Tales from The Ontological Tern: an examination of the role and meaning of faunal remains in the Neolithic long barrows of Wiltshire

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Abstract

Previous interpretations of Neolithic long barrow faunal deposits have commonly understood animals either in functionalist, economically determinist terms as resources for human exploitation, or as symbolic currency within human cosmologies, both approaches underpinned by an anthropocentric worldview. This is arguably unsurprising given that the same perspective has also informed the development of the zooarchaeological practices traditionally employed for their investigation, and is manifest in the standard suite of analyses deployed, analyses that seek to find evidence for such exploitation. That these perspectives are historically situated has remained largely unrecognised and undertheorized.

This research explores human-animal relationships presenced in eight Neolithic long barrows in the modern county of Wiltshire from an expressly posthuman position that understands phenomena to be relationally emergent within assemblages, drawing on the work of Bennett (2010), DeLanda (2006), Deleuze and Guattari (2004), and Haraway (1991; 2008). Assemblages are multiple, multi-scalar, transient gatherings, transgressive of corporeal boundaries to permit the incorporation and consequent transformation of diverse phenomena. Multiple long barrow assemblages are analysed: the osseous material, using the standard suites of techniques for animal bone, which in accordance with the posthumanist remit includes human bone; and the depositional assemblages, with a focus on materiality and working at and across different geographic and temporal resolutions, drawing together both documentary and archive data through a range of spatial analytics including Geographic Information Systems (GIS). Established approaches are thus not discarded, but are augmented through assemblage with others. A diversity of human-animal relations are uncovered to reveal new understandings of the roles and meanings of faunal deposits in long barrow assemblages and of the long barrows themselves, permitting exploration of past ontologies. The strength of this approach lies in the space it creates for difference to emerge, confirming its potential value as a means for exploring the more-than-human past.

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Figure 1: The Ontological Tern

Chapter 1. Introduction

Animal presences form a ubiquitous, but frequently neglected component of British Neolithic long barrow assemblages. This study exploring the role and meaning of faunal remains in the Neolithic long barrows of Wiltshire puts animals on an equal footing with other classes of evidence. It questions the nature of human-animal relationships manifest within these structures, some of which precede their physical incorporation, but all emergent and subject to change over time. It problematises the ways in which such relations have been framed in the past and explores the possibilities presented by expanding the evidence base from the zooarchaeological (as traditionally defined), to incorporate more than the remains of animal body parts. It explores animal absences through the imprints of bones in clay, the nature of animality presenced in worked bone objects, animal habitats and the ways in which animals enter into dialogue with the barrow structures on their own terms, for example. The osteological reanalysis of animal and human bone assemblages that has here been undertaken also forms a vital, core component. It folds together the materially diverse and ever-changing archive data with different modes of spatial analytics, and is situated within a very specific and explicitly articulated theoretical position; as such, it can be understood as a methodological manifesto for its own approach. But before tracing out its topography in greater detail, it is first necessary to unpack some key terms herein employed, loaded as they are with unwieldy volumes of baggage.

We begin with 'Neolithic', a period descriptive term that emerged with the first blossoming of the archaeological discipline in the 19th century (Lubbock 1865) and which despite its historical pedigree – and arguably somewhat arbitrary imposition that has given way to reification – has proved particularly adept at evading definition. And this is exactly as it should be; located in between the similarly troublesome 'Mesolithic' and 'Chalcolithic'/'Bronze Age' and with localised temporal variance, ongoing engagement with archaeological material enables understandings of such local chronologies to be revised, refined and debated. However, for clarity of discussion, the Neolithic of south west Britain, the area in which the modern county of Wiltshire is situated, is here defined as spanning the period from 3850-2500 BC, which is then subdivided into the Early Neolithic (3850-3400 BC), the Middle Neolithic (3400-2800 BC), and the Late Neolithic (2800-2500 BC), dates informed by recently published research (Ard and Darvill 2015; Healy *et al.* 2011; Whittle *et al.* 2011).

This leads us on to the second contentious term, 'Wiltshire'. The primary geographic focus of this study is identified as the modern county of Wiltshire, which is recognised to be an arbitrary boundary when considering the period defined as the Neolithic. However, it encompasses within it two distinct regional clusters of long barrows alongside other Early Neolithic monumental structures; that of the Salisbury Plain region in the south of the modern county, and the area surrounding what would later become Avebury in the north, both of which appear to have had coherence within a Neolithic milieu. The use of 'Wiltshire' is therefore employed as a useful shorthand, communicating the modern identity of the area to a modern reader.

