynch***, 48–77. Welshpool: Cambrian Archaeological Association
Bronk Ramsay, C. 2009. Bayesian analysis of radiocarbon dates. ***Radiocarbon*** 51, 337–60

Bronk Ramsay, C., Pettit, P. B., Hedges, R. E. M., Hodgins, G. W. L. and Owen, D. C. 2000. Radiocarbon dates from the Oxford AMS system: Archaeometry datelist 30. ***Archaeometry*** 42(2), 459–79

Brophy, K. 1999. The cursus monuments of Scotland. In A. Barclay and J. Harding (Eds). ***Pathways and Ceremonies: The Cursus Monuments of Britain and Ireland***, 119–29. Oxford: Oxbow Books

Brophy, K. 2000. Water coincidence? Cursus monuments and rivers. In A. Ritchie (Ed). ***Neolithic Orkney in its European Context***, 59–70. Cambridge: McDonald Institute Monograph

Brophy, K. 2016. ***Reading Between the Lines: The Neolithic Cursus Monuments of Scotland***. Routledge: London and New York

Brophy, K., Goeckeritz, C. and Macgregor, G. 2017. Build 'n' burn: using fire as a tool to evoke, education and entertain. ***Archaeological Journal*** 174(2), 437–63

Brophy, K. and Green, H. 2015. ***Leadketty Excavations 2015: Data Structure Report***. Strathearn Environs and Royal Forteviot (SERF) Project, unpublished report

Brophy, K. and Green, H. 2016. ***Leadketty Excavations 2016: Data Structure Report***. Strathearn Environs and Royal Forteviot (SERF) Project, unpublished report

Brophy, K. and Millican, K. 2015. Wood and fire: Scotland's timber cursus monuments. ***Archaeological Journal*** 172, 1–28

Brophy, K. and Noble, G. 2010. ***Forteviot Multiphase Ceremonial Monument Excavation 2010: Data Structure Report***. Strathearn Environs and Royal Forteviot Project, unpublished report

Brophy, K. and Noble, G. 2012. Henging, mounding and blocking: the Forteviot henge group. In A. Gibson (Ed). ***Enclosing the Neolithic: Recent Studies in Britain and Europe***, 21–36. Oxford: Archaeopress, British Archaeological Reports 2440

Brophy, K. and Noble, G. 2021. ***Prehistoric Forteviot: Excavations of a Ceremonial Complex in Eastern Scotland***. York: Council for British Archaeology

Brophy, K., Gould, A., Noble, G., Wright, D. and Younger, R. 2012. ***Leadketty Excavations 2012: Data Structure Report***. Strathearn Environs and Royal Forteviot (SERF) Project, unpublished report

Brück, J. 2001. Monuments, power and personhood in the British Neolithic. ***Journal of the Royal Anthropological Institute*** 7(4), 649–67

Brück, J. 2005. Experiencing the past? The development of phenomenological archaeology in British prehistory. ***Archaeological Dialogues*** 12(1), 45–72

Brück, J. and Jones, A. M. 2018. Finding objects, making persons: fossils in British early Bronze age burials. In E. Harrison-Buck and J. Hendon (Eds). ***Relational Identities and Other-Than-Human Agency in Archaeology***, 237–62. Louisville, CO: University of Colorado Press

Brumfiel, E. M. 1995. On the archaeology of choice: agency studies as a research stratagem. In M-A. Dobres and J. E. Robb (Eds). ***Agency in Archaeology***. London and New York: Routledge, 249–55

Brumfiel, E. M. and Earle, T. 1987. ***Specialisation, Exchange and Complex Societies***. Cambridge: Cambridge University Press, New Directions in Archaeology

Buchli, V. and Lucas, G. 2001. Between remembering and forgetting. In V. Buchli and G. Lucas (Eds). ***Archaeologies of the Contemporary Past***, 79–83. London: Routledge

Buck, C. E, Cavanagh, W. G. and Litton, C. D. 1996. ***The Bayesian Approach to Interpreting Archaeological Data***. Chichester: Wiley

Buck, C. E., Kenworthy, J. B., Litton, C. D. and Smith, A. F. M. 1991. Combining archaeological and radiocarbon information: a Bayesian approach to calibration. ***Antiquity*** 65, 808–21

Buck, C. E., Litton, C. D. and Smith, A. F. M. 1992. Calibration of radiocarbon results pertaining to related archaeological events. ***Journal of Archaeological Science*** 19, 497–512

Budd, P., Chenery, C., Montgomery, J. and Evans, J. 2003. You are where you ate: isotopic analysis in the reconstruction of prehistoric residency. In M. Parker Pearson (Ed). ***Food Culture and Identity in the Neolithic and Early Bronze Age***, 69–78. Oxford: Archaeopress, BAR International Series 1117

Burgess, C. 1984. The prehistoric settlement of Northumberland: a speculative survey. In R. Miket and C. Burgess (Eds). ***Between and Beyond the Walls: Essays on the Prehistory and History of North Britain in Honour of George Jobey***, 126–75. Edinburgh: John Donald Publishers

Burl, A. 1976. ***The Stone Circles of the British Isles***. New Haven and London: Yale University Press

Burl, A. 1980. Science or symbolism: problems of archaeoastronomy. ***Antiquity*** 54, 191–200

Burl, A. 1981. ***Rites of the Gods***. London: Dent

Burl, A. 1987. ***The Stonehenge People***. London: Dent

Burl, A. 1991. The Devil's Arrows. ***Yorkshire Archaeological Journal*** 63, 1–24
Burl, A. 1993. ***From Carnac to Callanish: The Prehistoric Stone Rows and Avenues of Britain, Ireland and Brittany***. New Haven: Yale University Press
Burl, A. 2002. ***Prehistoric Avebury*** (second edition). New Haven and London: Yale University Press
Burl, A. 2005. ***Prehistoric Astronomy and Ritual***. Princes Risborough: Shire
Burke, P. 1992. ***History and Social Theory***. Cambridge: Polity Press
Burrow, S. 2010. Bryn Celli Ddu passage tomb, Anglesey: alignment, construction, date and ritual. ***Proceedings of the Prehistoric Society*** 76, 249–70
Bush, M. B. 1988. Early Mesolithic disturbance: a force on the landscape. ***Journal of Archaeological Science*** 15, 453–62

C

Canti, M. 2013. Geology, landscape and soils. In M. Canti, G. Campbell and S. Greaney (Eds). ***Stonehenge World Heritage Site Synthesis: Prehistoric Landscape, Environment and Economy***, 5–13. Swindon: English Heritage Research Report Series 45-2013
Card, N., Mainland, I., Timpany, S., Towers, R., Batt, C., Bronk Ramsey, C., Dunbar, E., Reimer, P., Bayliss, A., Marshall, P. and Whittle, A. 2018. To cut a long story short: formal chronological modelling for the late Neolithic site of the Ness of Brodgar, Orkney. ***European Journal of Archaeology*** 21(2), 217–63
Carlin, N. 2017. Getting in the groove: exploring the relationship between Grooved Ware and developed passage tombs in Ireland *c*.3000–2700 cal BC. ***Proceedings of the Prehistoric Society*** 83, 155–88
Carlin, N. and Cooney, G. 2017. Transforming our understanding of Neolithic and Chalcolithic society (4000–2200 BC) in Ireland. In M. Stanley, R. Swan and A. O'Sullivan (Eds). *The Stories of Ireland's Past: Knowledge Gained from NRA Roads Archaeology*, 23–56. Dublin: Transport Infrastructure Ireland
Carlin, N. and Cooney, G. 2020. On the sea roads: the ebb and flow of links with a wider world. In N. Card, M. Edmonds and A. Mitchell (Eds). ***The Ness of Brodgar: As it Stands***, 320–33. Kirkwall: The Orcadian, University of the Highlands and Islands Archaeology Institute Research Series 3
Carpenter, E. and Winton, H. 2011. ***Marden Henge and Environs, Vale of Pewsey, Wiltshire: A Report for the National Mapping Programme***. English Heritage Research Report 76-2011
Carmichael, D. Hubert, J., Reeves, B. and Schanche, A. (Eds). 1994. ***Sacred Sites, Sacred Places***. London: Routledge
Case, H. 1969. Neolithic explanations. ***Antiquity*** 43(171), 176–86
Cassen, S., Grimaud, V., Lescop, L., Marcoux, N., Oberlin, C. and Querré, G. 2017. The first radiocarbon dates for the construction and use of the interior of the monument at Gavrinis (Larmor-Baden, France). ***Past*** 77, 1–4
Cassidy, L. M., Maoldúin, R. Ó., Kador, T., Lynch, A., Jones, C., Woodman, P. C., Murphy, E., Ramsey, G., Dowd, M., Noonan, A., Campbell, C., Jones, E. R., Mattiangeli, V. and Bradley, D. G. 2020. A dynastic elite in monumental Neolithic society. ***Nature*** 582, 384–8
Castleden, R. 1993. ***The Making of Stonehenge***. London: Routledge
Catt, J., Green, M. and Arnold, N. 1980. Naleds in a Wessex downland valley. ***Proceedings of the Dorset Natural History and Archaeological Society*** 102, 69–75
Chadwick, A. 2004. Footprints in the sands of time: archaeologies of inhabitation on Cranborne Chase, Dorset. In A. Chadwick (Ed). ***Stories from the Landscape: Archaeologies of Inhabitation,*** 1–78. Oxford: Archaeopress, British Archaeological Reports International Series 1238
Chadwick, A. 2016. 'The stubborn light of things': landscape, relational agencies and linear earthworks in later prehistoric Britain. ***European Journal of Archaeology*** 19, 245–78
Chapman, A. 1999. ***An Archaeological Resource Assessment of the Neolithic and Bronze Age in Northamptonshire***. East Midlands Archaeological Research Framework
Chapman, A. 2012. Towards a new prehistory. ***Northamptonshire Archaeology*** 37, 7–18
Chapman, B. 2013. ***Living Between Juniper and Palm: Nature, Culture and Power in the Himalayas***. Oxford: Oxford University Press

Chapman, H. and Gearey, B. 2000. Palaeoecology and the perception of prehistoric landscapes: some comments on visual approaches to phenomenology. ***Antiquity*** 74(284), 316–9

Chapman, H., Hewson, M. and Watters, M. S. 2010. The Catholme ceremonial complex, Staffordshire, UK. ***Proceedings of the Prehistoric Society*** 76, 135–63

Chapman, J. and Gaydarska, B. 2007. ***Parts and Wholes: Fragmentation in Prehistoric Context***. Oxford: Oxbow Books

Chapman, R. 1981. The emergence of formal disposal areas and the 'problem' of megalithic tombs in Western Europe. In R. Chapman, I. Kinnes and K. Randsborg (Eds). ***The Archaeology of Death***, 71–81. Cambridge: Cambridge University Press, New Directions in Archaeology

Chapman, R. 2003. ***Archaeologies of Complexity***. London and New York: Routledge

Chatwin, B. 1987. ***The Songlines***. London: Jonathan Cape

Cherry, J. 1978. Generalization and the archaeology of the state. In D. Green, C. Haselgrove and M. Spriggs (Eds). ***Social Organisation and Settlement: Contributions from Anthropology, Archaeology and Geography***, 411–437. Oxford: British Archaeological Reports, International Series 47

Childe, V. G. 1936. ***Man Makes Himself***. London: Watts & Co

Childe, V. G. 1940. ***Prehistoric Communities of the British Isles***. London: Chambers

Christie, P. 1970. A round barrow on Greenland Farm, Winterbourne Stoke. ***Wiltshire Archaeological and Natural History Magazine*** 65, 64–73

Clare, T. 1978. Recent work on the Shap 'Avenue'. ***Transactions of the Cumberland and Westmorland Antiquarian and Archaeological Society*** 78, 5–15

Clare, T. 2009. No-man's land revisited: some patterns in the Neolithic of Cumbria. In K. Brophy and G. Barclay (Eds). ***Defining a Regional Neolithic: Evidence from Britain and Ireland***, 78–91. Oxford: Oxbow Books

Clark, G. 1936. The timber monument at Arminghall and its affinities. ***Proceedings of the Prehistoric Society*** 2, 1–51

Clark, G. 1939. ***Archaeology and Society***. London: Methuen

Clark, G. 1946. ***From Savagery to Civilization***. London: Cobbett Press

Clark, J. E. 2000. Towards a better explanation of hereditary inequality: a critical assessment of natural and historic human agents. In M-A. Dobres and J. E. Robb (Eds). ***Agency in Archaeology***, 92–112. London and New York: Routledge

Clark, J. E. and Blake, M. 1994. The power of prestige: competitive generosity and the emergence of rank societies in lowland Mesoamerica. In E. M. Brumfiel and J. W. Fox (Eds). ***Factional Competition and Political Development in the New World***, 17–30. Cambridge: Cambridge University Press

Clark, R. 2013. ***Recent archaeological investigations at Priddy Circle 1, Somerset***. Unpublished AC Archaeology Report

Clarke, A. 2020. Stone tools from the Ness of Brodgar. In N. Card, M. Edmonds and A. Mitchell (Eds). ***The Ness of Brodgar: As It Stands,*** 224–43. Kirkwall: Kirkwall Press, University of the Highlands and Islands Archaeology Institute Research Series 3

Clarke, D.L. 1968. ***Analytical Archaeology***. London: Methuen

Clarke, D. L., Cowie, T. G. and Foxon, A. 1985. ***Symbols of Power at the Time of Stonehenge***. Edinburgh: National Museum of Antiquities of Scotland

Clarke, L. and Murphy, D. 2002. Excavation of a Bronze Age enclosure (Site 17) at Lagavooren townland, Co. Meath. Ríocht na Midhe **8**, 18–22

Clastres, P. 1977. ***Society Against the State***. Translated from the French by R. Hurley and A. Stein. Oxford: Blackwell. (Originally published in 1974)

Cleal, R. 2012. 'The small compass of a grave': early Bronze Age burial in and around Avebury and the Marlborough Downs. In G. Brown, D. Field and D. McOmish (Eds). ***The Avebury Landscape: Aspects of the Field Archaeology of the Marlborough Downs***, 115–32. Oxford: Oxbow Books

Cleal, R. and Pollard, J. 2012. The revenge of the native: monuments, material culture, burial and other practices in the third quarter of the 3rd millennium BC in Wessex. In M. J. Allen, J. Gardiner and A. Sheridan (Eds). ***Is there a British Chalcolithic? People, Place and Polity in the Late 3rd Millennium***, 317–32. Oxford: Oxbow Books, Prehistoric Society Research Paper 4

Cleal, R., Walker, K. E. and Montague, R. 1995. ***Stonehenge in its Landscape: Twentieth-Century Excavations***. London: English Heritage

Coates, G. 2002. ***A Prehistoric and Romano-British Landscape: Excavations at Whitemoor Haye Quarry, Staffordshire, 1997–1999***. Oxford: British Archaeological Reports, British Series 340
Cochrane, A. 2005. A taste of the unexpected: subverting mentalités through the motifs and settings of Irish passage tombs. In D. Hofmann, J. Mills and A. Cochrane (Eds). **Elements of Being: Mentalités, Identities and Movement**, 5–19**.** Oxford: British Archaeological Reports 1437
Cochrane, A. 2008. Some stimulating solutions. In C. Knappett and L. Malafouris (Eds). ***Material Agency: Towards a Non-Anthropocentric Approach***, 157–86. New York: Springer
Cochrane, A. 2012. Composing the Neolithic at Knockroe. In A. Cochrane and A. Jones (Eds). ***Visualising the Neolithic: Abstraction, Figuration, Performance, Representation***, 179–97. Oxford: Oxbow Books, Neolithic Studies Group Seminar Papers 13
Colchester Archaeological Group 2014. ***The Stour Valley: A Prehistoric Landscape***. Colchester: Colchester Archaeological Group
Collingwood, R. G. 1938. King Arthur's Round Table: interim report on the excavations of 1937. ***Transactions of the Cumberland and Westmorland Antiquarian and Archaeological Society*** 38, 1–31
Condit, T. and Keegan, M. 2018. ***Aerial Investigation and Mapping of the Newgrange landscape, Brú na Bóinne, Co. Meath***. Interim report, Department of Culture, Heritage and the Gaeltacht
Conneller, C. 2011. ***An Archaeology of Materials: Substantial Transformations in Early Prehistoric Europe*****.** New York and London: Routledge
Connerton, P. 1989. ***How Societies Remember***. Cambridge: Cambridge University Press
Cook, M., Ellis, C. and Sheridan, A. 2010. Excavations at Upper Largie Quarry, Argyll & Bute, Scotland: new light on the prehistoric ritual landscape of the Kilmartin Glen. ***Proceedings of the Prehistoric Society*** 76, 165–212
Cooney, G. 1983. Megalithic tombs in their environmental setting: a settlement perspective. In T. Reeves-Smyth and F. Hamond (Eds). ***Landscape Archaeology in Ireland***, 179–94. Oxford: British Archaeological Reports, British Series 116
Cooney, G. 1998. Breaking stones, making places. In A. Gibson and D. D. A. Simpson (Eds). ***Prehistoric Ritual and Religion***, 108–18. Stroud: Sutton Publishing
Cooney, G. 2000a. ***Landscapes of Neolithic Ireland***. London: Routledge
Cooney, G. 2000b. Coping with death, changing the landscape: people, place and histories in the Irish Neolithic. In A. Ritchie (Ed). ***Neolithic Orkney in its European Context,*** 247–58. Cambridge: McDonald Institute Monograph
Cooney, G. 2006. Newgrange – a view from the platform. ***Antiquity*** 80, 697–708
Cooper, A. 2000. Discussion of Early Holocene environments of the River Ure near Ripon, North Yorkshire, UK. ***Proceedings of the Yorkshire Geological Society*** 53(2), 155–6
Copper, M. 2021. ***Tracing the Lines: Scottish Grooved Ware Catalogue***. Available at: http://scarf.rcahms.gov.uk/groovedwarecatalogue [Accessed 11 September 2021]
Corcoran, M. and Stevastopulo, G. H. 2017. Provenance of stone used in the construction and decoration of Tomb 1. In K. Cleary and G. Eogan (Eds). ***Excavations at Knowth 6: The Passage Tomb Archaeology of the Great Mound at Knowth***, 505–68. Dublin: Royal Irish Academy
Corfield, P. 2007. ***Time and the Shape of History***. London: Yale University Press
Corlett, C. 2014. Some cursus monuments in South Leinster. ***Archaeology Ireland*** 28(2), 20–5
Crellin, R. 2017. Changing assemblages: vibrant matter in burial assemblages. ***Cambridge Archaeological Journal*** 27(1), 111–25
Crellin, R. 2020. Posthumanist power. In R. Crellin, C. N. Cipolla., L. M. Montgomery, O. J. T. Harris and Moore, S. V. (Eds.) ***Archaeological Theory in Dialogue***. London: Routledge
Critchley, S. 2009. Being and time: why Heidegger matters. ***Guardian*** 8–13 July 2009. Available at: https://www.theguardian.com/commentisfree/belief/2009/jun/05/heidegger-philosophy [Accessed 23 January 2019]
Croll, E. and Parkin, D. 1992. ***Bush Base: Forest Farm: Culture, environment and development***. London: Routledge

Crozier, R., Richards, C., Robertson, J. and Challands, A. 2016. Re-orientating the dead of Crossiecrown: Quanterness and Ramberry Head. In C. Richards and R. Jones (Eds). ***The Development of Neolithic House Societies in Orkney***, 196–223. Oxford: Oxbow Books

Crumley, C. 1995. Heterarchy and the analysis of complex societies. ***Archaeological Papers of the American Anthropological Association*** 6(1): 1–5

Cummings, V. 2009. Building monuments at the centre of the world: exploring regional diversity in south-west Wales and south-west Scotland. In K. Brophy and G. Barclay (Eds). ***Defining a Regional Neolithic: Evidence from Britain and Ireland,*** 53–64. Oxford: Oxbow Books