The third term that requires clarification is 'long barrow'. Like 'Neolithic', it too has a lengthy history, with sites thus designated forming the focus of some of the earliest antiquarian investigations in Britain, mentioned, for example, in the writings of Aubrey (1980 [1665-1693]; 1982 [1665-1693]) and Colt Hoare (1975a [1812]). Emerging as a descriptive category with Anglo-Saxon roots (Darvill 2004: 17) on the basis of broad similarities in external form – that of the elongated, broadly rectangular or trapezoidal mound – and the possible inclusion of human remains, subsequent investigation has revealed significant internal structural variance, resulting in the development of typologies. Darvill (2004: 14-15, 17-45) notes the proliferation of terms to describe these types, including: stone-chambered long barrow, megalithic tomb, and chamber(ed) tomb, denoting constructions with stone-built internal structures; earthen long barrow describing structures without stone chambers, also known as chamberless, unchambered or non-megalithic long barrows; timber-chambered long barrow, which also falls within the 'earthen' category; and long cairn, which may be assigned where the majority of mound material comprises stone. To this list, a class identified as oval barrows, which are also known as, or thought to be conflated with, short long barrows (Darvill 2004: 52-56) may be added, although consensus as to their existence as such appears divided (for example, see Harding (1986) who designates Cold Kitchen Hill as an oval barrow in the site report, but which becomes a long barrow when grouped together with Woodford G2 (Harding and Gingell 1986) in the same publication). Distribution of identified types suggests a degree of spatial coherence with apparently stylistically similar structures clustered together, as exemplified in the Cotswold-Severn region. However, it remains that these types are identified in structures that are in excess of 5000 years old, and may not have been constructed in accordance with a predetermined plan or a view to some form of architectural finality (McFadyen 2008). Further, choices made during construction could have been influenced by local tradition (Darvill 2004: 71-73), geology and building materials that if not the most readily available, then deemed most suitable, and therefore may or may not represent meaningful stylistic choices made in the past. As a consequence, long barrow is here employed as a generic descriptor for all such structures, with further elaboration as to the specific material composition of each provided as necessary. This step enables issues concomitant with the imposition of types to be minimised – with the obvious exception of the broad 'long barrow', a necessary action to permit the efficient communication of ideas – whilst also provisioning a platform for consideration of these structures as geographically coherent groups. This latter point is offered in response to Darvill, who regrets the "lamentable tendency to study these earthen or unchambered long barrows independently of the stone-chambered variety" (Darvill 2004: 15).

‘Citation’ is a term used throughout and occupies a central position within the arguments here developed. Whilst it makes explicit reference to and draws upon its use in the writings of Jones (2007; 2011) and Butler (1993), its deployment in the context of the present study is markedly different insofar as it does not necessarily describe or assume a relationship in which reference is located in a fixed linear temporal trajectory. The relationships it describes are multi-directional and observed from the present; it therefore has much in common with Latour’s concept of the circulating reference (Latour 1999). Liberated from reliance upon implicit originary phenomena, it becomes an especially germane concept for exploring and discussing assemblages, which are understood to be in a state of continuous unfolding, and form the focus of Chapter 4.

Finally, the use of the terms ‘animal’ and ‘human’ are acknowledged as especially problematic within the context of this study, which is undertaken from within a posthumanist perspective. Posthumanism is an ontological position that problematises the reification of the human as articulated in the Cartesian humanist ontology, arguing instead for relationality and the possibility for the coexistence of multiple ontologies, and is exemplified in the work of Braidotti (2013), Haraway (1991; 2008), and Wolfe (2010) (see Chapter 3). Cartesian humanism sets the human apart from all other phenomena and finds existence to be structured by conceptual oppositions. The animal is thus placed in opposition to the human and thereby becomes manifest of everything that the human is not: unthinking; unfeeling; inert. Dominating western thought throughout the Modern period to the present, this position has had a profound impact upon the ways in which human-animal relationships have been thought about and developed therein, and forms the focus of discussion in Chapter 5. The posthumanist approach of which this study is an expression therefore seeks to decentre the human, which is understood as one species amongst many that fall within the umbrella descriptor ‘animal’. As a consequence, the segregation of the ‘human’ from the broad category of ‘animal’, which is enacted throughout, troublingly performs the very reification of the human that the posthuman position seeks to undermine, by acting to set it apart. However, instigation of change and the new perspectives it seeks to develop must inevitably be founded within the very context it reacts against. This work has been undertaken within its particular historical, social context, so the use of these terms becomes a necessary stage in the development of a posthuman archaeology, a step that permits the effective and meaningful communication of ideas to an audience therein-situated.

This study, therefore, stands as a direct challenge to previous approaches to understanding the nature of human-animal relations, and of long barrows more broadly, in the Neolithic of south-western Britain, and it is critical consideration of these previous engagements that form the focus of Chapter 2. Detailed explication and argument in support of the theoretical position here taken forms the following four chapters, beginning with a discussion of the broad approach adopted (Chapter 3); followed by the implications of assemblage based thinking and relationality for addressing questions about human-animal relationships in specifically archaeological contexts (Chapter 4). This then leads on to an exploration of the impact of posthumanism on ways of understanding human-animal relationships (Chapter 5); and finally a consideration of the opportunities and limitations concomitant with inviting Geographical Information Systems (GIS) analysis to join and (re)create the already posthuman cyborg-assemblage-in-the-making that is this study (Chapter 6). Indeed, contra Holbraad and Pedersen (2017), it is here argued that in order to approach archaeological material with a view to allow ontological difference to emerge, explicit commitment to a posthumanist ontology is vital from the outset, to be maintained all the way down (cf. Haraway 2008: 32). As such, steps traditionally designated as data collection, analysis, and interpretation are understood to be theory-laden and inherently interpretive, any separation of the three serving as reification of a problematic view of data as atheoretical. Therefore, in keeping with the posthumanist position, results and discussion are merged to form Chapters 7 and 8, which consider the Salisbury Plain and Avebury regions in turn, incorporating the findings from the work undertaken as part of this study: the newly reanalysed osteological, documentary and archive material, spatial analyses, and newly obtained radiocarbon dates.