Cummings, V. 2016. Very real shared traditions? Thinking about similarity and difference in the construction and use of Clyde Cairns in the Western Scottish Neolithic. In K. Brophy, G. Macgregor, and I. Ralston (Eds). ***The Neolithic of Mainland Scotland***, 41–56. Edinburgh: Edinburgh University Press

Cummings, V. and Fowler, C. (Eds). 2004. ***The Neolithic of the Irish Sea: Materiality and Traditions of Practice***. Oxford: Oxbow Books

Cummings, V. and Richards, C. 2017. Passage graves as material technologies of wrapping. In In P. Bickle, V. Cummings, D. Hofman and J. Pollard (Eds). ***The Neolithic of Europe***, 235–48. Oxford: Oxbow Books

Cummings, V. and Whittle, A. 2003. Tombs with a view: landscape, monuments and trees. ***Antiquity*** 77(296), 255–66

Cummings, V. and Whittle, A. 2004. ***Places of Special Virtue: Megaliths in the Neolithic Landscapes of Wales***. Oxford: Oxbow Books

Cunnington, M. E. 1929. ***Woodhenge***. Devizes: Simpson

Cunnington, M. E. 1931. The 'Sanctuary' on Overton Hill, near Avebury. ***Wiltshire Archaeological and Natural History Magazine*** 45, 300–35

D

Darvill, T. 1979. Court cairns, passage graves and social change in Ireland. ***Man*** 14(2), 311–27

Darvill, T. 1996. ***Prehistoric Britain from the Air***. Cambridge: Cambridge University Press

Darvill, T. 1997. Ever increasing circles: the sacred geography of Stonehenge and its landscape. In B. Cunliffe and C. Renfrew (Eds). ***Science and Stonehenge***, 167–202. Oxford: Oxford University Press, Proceedings of the British Academy 92

Darvill, T. 1999. The historic environment, historical landscapes, and space-time-action models in landscape archaeology. In P. J. Ucko and R. Layton (Eds). ***The Archaeology and Anthropology of Landscape: Shaping Your Landscape***, 104–18. London: Routledge

Darvill, T. 2007. Towards the within: Stonehenge and its purpose. In D. A. Barrowclough and C. Malone (Eds). ***Cult and Context: Reconsidering Ritual in Archaeology***, 148–57. Oxford: Oxbow Books

Darvill, T. 2015. Afterword: dances beneath a diamond sky. In F. Silva and N. Campion (Eds). ***Skyscapes: The Role and Importance of the Sky in Archaeology***, 140–8. Oxford: Oxbow Books

Darvill, T. 2016. Houses of the holy: architecture and meaning in the structure of Stonehenge, Wiltshire, UK. ***Time and Mind*** 9(2), 89–121

Darvill, T., Marshall, P., Parker Pearson, M. and Wainwright, G. 2012. Stonehenge remodelled. ***Antiquity*** 86, 1021–40

David, A. Cole, M., Horsley, T., Linford, N., Linford, P. and Martin, L. 2004. A rival to Stonehenge? Geophysical survey at Stanton Drew, England. ***Antiquity*** 78, 341–58

Davidson, J. L. and Henshall, A. S. 1989. ***The Chambered Cairns of Orkney***. Edinburgh: Edinburgh University Press

Davies, P. and Robb, J. G. 2004. Scratches in the earth: the underworld as a theme in British prehistory, with particular reference to the Neolithic and earlier Bronze Age. ***Landscape Research*** 29(2), 141–51

Davies, S. M., Bellamy, P. S., Heaton, M. J. and Woodward, P. J. 2002. ***Excavations at Alington Avenue, Fordington, Dorchester, Dorset, 1984–87***. Dorchester: Dorset Natural History and Archaeological Society

Davis, S., Megarry, W., Brady, C., Lewis, H., Cummings, T., Guinan, L., Turner, J., Gallagher, C., Brown, A. G. and Meehan, R. 2010. ***Boyne Valley Landscape Project, Phase III Final Report***. Unpublished

report for the Heritage Council, Irish National Strategic Archaeological Research (INSTAR) Programme. Available at: http://eprints.dkit.ie/332/ [Accessed 19th May 2017]
Davis, S. and Rassman, K. 2021. Beyond Newgrange: Brú na Bóinne in the later Neolithic. ***Proceedings of the Prehistory Society*** 87, online
Daw, T. 2015. The twisted trilithon: Stone 56 and its skew, an investigation into its origin and possible significance. ***Wiltshire Archaeological and Natural History Magazine*** 108, 15–24
Dawson, T. 2012. ***Straighthanger Field, Sonning, Berkshire: Geophysical Survey***. Unpublished Thames Valley Archaeological Services report
DeLanda, M. 2002. ***Intensive Science and Virtual Philosophy***. London: Continuum
DeLanda, M. 2006. ***A New Philosophy of Society: Assemblage Theory and Social Complexity***. London: Continuum
Deleuze, G. 1990. ***Expressionism in Philosophy: Spinoza***. Translated from the French by M. Joughin. New York: Zone Books. (Originally published in 1969)
Deleuze, G. and Guattari, F. 1987. ***A Thousand Plateaus: Capitalism and Schizophrenia***. Translated from the French by B. Massumi. London: Continuum. (Originally published in 1980)
Dempsey, G. 2012. The pitfields of Rathcroghan, Co. Roscommon. ***Archaeology Ireland*** 26(1), 26–30
De Nardi, S., Orange, H., High, S. C., Koskinen-Koivisto, E. (Eds). 2019. ***The Routledge Handbook of Memory and Place***. London: Routledge
De Smedt, P., Van Merivenne, M., Saey, T., Baldwin, E., Gaffney, C. and Gaffney, V. 2014. Unveiling the prehistoric landscape at Stonehenge through multi-receiver EMI. ***Journal of Archaeological Science*** 50, 16–23
Descola, P. 1996. ***In the Society of Nature: A Native Ecology in Amazonia***. Cambridge: Cambridge University Press
Descola, P. 1998. ***The Spears of Twilight: Life and Death in the Amazon Jungle***. London: HarperCollins
Descola, P. 2013. ***Beyond Nature and Culture***. Chicago: University of Chicago Press
Devereux, P. and Nash, G. 2014. Indications of an acoustic landscape at Bryn Celli Ddu, Anglesey, North Wales. ***Time and Mind*** 7(4), 385–90
Dickson, A. and Hopkinson, G. 2011. ***Holes in the Landscape: Seventeen Years of Archaeological Investigations at Nosterfield Quarry, North Yorkshire***. Unpublished report, available at: http://www.mgassocs.com/pdf/holes_in_the_landscape.pdf [Accessed 21/02/18]
Ditchfield, P. 2014. Stable isotopic analysis. In A. Lynch (Ed). ***Poulnabrone: An Early Neolithic Portal Tomb in Ireland***, 86–92. Dublin: Wordwell, Archaeological Monograph Series 9
Dobres, M-A. and Robb, J. 2000. Agency in archaeology: paradigm or platitude? In M-A. Dobres and J. Robb (Eds). ***Agency in Archaeology***, 3–17. London and New York: Routledge
Dowd, M. 2015. ***The Archaeology of Caves in Ireland***. Oxford: Oxbow Books
Downes, J. and Richards, C. 2005. The dwellings at Barnhouse. In C. Richards (Ed). ***Dwelling Among the Monuments: The Neolithic Village of Barnhouse, Maes Howe Passage Grave and Surrounding Monuments at Stenness,*** 57–127. Cambridge: McDonald Institute for Archaeological Research
Downes, J., Richards, C. Brown, J., Cresswell, J. A., Ellen, R., Davies, A. D., Hall, A., McCulloch, R., Sanderson, D. C. W. and Simpson, I. A. 2013. Investigating the great Ring of Brodgar, Orkney. In C. Richards (Ed). ***Building the Great Stone Circles of the North***, 90–118. Bollington: Windgather Press
Dronfield, J. 1996. Entering alternative realities: cognition, art and architecture in Irish passage-tombs. ***Cambridge Archaeological Journal*** 6(1), 37–72
Dunlop, C. and Barkley, J. 2016. ***Road to the West, A Road to the Past Volume 2: The Archaeology of the A4/A5 Road Improvements Scheme from Dungannon to Ballygawley***. Belfast: Northern Archaeological Consultancy Ltd
Durkheim, E. 2001. ***The Elementary Forms of the Religious Life***. Translated from the French by C. Cosmon. Oxford: Oxford University Press. (Originally published in 1912)
Dyer, C. 1996. ***The Neolithic Monument Complex at Fornham All Saints, Suffolk: Air Photographic Transcription and Analysis***. Unpublished RCHME survey report
Dymond, D. P. 1966. Ritual monuments at Rudston, E. Yorkshire, England. ***Proceedings of the Prehistoric Society*** 4, 86–95

Dymond, C. W. 1879. 'The Hurlers' stone circles. ***Journal of the British Archaeological Association*** 35, 297–307

E

Eagleman, D. M. 2009. Brain time. ***Edge*** 23 June 2009. Available at: https://www.edge.org/conversation/brain-time [Accessed 17 June 2019]
Earle, T. K, 1991. Property rights and the evolution of chiefdoms. In T. Earle (Ed). ***Chiefdoms: Power, Economy and Ideology***. Cambridge: Cambridge University Press, 71–99
Earle, T. K. 1997. ***How Chiefs Come to Power: The Political Economy in Prehistory***. Stanford, California: Stanford University Press
Eck, D. 2012. ***India: A Sacred Geography***. New York: Random House
Edinborough, K., Shennan, S., Teahter, A., Baczkowski, J., Bevan, A., Bradley, R., Cook, G., Kerig, T., Parker Pearson, M., Pope, A. and Schauer, P. 2020. New radiocarbon dates show early Neolithic date of flint-mining and stone-quarrying in Britain. ***Radiocarbon*** 62(1), 75–105
Edmonds, M. 1999. ***Ancestral Geographies: Landscapes, Monuments and Memory***. London: Routledge
Edmonds, M. 2019. ***Orcadia: Lands, Sea and Stone in Neolithic Orkney***. London: Head of Zeus
Edwards, B. 2004. A henge too far? Reinterpreting the Neolithic monument complex at Milfield, Northumberland. ***Proceedings of the Prehistoric Society*** 73, 59–73
Eliade, M. 1959. ***The Sacred and the Profane: The Nature of Religion***. Translated from the French by W. R. Trask. New York: Harcourt
Ellis, C. J. 2004***. A Prehistoric Ritual Complex at Eynesbury, Cambridgeshire***. Cambridge: East Anglian Archaeology 17
Eogan, G. 1986. ***Knowth and the Passage-Tombs of Ireland***. London: Thames and Hudson
Eogan, G. and Roche, H. 1994. A Grooved Ware wooden structure at Knowth, Boyne Valley, Ireland. ***Antiquity*** 68, 322–30
Eogan, G. and Roche, H. 1997. ***Excavations at Knowth 2: Settlement and Ritual Sites of the Fourth and Third Millennia BC***. Dublin: Royal Irish Academy
Eogan, G. and Roche, H. 1999. Grooved Ware from Brugh na Bóinne and its wider context. In R. Cleal and A. MacSween (Eds). ***Grooved Ware in Britain and Ireland***, 98–111. Oxford: Oxbow Books
Eriksen, P. 2008. The great mound of Newgrange: An Irish multi-period mound spanning from the megalithic tomb period to the early Bronze Age. ***Acta Archaeologica*** 79, 250–73
Evans, C. and Hodder, I. 2006. ***A Woodland Archaeology: Neolithic Sites at Haddenham***. Cambridge: Cambridge University Press, McDonald Institute for Archaeological Research
Evans, C. 1997. Sentimental prehistories: the construction of the Fenland past. ***Journal of European Archaeology*** 5(2), 105–36
Evans, C. and Hodder, I. 2006. ***A Woodland Archaeology: Neolithic Sites at Haddenham***. Cambridge: McDonald Institute for Archaeological Research
Evans, C., Pollard, J. and Knight, M. 1999. Life in woods: tree-throws, 'settlement' and forest cognition. ***Oxford Journal of Archaeology*** 18(3), 241–54
Evans, J. G. 1968. Periglacial features of the chalk of Wiltshire. ***Wiltshire Archaeological and Natural History Magazine*** 63, 12–26
Evans, J. G. 1984. Stonehenge – the environment in the late Neolithic and early Bronze Age and a Beaker-age burial. ***Wiltshire Archaeological and Natural History Magazine*** 78, 7–30
Evans, J. G., Limbrey, S., Máté, I. and Mount, R. 1993. An environmental history of the Upper Kennet Valley, Wiltshire, for the last 10,000 years. ***Proceedings of the Prehistoric Society*** 59, 139–95
Evans, J. G. and Rouse, A. 1991. The river valleys of the South Winterbourne. In N. Sharples (Ed). ***Maiden Castle Excavations and Field Survey 1985–86***, 15–7. London: English Heritage
Exon, S., Gaffney, V. and Woodward, A. 2000. ***Stonehenge Landscapes: Journeys Through Real-and-Imagined Worlds.*** Oxford: Archaeopress

F

Fagan, A. 2017. Hungry architecture: spaces of consumption and predation at Göbekli Tepe. ***World Archaeology*** 49(3), 318–37

Farrell, M. Bunting, M. J., Sturt, F., Grant, M., Aalbersberg, G., Batchelor, R., Druce, D., Hill, T., Hollinrake, A., Jones, J., Tinsley, H., Bayliss, A., Marshall, P., Richer, S. and Whittle, A. 2019. Opening the woods: towards a quantification of Neolithic clearance around the Somerset Levels and Moors. ***Journal of Archaeological Method and Theory*** 27, 271–301

Feld, S. and Basso, K. 1996. ***Senses of Place***. Santa Fe, NM: School of American Research Press

Fenwick, J. and Parkes, M. 1997. 'Oweynagat', Rathcroghan, Co. Roscommon and associated karst features. ***Irish Speleology*** 16, 11–4

Field, D. 2006. ***Earthen Long Barrows: The Earliest Monuments in the British Isles***. Stroud: Tempus

Field, D. 2012. Some observations on perception, consolidation and change in a land of stones. In G. Brown, D. Field and D. McOmish (Eds). ***The Avebury Landscape: Aspects of the Field Archaeology of the Marlborough Downs,*** 87–94. Oxford: Oxbow Books

Field, D., Martin, L. and Winton, H. 2009. ***The Hatfield Earthworks, Marden: Survey and Investigation***. Swindon: English Heritage Research Report 96-2009

Fishpool, M. 1999. Land mollusca. In A. Whittle, J. Pollard and C. Grigson (Eds). ***The Harmony of Symbols: The Windmill Hill Causewayed Enclosure***, 127–38. Oxford: Oxbow Books

Fitzpatrick, A. 2012. ***The Amesbury Archer and the Boscombe Bowmen: Bell Beaker burials at Boscombe Down, Amesbury, Wiltshire***. Salisbury: Wessex Archaeology Report 27

Flannery, K.V. 1972. The cultural evolution of civilisations. ***Annual Review of Ecology and Systematics*** 3, 399–426

Flannery, K. V. and Marcus, J. 2012. ***The Creation of Inequality: How our Prehistoric Ancestors set the Stage for Monarchy, Slavery, and Empire***. Cambridge, MA: Harvard University Press

Fleming, A. 1972. Vision and design: approaches to ceremonial monument typology. ***Man*** 7(1), 57–73

Fleming, A. 1999. Phenomenology and the megaliths of Wales: a dreaming too far? ***Oxford Journal of Archaeology*** 18(2), 119–25

Fleming, A. 2004. Hail to the chiefdom? The quest for social archaeology. In C. Renfrew, J. F. Cherry, C. Scarre, and S. Shennan (Eds). ***Explaining Social Change: Studies in Honour of Colin Renfrew***, 141–146. Cambridge: University of Cambridge, McDonald Institute for Archaeological Research

Fleming, A. 2005. Megaliths and post-modernism: the case of Wales. ***Antiquity*** 79(306), 921–32

Ford, W. 2003. The Neolithic complex at Charlecote, Warwickshire. ***Birmingham and Warwickshire Archaeological Society Transactions*** 107, 1–39

Forty, A. 1999. Introduction. In A. Forty and S. Küchler (Eds). 1999. ***The Art of Forgetting***, 1–20. Oxford: Berg

Foucault, M. 2001. ***Madness and Civilization: A History of Insanity in the Age of Reason***. Translated from the French by R. Howard. London: Tavistock. (Originally published in 1961).

Foucault, M. 1980. ***Power/Knowledge: Selected Interviews and Other Writings, 1972–1977***. Translated from the French by C. Gordon. Harlow: Prentice Hall

Fowler, C. 2003. Rates of (ex)change: decay and growth, memory and the transformation of the dead in early Neolithic southern Britain. In H. Williams (Ed). ***Archaeologies of Remembrance: Death and Memory in Past Societies***, 45–63. New York: Springer

Fowler, C. 2013. ***The Emergent Past: A Relational Realist Archaeology of Early Bronze Age Mortuary Practices***. Oxford: Oxford University Press

Fowler, C. and Cummings, V. 2003. Places of transformation: building monuments from water and stone in the Neolithic of the Irish Sea. ***Journal of the Royal Anthropological Institute*** 9, 1–20

Fowles, S. 2012. ***An Archaeology of Doings: Secularism and the Study of Pueblo Religion***. Santa Fe: NM: SAR Press

Framework Archaeology 2010. ***Landscape Evolution in the Middle Thames Valley, Heathrow Terminal 5 Excavations Vol. 2***. Oxford and Salisbury: Framework Archaeology Monograph 3

Fraser, D. 1983. ***Land and Society in Neolithic Orkney***. Oxford: British Archaeological Reports, British Series 111

Fraser, S. M. 1998. The public forum and the space between: the materiality of social strategy in the Irish Neolithic. ***Proceedings of the Prehistoric Society*** 64, 203–44

French, C., Lewis, H., Allen, M., Green, M., Scaife, R. and Gardiner, J. (Eds). 2007. ***Prehistoric Landscape Development and Human Impact in the Upper Allen Valley, Cranborne Chase, Dorset***. Cambridge: McDonald Institute Monograph, University of Cambridge

French, C., Lewis, H., Scaife, R. and Allen, M. J. 2005. New perspectives of Holocene landscape development in the southern English chalklands: the upper Allen valley, Cranborne Chase, Dorset. ***Geoarchaeology*** 20, 109–34

French, C. and Pryor, F. 2005. ***Archaeology and Environment of the Etton Landscape***. Peterborough: Fenland Archaeological Trust

French, C., Scaife, R., Allen, M. J., Parker Pearson, M., Pollard, J., Richards, C., Thomas, J. and Welham, K. 2012. Durrington Walls to West Amesbury by way of Stonehenge: a major transformation of the Holocene landscape. ***The Antiquaries Journal*** 92, 1–36

Fried, M. H. 1967. ***The Evolution of Political Society: An Essay in Political Anthropology***. New York: Random House

Frieman, C. J. and Hofmann, D. 2019. Present pasts in the archaeology of genetics, identity, and migration in Europe: a critical essay. ***World Archaeology*** 51 (4), 528–45

Friedman, J. and Rowlands, M. J. 1977. Notes towards an epigenetic model of the evolution of civilisation. In J. Friedman and M. J. Rowlands (Eds). ***The Evolution of Social Systems,*** 201–67. London: Duckworth

G

Gaffney, V., Baldwin, E., Bates, M., Bates, C. R., Gaffney, C., Hamilton, D., Kinnaird, T., Neubauer, W., Yorston, R., Allaby, R., Chapman, H., Garwood, P., Löcker, K., Hinterleitner, A., Sparrow, T., Trinks, I., Wallner, M. and Leivers, M. 2020. A massive, Late Neolithic pit structure associated with Durrington Walls henge. ***Internet Archaeology*** 55, https://doi.org/10.11141/ia.55.4