The long barrow sites comprising the focus of the study are: Amesbury 42, Netheravon Bake, Woodford G2, and Cold Kitchen Hill in the Salisbury Plain region; and Horslip, South Street, West Kennet, and Beckhampton Road in the Avebury region. The nature of particular, evidentially grounded and contextually situated human-animal relationships emergent within each are explored in turn, analysis tacking between scales from the very intimate, at the level of individual specimens and individual persons, through to the regional and that of species. As noted above, all are located in the modern county of Wiltshire, whose density of clustered Early Neolithic sites and long history of antiquarian and archaeological intervention, coupled with the preservation of the relevant archive material in local and national museums make it an ideal focus of study and sandbox for posing and exploring ontological questions. Further, these qualities make it suitable for comparison with the only region where long barrow faunal assemblages have been systematically and recently re-examined: the Cotswold-Severn (Thomas and McFadyen 2010).

The concluding chapter (Chapter 9) draws together and discusses the key findings of the study, and presents recommendations for further development and exploration. Appendices comprise a table of the new radiocarbon dates obtained for the study, a table detailing taxonomic representation in each of the long barrow assemblages studied, and a standard zooarchaeological report for each site explored. The latter are included for comparative purposes, to contrast with the findings of the main study, and to demonstrate the value of working within a posthuman position. The digital datasets of osteological material collected for each site are presented on a USB memory stick to form Appendix 11.

But before setting out on this journey through multi-scalar and multi temporo-geographic human-animal realms, a note on style. In keeping with the posthumanist position here advocated, this study is no less an assemblage and part of all of the assemblages it considers and transforms. As noted above, it is an inherently interpretative, creative undertaking, and this is reflected in its structure and the style of language employed. A narrative spirit is invoked to lead the reader on an exploratory expedition, and is further elaborated through the use of literary themes and characters that emerge during the course of the text and are interwoven throughout, to provide threads of connection and continuity. Many of the figures included are purely illustrative, included to develop this fairy-tale character, and as such may not be referred to directly in the text.

Chapter 2. Once upon a time: past approaches to the study of animal remains from long barrows

The study of long barrows has been central to the development of archaeological practice in Britain, from its inception through early antiquarian investigation, to the establishment of methods that form the basis of modern fieldwork techniques. Receiving mention in the early 17th-century writings of Aubrey (1980, 1982) and later by Stukeley in 1740 (2010), concern with description, the establishment of monument types and the acquisition of objects for incorporation into collections is characteristic of these early works. Although briefly noted by Stukeley (2010: 27) in his description of buried soils revealed through the removal of the bank of Avebury Henge, the presence of faunal material is rarely documented in the earliest antiquarian sources.

W. Cunnington Snr., Colt Hoare and a troupe of zealous, provincial clerics working in the first half of the 19th century took up the challenge of examining the contents of long barrows; the quality of work undertaken exhibits considerable variation. W. Cunnington Snr. and Colt Hoare are notable for the detailed records they made of their enquiries, regularly including accounts of material recovered, including pottery fragments, flint and animal remains as well as indications of their depth, general position and the nature of soils (Colt Hoare 1975a; 1975b). However, a focus on the recovery of the unusual or spectacular persisted. Despite Colt Hoare's self-declared motto "We speak from facts, not theory" (Colt Hoare 1975a: 7), which gives expression to his thoroughly humanist commitment to adhere to the scientific ideals so characteristic of Enlightenment thinking, he tellingly advises his readers to "Let due reverence be paid to the *manes* of the Britons; and though you rob them of their instruments of war and decoration, let their bones and ashes be properly respected, and carefully reinterred" (Colt Hoare 1975a: Appendix 2). The meaning of the material recovered is accorded some consideration, although interpretations are largely focused on the identification and discussion of hierarchies in past societies, with important men placed *a priori* at the apex.

Moving on next to the second half of the 19th century, prolific barrow digger and skeletal head-hunter John Thurnham identified the absence of interpretation in earlier accounts as problematic (Thurnham 1869: 161). A doctor by profession, Thurnham's interest in the recovery, examination and measurement of human crania from barrows was central to his interest (Darvill 2004: 26). Despite this focus, Thurnham also made note of the animal bones he found, together with their depositional relationships with human remains, as well as broader patterns identified in depositional practice. And although limited in scope, he accorded the meaning of the animal bone assemblages consideration, suggesting that disarticulated remains represent evidence of feasting (Thurnham 1869: 182). However, the rigour of Thurnham's practice was somewhat inconsistent; he fails, for example, to offer an explanation for the presence of a complete, articulated goose skeleton in Amesbury 14 long barrow (Thurnham's No. 27, Stonehenge No. 165) beyond suggesting that the consumption of birds may have been taboo, an assertion made on the basis of the writings of Caesar (Thurnham 1869: 183). Thurnham's approach to investigation is certainly unsatisfactory by modern standards, particularly with regard to his execution and recording of excavations (Ashbee *et al.* 1979: 231-232; Darvill 2004: 26). In the 1964 re-examination of Beckhampton Road long barrow, Avebury, Ashbee's intense frustration with Thurnham's earlier attempt to investigate the site, and its implications for subsequent archaeological investigations, is clear (Ashbee *et al.* 1979: 231-232). Some aspects of a research framework can, however, be discerned in Thurnham's work: he identifies the potential for reanalysis and testing of finds by earlier investigators (Thurnham 1869: 161, 179); the need for findings to be accessible (Thurnham 1869: 161); and has clear objectives, although these are often implicit and do not translate in practice into an organised methodology.