Gaffney, V., Fitch, S., Ramsey, E., Yorston, R., Ch'ng, E., Baldwin, E., Bates, R., Gaffney, C., Ruggles, C., Sparrow, T., McMillan, A., Cowley, D., Fraser, S., Murray, C., Murray, H., Hopla, E. and Howard, A. 2013. Time and a place: a luni-solar 'time-reckoner' from 8th millennium BC Scotland. ***Internet Archaeology*** 34, https://doi.org/10.11141/ia.34.1

Gaffney, C., Gaffney, V., Neubauer, W., Baldwin, E., Chapman, H., Garwood, P., Moulden, H., Sparrow, T., Bates, R., Löcker, K., Hinterleitner, A., Trinks, I., Nau, E., Zitz, T., Floery, S., Verhoeven, G. and Doneus, M. 2012. The Stonehenge hidden landscapes project. ***Archaeological Prospection*** 19(2), 147–55

Gale, J. 2017. Knowlton Circles: a later Neolithic and early Bronze Age ceremonial complex and its environs – a review. ***Landscapes*** 18(2), 102–19

Gamble, C. 2015. ***Archaeology: The Basics*** (third edition). Oxford: Routledge

Gannon, A. 2016. Should I stay or should I go? Movement and mobility in the Hebridean Neolithic. In J. Leary and T. Kador (Eds). ***Moving on in Neolithic Studies: Understanding Mobile Lives***. Oxford: Oxbow Books, 137–53

Gannon, A. 2021. An upland cursus monument at Melbourne Crossroads, Starthclyde, Scotland. ***PAST*** 99, 1–3

Gardiner, J. 1985. Intra-site patterning in the flint assemblage from the Dorset Cursus, 1984. ***Proceedings of the Dorset Natural History and Archaeology Society*** 107, 87–94

Gardiner, J., Allen, M. J., Powell, A., Harding, P., Lawson, A. J., Loader, E., McKinley, J., Sheridan, A. and Stevens, C. 2007. A matter of life and death: late Neolithic, Beaker and early Bronze Age settlement and cemeteries at Thomas Hardye School, Dorchester. ***Proceedings of the Dorset Natural History and Archaeology Society*** 126, 17–52

Garrow, D., Raven, J. and Richards, C. 2005. The anatomy of a megalithic landscape. In C. Richards (Ed). ***Dwelling Among the Monuments: The Neolithic Village of Barnhouse, Maeshowe Passage Grave and Surrounding Monuments at Stenness, Orkney***, 249–59. Cambridge: Cambridge University, McDonald Institute

Garrow, D. and Sturt, F. 2011. Grey waters bright with Neolithic argonauts? Maritime connections and the Mesolithic-Neolithic transition within the 'western seaways' of Britain, *c*.5000–2500 BC. ***Antiquity*** 85, 59–72

Garwood, P. 1991. Ritual tradition and the reconstitution of society. In P. Garwood, D. Jennings, R. Skeates and J. Thomas (Eds). ***Sacred and Profane,*** 10–32. Oxford: Oxbow Books, Oxford University Committee for Archaeology Monograph

Garwood, P. (Ed). 2007. ***The Undiscovered Country: The Earlier Prehistory of West Midlands***. Oxford: Oxbow Books

Geertz, C. 1966. ***Person, Time and Conduct in Bali: An Essay in Cultural Analysis***. New Haven: Yale University

Geertz, C. 1973. ***The Interpretation of Cultures: Selected Essays***. New York: Basic Books

Gell, A. 1992. ***The Anthropology of Time: Cultural Constructions of Temporal Maps and Images***. Oxford: Berg

Gell, A. 1998. ***Art and Agency: An Anthropological Theory***. Oxford and New York: Clarendon Press

Gibson, A. 1994. Excavations at the Sarn-y-bryn-caled cursus complex, Welshpool, Powys, and the timber circles of Great Britain and Ireland. ***Proceedings of the Prehistoric Society*** 60, 143–223

Gibson, A. 1998. Hindwell and the Neolithic palisaded sites of Britain and Ireland. In A. Gibson and D. Simpson (Eds). ***Prehistoric Ritual and Religion***, 68–79. Stroud: Sutton

Gibson, A. 1999a. ***The Walton Basin, Powys: Survey at the Hindwell Neolithic Enclosure.*** Welshpool: Clwyd-Powys Archaeological Trust

Gibson, A. 1999b. Cursus monuments and possible cursus monuments in Wales: avenues for research (or roads to nowhere?). In A. Barclay and J. Harding (Eds). ***Pathways and Ceremonies: The Cursus Monuments of Britain and Ireland***, 130–40. Oxford: Oxbow Books

Gibson, A. 2005. ***Stonehenge and Timber Circles***. Stroud: Tempus

Gibson, A. 2010a. New dates for Sarn-y-bryn-caled, Powys, Wales. ***Proceedings of the Prehistoric Society*** 76, 351–6

Gibson, A. 2010b. Dating Balbirnie: recent radiocarbon dates from the stone circle and cairn at Balbrinie, Fife, and a review of its place in the overall Balfarg/Balbrinie site sequence. ***Proceedings of the Society of Antiquaries of Scotland*** 140, 51–77

Gibson, A., Allen, M., Bradley, P., Carruthers, W., Challinor, D., French, C., Hamilton, D., Mainland, I., McCarthy, M., Ogden, A., Scaife, R., Sheridan, A. and Walmsley, C. 2014. Report on the excavation at the Duggleby Howe causewayed enclosure, North Yorkshire, May–July 2009. ***Archaeological Journal*** 168, 1–63

Gibson, A., Bayliss, A., Heard, H., Mainland, I., Ogden, A. R., Bronk Ramsey, C., Cook, G., van der Plicht, J. and Marshall, P. 2009. Recent research at Duggleby Howe, North Yorkshire. ***Archaeological Journal*** 166, 39–78

Gibson, A. and Bayliss, A. 2010. Recent work on the Neolithic round barrows of the Upper Great Wold Valley, Yorkshire. In J. Leary, T. Darvill and D. Field (Eds). ***Round Mounds and Monumentality in the British Neolithic and Beyond***, 72–107. Oxford: Oxbow Books, Neolithic Studies Group Seminar Papers 10

Giddens, A. 1979. ***Central Problems in Social Theory: Action, Structure and Contradiction in Social Analysis***. London: Macmillan

Gibson, J. J. 1979. ***The Ecological Approach to Visual Perception***. Boston: Houghton Mifflin

Gillings, M. and Pollard, J. 1999. Non-portable stone artefacts and contexts of meaning: the tale of Grey Wether. ***World Archaeology*** 31(2), 179–93

Gillings, M. and Pollard, J. 2004. ***Avebury***. London: Duckworth

Gillings, M. and Pollard, J. 2016. Making megaliths: shifting and unstable stones in the Neolithic of the Avebury landscape. ***Cambridge Archaeological Journal*** 26(4), 537–59

Gillings, M., Pollard, J., Wheatley, D. and Peterson, R. 2008. ***Landscape of the Megaliths: Excavation and Fieldwork on the Avebury Monuments, 1997–2003***. Oxford: Oxbow Books

Gramsci, A. 1971. ***Selections from the Prison Notebooks of Antonio Gramsci***. Translated from the Italian by Q. Hoare and G. Nowell-Smith. London: Lawrence and Wishart. (Originally published in 1948–51)

Gray, H. St. G. 1908. Interim report on the excavations at Maumbury Rings, Dorchester, 1908. ***Proceedings of the Dorset Natural History and Antiquarian Field Club*** 29, 256–72

Gray, H. St. G. 1913. Interim report on the excavations of Maumbury Rings, Dorset 1912. ***Proceedings of the Dorset Natural History and Archaeology Society*** 34, 83–106
Gray, H. St. G. 1935. The Avebury excavations, 1908–1922. ***Archaeologia*** 84, 99–162
Greaney, S. 2019. A whiter shade of pale: powerful relationships between Neolithic communities and the underworld at Monkton up Wimborne, Dorset. In A. Teather, P. Toppping and J. Baczkowski (Eds). ***Mining and Quarrying in Neolithic Europe: A Social Perspective,*** 193–206. Oxford: Oxbow Books
Greaney, S., Hazell, Z., Barclay, A., Bronk Ramsey, C., Dunbar, E., Hajdas, I., Reimer, P., Pollard, J., Sharples, N. and Marshall, P. 2020. Tempo of a mega-henge: a new chronology for Mount Pleasant, Dorchester, Dorset. ***Proceedings of the Prehistoric Society*** 86, 199–236
Green, M. 2000. ***A Landscape Revealed: 10,000 Years on a Chalkland Farm***. Stroud: Tempus
Green, M. and Allen, M. 1997. An early prehistoric shaft on Cranborne Chase. ***Oxford Journal of Archaeology*** 16(2), 121–32
Griffiths, F. 1985. Some newly discovered ritual monuments in mid Devon. ***Proceedings of the Prehistoric Society*** 51, 301–5
Griffiths, S. Edwards, B., Wilson, A., Reynolds, F. and Stanford, A. 2016. Bryn Celli Ddu passage tomb revisited. ***Antiquity*** project gallery 349. Available at: https://www.antiquity.ac.uk/projgall/griffiths349 [Accessed 16 June 2020]
Grosz, E. 2005. ***Time Travels: Feminism, Nature, Power***. Crows Nest, NSW: Allen & Unwin
Godelier, M. 1977a. Economy and religion: an evolutionary optical illusion. In J. Friedman and M. J. Rowlands (Eds). ***The Evolution of Social Systems***. Gloucester: Duckworth, 1–11
Godelier, M. 1977b. ***Perspectives in Marxist Anthropology***. Cambridge: Cambridge University Press
Godelier, M. 1978. Infrastructures, societies and history. ***Current Anthropology*** 19(4), 763–71
Goldstein, L. 1981. The emergence of formal disposal areas and the 'problem' of megalithic tombs in Western Europe. In R. Chapman, I. Kinnes and K. Randsborg (Eds). ***The Archaeology of Death***, 53–69***.*** Cambridge: Cambridge University Press, New Directions in Archaeology
Gormley, S. 2004. ***The Dating and Phasing of the Timber Circle Complex at Ballynahatty, Co. Down***. Unpublished MPhil thesis, Queen's University Belfast
Gosden, C. 1994. ***Social Being and Time***. Oxford: Wiley-Blackwell
Gosden, C. and Lock, G. 1998. Prehistoric histories. ***World Archaeology*** 30(1), 2–12

H

Haggarty, A. 1991. Machrie Moor, Arran: recent excavations at two stone circles. ***Proceedings of the Society of Antiquaries of Scotland*** 121, 51–94
Halbwachs, M. 1992. ***On Collective Memory***. Translated from the French by L. A. Coser. Chicago: University of Chicago Press. (Originally published in 1950)
Hale, D., Platell, A. and Millard, A. 2009. A late Neolithic palisaded enclosure at Marne Barracks, Catterick, North Yorkshire. ***Proceedings of the Prehistoric Society*** 75, 265–304
Hale, D. 2013. ***Long Meg and Her Daughters, Little Salkeld, Cumbria: Geophysical and Topographic Surveys***. Archaeological Services Durham University on behalf of Altogether Archaeology, Report 3132. Available at: https://archaeologydataservice.ac.uk/library/browse/issue.xhtml?recordId=1153331&recordType=GreyLitSeries [Accessed 30 Sep 2021]
Hallowell, I. 1960. ***Ojibwa Ontology, Behavior and World View***. New York: Columbia University Press
Hamilakis, Y. and Jones, A. M. 2017. Archaeology and Assemblage. ***Cambridge Archaeological Journal*** 27, 77–84
Haraway, D. 1991. ***Simians, Cyborgs and Women: The Reinvention of Nature***. New York: Routledge
Harding A. F. 1981. Excavations in the prehistoric ritual complex near Milfield, Northumberland. ***Proceedings of the Prehistoric Society*** 47, 87–135
Harding, J. 1999. Pathways to new realms: cursus monuments and symbolic territories. In A. Barclay and J. Harding (Eds). ***Pathways and Ceremonies: The Cursus Monuments of Britain and Ireland***, 30–8. Oxford: Oxbow Books

Harding, J. 2000. Ceremonial centres, cosmology and pilgrimage: the monument complex of Thornborough, North Yorkshire. In A. Ritchie (Ed). ***Neolithic Orkney in its European Context***, 31–46. Cambridge: McDonald Institute Monograph

Harding, J. 2006. Pit digging, occupation and structured deposition on Rudston Wold, Eastern Yorkshire. ***Oxford Journal of Archaeology*** 25(2), 109–26

Harding, J. 2012. Conformity, routeways and religious experience – the henges of central Yorkshire. In Gibson, A. (Ed). ***Enclosing the Neolithic: Recent Studies in Britain and Europe***, 67–80. Oxford: BAR International Series 2440

Harding, J. 2013. ***Cult, Religion and Pilgrimage: Archaeological Investigations at the Neolithic and Bronze Age Monument Complex of Thornborough, North Yorkshire***. York: Council for British Archaeology Research Report 174

Harding, J. and Healy, F. 2008. ***The Raunds Area Project Volume 1: A Neolithic and Bronze Age Landscape in Northamptonshire***. Swindon: English Heritage Archaeology Report

Harding, J., Johnston, B. and Goodrick, G. 2006. Neolithic cosmology and the monument complex of Thornborough, North Yorkshire. ***Archaeoastronomy*** 20, 28–53

Harman, G. 2010. ***Towards Speculative Realism: Essays and Lectures***. Ropley: Zero Books

Harman, G. 2018. ***Object-Oriented Ontology: A New Theory of Everything***. London: Pelican

Harris, O. J. T. 2009. ***Identity, Emotion and Memory in Neolithic Dorset***. Unpublished PhD thesis, Cardiff University

Harris, O. J. T. 2013. Relational communities in Neolithic Britain. In C. Watts (Ed). ***Relational Archaeologies: Humans, Animals, Things***, 173–89. London: Routledge

Harris, O. J. T. 2018. More than representation: multiscalar assemblages and the Deleuzian challenge to archaeology. ***History of the Human Sciences*** 20(10), 1–22

Harris, O. J. T. 2019. Book review: Eleanor Harrison-Buck & Julia A. Hendon (Ed). 2018. Relational identities and other-than-human agency in archaeology. ***Antiquity*** 93(368), 550–1

Harris, O. J. T. and Cipolla, C. 2017. ***Archaeological Theory in the New Millennium: Introducing Current Perspectives***. London: Routledge

Harris, O. J. T. and Crellin, R. 2018. Assembling new ontologies from old materials: towards multiplicity. In M. Astor-Aguilera and G. Harvey (Eds). ***Rethinking Personhood: Animism and Materiality in Dialogue***, 55–74. London: Routledge

Harris, O. J. T. and Sørensen, T. F. 2010. Rethinking emotion and material culture. ***Archaeological Dialogues*** 17(2), 145–63

Hartwell, B. 1994. Late Neolithic ceremonies. ***Archaeology Ireland*** 8(4), 10–3

Hartwell, B. 1998. The Ballynahatty complex. In A. Gibson and D. D. A. Simpson (Eds). ***Prehistoric Ritual and Religion***, 32–44. Stroud: Sutton Publishing

Hartwell, B. 2002. A Neolithic ceremonial timber complex at Ballynahatty, Co. Down. ***Antiquity*** 76, 526–32

Hawkes, C. 1954. Archaeological theory and method: some suggestions from the Old World. ***American Anthropologist*** 56(2,1), 155–68

Hawkes, J. 1962. ***Man and the Sun***. London: Cresset

Hawkins, G. S. 1966. ***Stonehenge Decoded***. London: Fontana/Collins

Hayden, B. 2014. ***The Power of Feasts: From Prehistory to the Present***. Cambridge: Cambridge University Press

Hayes, R. 1987. Archaeological finds in the Ryedale Windypits. ***Studies in Speleology*** 7, 31–74

Healy, F. 1997. Site 3: Flagstones. In R. J. C. Smith, F. Healy, M. J. Allen, E. L. Morris, I. Barnes and P. J. Woodward (Eds). ***Excavations Along the Route of the Dorchester By-Pass, Dorset, 1986–8***, 27–48. Salisbury: Trust for Wessex Archaeology

Hedges, J. D. and Buckley, D. G. 1981. ***Springfield Cursus and the Cursus Problem***. Chelmsford: Essex County Council

Heidegger, M. 1996. ***Being and Time***. Translatted from the German by J. Macquarrie and E. Robinson. Oxford: Blackwell. (Originally published in 1927)

Helms, M. 1988. ***Ulysses' Sail: An Ethnographic Odyssey of Power, Knowledge and Geographical Distance***. Princeton, NJ: University of Princeton Press

Helms, M. 2012. Nourishing a structured world with living metal in Bronze Age Europe. ***Journal of World Art*** 2, 105–18

Henley, C. 2005. Choreographed monumentality: recreating the centre of other worlds at the monument complex of Callanish, western Lewis. In V. C. Cummings and A. Pannett (Eds). ***Set in Stone: New Approaches to Neolithic Monuments in Scotland***, 95–106. Oxford: Oxbow Books

Hensey, R. 2015. ***First Light: The Origins of Newgrange***. Oxford: Oxbow Books

Hensey, R., Meehan, P., Dowd, M. and Moore, S. 2014. A century of archaeology – historical excavation and modern research at the Carrowkeel passage tombs, County Sligo. ***Proceedings of the Royal Irish Academy C*** 114, 57–86

Henshall, A. 1972. ***The Chambered Tombs of Scotland, Volume 2***. Edinburgh: Edinburgh University Press

Hewson, M. 2007. ***Excavations at Whitemoor Haye Quarry, Staffordshire 2000–2004***. Oxford: British Archaeological Reports, British Series 428

Hill, J. and Richards, C. 2005. Structure 8: monumentality at Barnhouse. In C. Richards (Ed). ***Dwelling Among the Monuments: The Neolithic Village of Barnhouse, Maes Howe Passage Grave and Surrounding Monuments at Stenness***, 157–88. Cambridge: McDonald Institute for Archaeological Research

Hirsch, E. and O'Hanlon, M. (Eds). 1995. ***The Anthropology of Landscape: Perspectives on Place and Space.*** Oxford: Oxford University Press

Hobsbawn, E. J. and Ranger, T. (Eds). 1983. ***The Invention of Tradition***. Cambridge: Cambridge University Press

Hodder, I. 1979. Economic and social stress and material culture patterning. ***American Antiquity*** 44(3), 446–54

Hodder, I. 1982. The identification and interpretation of ranking in prehistory: a contextual perspective. In C. Renfrew and S. Shennan (Eds). ***Ranking, Resource and Exchange: Aspects of the Archaeology of Early European Society***, 150–4. Cambridge: Cambridge University Press

Hodder, I. (Ed). 1982. ***Symbolic and Structural Archaeology***. Cambridge: Cambridge University Press

Hodder, I. 1984. Burials, houses, women and men in the European Neolithic. In D. Miller and C. Tilley (Eds). ***Ideology, Power and Prehistory***, 51–68. Cambridge: Cambridge University Press

Hodder, I. 1990. ***The Domestication of Europe: Structure and Contingency in Neolithic Societies***. Oxford: Basil Blackwell

Hodder, I. 1991. ***Reading the Past: Current Approaches to Interpretation in Archaeology***. Cambridge: Cambridge University Press

Hodder, I. 2012. ***Entangled: An Archaeology of the Relationships Between Humans and Things***. Chichester: Wiley Blackwell

Hodson, T. C. 1911. ***The Nāga Tribes of Manipur***. London: Macmillan & Co

Hogan, S. 2013. Manor Farm cursus complex: floodplain investigations on the River Great Ouse, Milton Keyes. ***Past*** 74, 2–4