A focus on the recovery and interpretation of human remains is typical of many 19th-century accounts (for example, see Rolleston 1876; Thurnham 1869). The dedicated study of animal remains is a later development, reflecting the changing status accorded to animals, influenced by dominant social and political ideas, theoretical trends within the discipline, and methodological advances. Towards the end of the 19th century, the presence of animal remains in excavated assemblages was increasingly documented, although material was characteristically interpreted as offerings or evidence of feasting, catch-all categories that were applied frequently, and often without justification. There are exceptions; taphonomic features were noted on some animal bone specimens from excavations at West Tump, Gloucestershire, and were thus interpreted in the published report (Witts 1881: 206). It is arguably through the meticulous work of Pitt-Rivers, however, that the basis for modern standards of archaeological investigation was established. His 1893 excavation of Wor Barrow, Dorset, published in 1898, exemplifies this approach and includes detailed records of animal remains recovered, including species lists, identification of individual elements, metric data, and contextual information (Pitt-Rivers 1898). The exceptional quality of the records is such that it is possible for researchers to engage with the information presented in terms more usually reserved for more recent archive sources. However, the subsequent development of scientific methods and the establishment of modern standards, for example, the suite of measurements gathered from different osseous elements for the purpose of consistency and maximisation of useful information, places some limitations upon the potential utility of Pitt-Rivers' excavation archives, an obstacle that is insurmountable due to the failure to retain all but a small quantity of the faunal remains.

Interpretation of findings is absent from the Wor Barrow report; the focus of enquiry remains firmly set upon description and classification, and in this respect, animal bone is accorded the same treatment as other excavated material collected within the antiquarian tradition. Brief note is made of a pattern identified in elemental representation in cattle (Pitt-Rivers 1898: Relic table, Wor Barrow, Ditch Sept 11th-Oct 25th), but aside from worked bone artefacts, no mention is made of animal bone in the main text of the report; description and discussion of the circumstances of recovery of all other 'classes' of material is, however, evident (Pitt-Rivers 1898). That animal bone was still considered of secondary importance is implicit.

This apparent subordinate status seems further confirmed by evidence provided by two gazetteers published during the second decade of the 20th century (Acland 1916; M. E. Cunnington 1914). Acland presents notes made by E. Cunnington, which describe his exploration of barrows in Dorset during the latter years of the 19th century, whilst M. E. Cunnington draws together the findings of her barrow-digging forebear W. Cunnington, Colt Hoare and Thurnham, together with her own observations in a list of Wiltshire long barrows. Animal bones receive occasional mention, but the focus of both texts remains centred firmly on classification of barrow structure, the presence of human skeletal material, and the recovery of artefacts. Although it is acknowledged that this is inevitably a factor of the nature of the texts, essentially compilations of previously published material from disparate sources, the biases inherent in the original works are reinforced through the act of repetition. A third gazetteer, complied in 1925 by O. G. S. Crawford is likewise dependent upon the work of earlier investigators, and is subject to the same issues identified above (Crawford 1925). However, Crawford's acknowledgement of the problems associated with reliance upon such sources (Crawford 1925: 1-4), together with the inclusion of the author's own field notes provides something of a contrast. In his overview of faunal and plant remains characteristically recovered from long barrow contexts, he makes explicit his contention that the discussion of human bones should be included within this category (Crawford 1925: 25), thereby contesting the existence of an artefactual hierarchy that is implicit in earlier publications, and which often continues today.

Recognition of the limitations of early excavations, together with an increased awareness of the damage caused by a range of processes, particularly agriculture and the exploitation of barrows as a readily available source of stone for construction – ironically made evident through comparison against plans and sketches made by antiquarian investigators – resulted in the re-examination of many barrows during the 20th century (Clifford 1938: 191; Drew and Piggott 1936: 77; Phillips 1935: 101). The treatment of animal remains in the resultant excavation reports varies from inclusion in general discussion of finds from Therfield Heath long barrow, Hertfordshire, at a contextual level, albeit with an unqualified interpretation as occupation debris (Phillips 1936: 103), to presentation in specialist sections within the broader report detailing excavations at Nympsfield long barrow, Gloucestershire, and Thickthorn Down in Dorset (Bate 1938: 212-213; Jackson 1936: 93-94). The different contents and organisation of the reports are symptomatic of an absence of the standardisation that has come to dominate more recent report writing, but both are illustrative and generative of ongoing developmental processes that establish and seek to improve archaeological and zooarchaeological methods.