Hogg, A. H. A. 1968. Review of Megalithic Sites in Britain by A. Thom. ***Archaeologia Cambrensis*** 117, 207–10

Holbraad, M. 2007. The power of powder: multiplicity and motion in the divinatory cosmology of Cuban Ifá (or *mana*, again). In A. Henare, M. Holbraad and S. Wastell (Eds). ***Thinking Through Things: Theorising Artefacts Ethnographically***, 189–255. London: Routledge

Holbraad, M. and Pederson, M. A. 2017. ***The Ontological Turn: An Anthropological Exposition***. Cambridge: Cambridge University Press

Holbrook, J., McCluskey, S. and Ruggles, C. 2010. Indigenous uses of astronomy. In C. Ruggles and M. Cotte (Eds). ***Heritage Sites of Astronomy and Archaeoastronomy in the Context of the UNESCO World Heritage Convention: A Thematic Study***, 65–70. Paris: ICOMOS

Houlder, C. 1968. The henge monuments at Llandegai. ***Antiquity*** 42 (167), 216–21

House, M. 1991. Dorset dolines: part 2, Bronkham Hill. ***Proceedings of the Dorset Natural History and Archaeology Society*** 113, 149–53

Hoyle, F. 1966. Speculations on Stonehenge. ***Antiquity*** 40, 262–76

Huber, T. 1999. Putting the gnas back into Gnas-shor: rethinking Tibetan pilgrimage practice. In T. Huber (Ed). ***Sacred Spaces and Powerful Places in Tibetan Culture: A Collection of Essays***, 77–104. Library of Tibetan Works and Archives: Dharamsala

Huffman, T. N. and Earley, F. L. 2014. Caddoan archaeology on the high plains: a conceptual nexus of bison, lodges, maize and rock art. ***American Antiquity*** 79(4), 655–78

Hughes, A. 2015. Arnhem Land to Adelaide. In A. McGrath and M. A. Jebb (Eds). ***Long History, Deep Time: Deepening the Histories of Place***, 83–100. Canberra: Australian National University Press

Hughes, G. and Crawford, G. 1995. Excavations at Wasperton, Warwickshire, 1980-1985: introduction and part 1: the Neolithic and Early Bronze Age. ***Transactions of the Birmingham and Warwickshire Archaeological Society*** 99, 9–46

Husserl, E. 1964. ***On the Phenomenology of the Consciousness of Internal Time***. Translated from the German by J. S. Churchill. The Hague: Nijhoff (Originally published in 1928)

Hutton, J. H. 1921. ***The Angami Nagas, With Some Notes on Neighbouring Tribes***. London: Macmillan & Co

Hutton, R. 1996. ***The Stations of the Sun: The History of the Ritual Year in Britain***. Oxford: Oxford University Press

I

Ingold, T. 1993. The temporality of the landscape. ***World Archaeology*** 25(2), 152–74

Ingold, T. 2000. ***The Perception of the Environment: Essays in Livelihood, Dwelling and Skill***. London: Routledge

Ingold, T. 2006. Rethinking the animate, re-animating thought. ***Ethnos*** 71(1), 9-20

Ingold, T. 2007. Materials against materiality. ***Archaeological Dialogues*** 14(1), 1–16

Ingold, T. 2010. ***Bringing things to life: creative entanglements in a world of materials***. ESRC National Centre for Research Methods, NCRM Working Paper Series 05/10. Available at: http://eprints.ncrm.ac.uk/1306/1/0510_creative_entanglements.pdf

Ingold, T. 2011. ***Being Alive: Essays on Movement, Knowledge and Description***. London and New York: Routledge

Ingold, T. 2013. ***Making: Anthropology, Archaeology, Art and Architecture***. London: Routledge

Insoll, T. 2004. ***Archaeology, Ritual and Religion***. London: Routledge

Itéau, A. 1999. Synchronisations among the Orokaiva. ***Social Anthropology*** 7(3), 265–78

Iwaniszewki, S. 2011. The sky as a social field. ***Proceedings of the International Astronomical Union*** 7(S278), 30–7

J

Jackson, R. and Dalwood, H. 2007. ***Archaeology and Aggregates in Worcestershire: A Resource Assessment and Research Agenda***. Worcester: Historic Environment and Archaeology Service, Worcestershire County Council and Cotswold Archaeology, Internal Report 1477

James, D. 2015. Tjukurpa time. In A. McGrath and M. A. Jebb (Eds). ***Long History, Deep Time: Deepening the Histories of Place***, 33–46. Canberra: Australian National University Press

Jay, M., Richards, M. P. and Marshall, P. 2019. Radiocarbon dates and their Bayesian modelling. In M. Parker Pearson, A. Sheridan, M. Jay, A. Chamberlain, M. P. Richards and Evans, J. (Eds). ***The Beaker People Project: Isotopes, Mobility and Diet in Prehistoric Britain***, 43–80. Oxford: Oxbow Books, Prehistoric Society Research Paper 7

Jervis, B. 2019. ***Assemblage Thought and Archaeology***. London: Routledge

Johnson, B. and Waddington, C. 2014. Prehistoric and Dark Age settlement remains from Cheviot Quarry, Milfield Basin, Northumberland. ***Archaeological Journal*** 165, 107–264

Johnson, M. 2010. ***Archaeological Theory: An Introduction***. Chichester: Wiley Blackwell

Johnston, R. 1999. An empty path? Processions, memories and the Dorset Cursus. In A. Barclay and J. Harding (Eds). ***Pathways and Ceremonies: The Cursus Monuments of Britain and Ireland***, 39–48. Oxford: Oxbow Books, Neolithic Studies Group Seminar Papers 4

Jones, A. M. 2007a. ***Memory and Material Culture***. Cambridge University Press: Cambridge

Jones, A. M. 2007b. By way of illustration: art, memory and materiality in the Irish Sea and beyond. In V. Cummings and C. Fowler (Eds). ***The Neolithic of the Irish Sea: Materiality and Traditions of Practice***, 202–13. Oxford: Oxbow Books

Jones, A. M. 2012. ***Prehistoric Materialities: Becoming Material in Prehistoric Britain and Ireland***. Oxford: Oxford University Press

Jones, A. M. 2014. Meeting pasts halfway: a consideration of the ontology of material evidence in archaeology. In R. Chapman and A. Wylie (Eds). ***Material Evidence: Learning from Archaeological Practice***, 324–38. London and New York: Routledge

Jones, A. M. 2015. Assemblages, relationality and recursivity: comments on 'archaeology and contemporaneity' by Gavin Lucas. ***Archaeological Dialogues*** 22(1), 21–24

Jones, A. M. and Díaz-Guardamino, M. 2019. ***Making a Mark: Image and Process in Neolithic Britain and Ireland.*** Oxford: Oxbow Books

Jones, A. M., Freedman, D., O'Connor, B., Lamdin-Whymark, H., Tipping, R. and Watson, A. 2011. ***An Animate Landscape: Rock Art and the Prehistory of Kilmartin, Argyll, Scotland***. Oxford: Oxbow Books

Jones, A. M. and MacGregor, G. 2002. Wonderful things – colour studies in archaeology from Munsell to materiality. In A. Jones and G. MacGregor (Eds). ***Colouring the Past: The Significance of Colour in Archaeological Research***, 1–21. Oxford: Berg

Jones, A. M. and Watson, A. 2011. An animate landscape II: the sacred geography of prehistoric Kilmartin. In A. M. Jones, D. Freedman, B. O'Connor, H. Lamdin-Whymark, R. Tipping and A. Watson (Eds). ***An Animate Landscape: Rock Art and the Prehistory of Kilmartin, Argyll, Scotland***, 270–281. Oxford: Oxbow Books

Jones, N. W. and Gibson, A. 2017. Neolithic palisaded enclosures of Radnorshire's Walton Basin. ***Archaeologia Cambrensis*** 166, 33–88

Joyce, R. A. 2004. Unintended consequences? Monumentality as a novel experience in Formative Mesoamerica. ***Journal of Archaeological Method and Theory*** 11, 5–29

Joyce, R. A. 2008. Practice in and as deposition. In B. J. Mills and W. H. Walker (Eds). ***Memory Work: Archaeologies of Material Practices***, 25–39. Santa Fe, NM: School for Advanced Research Press

K

Kador, T., Cassidy, L. M., Geber, J., Hensey, R., Meehan, P. and Moore, S. 2018. Rites of passage: mortuary practice, population dynamics and chronology at the Carrowkeel passage tomb complex, Co. Sligo, Ireland. ***Proceedings of the Prehistoric Society*** 84, 225–55

Karlsson, H. 2001. ***It's About Time: The Concept of Time in Archaeology***. Lindome: Bricoleur Press

Kinnes, I. 1988. The Cattleship Potemkin: reflections on the first Neolithic in Britain. In J. C. Barrett and I. A. Kinnes (Eds). ***The Archaeology of Context in the Neolithic and Bronze Age: Recent Trends***, 2–8. Sheffield: University of Sheffield Department of Archaeology and Prehistory

Kirk, T. 1993. Space, subjectivity, power and hegemony: megaliths and long mounds in earlier Neolithic Brittany. In C. Tilley (Ed). ***Interpretative Archaeology***, 181–224. Oxford: Berg

Knapp, A. B. 1992. Archaeology and *Annales*: time, space and change. In A. B. Knapp (Ed). ***Archaeology, Annales and Ethnohistory***, 1–21. Cambridge: Cambridge University Press

Knappett, C. 2011. ***An Archaeology of Interaction: Network Perspectives on Material Culture and Society***. Oxford: Oxford University Press

Kohn, E. 2013. ***How Forests Think: Toward an Anthropology Beyond the Human***. Berkeley, CA: University of California Press

Koldehoff, B. H. and Pauketat, T.R. 2018. Introduction: an archaeology of ancient religious practices. In B. H. Koldehoff and T. R. Pauketat (Eds). ***Archaeology and Ancient Religion in the American Midcontinent***. Tuscaloosa, AL: University of Alabama Press

Kristan-Graham, C. and Amrhein, L. 2015. Memory traces. In C. Kristan-Graham and L. Amrhein (Eds). ***Memory Traces: Analysing Sacred Space at Five Mesoamerican Sites***, xiii-xxx. Boulder, CO: University Press of Colorado

Kristiansen, K. 1984. Ideology and material culture: an archaeological perspective. In M. Spriggs (Ed). ***Marxist Perspectives in Archaeology***, 72–100. Cambridge: Cambridge University Press, New Directions in Archaeology

Kristiansen, K. and Rowlands, M. 1998. ***Social Transformations in Archaeology: Global and Local Perspectives***. London: Routledge

Krupp, E. C. 2015. Astronomy and power. In C. Ruggles (Ed). 2015. ***Handbook of Archaeoastronomy and Ethnoastronomy***, 67–92. New York: Springer

Küchler, S. 1999. The place of memory. In A. Forty and S. Küchler (Eds). ***The Art of Forgetting***, 52–72. Oxford: Berg

L

Laidlaw, G. 2017. Excavations of the Late Neolithic Grooved Ware site at Scart, Co. Kilkenny. ***Journal of Irish Archaeology*** 26, 33–56

Lambrick, G. 1988. ***The Rollright Stones: Megaliths, Monuments, and Settlement in the Prehistoric Landscape*****.** English Heritage: London

Lambrick, G. 2013. Prehistoric Oxford (The Tom Hassall Lecture for 2012). ***Oxoniensia*** 78, 1–48

Lambrick, G. and Allen, T. 2005. ***Gravelly Guy: Excavations at Stanton Harcourt***. Oxford: Oxbow Books

Lancaster, S. 2009. Palaeoenvironmental synthesis. In H. K. Murray, J. C. Murray and C. Fraser (Eds). ***A Tale of the Unknown Unknowns: A Mesolithic Pit Alignment and a Neolithic Timber Hall at Warren Field, Crathes, Aberdeenshire***, 15–20. Oxford: Oxbow Books

Lane, B. C. 2001. ***Landscapes of the Sacred: Geography and Narrative in American Spirituality***. Baltimore, MD: John Hopkins University Press

Latour, B. 1993. ***We Have Never Been Modern***. Translated from the French by C. Porter. London: Harvester Wheatsheaf. (Originally published in 1991)

Latour, B. 1996. On actor-network theory: a few clarifications. ***Soziale Welt*** 47, 369–81

Latour, B. 2005. ***Reassembling the Social: An Introduction to Actor-Network-Theory***. Oxford: Oxford University Press

Lawrence, D. M. 2012. ***Reconstructing Biographies from Osteological Analysis to Gain Insights into Life and Society in a Neolithic Community on the Edge of Atlantic Europe***. Unpublished PhD thesis, University of Bradford

Lazzari, M. 2014. Old and new materialisms. ***Journal of Contemporary Archaeology*** 1, 236–8

Leach, E. R. 1982. ***Social Anthropology***. Glasgow: Fontana

Leach, S. 2019. King Arthur's Round Table revisited: a review of two rival interpretations of a henge monument near Penrith, in Cumbria. ***The Antiquaries Journal*** 99, 417–34

Leary, J., Canti, M., Field, D., Fowler, P., Marshall, P. and Campbell. G. 2013b. The Marlborough Mound, Wiltshire: a further Neolithic monumental mound by the River Kennet. ***Proceedings of the Prehistoric Society*** 79, 137–63

Leary, J., Clarke, A. and Bell, M. 2016. Valley of the henges: exploring Neolithic landscapes in the Pewsey Vale. ***Current Archaeology*** 316, 28–34

Leary, J. and Field, D. 2010. Recent work at Marden Henge, Wiltshire. ***English Heritage Research News*** 15, 10–3

Leary, J. and Field, D. 2012. Journeys and juxtapositions: Marden henge and the view from the vale. In A. Gibson (Ed). ***Enclosing the Neolithic: Recent Studies in Britain and Europe***, 55–65. BAR International Series 2440. Oxford: Archaeopress

Leary, J., Field, D. and Campbell, G. 2013a. ***Silbury Hill: The Largest Prehistoric Mound in Europe***. Swindon: English Heritage

Leary, J. and Kador, T. 2016. Movement and mobility in the Neolithic. In J. Leary and T. Kador (Eds). ***Moving on in Neolithic Studies: Understanding Mobile Lives***, 1–13. Oxford: Oxbow Books, Neolithic Studies Group Seminar Papers 14

Leary, J. and Pelling, R. 2016. ***Priddy Circle 1, Somerset: Archaeological Evaluation Report***. Swindon: Historic England Research Report Series No.32-2016

Leivers, M. 2019***. Bulford Service Family Accommodation, Bulford, Wiltshire: Post-Excavation Assessment***. Wessex Archaeology Report 200770.01

Lelong, O. and Pollard, T. 1998. The excavation and survey of prehistoric enclosures at Blackshouse Burn, Lanarkshire. ***Proceedings of the Society of Antiquaries of Scotland*** 128, 13–53

Levy, J. E. 1995. Heterarchy in Bronze Age Denmark: settlement pattern, gender and burial. ***Archaeological Papers of the American Anthropological Association*** 6(1), 41–53
Lewis, J. 2005. ***Monuments, Ritual and Regionality: The Neolithic of Northern Somerset***. Oxford: Archaeopress, BAR British Series 401
Lewis, J. 2020. ***A Neolithic timber circle in Priddy – and some wonderful pits – insights from Jodie Lewis***. Unpublished report. Available at: https://0501.nccdn.net/4_2/000/000/03f/ac7/a-neolithic-timber-circle-in-priddy-november-2020.pdf [Accessed 29th October 2021]
Lewis, J. and Mullin, D. 2011. New excavations at Priddy Circle I, Mendip Hills, Somerset. ***Proceedings of the University of Bristol Spelaeological Society*** 25(2), 133–63
Lewis, J. and Mullin, D. 2012. '…An assemblage of ponderous stones': recent archaeological fieldwork at Stanton Drew stone circles. ***Archaeological Journal*** 169, 87–126
Lewis, J., Mullin, D. and Johnson, N. 2018. Filling the gaps: new research on the Mendip Hills, Somerset. ***Past*** 90, 11–3
Lewis-Williams, D. and Pearce, D. 2005. ***Inside the Neolithic Mind: Consciousness, Cosmos and the Realm of the God.*** London: Thames and Hudson
Linford, N., Linford, P. and Payne, A. 2012. ***Stonehenge Monument Field and Barrows, Wiltshire: Report on Geophysical Surveys, September 2010, April and July 2011***. Swindon: English Heritage Research Report 34-2012
Linford, N., Linford, P. and Payne, A. 2013a. ***Marden Barrow Cemetery and Wilsford Henge: Report on Geophysical Surveys, September 2012***. English Heritage Research Report 8-2013
Linford, N., Linford, P. and Payne, A. 2013b. ***Priddy Circle I, Somerset: Report on Geophysical Surveys, March 2013***. English Heritage Research Department Report Series 61-2013
Linford, N., Linford, P., Payne, A. and Greaney, S. 2017. ***Stanton Drew Stone Circles and Avenues, Bath and North East Somerset: Report on Geophysical Surveys, July 2017***. Historic England Research Report 79-2017
Loveday, R. 1989. The Barford ritual complex: further excavations (1972) and a regional perspective. In A. Gibson (Ed). ***Midlands Prehistory***, 27–50. Oxford: Archaeopress, British Archaeological Reports British Series 204
Loveday, R. 1999. Dorchester-on-Thames. In A. Barclay and J. Harding (Eds). ***Pathways and Ceremonies: The Cursus Monuments of Britain and Ireland***, 49–63. Oxford: Neolithic Studies Group Seminar Papers 4
Loveday, R. 2006. ***Inscribed Across the Landscape: The Cursus Enigma***. Stroud: Tempus
Loveday, R. 2009. From ritual to riches – the route to individual power in later Neolithic eastern Yorkshire. In K. Brophy and G. Barclay (Eds). ***Defining a Regional Neolithic: The Evidence from Britain and Ireland***, 35–52. Oxford: Oxbow Books
Lubbock, S. J. 1865. ***Pre-historic Times***. London: Williams and Norgate
Lucas, G. 2004. ***The Archaeology of Time***. Oxford: Routledge
Lucas, G. 2012. ***Understanding the Archaeological Record***. Cambridge: Cambridge University Press
Lucas, G. 2015. Archaeology and contemporaneity. ***Archaeological Dialogues*** 22, 1–15
Lukes, S. 1974. ***Power: A Radical View***. London: Macmillan
Lynch, F. and Musson, C. 2004. A prehistoric and early medieval complex at Llandegai, near Bangor, North Wales. ***Archaeologia Cambrensis*** 150, 17–142
Lyons, A. 2020. ***Rectory Farm, Godmanchester, Cambridgeshire: Excavations 1988 – 95, Neolithic Monument to Roman Villa Farm***. Cambridge: East Anglian Archaeology 170, Oxford Archaeology East

M

Macfarlane, R. 2015. ***Landmarks***. London: Penguin
MacKie, E. 1977. ***Science and Society in Prehistoric Britain***. London: Elek
MacKie, E. 1997. Maeshowe and the winter solstice: ceremonial aspects of the Orkney Grooved Ware culture. ***Antiquity*** 71, 338–59
MacKie, E. 2009. The prehistoric solar calendar: an out-of-fashion idea revisited with new evidence. ***Time and Mind*** 2(1), 9–46

Madgwick, R., Mulville, J. and Evans, J. 2012. Investigating diagenesis and the suitability of porcine enamel for strontium ($^{87}Sr/^{86}Sr$) isotope analysis. ***Journal of Analytical Atomic Spectrometry*** 27(5), 733–42

Madgwick, R., Lamb, A., Sloane, H., Nederbragt, A. J., Alberella, U., Parker Pearson, M. and Evans, J. A. 2019. Multi-isotope analysis reveals that feasts in the Stonehenge environs and across Wessex drew people and animals from throughout Britain. ***Science Advances*** 5, eaau6078