The animal bone report from Nympsfield includes details of species identified and discussion of the wild and domestic composition of the assemblage. Metrical data are included together with reflections on the implications of this information (Bate 1938: 212-213). Brief note is made of the findings from the analysis of the animal bone in the general discussion (Clifford 1938: 204) and faunal remains are considered as part of the burnt deposits broadly interpreted as evidence of ritual practices (Clifford 1938: 203), but neither point is developed further. Jackson's report on the animal bone assemblage is one among a series of specialist sections detailing a range of material recovered from Thickthorn Down. The influence of Pitt-Rivers' (1898) Wor Barrow publication is evident in the format and content of the full excavation report, and is cited by the authors as an exemplar of a rigorous approach (Drew and Piggott 1936: 77). The animal bone report details species present in excavated material and whilst it contains precise contextual information, there is an absence of interpretation; both reports remain essentially descriptive and can therefore be understood as a continuation of the antiquarian tradition (Jackson 1936: 93-94).

Piggott's 1962 publication of his 1955-56 excavation of West Kennet long barrow develops this approach. Faunal remains are presented as one class of artefact among many, receiving mention in the general discussion of deposits (Piggott 1962a: 17, 27). Results of analyses, which were undertaken by a specialist, are presented in a dedicated section within the report (Piggott 1962a: 53-55), treatment that accords with that of other artefact 'types'. The notable exception is the human bone assemblage, which in addition to occupying no less than three appendices detailing the results of analyses undertaken, is fully integrated into discussion throughout the main body of the report. A table detailing species and context from which faunal remains were recovered shows correspondence with the presentation of finds from Pitt-Rivers' (1898) Wor Barrow excavation, but departing from this model, Piggott (1962b: 53-55) reflects upon the implications of his data, noting the dominance of domesticates within the assemblage and considering the potential complications introduced by the actions of burrowing animals. General comments on animal size and age represented by some specimens are included, but there are notable gaps in the records published that have been brought to light through reanalysis of the site as part of the present study, and which will be discussed later (Chapter 8).

It is the inclusion and specific discussion of the meaning of animal bone deposits within the West Kennet assemblage that marks Piggott's work as progressive. Interpretation is approached through comparison with other prehistoric chambered tomb sites, both British and European. Piggott finds that deposits of animal bones from Scandinavian examples, understood to represent ritual feasting or offerings, is consistent with evidence from West Kennet and recognises the importance of deposits as the deliberate combination of diverse substances (Piggott 1962a: 75). Piggott's direct use of analogy is problematic; not least, he seeks to import the Scandinavian example wholesale, speculating as to the possible existence and position of an offering house associated with the long barrow (Piggott 1962a: 75). This interpretation also appears to bear the influence of Thurnham, whom he cites in his discussion of animal remains from long barrow assemblages in his 1954 publication, 'The Neolithic Cultures of the British Isles' (Piggott 1954: 60). Piggott's discussion is rooted in the tradition of culture history, conveying a particular concern with typology and the spread of cultural ideas (Piggott 1962a: 57-65, 71).

Despite his increased focus on artefact associations and assemblages, assumptions as to the nature and meaning of the site reflect the same Enlightenment ideals that influenced earlier investigators, not least, an unquestioned anthropocentrism in which human remains are accorded a central position. This is implicit, through the unquestioned classification of long barrows as tombs constructed primarily for the interment of the human dead (Piggott 1962a: 57-65), and through the categorisation of artefact classes; 'Bone Objects' (Piggott 1962a: 49-50) and 'Beads and Similar Objects' (Piggott 1962a: 51-53) both included worked animal bone, but are separated from the remaining animal bone assemblage. Such untheorized categorisation is problematic. It reflects a dualistic worldview in which nature and culture are separated, potentially leading to understandings and interpretations that do little more than reinforce this philosophical position (Thomas 2004; and see Chapter 3 for further discussion). In considering past interpretations concerning the fill of long barrow chambers, Piggott notes that "the observation and interpretation of archaeological evidence is conditioned by the presuppositions of the excavator" (Piggott 1962a: 71), but fails to recognise and address it in his own work.

This problem is also evident in a second publication by Piggott from the same year (Piggott 1962b), focusing on the meaning and geographic distribution of ungulate bone deposits comprising cranial and pedal bones and associated with human interments. Piggott seeks to identify 'traditions' and the spread of cultural ideas based upon superficial patterns identified in depositional practice. His suggestion that the continental European evidence represents a 'tradition' infers cohesive and continuous practice spanning millennia (Piggott 1962b), although he recognises that attempts to extend associations *directly* to such deposits in Wessex long barrows would be misguided (Piggott 1962b: 118). Piggott's comments on the use and value attached to different parts of the animal carcass are based upon untheorized assumptions (Piggott 1962b: 112), revealing more of the economic determinist attitudes dominant in modern, western thinking, than any past value systems represented by the archaeology.

The impact of Piggott's article can be detected in subsequent publications (Ashbee 1970: 84; Carter and Higgs 1979: 245; Grigson 1966: 66), his argument arguably gaining traction following Ashbee's 1957 discovery in Fussell's Lodge long barrow of a cattle cranium associated with human skeletal remains sealed beneath flint nodules interpreted as a 'mortuary house' and upon which lay a discrete deposit of cattle pedal bones (Ashbee 1966). In her discussion of the animal bone deposits, which forms part of a dedicated section on animal remains within this site's excavation report, Grigson cites Piggott, noting that the cranium and pedal bones may represent a 'hide burial' (Grigson 1966: 66). Grigson's document is remarkable for the inclusion of interpretation, alongside species lists, detailed contextual information, description and discussion of bone groups, metric data and age-at-death estimates. She posits that evidence suggests intentionality of purpose, dismissing the idea that deposits can be understood to represent domestic waste (Grigson 1966: 64). Grigson suggests that the remains inform on the significance of domesticates (Grigson 1966: 68), and cattle in particular, in the societies in which those who constructed the long barrows lived (Grigson 1966: 65), although importance is here equated with presence (Grigson 1966: 68).

Grigson's work shares many of the features of faunal reports from publications of excavations that are broadly contemporary (Ashbee *et al.* 1979: 267-269; Carter and Higgs 1979: 248-249; De Mallet Morgan 1959: 47-49; Grant King 1966: 84; Higham and Higgs 1979: 225-228). Published during a period in which zooarchaeological approaches became formalised and reflecting the influence of processual discourse that valorises data, demonstrable in the work of Higgs and Jarman (1969), they all include species lists, identification to element, contextual information and evidence consideration of age at death. Reports on faunal remains from South Street, Beckhampton Road and Horslip long barrows also contain limited metric data (Ashbee *et al.* 1979: 268-269; Carter and Higgs 1979: 249; Higham and Higgs 1979: 225-226). Despite strong structural similarities, variation in the range and volume of information included can be observed. Approach to interpretation of evidence is likewise varied and is a feature of all but the Lanhill excavation report (Grant King 1966). Deposits of worked antler from Beckhampton Road and South Street are described as tools (Ashbee *et al.* 1979: 247, 268-269). The presence of animal bone at Horslip is understood to indicate meat consumption, the character of which is not discussed (Higham and Higgs 1979: 227), whilst at Nutbane, 'ritual' activity is inferred upon the supposition that the animal bone assemblage is primarily connected with activities focused on the human dead (De Mallet Morgan 1959: 48). An expressly ethnocentric, anthropocentric approach is evident in all; interpretations are developed on the basis of assumptions reflecting the norms of the societies in which they were formulated, thereby limiting the scope for understanding of past practices.

Ashbee recognises this issue in a publication dedicated exclusively to British earthen long barrows, setting out the limitations of prehistoric archaeology and making explicit his awareness of the subjectivity of interpretation, categorisation and approach to excavation (Ashbee 1970: 1-4). Animal remains are addressed in a small, discrete section within the volume, in keeping with the now established standard structure of excavation reports (Ashbee 1970: 74-77). The emphasis placed upon the potential for variance in depositional practice and associated meaning between different contexts within the structure of earthen long barrows, together with of the character of faunal assemblages in comparison with other classes of material in the wider assemblage, indicates a change of approach. Ashbee's synthesis of findings from barrows across Britain is used as a basis for identification of some regional patterning as well as inter-regional variation (Ashbee 1970: 75-77).

Ashbee's work was arguably ahead of its time, anticipating the arrival of a wider disciplinary interest in interpretative approaches to archaeology, a reaction against processualist concerns. It therefore seems somewhat surprising that in a number of specialist animal bone reports from excavations of long barrows published in the intervening period, there is a marked absence of interpretation (Gingell 1986: 15-22; Harding 1986: 7-14; Noddle 1993: 222-223; Noddle 1994: 34-36). Indeed, the reports for Woodford G2 (Gingell 1986: 20-21) and Easton Down (Noddle 1993: 222-223) amount to no more than a single short paragraph, briefly documenting the presence and nature of material, inviting comparison with 19th-century examples.

Kinnes' 'Non-Megalithic Long Barrows and Allied Structures in the British Neolithic', published in 1992 does include interpretation and discussion of faunal material from a range of long barrow sites (Kinnes 1992: 110-111). Artefact associations are noted and explanations for the presence of animal bones in barrows that do not evidence human mortuary deposits are proposed (Kinnes 1992: 110). Some structural elements of the piece are reminiscent of Piggott's work; bone beads and animal bone are considered separately, thereby implying the existence of a nature/culture separation (Kinnes 1992: 110). Recognition of the value of animal bones is implicit, but an overarching concern with economic factors is confirmed through his acknowledgement of the need for the study of the 'use' of animals in the Neolithic (Kinnes 1992: 61): animals are understood as passive objects, resources to be exploited by people. This concern reflects dominant political discourse in Britain at the time of writing and its imposition upon Kinnes' approach to animal remains shapes his interpretations, which are resolutely anthropocentric.