Madsen, T. and Jensen, H. J. 1982. Settlement and land use in Early Neolithic Denmark. ***Analecta Praehistorica Leidensia*** 15: 63–86

Malim, T. 1999. Cursuses and related monuments of the Cambridgeshire Ouse. In A. Barclay and J. Harding (Eds). ***Pathways and Ceremonies: The Cursus Monuments of Britain and Ireland***. Oxford: Oxbow Books, 77–85

Malim, T. 2000. The ritual landscape of the Neolithic and Bronze Age along the middle and lower Ouse Valley. In M. Dawson (Ed). ***Prehistoric, Roman and Post-Roman Landscapes of the Great Ouse Valley***, 57–88. York: Council of British Archaeology Research Report 119

Mann, M. 1986. ***The Sources of Social Power.*** Cambridge: Cambridge University Press

Manning, S. W. 2015. Radiocarbon dating and archaeology: history, progress and present status. In R. Chapman and A. Wylie (Eds). ***Material Evidence: Learning from Archaeological Practice***, 113–27. London: Routledge

Marshack, A. 1972. ***The Roots of Civilisation***. New York: Weidenfeld and Nicolson

Marshall, S. 2013. Silbury spring. ***British Archaeology*** 131, 24–7

Marshall, S. 2016. ***Exploring Avebury: The Essential Guide***. Stroud: The History Press

Marshall, S. and Currie, G. 2010. Investigation of a 'sun roll' effect in relation to Silbury Hill. ***Time and Mind*** 3(3), 291–302

Marx, K. 1977. ***A Contribution to the Critique of Political Economy***. Translated from the Russian, by S.W. Ryazanskaya. Moscow: Progress Publishers. (Originally published in 1859)

Mauzé, M. 1998. Northwest coast trees: from metaphors in culture to symbols for culture. In L. Rival (Ed). ***The Social Life of Trees: Anthropological Perspectives on Tree Symbolism***, 233–51. Oxford: Berg

Mays, S., Roberts, D., Marshall, P., Pike, A. W. G., van Heekern, V., Bronk Ramsey, C., Dunbar, E., Reimer, P., Linscott, B., Radini, A., Lowe, A., Dowle, A., Speller, C., Vallender, J. and Bedford, J. 2018. Lives before and after Stonehenge: an osteobiographical study of four prehistoric burials recently excavated from the Stonehenge World Heritage Site. ***Journal of Archaeological Science: Reports*** 20, 692–710

McAvoy, F. 2000. The development of a Neolithic monument complex at Godmanchester, Cambridgeshire. In M. Dawson (Ed). ***Prehistoric, Roman and Post-Roman Landscape of the Great Ouse Valley***, 51–6. York: Council for British Archaeology Research Report 119

McFadyen, L. 2007. Neolithic architecture and participation: practices of making at long barrow sites in southern Britain. In J. Last (Ed). ***Beyond the Grave: New Perspectives on Barrows,*** 22–9. Oxford: Oxbow Books

McFadyen, L. 2016. Immanent architecture. In M. Bille and T. Flohr-Sorensen (Eds). ***Elements of Architecture: Assembling Archaeology, Atmosphere and the Performance of Building Space,*** 53–62. London: Routledge

McFadyen, L. 2018. Outer worlds inside. In A. Brysbaert, V. Klinkenberg, A. Gutierrez Garcia-M and I. Vikatou (Eds). ***Constructing Monuments, Perceiving Monumentality and the Economics of Building: Theoretical and Methodological Approaches to the Built Environment***, 87–101. London: Sidestone Press

McGlade, J. 1999. The times of history: archaeology, narrative and non-linear causality. In T. Murray (Ed). ***Time and Archaeology***, 139–63. London: Routledge

McGrath, A. 2015. Deep histories in time, or crossing the great divide? In A. McGrath and M. A. Jebb (Eds). ***Long History, Deep Time: Deepening the Histories of Place***, 1–32. Canberra: Australian National University Press

McGuire, R. H. 1983. Breaking down cultural complexity: inequality and heterogeneity. ***Advances in Archaeological Method and Theory*** 6, 91–142

McGuire, R.H. and Saitta, D.J. 1996. Although they have petty captains, they obey them badly: the dialectics of Prehispanic Western Pueblo social organization. ***American Antiquity*** 61(2), 197–216
McKinley, J. 2007. Human remains. In C. French, H. Lewis, M. Allen, M. Green, R. Scaife and J. Gardiner (Eds). ***Prehistoric Landscape Development and Human Impact in the Upper Allen Valley, Cranborne Chase, Dorset***, 372–77. Cambridge: McDonald Institute Monograph, University of Cambridge
Meaden, T. 1992. ***The Stonehenge Solution: Sacred Marriage and the Goddess***. London: Souvenir Press
Meighan, I., Simpson, D. and Hartwell, B. 2003. Newgrange – sourcing of its granitic cobbles. ***Archaeology Ireland*** 16(1), 32–5
Meillassoux, C. 1960. Essai d'interpretation du phenomene economique dans les societies traditionelles d'autosubsistance. ***Cahiers D'etudes Africaines*** 4, 38–67
Mellaart, J. 1967. ***Çatalhöyük***. London: Thames and Hudson
Mercer, R. 1981. The excavation of a late Neolithic henge-type enclosure at Balfarg, Markinch, Fife, Scotland, 1977–78. ***Proceedings of the Society of Antiquaries of Scotland*** 111, 63–171
Mercer, R. and Healy, F. (Eds). 2008. ***Hambledon Hill, Dorset, England: Excavation and Survey of a Neolithic Monument Complex and its Surrounding Landscape***. Swindon: English Heritage
Merleau-Ponty, M. 2002. ***Phenomenology of Perception***. Translated from the French by C. Smith. London: Routledge. (Originally published in 1945)
Meskell, L. 1996. The somatization of archaeology: institutions, discourses, corporeality. ***Norwegian Archaeological Review*** 29(1), 1–6
Meskell, L. 2004. ***Object Worlds in Ancient Egypt: Material Biographies Past and Present***. Oxford and New York: Berg
Miket, R., Edwards, B. and O'Brien, C. 2008. Thirlings: a Neolithic site in Northumberland. ***Archaeological Journal*** 165, 1–106
Middleton, D. and Edwards, D. 1997. Introduction. In D. Middleton and D. Edwards (Eds). ***Collective Remembering***, 1–23. London: Sage
Miller, D. and Tilley, C. (Eds). 1984a. ***Ideology, Power and Prehistory***. Cambridge: Cambridge University Press
Miller, D. and Tilley, C. 1984b. Ideology, power and prehistory: an introduction. In D. Miller and C. Tilley (Eds). ***Ideology, Power and Prehistory***, 1–15. Cambridge: Cambridge University Press
Millican, K. 2016. ***The Timber Monuments of Neolithic Scotland***. Oxford: Archaeopress, British Archaeological Report British Series 623
Millican, K., Goodchild, H. and Graves McEwan, D. 2017. Monuments and landscape: investigating a prehistoric monument complex at Loughbrow, Dumfries and Galloway. ***Antiquaries Journal*** 97, 27–47
Mills, B. J. and Walker, W. H. (Eds). 2008. ***Memory Work: Archaeologies of Material Practices***. Santa Fe: School for Advanced Research Press
Mills, S. 2003. ***Michel Foucault***. London: Routledge
Mitchell, F. 1992. Notes on some non-local cobbles at the entrances to the passage-graves at Newgrange and Knowth, County Meath. ***Journal of the Royal Society of Antiquaries of Ireland*** 122, 128–45
Mitchell, G. F. 1995. Did the tide once flow as far as Newgrange? ***Living Heritage*** 12, 34
Moloney, C., Holbrey, R., Wheelhouse, P. and Roberts, I. 2003. ***Catterick Racecourse, North Yorkshire: The Reuse and Adaptation of a Monument from Prehistoric to Anglian Times***. Leeds: West Yorkshire Archaeological Services Publication 4
Montgomery, J., Budd. P. and Evans, J. 2000. Reconstructing the lifetime movements of ancient people: a Neolithic case study. ***European Journal of Archaeology*** 3, 370–85
Mook, W. G. 1986. Business meeting: recommendations/ resolutions adopted by the twelfth international radiocarbon conference. ***Radiocarbon*** 28, 799
Moore, S. 2003. The Carrowkeel passage tomb complex, Co. Sligo: people and a pre-monumental landscape. In J. Lyttleton and C. Healy (Eds). ***Proceedings of the Association of Young Irish Archaeologists***, 15–32. Cork: University College Cork
Moore, S. 2016. Movement and thresholds: architecture and landscape at the Carrowkeel-Keshcorran passage tomb complex, Co. Sligo, Ireland. In J. Leary and T. Kador (Eds). ***Moving on in Neolithic Studies: Understanding Mobile Lives***. Neolithic Studies Group Seminar Papers 14, 45–66

Morgan, L.H. 1877. ***Ancient Society, or, Researches in the Lines of Human Progress from Savagery, Through Barbarism to Civilization***. Chicago: C H Kerr
Morigi, T., Schreve, M., White, M. and Hey, G. 2011. ***The Archaeology of the Gravel Terraces of the Upper and Middle Thames: Early Prehistory to 1500 BC***. Oxford: Oxford Archaeology
Morris, I. 1991. The archaeology of ancestors: the Saxe/Goldstein hypothesis revisited. ***Cambridge Archaeological Journal*** 1(2), 147–69
Morrison, W. 2009. ***A Synthesis of Antiquarian Observation and Archaeological Excavation at Dorchester-on-Thames, Oxfordshire***. Oxford: Archaeopress, British Archaeological Reports British Series 491
Morton, T. 2012. ***The Ecological Thought***. Cambridge, MA: Harvard University Press
Morton, T. 2013. ***Hyperobjects: Philosophy and Ecology after the End of the World***. Minneapolis: University of Minnesota Press
Mudd, A., Brett, M., Anderson-Whymark, H., Black, S., Cobain, S., Geber, J., Healy, F., Marini, N., Mcsloy, E. R., Morris, E. L., Price, K. M., Warman, S., Warren, G., Watson, N., Wilkinson, K. and Young, T. P. 2012. A Neolithic and Bronze Age monument complex and its Early Medieval reuse: excavations at Netherfield Farm, South Petherton, Somerset, 2006. ***Archaeological Journal*** 169, 3–86
Mullan, G. and Chamberlain. A. 2018. ***Gazetteer of Caves, Fissures and Rock Shelters in Britain Containing Human Remains***. Available at: https://caveburial.ubss.org.uk [Accessed 08/02/18]
Müller, J. 2018. Social memories and site biographies: construction and perception in non-literate societies. In C. C. Bakels, Q. P. J. Bourgeois, D. R. Fontijn and R. Jansen (Eds). ***Local Communities in the Big World of Prehistoric Northwest Europe***, 9–17. Leiden: Sidestone Press
Müller, M. 2015. Assemblages and actor-networks: rethinking socio-material power, politics and space. ***Geography Compass*** 9(1), 27–41
Murray, H. K. Murray, J. C. and Fraser, C. (Eds). 2009. ***A Tale of the Unknown Unknowns: A Mesolithic Pit Alignment and a Neolithic Timber Hall at Warren Field, Crathes, Aberdeenshire***. Oxford: Oxbow Books
Mutoro, H. W. 1994. The Mijikenda kaya as a sacred site. In D. Carmichael, J. Hubert, B. Reeves and A. Schanche (Eds). ***Sacred Sites, Sacred Places***, 132–9. Routledge: London

N

Nabokov, P. 2007. ***Where the Lightning Strikes: The Lives of American Indian Sacred Places***. New York: Viking
Nairn, C. 1976. ***Ongka's Big Moka: the Kawelka***. London: Granada Television International
Nash, D. J., Ciborowski, T. J. R., Ullyott, J. S., Parker Pearson, M., Darvill, T. and Greaney, S. 2020. Origins of the sarsen megaliths at Stonehenge. ***Science Advances*** 6(31), eabc0133
Naylor, J. C. and Smith, A. F. M. 1988. An archaeological inference problem. ***Journal of the American Statistical Association*** 83(403), 588–95
Needham, S. 2006. From henge to barrow: Ringlemere M1 and comparable monuments. In S. Needham, K. Parfitt & G. Varndell (Eds). ***The Ringlemere Cup: Precious Cups and the Beginning of the Channel Bronze Age***, 16–30. London: British Museum Research Publication 163
Needham, S. and Woodward, A. 2008. The Clandon Barrow finery: a synopsis of success in an early Bronze Age world. ***Proceedings of the Prehistoric Society*** 74, 1–52
Neil, S., Evans, J., Montgomery, J. and Scarre, C. 2016. Isotopic evidence for residential mobility of farming communities during the transition to agriculture in Britain. ***Royal Society Open Science*** 3, 150522
Neil, S., Evans, J., Montgomery, J. and Scarre, C. 2018. Isotopic evidence for landscape use and the role of causewayed enclosures during the earlier Neolithic in southern Britain. ***Proceedings of the Prehistoric Society*** 84, 185–205
Neil, S., Evans, J., Montgomery, J. and Scarre, C. 2020. Isotopic evidence for human movement into Central England during the Early Neolithic. ***European Journal of Archaeology*** 23(4), 512–29

Neil, S., Montgomery, J., Evans, J., Cook, G. T. and Scarre, C. 2017. Land use and mobility during the Neolithic in Wales explored using isotope analysis of tooth enamel. ***American Journal of Physical Anthropology*** 164, 371–93

Newham, C. A. 1972. ***The Astronomical Significance of Stonehenge***. Leeds: John Blackburn

Newman, C. 1995. A cursus at Loughcrew, Co. Meath. ***Archaeology Ireland*** 9(4), 19–21

Newman, C. 1997. ***Tara: An Archaeological Survey***. Dublin: Royal Irish Academy

Noble, G. 2006a. Harnessing the waves, monuments and ceremonial complexes in Orkney and beyond. ***Journal of Maritime Archaeology*** 1, 100–17

Noble, G. 2006b. ***Neolithic Scotland: Timber, Stone, Earth and Fire***. Edinburgh: Edinburgh University Press

Noble, G. 2017. ***Woodland in the Neolithic of Northern Europe: The Forest as Ancestor***. Cambridge: Cambridge University Press

Noble, G. and Brophy, K. 2011a. Ritual and remembrance at a prehistoric ceremonial complex in central Scotland: excavations at Forteviot, Perth and Kinross. ***Antiquity*** 85, 787–804

Noble, G. and Brophy, K. 2011b. Big enclosures: the later Neolithic palisaded enclosures of Scotland in their northwestern European context. ***European Journal of Archaeology*** 14, 60–87

Noble, G., Brophy, K., Hamilton, D., Leach, S. and Sheridan, A. 2017. Cremation practices and the creation of monument complexes: the Neolithic cremation cemetery at Forteviot, Strathearn, Perth and Kinross, Scotland, and its comparanda. ***Proceedings of the Prehistoric Society*** 83, 213–45

Noble, G., Greig, M. and Millican, K. 2011. Excavations at a multi-period site at Greenbogs, Aberdeeshire, Scotland and the four-post timber architecture tradition of Late Neolithic Britain and Ireland. ***Proceedings of the Prehistoric Society*** 78, 135–71

Nowakowski, J. A., Kennett, C., Gossip, J. and Sheen, B. 2020. Investigating archaeology and astronomy at The Hurlers, Cornwall, 2013–2019. ***Journal of Skyscape Archaeology*** 6(1), 53–85

Nunn, P. D. 2018. ***The Edge of Memory: Ancient Stories, Oral Tradition and the Post-Glacial World***. London: Bloomsbury

Nunn, P. D. and Reid, N. J. 2016. Aboriginal memories of inundation of the Australian coast dating from more than 7000 years ago. ***Australian Geographer*** 47(1), 11–47

O

Ó Drisceoil, C. 2009. Archaeological excavations of a late Neolithic Grooved Ware site at Balgatheran, County Louth. ***Journal of the County Louth Archaeological and Historical Society*** 27, 77–102

O'Connor, B. and Cooney, G. 2009. Introduction: materialitas and the significance of stone. In B. O'Connor, G. Cooney and J. Chapman (Eds). ***Materialitas: Working Stone, Carving Identity***, xxi–xxv. Oxford: Oxbow Books, Prehistoric Society Research Paper 3

O'Connor, B., Cooney, G. and Chapman, J. (Eds). 2009. ***Materialitas: Working Stone, Carving Identity***. Oxford: Oxbow Books, Prehistoric Society Research Paper 3

O'Kelly, M. 1982. ***Newgrange: archaeology, art and legend***. London: Thames and Hudson

O'Kelly, M. J., Cleary, R. M. and Lehane, D. 1983. ***Newgrange, Co. Meath, Ireland: The Late Neolithic/Beaker Period Settlement***. Oxford: British Archaeological Reports International Series 190

O'Kelly, M. J., Lynch, F. and O'Kelly, C. 1978. Three passage-graves at Newgrange, Co. Meath. ***Proceedings of the Royal Irish Academy*** 78, 249–352

O'Sullivan, M. Prendergast, F. and Stout, G. 2010. An intriguing monument. ***Archaeology Ireland*** 24(1), 20–2

O'Sullivan, M., Scarre, C. and Doyle, M. (Eds). 2013. ***Tara: From the Past to the Future***. Dublin: Wordwell

Olalde, I., Brace, S., Morten E. Allentoft, M.E., Ian Armit, I., Kristiansen, K., Rohland, N., Mallick, S., Booth, T., Szécsényi-Nagy, A., Mittnik, A., Altena, E., Lipson, M., Lazaridis, I., Patterson, N., Broomandkhoshbacht, N., Diekmann, Y., Faltyskova, Z., Fernandes, D., Ferry, M., Harney, E., de Knijff, P., Michel, M., Oppenheimer, J., Stewardson, K., Barclay, A., Alt, K.W., Avilés Fernández, A., Eszter Bánffy, E., Bernabò-Brea, M., Billoin, D., Blasco, C., Bonsall, C., Bonsall, L., Allen, T., Büster, L., Carver, S., Castells Navarro, L., Craig, O.E., Cook, G.T., Cunliffe, B., Denaire, A., Egging Dinwiddy, K., Dodwell, N., Ernée, M., Evans, C., Kuchařík, M., Farré, J.F., Fokkens, H., Fowler, C., Gazenbeek, M., Garrido Pena, R., Haber-Uriarte, M., Haduch, E., Hey, G., Jowett, N., Knowles, T., Massy, K.,

Pfrengle, S., Lefranc, P., Lemercier, O., Lefebvre, A., Maurandi, J.L., Majó, T., McKinley, J.I., McSweeney, K., Balázs Gusztáv, M., Modi, A., Kulcsár, G., Kiss, V., Czene, A., Patay, R., Endrődi, A., Köhler, K., Hajdu, T., Cardoso, J.L., Liesau, C., Parker Pearson, M., Włodarczak, P., Price, T.D., Prieto, P., Rey, P.-J., Ríos, P., Risch, R., Rojo Guerra, M.A., Schmitt, A., Serralongue, J., Silva, A.M., Smrčka, V., Vergnaud, L., Zilhão, J., Caramelli, D., Higham, T., Heyd, V., Sheridan, A., Sjögren, K.-G., Thomas, M.G., Stockhammer, P.W., Pinhasi, R., Krause, J., Haak, W., Barnes, I., Lalueza-Fox, C. and Reich, D. 2019. The Beaker phenomenon and the genomic transformation of northwest Europe. ***Nature*** 555, 190–6

Olivier, L. 1999. The Hochdorf 'princely' grave and the question of the nature of archaeological funerary assemblages. In T. Murray (Ed). ***Time and Archaeology***, 109–38. London: Routledge

Olivier, L. 2006. The greatest harmony is born of differences, comments on Jan Harding: Rethinking the great divide: long-term structural history and the temporality of the event. ***Norwegian Archaeological Review*** 38, 89–93