The influence of Ashbee's 'The Earthen Long Barrow in Britain', with its concern with interpretation is, however, clearly evident in a selection of later studies. In the first of these, a PhD thesis examining the nature of deposition in Neolithic Wessex, which includes a re-examination of material from Beckhampton Road, Horslip and South Street long barrows in the Avebury region, and Fussell's Lodge, Cold Kitchen Hill (Kingston Deverill G1), and Woodford G2 long barrows in the environs of Salisbury Plain, Pollard (1993) includes interpretation of faunal material alongside other material types, and notes the subordinate status that animal bone, lithic and pottery artefacts are commonly accorded (Pollard 1993: 220-221). He adopts a post-processual perspective, placing emphasis upon the symbolic qualities of the deposits (Pollard 1993: 83-86, 224) and their role in establishing special structure (Pollard 1993: 137-136, 221-222, 228-232, 244). Pollard's study is remarkable for its explication and defence of the theoretical perspective employed, but its concern with material culture as a system of signification (Pollard 1993: 13-14) is stubbornly situated within an anthropocentric ontology and places limits upon the scope of the interpretation (see Chapter 5 for further discussion).

Two specialist volumes that also bear Ashbee's influence, published over 20 years after his seminal volume, explore different categories of long barrow. Both feature a section focused exclusively on the discussion of animal remains in which the character of material from different sites is described and the dominance of domesticates, especially cattle, is noted (Darvill 2004: 171-172; Field 2006: 125-132) and, like Ashbee, both authors place strong emphasis upon interpretation. Darvill's publication explores the long barrows of the Cotswold-Severn and adjacent regions. From the outset, Darvill makes clear his intention to consider the meaning of long barrows, whilst recognising the speculative and subjective nature of such an undertaking (Darvill 2004: 11-13). He demonstrates an awareness for the potential for multiple interpretations of the structures and their constituent parts, reflecting broader concerns with multivocality and multiple stakeholders both in prehistory and the present, in contemporary archaeological discourse (Bender 1998). Although the section dedicated to the discussion of animal remains is concise and predominantly descriptive, consideration of the meaning of faunal remains is interwoven in broader discussion throughout the volume; faunal remains are not isolated, but are presented as elements of diverse assemblages, and a wide range of interpretations, some contradictory, are presented.

The status that animal remains are accorded through different interpretations is varied and contextually specific: from implicitly secondary to human material (Darvill 2004: 133); to suggestions of equivalence between human and animal material, through presentation of Whittle's interpretation of material from the Windmill Hill causewayed enclosure to suggest possible parallels between the treatment of human remains in long barrows with the butchery of animals (Darvill 2004: 191, citing Whittle *et al.* 1999: 362); to reverence as a form of community 'progenitor' (Darvill 2004: 133). The latter two propositions are interesting: they explore possibilities for understanding that extend beyond the economic and the ascription of a safe, generic and undeveloped 'ritual' explanation characteristic of many earlier interpretations. Understood as the root of human communities, the agency of animals may be recognised, the human-animal relationship understood as mutually constitutive, thereby holding potential to decentralise the human. However, the nature of this human-animal relationship is not made explicit; the animals may be conceptualised as symbolic or anthropomorphic, in which case, an anthropocentric position is maintained. Despite the presentation of a range of interpretations of faunal material, providing many possibilities for consideration, the potential for multiple relational, contradictory meanings and understandings to have been played out simultaneously at any one time in the past is not examined explicitly.

Earthen long barrows from across the British Isles form the focus of Field's study. He presents evidence from a range of different sites, together with an overview of the interpretations of the original excavators (Field 2006: 126-132). Field's imaginative suggestions as to the role and importance of animals associated with long barrows, with repeated mention of the 'supernatural' (Field 2006: 129, 130,132), are influenced by ideas generated from anthropological and ethnographic studies by Ingold (2000: 111-131, cited by Field 2006: 130) and Topping (2005: 74, cited by Field 2006: 130-131, pers. comm. Peter Topping, cited by Field 2006: 132), but are based upon superficial similarities that once again, conceptualise the animals as part of a human cosmology. He does, however, go on to question long held assumptions regarding the centrality of human remains in long barrow assemblages in his wider discussion, on the basis of comparison between animal and human deposits, to suggest a more complex, multi-faceted role for the faunal remains (Field 2006: 146-147). This avenue is also explored by Woodward in an overview of long and round barrows (Woodward 2000: 37), thereby developing Ashbee's ideas regarding contextual variation in depositional practices and opening up new avenues for exploration.

Field shows concern with changes in the nature of human-animal relationships in the context of the introduction of domesticates (Field 2006: 125). Citing the work of Sharples (2000, cited by Field 2006: 125), he touches on the problems associated with the imposition of 'wild' and 'domestic' as conceptually discrete and opposed categories in the context of the Neolithic, an issue identified over 30 years earlier by Higgs and Jarman (1969: 32), through consideration of the potential for management of deer herds, which are traditionally regarded as 'wild' in zooarchaeological analyses of British Neolithic material. However, he does not pursue the implications for analysis and understanding of faunal assemblages in long barrows.