Olivier, L. 2011. ***The Dark Abyss of Time: Archaeology and Memory***. Lanham, MD: Rowland and Littlefield

Olsen, B. 2010. ***In Defense of Things: Archaeology and the Ontology of Objects***. New York: AltaMira Press

Olsen, B., Shanks, M., Webmoor, T. and Witmore, C. 2012. ***Archaeology: The Discipline of Things***. Oakland, CA: University of California Press

Ortner, S. 1984. Theory in anthropology since the sixties. ***Comparative Studies in Society and History*** 26(1), 126–66

Oswald, A. 1966–7. Excavations for the Avon/Severn Research Committee at Barford, Warwickshire. ***Birmingham Archaeological Society*** 83, 5–64

Oswald, A., Dyer, C. and Barber, M. 2001. ***The Creation of Monuments: Neolithic Causewayed Enclosures in the British Isles***. Swindon: English Heritage

Ouzman, S. 2001. Seeing is deceiving: rock art and the non-visual. ***World Archaeology*** 33(2), 237–56

P

Parker Pearson, M. 1982. Mortuary practices, society and ideology: an ethnoarchaeological study. In I. Hodder (Ed). ***Symbolic and Structural Archaeology,*** 99–114. Cambridge: Cambridge University Press

Parker Pearson, M. 1984. Social change, ideology and the archaeological record. In M. Spriggs (Ed). ***Marxist Perspectives in Archaeology***, 59–71. Cambridge: Cambridge University Press. New Directions in Archaeology

Parker Pearson, M. 2007. The Stonehenge Riverside Project: excavations at the east entrance of Durrington Walls. In M. Larsson and M. Parker Pearson (Eds). ***From Stonehenge to the Baltic: Living with Cultural Diversity in the Third Millennium BC***, 125–44. BAR International Series 1692, Oxford: Archaeopress

Parker Pearson, M. 2012a. Stonehenge and the beginning of the British Neolithic. In A. Jones, J. Pollard, M. Allen and J. Gardiner (Eds). ***Image, Memory and Monumentality: Archaeological Engagements with the Material World***, 18–28. Oxford: Oxbow Books, Prehistoric Society Research Paper 5

Parker Pearson, M. 2012b. ***Stonehenge: Exploring the Greatest Stone Age Mystery***. New York: Simon and Schuster

Parker Pearson, M. 2019. Stonehenge's bluestones. In A. Teather, P. Toppping and J. Baczkowski (Eds). ***Mining and Quarrying in Neolithic Europe: A Social Perspective,*** 83–100. Oxford: Oxbow Books

Parker Pearson, M., Bevins, R., Ixer, R., Pollard, J., Richards, C., Welham, K., Chan, B., Edinborough, K., Hamilton, D., Macphail, R., Schlee, D., Schwenninger, J-L, Simmons, E. and Smith, M. 2015. Craig Rhos-y-felin: a Welsh bluestone megalith quarry for Stonehenge. ***Antiquity*** 89(348), 1331–52

Parker Pearson, M., Chamberlain, A., Jay, M., Marshall, P., Pollard, J., Richards, J., Thomas, J., Tilley, C. and Welham, K. 2009. Who was buried at Stonehenge? ***Antiquity*** 83, 23–39

Parker Pearson, M., Cleal, R., Marshall, P., Needham, S., Pollard, J., Richards, C., Ruggles, C., Sheridan, A., Thomas, J., Tilley, C., Welham, K., Chamberlain, A., Chenery, C., Evans, J., Knüsel, C., Linford, N.,

Martin, L., Montgomery, J., Payne, A. and Richards, M. 2007. The age of Stonehenge. ***Antiquity*** 81, 617–39

Parker Pearson, M., Pollard, J., Richards, C., Thomas, J., Tilley, C. and Welham, K. 2008. The Stonehenge Riverside Project: exploring the Neolithic landscape of Stonehenge. ***Documenta Praehistorica*** 35, 153–66

Parker Pearson, M., Pollard, J., Richards, C., Welham, K., Casswell, C., French, C., Schlee, D., Shaw, D., Simmons, E., Stanford, A., Bevins, R. and Ixer, R. 2019a. Megalith quarries for Stonehenge's bluestones. ***Antiquity*** 93(367), 45–62

Parker Pearson, M., Pollard, J., Richards, C., Welham, K., Kinnaird, T., Shaw, D., Simmons, E., Stanford, A., Bevins, R., Ixer, R., Ruggles, C., Rylatt, J. and Edinborough, K. 2021. The original Stonehenge? A dismantled stone circle in the Preseli Hills of west Wales. ***Antiquity*** 95(379), 85–103

Parker Pearson, M., Pollard, J., Thomas, J., Tilley, C., Welham, K. and Albarella, U. 2006a. Materializing Stonehenge: the Stonehenge Riverside Project and new discoveries. ***Journal of Material Culture*** 11(1/2), 227–61

Parker Pearson, M., Pollard, J., Richards, C., Thomas, J., Tilley, C. and Welham, K. 2020. ***Stonehenge for the Ancestors: Part 1, Landscape and Monuments***. Leiden: Sidestone Press

Parker Pearson, M. and Ramilisonina 1998a. Stonehenge for the ancestors: the stones pass on the message. ***Antiquity*** 72 (276), 308–26

Parker Pearson, M. and Ramilisonina 1998b. Stonehenge for the ancestors: part two. ***Antiquity*** 72(278), 855–6

Parker Pearson, M. Sheridan, A., Jay, M., Chamberlain, A., Richards, M. P. and J. Evans (Eds). 2019b. ***The Beaker People Project: Isotopes, Mobility and Diet in Prehistoric Britain***. Oxford: Oxbow, Prehistoric Society Research Paper 7

Passmore, D. G. and Waddington, C. 2009. ***Managing Archaeological Landscapes in Northumberland***. Till-Tweed Studies Volume 1, Oxford: Oxbow Books

Paton, R. 2015. The mutability of time and space as a means of healing history in an Australian Aboriginal community. In A. McGrath and M. A. Jebb (Eds). ***Long History, Deep Time: Deepening the Histories of Place***, 67–82. Canberra: Australian National University Press

Patrick, J. 1974. Midwinter sunrise at Newgrange. ***Nature*** 249, 517–9

Patterson, T. C. 2003. ***Marx's Ghost: Conversations with Archaeologists***. Oxford and New York: Berg

Patton, M. 1995. New light on Atlantic seaboard passage-grave chronology: radiocarbon dates from La Hougue Bie (Jersey). ***Antiquity*** 69(264), 582–6

Pauketat, T. 2000. The tragedy of the commoners. In M.-A. Dobres and J. Robb (Eds). ***Agency in Archaeology***, 113–29. Routledge: London

Pauketat, T. 2007. ***Chiefdoms and Other Archaeological Delusions***. Lanham, Maryland: AltaMira Press

Pauketat, T. 2012. ***An Archaeology of the Cosmos: Rethinking Agency and Religion in Ancient America.*** New York: Routledge

Pauketat, T. and Alt, S. 2003. Mounds, memory and contested Mississippian history In R. Van Dyke and S. E. Alcock (Eds). ***Archaeologies of Memory***, 151–79. Oxford: Blackwell

Peebles, C. S. and Kus, S. M. 1977. Some archaeological correlates of ranked societies. ***American Antiquity*** 42(3), 421–48

Penny, A. and Wood, J. E. 1973. The Dorset Cursus complex – a Neolithic astronomical observatory? ***Archaeological Journal*** 130, 44–76

Peterson, R. 2019. ***Neolithic Cave Burials: Agency, Structure and Environment***. Manchester: Manchester University Press

Pettitt, P. and Zilhão, J. 2015. Problematising Bayesian approaches to prehistoric chronologies. ***World Archaeology*** 47(4), 525–42

Piggott, S. 1949. ***British Prehistory***. London: Oxford University Press

Piggott, S. 1954. ***The Neolithic Cultures of the British Isles: A Study of the Stone-Using Agricultural Communities of Britain in the Second Millennium B.C***. Cambridge: Cambridge University Press

Piggott, S. and Piggott, C. M. 1939. Stone and earth circles in Dorset. ***Antiquity*** 13, 138–58

Pitts, M. 2001. ***Hengeworld***. London: Century

Pitts, M. W. 1982. On the road to Stonehenge: report on investigations beside the A344 in 1968, 1979 and 1980. ***Proceedings of the Prehistoric Society*** 48, 75–132

Plunkett, G., Carroll, F., Hartwell, B., Whitehouse, N. J. and Reimer, P. J. 2008. Vegetation history at the multi-period prehistoric complex at Ballynahatty, Co. Down, Northern Ireland. ***Journal of Archaeological Science*** 35, 181–90

Pollard, J. 1992. The Sanctuary, Overton Hill, Wiltshire: a re-examination. ***Proceedings of the Prehistoric Society***, 58, 213–26

Pollard, J. 1995a. Inscribing space: formal deposition at the later Neolithic monument of Woodhenge, Wiltshire. ***Proceedings of the Prehistoric Society*** 61, 137–56

Pollard, J. 1995b. The Durrington 68 timber circle: a forgotten late Neolithic monument. ***Wiltshire Archaeological and Natural History Magazine*** 88, 122–5

Pollard, J. 2000. Neolithic occupation practices and social ecologies from Rinyo to Clacton. In A. Ritchie (Ed). ***Neolithic Orkney in Its European Context***, 363–70. Cambridge: McDonald Institute

Pollard, J. 2009. The materialization of religious structures in the time of Stonehenge. ***Material Religion*** 5(3), 332–53

Pollard, J. 2012. Living with sacred spaces: the henge monuments of Wessex. In A. Gibson (Ed). ***Enclosing the Neolithic: Recent Studies in Britain and Europe,*** 93–107. Oxford: Archaeopress, British Archaeological Reports International Series 2440

Pollard, J. 2013. From Ahu to Avebury: monumentality, the social and relational ontologies. In B. Alberti, A. M. Jones and J. Pollard (Eds). ***Archaeology After Interpretation: Returning Materials to Archaeological Theory***, 177–96. Walnut Creek, California: Left Coast Press

Pollard, J., Allen, M., Cleal, R., Snashall, N., Gunter, J., Roberts, V. and Robinson, D. 2012. East of Avebury: tracing prehistoric activity and environmental change in the environs of Avebury henge (excavations at Rough Leaze 2007). ***Wiltshire Archaeological and Natural History Magazine*** 105, 1–20

Pollard, J., Garwood, P., Parker Pearson, M., Richards, C., Thomas, J. and Welham, K. 2017. Remembered and imagined belongings: Stonehenge in the age of first metals. In P. Bickle, V. Cummings, D. Hofman and J. Pollard (Eds). ***The Neolithic of Europe***, 279–97. Oxford: Oxbow Books

Pollard, J. and Gillings, M. 2010. The world of the grey wethers. In B. O'Connor, G. Cooney and J. Chapman (Eds). ***Materialitas: Working Stone, Carving Identity***, 29–41. Oxford: Oxbow Books, Prehistoric Society Research Paper 3

Pollard, J., Gillings, M., Chan, B., Cleal, R., French, C., Allen, M., Banfield, E., Pike, A., de Carle, D., Eve, S., Rowland, J., Thompson, J., Clifton, B. and Snashall, N. 2019. ***West Kennet Palisades, Avebury: An Interim Report on the Summer 2019 Excavations***. Unpublished report: Living with Monuments Project

Pollard, J. and Reynolds, A. 2002. ***Avebury: The Biography of a Landscape***. Stroud: Tempus

Pollard, J. and Ruggles, C. 2001. Shifting perceptions: spatial order, cosmology, and patterns of deposition at Stonehenge. ***Cambridge Archaeological Journal*** 11(1), 69–90

Ponting, G. and Ponting, M. 1981. Decoding the Callanish complex – some initial results. In C. Ruggles and A. Whittle (Eds). ***Astronomy and Society in Britain During the Period 4000–1500 BC***. Oxford: British Archaeological Reports, British Series 88, 63–110

Poole, F. J. P. 1986. The erosion of a sacred landscape: European exploration and cultural ecology among the Bimin-Kuskusmin of Papua New Guinea. In M. Tobias (Ed). ***Mountain People***, 169–82. Norman: University of Oklahoma Press

Prendergast, F. 1991. Shadow casting phenomena at Newgrange. ***Survey Ireland*** 9, 9–18

Prendergast, F. 2008. 'In the eye of the beholder': symbolism and meaning in Irish passage tomb alignment and height. In F. Coimbra and G. Dimitraidis (Eds). ***Cognitive Archaeology as Symbolic Archaeology***, 3–12. Oxford: Archaeopress, British Archaeological Reports, International Series 1737

Prendergast, F. 2011. The Loughcrew hills and passage tomb complex. In B. Steffanini and G. M. Glynn (Eds). ***Field Guide No. 29 – North Meath***, 42–54. Dublin: Irish Quaternary Association

Prendergast, F. 2015. Boyne Valley tombs. In C. Ruggles (Ed). ***Handbook of Archaeoastronomy and Ethnoastronomy***, 1264–76. New York: Springer

Prendergast, F. 2016. Interpreting megalithic tomb orientations and siting within broader cultural contexts. In D. Brown (Ed). ***Journal of Physics: Conference Series*** 685, 1–25
Prendergast, F., O'Sullivan, M., Williams, K. and Cooney, G. 2017. Facing the sun. ***Archaeology Ireland*** 31(4), 10–7
Prendergast, F. and Ray, T. 2002. Ancient astronomical alignments: fact or fiction. ***Archaeology Ireland*** 16(2), 32–5
Prendergast, F. and Ray, T. 2018. Alignment of the western and eastern passage tombs. In G. Eogan and K. Cleary (Eds). ***Excavations at Knowth 6: The Neolithic Archaeology of the Large Passage Tomb at Knowth, Co Meath***, 263–76. Dublin: Royal Irish Academy
Prendergast, K. 2004. Caves of the winter sun: synthesising evidence for astronomical orientation at the Boyne Valley passage tombs. ***Ríocht na Midhe*** 15, 12–25
Pryor, F. 1999. ***Etton: Excavations at a Neolithic Causewayed Enclosure near Maxey, Cambridgeshire, 1982–7***. Swindon: English Heritage
Pryor, F., French, C., Crowther, D., Gurney, D., Simpson, G. and Taylor, M. 1985. ***The Fenland Project No.1: Archaeology and Environment in the Lower Welland Valley***. Cambridge: East Anglian Archaeology Monograph 27

R

Ray, K. 2007. The Neolithic in the West Midlands: an overview. In P. Garwood (Ed). 2007. ***The Undiscovered Country: The Earlier Prehistory of West Midlands***, 51–78. Oxford: Oxbow Books
Ray, K. and Thomas, J. 2018. ***Neolithic Britain: The Transformation of Social Worlds***. Oxford: Oxford University Press
Ray, T. 1989. The winter solstice phenomenon at Newgrange, Ireland: accident or design? ***Nature*** 337, 343–5
RCHME (Royal Commission on Historic Monuments of England) 1970. ***An Inventory of Historical Monuments in Dorset, Volume 2, South-East***. London: HMSO
Reeves, B. 1994. Ninaistakis – the Nitsitapii's sacred mountain: traditional native religious activities and land use/tourism conflicts. In D. Carmichael, J. Hubert, B. Reeves and A. Schanche (Eds). ***Sacred Sites, Sacred Places***, 265–95. London: Routledge
Reimer, P., Austin, W., Bard, E., Bayliss, A., Blackwell, P., Bronk Ramsey, C., Butzin, M., Cheng, H., Edwards, R., Friedrich, M., Grootes, P., Guilderson, T., Hajdas, I., Heaton, T., Hogg, A., Hughen, K., Kromer, B., Manning, S., Muscheler, R., Palmer, J., Pearson, C., van der Plicht, J., Reimer, R., Richards, D., Scott, E., Southon, J., Turney, C., Wacker, L., Adolphi, F., Büntgen, U., Capano, M., Fahrni, S., Fogtmann-Schulz, A., Friedrich, R., Köhler, P., Kudsk, S., Miyake, F., Olsen, J., Reinig, F., Sakamoto, M., Sookdeo, A., and Talamo, S. 2020. The IntCal20 Northern Hemisphere radiocarbon age calibration curve (0–55 cal kBP). ***Radiocarbon*** 62, 725–57
Reiter, S. S. and Frei, K. M. 2019. Interpreting past human mobility patterns: a model. ***European Journal of Archaeology*** 22(4), 454–69
Renfrew, C. 1973. Monuments, mobilisation and social organisation in Neolithic Wessex. In C. Renfrew (Ed). ***The Explanations of Culture Change, Models in Prehistory***, 539–58. London: Duckworth
Renfrew, C. 1974. Beyond a subsistence economy: the evolution of social organization in prehistoric Europe. ***Bulletin of the American Schools of Oriental Research, Supplementary Studies*** 20, 69–95
Renfrew, C. 1976. Megaliths, territories and populations. In Atlantic Colloquium (Ed). ***Acculturation and Continuity in Atlantic Europe Mainly During the Neolithic Period and the Bronze Age***, 198–220. Brugge: De Tempel, Dissertationes archaeologicae Gandenses 16
Renfrew, C. 1979. ***Investigations in Orkney***. London: Society of Antiquaries of London
Renfrew, C. 1984. ***Approaches to Social Archaeology***. Edinburgh: Edinburgh University Press
Renfrew, C. 1986. Introduction: peer polity interaction and socio-political change. In C. Renfrew and J. F. Cherry (Eds). ***Peer Polity Interaction and Socio-Political Change***, 1–18. Cambridge: Cambridge University Press
Renfrew, C. 2000. 'The auld hoose speaks': society and life in Stone Age Orkney. In A. Ritchie (Ed). ***Neolithic Orkney in its European Context***, 1–20. Cambridge: McDonald Institute Monograph
Renfrew, C. and Shennan, S. (Eds). 1982. ***Ranking, Resource and Exchange: Aspects of the Archaeology of Early European Society***. Cambridge: Cambridge University Press

Reynolds, F. 2009. Regenerating substances: quartz as an animistic agent. ***Time and Mind: The Journal of Archaeology, Consciousness and Culture*** 2(2), 153–66

Reynolds, F., Griffiths, S., Edwards, B. and Stanford, A. 2016. The mound in the dark grove: Bryn Celli Ddu, Anglesey. ***Current Archaeology*** 318, 40–1

Richards, C. 1993a. Monumental choreography: architecture and spatial representation in Late Neolithic Orkney. In C. Tilley (Ed). ***Interpretative Archaeology***, 143–78. Oxford: Berg

Richards, C. 1993b. ***An Archaeological Study of Neolithic Orkney: Architecture, Order and Social Classification***. PhD thesis, University of Glasgow. Available at: http://theses.gla.ac.uk/2953/ [Accessed 13 December 2018]

Richards, C. 1996a. Henges and water: towards an elemental understanding of monumentality and landscape in late Neolithic Britain. ***Journal of Material Culture*** 1(3), 313–36

Richards, C. 1996b. Monuments as landscape: creating the centre of the world in late Neolithic Orkney. ***World Archaeology*** 28(2), 190–208

Richards, C. 2004. A choreography of construction: monuments, mobilisation and social organisation. In J. Cherry, C. Scarre and S. Shennan (Eds). ***Explaining Social Change: Studies in Honour of Colin Renfrew***, 103–13. Cambridge: University of Cambridge, McDonald Institute for Archaeological Research

Richards, C. 2013a. Interpreting stone circles. In C. Richards (Ed). ***Building the Great Stone Circles of the North***, 3–30. Bollington: Windgather Press

Richards, C. 2013b. Wrapping the hearth: constructing house societies and the tall Stones of Stenness, Orkney. In C. Richards (Ed). ***Building the Great Stone Circles of the North***, 64–89. Bollington: Windgather Press

Richards, C. 2019. ***Decaying flesh and instability of substances: rethinking Neolithic chambered tombs***. University of Highlands and Islands Research Seminar, 1 Mar 2019. Available at: https://www.youtube.com/watch?v=bVM_I6f8s2Q&t=1s [Accessed 24 Oct 2021]

Richards, C., Jones, A. M., MacSween, A., Sheridan, A., Dunbar, E., Reimer, P., Bayliss, A., Griffiths, S. and Whittle, A. 2016. Settlement duration and materiality: formal chronological models for the development of Barnhouse, a Grooved Ware settlement in Orkney. ***Proceedings of the Prehistoric Society*** 82, 193–225

Richards, C. and Thomas, J. 1984. Ritual activity and structured deposition in later Neolithic Wessex. In R. Bradley and J. Gardiner (Eds). ***Neolithic Studies: A Review of Some Current Research***, 189–218. Oxford: British Archaeological Reports, British Series 133

Richards, C. and Thomas, J. 2012. The Stonehenge landscape before Stonehenge. In A. Jones, J. Pollard, M. Allen and J. Gardiner (Eds). ***Image, Memory and Monumentality: Archaeological Engagements with the Material World***, 29–42. Oxford: Oxbow Books, Prehistoric Society Research Paper 5

Richards, J. C. 1990. ***The Stonehenge Environs Project***. London: English Heritage

Richards, J. C. 1991. ***Stonehenge***. London: Batsford

Richer, S. and Gearey, B. 2017. The medicine tree: unsettling palaeoecological perceptions of past environments and human activity. ***Journal of Social Archaeology*** 17(3), 239–62

Ricoeur, P. 1988. ***Time and Narrative, Volume 3***. Translated from the French by K. Blamey and D. Pellauer. London and Chicago: University of Chicago Press. (Originally published in 1985).

Ritchie, A. 1995. ***Prehistoric Orkney***. Edinburgh: Historic Scotland

Ritchie, J. N. G. 1974. Excavation of a stone circle and cairn at Balbrinie, Fife. ***Archaeological Journal*** 131, 1–32

Rival, L. (Ed). 1998. ***The Social Life of Trees: Anthropological Perspectives on Tree Symbolism***. Oxford: Berg

Robb, J. E. 2004. The extended artifact and the monumental economy: a methodology for material agency. In E. DeMarrais, C. Gosden and C. Renfrew (Eds). ***Rethinking Materiality: The Engagement of Mind with the Material World***, 131–9. Cambridge: McDonald Institute for Archaeological Research

Robb, J. 2010. Beyond agency. ***World Archaeology*** 42(4), 493–520

Robb, J. and Pauketat, T. 2013. From moments to millennia: theorising scale and change in human history. In J. Robb and T. Pauketat (Eds). ***Big Histories, Human Lives,*** 3–33. Santa Fe: SAR Press

Roberts, D., Valdez-Tullett, A., Marshall, P., Last, J., Oswald, A., Barclay, A., Bishop, B., Dunbar, E., Forward, A., Law, M., Linford, N., Linford, P., López-Dóriga, I., Manning, A., Payne, A., Pelling, R., Powell, A., Reimer, P., Russell, M., Small, F., Soutar, S., Vallender, J., Winter, E. and Worley, F. 2018. Recent investigations at two long barrows and reflections on their context in the Stonehenge World Heritage Site and environs. ***Internet Archaeology*** 47. https://doi.org/10.11141/ia.47.7

Roberts, I. (Ed). 2005. ***Ferrybridge Henge: The Ritual Landscape, Archaeological Investigations at the Site of the Holmfield Interchange of the A1 Motorway***. Archaeological Services WYAS

Robertson-Mackay, R. 1987. The Neolithic Causewayed Enclosure at Staines, Surrey: Excavations 1961-63. ***Proceedings of the Prehistoric Society*** 53, 23–128

Robin, G. 2010. Spatial structures and symbolic systems in Irish and British passage tombs: the organization of architectural elements, parietal carved signs and funerary deposits. ***Cambridge Archaeological Journal*** 20(3), 373–418

Roe, F. 2008. Worked stone other than axes and adzes. In R. Mercer and F. Healy (Eds). ***Hambledon Hill, Dorset, England: Excavation and Survey of a Neolithic Monument Complex and its Surrounding Landscape,*** 632–40. Swindon: English Heritage

Roe, F. 2009. Corn grinding in southern England: what can the querns tell us? In K. Brophy and G. Barclay (Eds). ***Defining a Regional Neolithic: The Evidence from Britain and Ireland***, 26–34. Oxford: Oxbow Books

Roughley, C., Shee Twohig, E., Shell, C. and Swanton, G. 2021. The changing fieldscapes of Loughcrew: new insights from airbourne Lidar. In S. Anoldussen, R. Johnston and M. Løvschal (Eds). ***Europe's Early Fieldscapes: Archaeologies of Prehistoric Land Allotment***, 115–29. New York: Springer

Rowlands, M. 1993. The role of memory in the transmission of culture. ***World Archaeology*** 25(2), 141–51

Rowley-Conwy, P. and Owen, A. C. 2011. Grooved Ware feasting in Yorkshire: late Neolithic animal consumption at Rudston Wold. ***Oxford Journal of Archaeology*** 30(4), 325–67

Ruggles, C. 1998. Ritual astronomy in the Neolithic and Bronze Age British Isles: patterns of continuity and change. In A. Gibson and D. Simpson (Eds). ***Prehistoric Ritual and Religion***, 203–8. Stroud: Sutton

Ruggles, C. 1999. ***Astronomy in Prehistoric Britain and Ireland***. New Haven, CT: Yale University Press

Ruggles, C. 2005. ***Ancient Astronomy: An Encyclopaedia of Cosmologies and Myth***. Santa Barbara, CA: ABC-CLIO

Ruggles, C. 2006. Interpreting solstitial alignments in late Neolithic Wessex. ***Archaeoastronomy*** 20, 1–27

Ruggles, C. 2015a. Preface. In C. Ruggles (Ed). ***Handbook of Archaeoastronomy and Ethnoastronomy***, v–vii. New York: Springer

Ruggles, C. 2015b. Stonehenge and its landscape. In C. Ruggles (Ed). ***Handbook of Archaeoastronomy and Ethnoastronomy***, 1223–8. New York: Springer

Ruggles, C. 2016. Archaeoastronomical interests in Avebury and its landscape. In M. Leivers and A. B. Powell (Eds). ***A Research Framework for the Stonehenge, Avebury and Associated Sites World Heritage Site: Avebury Resource Assessment Part 2***, 98. Salisbury: Wessex Archaeology

Ruggles, C. 2017. Postscript: still our equinox? ***Journal of Skyscape Archaeology*** 3(1), 132–5

Ruggles, C. and Barclay, G. 2000. Cosmology, calendars and society in Neolithic Orkney: a rejoinder to Euan MacKie. ***Antiquity*** 74, 62–74

Ruggles, C. and Barclay, G. 2002. Will the data drive the model? A further response to Euan MacKie. ***Antiquity*** 76, 668–71

Ruggles, C. and Chadburn, A. 2007. Stonehenge World Heritage Property, United Kingdom. In C. Ruggles (Ed). ***Heritage Sites of Astronomy and Archaeoastronomy in the Context of the UNESCO World Heritage Convention: Thematic Study No. 2***, 41–62. Paris: ICOMOS

Ruggles, C., Chadburn, A., Leivers, M. and Smith, A. 2021. A possible new solstitial sightline in the Stonehenge landscape. ***Journal of Skyscape Archaeology*** 7(1), 144–56

Ruggles, C. and Saunders, N. 1993. The study of cultural astronomy. In C. Ruggles and N. Saunders (Eds). ***Astronomies and Cultures***, 1–31. Niwot, CO: Colorado University Press

Rumsey, A. 1994. The dreaming, human agency and inscriptive practice. ***Oceania*** 65(2), 116–30

S

Sahlins, M. 1958. ***Social Stratification in Polynesia***. Seattle: University of Washington Press

Sahlins, M. 1961. The segmentary lineage: an organisation of predatory expansion. ***American Anthropologist*** 63(2), 322–45

Sahlins, M. 1963. Poor man, rich man, big man, chief: political types in Melanesia and Polynesia. ***Comparative Studies in Society in History*** 5(3), 285–303

Sahlins, M. 1985. ***Islands of History***. London and New York: Tavistock Publications

Saul, M. 2005. Claude Meillassoux (1925–2005). ***American Anthropologist*** 107(4), 753–57

Saunders, N. 2004. The cosmic earth: materiality and mineralogy in the Americas. In N. Boivin and M. A. Owoc (Eds). ***Soils, Stones and Symbols: Cultural Perceptions of the Mineral World***, 123–41. London: UCL Press

Saxe, A. 1970. ***Social Dimensions of Mortuary Practices***. PhD Thesis, University of Michigan

Scarre, C. 2001. Pilgrimage and place in Neolithic Western Europe. In A. Smith and A. Brookes (Eds). ***Holy Ground: Theoretical Issues Relating to the Landscape and Material Culture of Ritual Space***, 9–20***.*** Oxford: Archaeopress, British Archaeological Report 956

Scarre, C. 2009. Stony ground: outcrops, rocks and quarries in the creation of megalithic monuments. In C. Scarre (Ed). ***Megalithic Quarrying: Sourcing, Extracting and Manipulating the Stones***, 3–20. Oxford: Archaeopress, BAR International Series 1923

Schauer, P., Bevan, A., Shennan, S., Edinborough, K., Kerig, T. and Parker Pearson, M. 2020. British Neolithic axehead distributions and their implications. ***Journal of Archaeological Method and Theory*** 27, 836–59

Schele, L. and Mathews, P. 1999. ***The Code of Kings: The Language of Seven Sacred Maya Temples and Tombs.*** New York: Touchstone

Schlee, G. 1992. Ritual topography and ecological use: the Gabbra of the Kenyan/Ethiopian borderlands. In E. Croll and D. Parkin (Eds). ***Bush Base, Forest Farm: Culture, Environment and Development***, 110–28. London: Routledge

Schulting, R. 2010. Holocene environmental change and the Mesolithic-Neolithic transition in north-west Europe: revisiting two models. ***Environmental Archaeology*** 15(2), 160–72

Schulting, R. 2014. Dating the construction of Newgrange. In A. Lynch (Ed). Newgrange revisited: new insights from excavations at the back of the mound in 1984–8. ***The Journal of Irish Archaeology*** 23, 13–82

Schulting, R., Sheridan, A., Crozier, R. and Murphy, E. 2010. Revisiting Quanterness: new AMS dates and stable isotopes from an Orcadian chamber tomb. ***Proceedings of the Society of Antiquaries of Scotland*** 140, 1–50

Scott, D. 2010. Recent astronomical observations at Kilmartin Glen, Argyll, Scotland. ***Antiquity*** Project Gallery 84(324). Available at: http://antiquity.ac.uk/projgall/scott324/ [Accessed 29 April 2020]

Scott, J. C. 1990. ***Domination and the Arts of Resistance: Hidden Transcripts***. New Haven: Yale University Press

Scott, L. 1951. The colonisation of Scotland in the second millennium BC. ***Proceedings of the Prehistoric Society*** 17, 16–82

Serres, M. 1997. Science and the humanities: the case of Turner. ***SubStance*** 82, 26(2), 6–21

Serres, M. and Latour, B. 1995. ***Conversations on Science, Culture and Time***. Ann Arbor: University of Michigan Press

Service, E. 1962. ***Primitive Social Organization: An Evolutionary Perspective***. New York: Random House

Service, E. 1975. ***Origins of the State and Civilization: The Process of Cultural Evolution***. New York: W. W. Norton & Company

Shanks, M. and Tilley, C. 1982. Ideology, symbolic power and ritual communication: a reinterpretation of Neolithic mortuary practices. In I. Hodder (Ed). ***Symbolic and Structural Archaeology***, 129–54. Cambridge: Cambridge University Press

Shanks, M. and Tilley, C. 1987. ***Social Theory and Archaeology***. Cambridge: Polity Blackwell

Sharp, J. P., Routledge, P., Philo, C. and Paddison, R. 2000. ***Entanglements of Power: Geographies of Domination/Resistance***. London and New York: Routledge

Sharples, N. (Ed). 1991. ***Maiden Castle: Excavation and Field Survey 1985–6***. London: English Heritage
Sharples, N. M. 1985. Excavations at Pierowall Quarry, Westray, Orkney. ***Proceedings of the Society of Antiquaries of Scotland*** 114, 75–125
Shee Twohig, E., Roughley, C., Shell, C., O'Reilly, C. Clarke, P. and Swanton, G. 2010. Open-air rock art at Loughcrew, Co. Meath. ***Journal of Irish Archaeology*** 19, 1–28
Sheridan, A. 1985. Megaliths and megalomania: an account, and interpretation, of the development of passage tombs in Ireland. ***Journal of Irish Archaeology*** 3, 17–30
Sheridan, A. 2004. Going round in circles? Understanding the Irish Grooved Ware 'complex' in its wider context. In H. Roche, J. Bradley, J. Coles, E. Grogan and B. Raftery (Eds). ***From Megaliths to Metals: Essays in Honour of George Eogan***, 26–37. Oxford: Oxbow Books
Sheridan, A. 2012. Contextualising Kilmartin: building a narrative for developments in western Scotland and beyond, from the Early Neolithic to the Late Bronze Age. In A. Jones, J. Pollard, M. Allen and J. Gardiner (Eds). ***Image, Memory and Monumentality: Archaeological Engagements with the Material World***, 163–83. Oxford: Oxbow Books, Prehistoric Society Research Paper 5
Sheridan, A. 2013. Plus ca change….? Developments in Shetland *c*.2500–1800 BC. In D. L. Mahler (Ed). ***The Border of Farming: Shetland and Scandinavia: Neolithic and Bronze Age Farming***, 47–72. Copenhagen: The National Museum of Denmark.
Sheridan, A. 2014. Little and large: the miniature 'carved stone ball' beads from the eastern passage tomb under the main mound at Knowth, Ireland and their broader significance. In R. M. Arbogast and A. Greffier-Richard (Eds). ***Entre Archéologie et Ecologie, une Préhistorie de Tous les Milieux***, 303–313. Besançon: Presses Universitaires de France-Comté
Sheridan, A. 2020. Incest uncovered at elite prehistoric Irish burial site. ***Nature*** 582(7812), 347–9
Sherratt, A. 1984. Social evolution: Europe in the later Neolithic and Copper Ages. In J. L. Bintliff (Ed). ***European Social Evolution: Archaeological Perspectives***, 123–34. Bradford: University of Bradford
Sherratt, A. 1996. Why Wessex? The Avon route and river transport in later British prehistory. ***Oxford Journal of Archaeology*** 15(2), 211–34
Shore, B. 1989. Mana and tapu. In A. Howard and R. Borofsky (Eds). ***Developments in Polynesian Ethnography***, 137–73. Honolulu: University of Hawaii Press
Silva, F. 2015. The role and importance of the sky in archaeology: an introduction. In F. Silva and N. Campion (Eds). ***Skyscapes: The Role and Importance of the Sky in Archaeology***, 1–7. Oxford: Oxbow Books
Simmonds, V. 2016. ***An Overview of the Archaeology of Mendip Caves and Karst***. Unpublished research report, available at: https://www.academia.edu/11579732/An_overview_of_the_archaeology_of_Mendip_caves_and_karst [accessed 08/02/2018]
Sims, L. 2009. Entering, and returning from, the underworld: reconstituting Silbury Hill by combing a quantified landscape phenomeonology with archaeoastronomy. ***Journal of the Royal Anthropological Institute*** 15(2), 386–408
Sims, L. 2021. Returning from the underworld: the West Kennet palisades in the Avebury monument complex. ***Proceedings of the Prehistoric Society*** 87
Slade, C. F. 1964. A late Neolithic enclosure at Sonning, Berkshire. ***Berkshire Archaeological Journal*** 61, 4–19
Small, F. 1996. ***RCHME: Drayton St Leonard Enclosure Project***. Swindon: RCHME unpublished report
Smith, C. 1999. Ancestors, place and people: social landscapes in Aboriginal Australia. In P. J. Ucko and R. Layton (Eds). ***The Archaeology and Anthropology of Landscape: Shaping Your Landscape***, 189–205. London: Routledge
Smith, I. 1965. ***Windmill Hill and Avebury: Excavations by Alexander Keiller 1925–1939***. Oxford: Clarendon Press
Smith, R. J. C., Healy, F., Allen, M. J., Morris, E. L., Barnes, I. and Woodward, P. J. 1997. ***Excavations Along the Route of the Dorchester By-pass, Dorset, 1986–8***. Salisbury: Trust for Wessex Archaeology
Smyth, J. 2014. ***Settlement in the Irish Neolithic: New Discoveries at the Edge of Europe***. Oxford: Oxbow Books, Prehistoric Society Research Paper 6

Snoeck, C., Pouncett, J., Claeys, P., Goderis, S., Mattielli, N., Parker Pearson, M., Willis, C., Zazzo, A., Lee-Thorpe, J. A. and Schulting, R. J. 2018. Strontium isotope analysis on cremated human remains from Stonehenge support links with west Wales. ***Nature Scientific Reports*** 8, 10790

Snoeck, C., Pouncett, J., Ramsey, G., Meighan, I. G., Mattielli, N., Goderis, S., Lee-Thorp, J. A. and Schulting, R. J. 2016. Mobility during the Neolithic and Bronze Age in Northern Ireland explored using strontium isotope analysis of cremated human bone. ***American Journal of Physical Anthropology*** 160, 397–413

Soffe, G. and Clare, T. 1988. New evidence of ritual monuments at Long Meg and her Daughters, Cumbria. ***Antiquity*** 62(236), 552–7

Somerville, B. 1912. Astronomical indications in the megalithic monument at Callanish. ***Journal of the British Archaeological Association*** 23, 83–96

Speak, S. and Burgess, C. 1999. Meldon Bridge: a centre of the third millennium BC in Peebleshire. ***Proceedings of the Society of Antiquaries of Scotland*** 129, 1–118

Sperling, C., Goudie, A., Stoddart, D. and Poole, G. 1977. Dolines of the Dorset chalklands and other area in southern Britain. ***Transactions of the Institute of British Geographers*** 2(2), 205–23

Spriggs, M. 1984. Another way of telling: Marxist perspectives in archaeology. In M. Spriggs (Ed). ***Marxist Perspectives in Archaeology,*** 1–9. Cambridge: Cambridge University Press, New Directions in Archaeology

Spriggs, M. 2008. Ethnographic parallels and the denial of history. ***World Archaeology*** 40(4), 538–52

Souvatzi, S., Baysal, A. and Baysal, E. L. 2019. Is there pre-history? In S. Souvatzi, A. Baysal and E. L. Baysal (Eds). ***Time and History in Prehistory***. London: Routledge, 1–27

Stanton, W. I. 1986. Natural sinkholes affecting the Priddy Circles, Mendip. ***Proceedings of the University of Bristol Spelaeological Society*** 17(3), 355–8

Startin, W. and Bradley, R. 1981. Some notes on work organisation and society in prehistoric Wessex. In C. Ruggles and A. Whittle (Eds). ***Astronomy and Society in Britain During the Period 4000–1500 BC***, 143–59. Oxford: British Archaeological Report 88

Stevens, C. J. and Fuller, D. Q. 2012. Did Neolithic farming fail? The case for a Bronze Age agricultural revolution in the British Isles. ***Antiquity*** 86, 707–22

Stewart, I. and Piccardi, L. 2017. Seismic faults and sacred sanctuaries in Aegean antiquity. ***Proceedings of the Geologists Association*** 128, 711–21

Stoertz, C. 1997. ***Ancient Landscapes of the Yorkshire Wolds: Aerial Photographic Transcription and Analysis***. Swindon: Royal Commission on the Historical Monuments of England

Stout, G. 2002. ***Newgrange and the Bend of the Boyne***. Cork University Press: Cork

Stout, M. 1997. The bend of the Boyne, Co. Meath. In F. H. A. Aalen, K. Whelan and M. Stout (Eds). ***Atlas of the Irish Rural Landscape***, 299–315. Buffalo, TO: University of Toronto Press

Strang, V. 2015. On the matter of time. ***Interdisciplinary Science Reviews*** 40(2), 101–23

Strathern, M. 1988. ***The Gender of the Gift: Problems with Women and Problems with Society in Melanesia.*** Berkeley, CA: University of California Press

Stukeley, W. 1740. ***Stonehenge: A Temple Restor'd to the British Druids***. London: Innys and Manby

T

Taçon, P. 1991. The power of stone: symbolic aspects of stone use and tool development in western Arnhem Land, Australia. ***Antiquity*** 65, 192–207

Taçon, P. 1999. Identifying ancient sacred landscapes in Australia: from physical to social. In W. Ashmore and A. B. Knapp (Eds). ***Archaeologies of Landscape: Contemporary Perspectives***, 77–91. Oxford: Blackwell Publishing

Taylor, C. and Tratman, E. K. 1957. The Priddy Circles: preliminary report. ***Proceedings of the University of Bristol Spelaeological Society*** 11(2), 97–125

Teather, A. 2007. Neolithic phallacies: a discussion of some southern British artefacts. In M. Larsson and M. Parker Pearson (Eds). ***From Stonehenge to the Baltic: Living with Cultural Diversity in the Third Millennium BC***, 205–11. Oxford: Archaeopress, BAR International Series 1692

Thom, A. 1955. A statistical examination of the megalithic sites in Britain. ***Journal of the Royal Statistical Society,*** Series A, 118, 275–91
Thom, A. 1967. ***Megalithic Sites in Britain***. Oxford: Oxford University Press
Thomas, J. 1991. ***Rethinking the Neolithic***. Cambridge: Cambridge University Press
Thomas, J. 1993a. The hermeneutics of megalithic space. In C. Tilley (Ed). ***Interpretative Archaeology: Explorations in Anthropology****,* 73–97. Oxford: Berg
Thomas, J. 1993b. The politics of vision and the archaeologies of landscape. In B. Bender (Ed). ***Landscape: Politics and Perspectives***, 19–48. London: Berg
Thomas, J. 1996. ***Time, Culture and Identity: An Interpretive Archaeology***. London and New York: Routledge
Thomas, J. 1999. An economy of substances in earlier Neolithic Britain. In J. Robb (Ed). ***Material Symbols: Culture and Economy in Prehistory***, 70–89. Carbondale: Centre for Archaeological Investigations, Southern Illinois University, Occasional Paper 26
Thomas, J. 2000. The identity of place in Neolithic Britain: example from southwest Scotland. In A. Ritchie (Ed). ***Neolithic Orkney in its European Context***, 79–87. Cambridge: McDonald Research Monographs
Thomas, J. 2002. Taking power seriously. In M. O'Donovan (Ed). ***The Dynamics of Power****,* 35–50. Carbondale: Center for Archaeological Investigations, Southern Illnois University, Occasional Paper No.30
Thomas, J. 2003. In the kinship of cows: the social centrality of cattle in the earlier Neolithic of Southern Britain. In M. Parker Pearson (Ed). ***Food, Culture and Identity in the Neolithic and Early Bronze Age****, 37–44*. Oxford: British Archaeological Report International Series 1117
Thomas, J. 2004. Materiality and traditions of practice in Neolithic south-west Scotland. In V. Cummings and C. Fowler (Eds). ***The Neolithic of the Irish Sea: Materiality and Traditions of Practice***, 174–184. Oxford: Oxbow Books
Thomas, J. 2007. The internal features at Durrington Walls. In M. Larsson and M. Parker Pearson (Eds) ***From Stonehenge to the Baltic: Living with Cultural Diversity in the Third Millennium BC,*** 145–57. Oxford: British Archaeological Reports International Series 1692
Thomas, J. 2010. The return of the Rinyo-Clacton folk? The cultural significance of the Grooved Ware complex in later Neolithic Britain. ***Cambridge Archaeological Journal*** 20(1), 1–15
Thomas, J. 2013. ***The Birth of Neolithic Britain: An Interpretative Account***. Oxford: Oxford University Press
Thomas, J. 2015. ***Dunragit and Droughduil: A Neolithic Ceremonial Complex in Galloway***. Oxford: Oxbow Books
Thomas, J., Ray, K. and Garcia-Rovira, I. 2015. ***An Interim Report on Excavations at Dorstone Hill, Herefordshire, 2011-2014***. Manchester University, unpublished report
Thomas, J. and Whittle, A. 1986. Anatomy of a tomb – West Kennet revisited. ***Oxford Journal of Archaeology*** 5(2), 129–56
Thorpe, I. J. 1981. Ethnoastronomy: its patterns and archaeological implications. In C. Ruggles and A. Whittle (Eds). ***Astronomy and Society During the Period 4000–1500 BC, 175–89***. Oxford: British Archaeological Reports 88
Thorpe, I. J. 1984. Ritual, power and ideology: a reconstruction of earlier Neolithic rituals in Wessex. In R. Bradley and J. Gardiner (Eds). ***Neolithic Studies: A Review of Some Current Research***, 41–60. Oxford: British Archaeological Reports, British Series 133
Thorpe, I. J. and Richards, C. 1984. The decline of ritual authority and the introduction of Beakers into Britain. In R. Bradley and J. Gardiner (Eds). ***Neolithic Studies: A Review of Some Current Research***, 67–8. Oxford: British Archaeological Reports, British Series 133
Tilley, C. 1984. Ideology and the legitimation of power in the middle Neolithic of southern Sweden. In D. Miller and C. Tilley (Eds). ***Ideology, Power and Prehistory***, 111–45. Cambridge: Cambridge University Press
Tilley, C. 1994. ***A Phenomenology of Landscape: Paths, Places and Monuments***. Oxford: Berg
Tilley, C. 1996. The power of rocks: topography and monument construction on Bodmin Moor. ***World Archaeology*** 28, 161–76
Tilley, C. 2004. ***The Materiality of Stone: Explorations in Landscape Phenomenology***. Oxford: Berg

Tilley, C. 2007a. Materiality in materials. ***Archaeological Dialogues*** 14: 16–20
Tilley, C. 2007b. The Neolithic sensory revolution: monumentality and the experience of landscape. In A. Whittle and V. Cummings (Eds). ***Going Over: The Mesolithic–Neolithic Transition in North-West Europe***, 329–45. Oxford: Oxford University Press, Proceedings of the British Academy 144
Tilley, C. 2010. ***Interpreting Landscapes: Geologies, Topographies, Identities***. Walnut Creek, California: Left Coast Press
Timoney, M. 2009. Sub-rectangular pits and pitfields in central north Roscommon. ***Journal of the Roscommon Historical and Archaeological Society*** 1, 139–43
Tipping, R., Bradley, R., Sanders, J., McCulloch, R. and Wilson, R. 2012. Moments of crisis: climate change in Scottish prehistory. ***Proceedings of the Society of Antiquaries of Scotland*** 142, 9–25
Topping, P. 1992. The Penrith henges: a survey by the Royal Commission on the Historic Monuments of England. ***Proceedings of the Prehistoric Society*** 58, 249–64
Topping, P. 1996. Structure and ritual in the Neolithic house: some examples from Britain and Ireland. In T. Darvill and J. Thomas (Eds). ***Neolithic Houses in Northwest Europe and Beyond***. Oxford: Oxbow Books, Neolithic Studies Group Seminar Papers, 157–70
Topping, P. 2019. The social context of lithic extraction in Neolithic Britain and Ireland. In A. Teather, P. Topping and J. Baczkowski (Eds). ***Mining and Quarrying in Neolithic Europe: A Social Perspective,*** 179–192. Oxford: Oxbow Books
Topping, P. 2021. ***Neolithic Stone Extraction in Britain and Europe: An Ethnoarchaeological Perspective***. Oxford: Oxbow Books
Topping, P. and Lynott, M. (Eds). 2005. ***The Cultural Landscape of Prehistoric Mines***. Oxford: Oxbow Books
Toren, C. 1995. Seeing the ancestral sites: transformations in Fijian notions of the land. In E. Hirsch and M. O'Hanlon (Eds). ***The Anthropology of Landscape: Perspectives on Place and Space***, 163–83. Oxford: Oxford University Press
Tratman, E. K. 1967. The Priddy Circles, Mendip, Somerset, henge monuments. ***University of Bristol Spelaeological Society*** 11, 97–125
Trigger, B. 2006. ***A History of Archaeological Thought***. Cambridge: Cambridge University Press
Tuan, Y-F. 1974. ***Topophilia: A Study of Environmental perception, Attitudes and Values***. New Jersey: Prentice-Hall
Turnbull, P. and Walsh, D. 1997. A prehistoric ritual sequence at Oddendale, near Shap. ***Transactions of the Cumberland and Westmorland Antiquarian and Archaeological Society*** 97, 11–44
Turner, V. 1967. ***The Forest of Symbols: Aspects of Ndembu Ritual***. New York: Cornell University Press

U

Ucko, P. J. 1994. Foreword. In D. Carmichael, J. Hubert, B. Reeves and A. Schanche (Eds). ***Sacred Sites, Sacred Places***, xiii-xxiii. Routledge: London

V

van Beek, W. E. K. and Banga, P. M. 1992. The Dogon and their trees. In E. Croll and D. Parkin (Eds). ***Bush Base, Forest Farm: Culture, Environment and Development***, 57–75. London and New York: Routledge
van Dyke, R. and Alcock, S. E. 2003. Archaeologies of memory: an introduction. In R. Van Dyke and S. E. Alcock (Eds). ***Archaeologies of Memory***, 1–13. Oxford: Blackwell
Viner, S., Evans, J., Albarella, U. and Parker Pearson, M. 2010. Cattle mobility in prehistoric Britain: strontium isotope analysis of cattle teeth from Durrington Walls (Wilsthire, Britain). ***Journal of Archaeological Science*** 37(11), 2812–20
Vondrovský, V. 2018. Let the sunshine in: the issue of Neolithic longhouse orientation. ***European Journal of Archaeology*** 21(4), 528–49
Vyner, B. E. 2007. A 'Great North Route' in Neolithic and Bronze Age Yorkshire: the evidence of landscape and monuments. ***Landscapes*** 8, 69–84

W

Waddell, J. 2018. ***Myth and Materiality***. Oxford: Oxbow Books

Waddell, J., Fenwick, J. and Barton, K. 2009. ***Rathcroghan, Co. Roscommon: Archaeological and Geophysical Survey in a Ritual Landscape***. Dublin: Wordwell

Waddington, C. Marshall, P. and Passmore, D. G. 2011. Towards synthesis: research and discovery in Neolithic north-east England. ***Proceedings of the Prehistoric Society*** 77, 279–319

Wainwright, G. J. 1979. ***Mount Pleasant, Dorset: Excavations 1970-1971, Incorporating an Account of Excavations Undertaken at Woodhenge in 1970.*** London: Society of Antiquaries of London

Wainwright, G. J. 1989. ***The Henge Monuments: Ceremony and Society in Prehistoric Britain***. London: Thames and Hudson

Wainwright, G. J. and Longworth, I. H. 1971. ***Durrington Walls: Excavations 1966–1968***. London: Society of Antiquaries of London

Warren, G. 2010. Help, I'm a rock! The materiality of stone in the Mesolithic of Britain and Ireland. In B. O'Connor, G. Cooney and J. Chapman (Eds). ***Materialitas: Working Stone, Carving Identity***, 95–104. Oxford: Oxbow Books, Prehistoric Society Research Paper 3

Watson, A. 2001a. Composing Avebury. ***World Archaeology*** 33(2), 296–314

Watson, A. 2001b. Round barrows in a circular world: monumentalising landscapes in early Bronze Age Wessex. In J. Brück (Ed). ***Bronze Age Landscapes: Tradition and Transformation***, 205–16. Oxford: Oxbow Books

Watson, A. and Bradley, R. 2009. On the edge of England: Cumbria as a Neolithic region. In K. Brophy and G. Barclay (Eds). ***Defining a Regional Neolithic: Evidence from Britain and Ireland***, 65–77. Oxford: Oxbow Books

Watson, A. and Keatin, D. 2000. The architecture of sound in Neolithic Orkney. In A. Ritchie (Ed). ***Neolithic Orkney in its European Context***, 259–63. Cambridge: McDonald Institute Monograph

Webmoor, T. 2007. What about 'one more turn after the social' in archaeological reasoning? Taking things seriously. ***World Archaeology*** 39, 563–78

Wengrow, D. and Graeber, D. 2015. Farewell to the 'childhood of man': ritual, seasonality and the origins of inequality. ***Journal of the Royal Anthropological Institute*** 21, 597–619

Wheatley, P. 1971. ***The Pivot of the Four Quarters***. Edinburgh: Edinburgh University Press

Whitaker, K. 2019. Sarsen stone quarrying in southern England: an introduction. In A. Teather, P. Toppping and J. Baczkowski (Eds). ***Mining and Quarrying in Neolithic Europe: A Social Perspective,*** 101–13. Oxford: Oxbow Books

Whitehead, P. and Edmunds, W. M. 2012. Modelling and reconstruction of the River Kennet palaeohydrology and hydrogeology: Silbury Hill and Avebury in 4,400 BP. ***Hydrology Research*** 43.5, 551–59

Whitehouse, N. J., Bunting, M. J., McClatchie, M., Barratt, P., McLaughlin, R., Schulting, R. and Bogaard, A. 2018. Prehistoric land-cover and land-use history in Ireland at 6000 BP. ***Past Global Changes Magazine*** 26(1), 24–5

Whitehouse, N. J. and Smith, D. 2010. How fragmented was the British Holocene wildwood? Perspectives on the 'Vera' grazing debate from the fossil beetle record. ***Quarternary Science Reviews*** 29, 539–53

Whitley, J. 2002. Too many ancestors? ***Antiquity*** 76, 119–26

Whittle, A. 1981. Later Neolithic society in Britain: a realignment. In C. Ruggles and A. Whittle (Eds). ***Astronomy and Society in Britain During the Period 4000–1500 BC***. Oxford: British Archaeological Report 88, 297–342

Whittle, A. 1991. Wayland's Smithy, Oxfordshire: excavations at the Neolithic tomb in 1962–63 by R. J. C. Atkinson and S. Piggott. ***Proceedings of the Prehistoric Society*** 57(2), 61–101

Whittle, A. 1996. ***Europe in the Neolithic: The Creation of New Worlds***. Cambridge: Cambridge University Press

Whittle, A. 1997a. ***Sacred Mound, Holy Rings: Silbury Hill and the West Kennet Palisade Enclosures, a Later Neolithic Complex in north Wiltshire***. Oxford: Oxbow

Whittle, A. 1997b. Moving on and moving around: Neolithic settlement mobility. In P. Topping (Ed). ***Neolithic Landscapes***, 15–22. Oxford: Oxbow Monograph 86

Whittle, A. 1997c. Remembered and imagined belongings: Stonehenge in its traditions and structures of meaning. ***Proceedings of the British Academy*** 92, 145–66
Whittle, A. 1998. People and the diverse past: two comments on 'Stonehenge for the ancestors'. ***Antiquity*** 72, 852–4
Whittle, A. 2018. ***The Times of Their Lives: Hunting History in the Archaeology of Neolithic Europe***. Oxford: Oxbow Books
Whittle, A., Atkinson, R. J. C., Chambers, R., Thomas, N., Northover, P. and Robinson, M. 1992. Excavations in the Neolithic and Bronze Age complex at Dorchester-on-Thames, Oxfordshire, 1947–1952 and 1981. ***Proceedings of the Prehistoric Society*** 58, 143–201
Whittle, A. Barclay, A., Bayliss, A., McFadyen, L., Schulting, R. and Wysocki, M. 2007 Building for the dead: events, processes and changing worldviews from the thirty-eight to the thirty-fourth centuries cal. BC in southern Britain. In A. Bayliss and A. Whittle (Eds). Histories of the Dead: Building Chronologies for Five Southern British Long Barrows. ***Cambridge Archaeological Journal (Supplement)*** 17(1), 123–47
Whittle, A., Healy, F. and Bayliss, A. (Eds). 2011. ***Gathering Time: Dating the Early Neolithic Enclosures of Southern Britain and Ireland***. Oxford: Oxbow Books
Whittle, A. Pollard, J. and Grigson, C. 1999. ***The Harmony of Symbols: The Windmill Hill Causewayed Enclosure***. Oxford: Oxbow Books
Whittle, A., Rouse, A. and Evans, J. G. 1993. A Neolithic downland monument in its environment: excavations at Easton Down long barrow, Bishops Cannings, North Wiltshire. ***Proceedings of the Prehistoric Society*** 59, 197–239
Whitty, Y. 2011. ***M3 Clonee – North of Kells Motorway Scheme, Navan to Kells and Kells Bypass, E3144: Kilmainham 3, Final Report***. Irish Archaeological Consultancy Report, available at: https://www.academia.edu/11046087 [Accessed 4 August 2018]
Williams, K. 2019. ***Re-discovering the 'Lost' Records of the Newgrange Roof-Box***. Blog post on Boyne Valley Tombs website. Available at: https://boynevalleytombs.wordpress.com/2019/04/14/re-discovering-the-lost-records-of-the-newgrange-roof-box/ [Accessed 15 April 2019]
Willis, C. 2019. ***Stonehenge and Middle to Late Neolithic Cremation Rites in Mainland Britain (c.3500–2500 BC)***. Unpublished PhD thesis, University College London
Willis, C., Marshall, P., McKinley, J., Pitts, M., Pollard, J., Richards, C., Richards, J., Thomas, J., Waldron, T., Welham, K. and Parker Pearson, M. 2016. The dead of Stonehenge. ***Antiquity*** 90 (350), 337–56
Windell, D. 1989. A Later Neolithic 'Ritual Focus' at West Cotton, Northamptonshire. In A. Gibson (Ed)., ***Midlands Prehistory: Some Recent and Current Researches into the Prehistory of Central England***. Oxford: British Archaeological Report (British Series) 204, 85–94
Witmore, C. 2006. Vision, media, noise and the percolation of time: symmetrical approaches to the mediation of the material world. ***Journal of Material Culture*** 11(3), 267–92
Wolf, E. 1990. Distinguished lecture: facing power – old insights, new questions. ***American Anthropologist*** 92: 586–96
Wood, J. E. 1978. ***Sun, Moon and Standing Stones***. Oxford: Oxford University Press
Woodward, A. 2000. ***British Barrows: A Matter of Life and Death***. Stroud: Tempus
Woodward, P. J. 1988. Picturing the Neolithic: discoveries from the Flagstones House excavations, Dorchester, Dorset. ***Antiquity*** 62(235), 266–74
Woodward, P. J. 1991. ***The South Dorset Ridgeway: Survey and Excavations 1977-84***. Dorchester: Dorset Natural History and Archaeological Society, Monograph Series 8
Woodward, P. J., Davies, S. M. and Graham, A. H. 1993. ***Excavations at the Old Methodist Chapel and Greyhound Yard, Dorchester, 1981–1984***. Dorset Natural History and Archaeological Society, Monograph 12
Wright, E., Viner-Daniels, S., Parker Pearson, M. and Albarella, U. 2014. Age and season of pig slaughter at Late Neolithic Durrington Walls (Wiltshire, UK) as detected through a new system for recording tooth wear. ***Journal of Archaeological Science*** 52, 497–514

Yoffee, N. 2005. ***Myths of the Archaic State: Evolution of the Earliest Cities, States, and Civilizations***. Cambridge, New York: Cambridge University Press

Zedeño, M. N. 2009. Animating by association: index objects and relational taxonomies. *Cambridge **Archaeological Journal*** 19(3), 407–17