This issue is addressed by Pollard in two papers: one, published in the same year as Field's volume, but delivered as a paper at the 2003 Neolithic Studies Group 'Animals in the Neolithic' conference; and the second, a paper in an edited volume, published in 2004. Showing development from his arguments presented in his 1993 thesis, Pollard constructs convincing, theoretically sustained arguments contending that imposing a wild/domestic distinction upon evidence from Neolithic contexts including long barrows is problematic (Pollard 2004: 55-66; 2006: 143-145). Unlike Ashbee and Piggott, who identify but ultimately fail to respond to, the potential for assumptions based upon social norms prevalent at the time of writing to influence interpretation, Pollard's discussions demonstrate an acute awareness of this issue and offer viable, evidentially grounded alternative perspectives.

Traditional approaches that favour an economic determinist position and conceptualise animals as inert subjects to be exploited are the focus of critique (Pollard 2004: 59; 2006: 136; see also Whittle 2003: 78). Like Field, Pollard cites Ingold in his exploration of the nature of human-animal relationships based on evidence from Neolithic contexts, but with a focus on ideas relating to animal agency, personhood, and inextricably interwoven, inseparable, co-constitutive human-animal biographies undermining nature/culture, subject/object, wild/domestic, trust/domination oppositions, he develops his arguments further (Pollard 2006: 145). Pollard proposes that animals are treated differently based upon qualities, behaviours and associations (Pollard 2004: 60-62; 2006: 139-141), an idea that supports the findings of Ray and Thomas (2003) who adopt a similar approach in an examination of human-cattle relationships in southern Britain during this period. Connections between particular species and human ancestors, also considered by Darvill, are explored on the basis of ethnographic evidence, but unlike Darvill, Pollard provides further definition as to the nature of these possible associations. His suggestion that animals may have been thought of *as* ancestors (Pollard 2006: 140) decentralises the human. Although this proposal is very specific and narrow in scope, and is acknowledged by Pollard as essentially speculative (Pollard 2006: 140), the broader concept offers exciting potential for reconsideration of all faunal deposits in long barrow contexts.

This is further, and more fruitfully, explored by Pollard in his 2008 paper 'Deposition and Material Agency', through consideration of material including animal and human bone, and other substances at assemblage level, and through an engagement with discourse that decentralises the human and understands phenomena, including but not limited to material entities, as relational. Pollard suggests that through association, materials deposited together but traditionally disconnected by virtue of excavation, post-excavation processing and curation, and informed by typological categories developed in the 19th century, may be transformed into new substances, taking on and manifest of new values and significance (Pollard 2004: 62; 2008: 58). Archaeological materials can thus be conceived of as relationally constituted substances with fluid, contextually specific meanings.

By contrast, Smith and Brickley claim to find few similarities between the treatment of animal and human deposits in long barrows (Smith and Brickley 2009: 78). This assertion is unconvincing on the basis of evidence, and approached from an expressly human osteoarchaeological perspective, it arguably reflects problematic nature/culture divisions inherent within the specialism that recognises human remains as simultaneously biological and social artefacts, but due to complex and often competing scientific, religious, moral and legal mandates, are frequently irreconcilable (Sofaer 2006: 31-61). Although animal burial and concepts of non-human personhood receive brief mention, an anthropocentric position dominates their approach to animal remains, which is maybe unsurprising, given the focus of the volume.

The assumed centrality of the human, and the influence of now standard modes of analysis that separate animal and human remains are identified by Thomas and McFadyen as key issues to be addressed in the study of long barrow assemblages (Thomas and McFadyen 2010: 95-97). In a re-examination of animal bone from six Cotswold-Severn long barrow sites, a response to these concerns, as well as problems identified in original analyses of material – not least the misidentification of samples – and upon which many subsequent syntheses have been dependent (Thomas and McFadyen 2010: 97), Thomas and McFadyen successfully integrate zooarchaeological analysis with interpretation of the nature of human-animal relationships suggested by the evidence (Thomas and McFadyen 2010). Reflecting concerns discussed by Pollard, faunal remains are reconsidered as elements within wider assemblages including structural components, artefact associations are discussed, and material is contextually located (Thomas and McFadyen 2010). Pollard's arguments disputing the existence of a conceptual distinction between wild and domestic species in the Neolithic find support in the evidence presented (Thomas and McFadyen 2010: 109-110) and unlike Darvill, Thomas and McFadyen do identify the potential for the existence of multiple, simultaneous, relational, contradictory meanings and understandings of animals (Thomas and McFadyen 2010: 110).

Recognition of the spatial and temporal complexity of individual sites is not simply a conclusion reached, based upon studies already undertaken, but informs Thomas and McFadyen's approach to investigation (Thomas and McFadyen 2010: 110), which thereby moves beyond the scope of Ashbee's work. Identification of potentially geographically discrete trends, including a noted absence of evidence suggesting differential treatment of cattle, which appears contrary to findings from Wessex long barrow contexts (Thomas and McFadyen 2010: 110) reveals an interesting focus for research. Indeed, in the light of issues and potentials highlighted through the work of Thomas and McFadyen, re-examination and reinterpretation of the meaning of animal bone from Wiltshire long barrows would seem not only useful and informative, but necessary.

Recent programmes of radiocarbon dating of selected long barrow sites, coupled with Bayesian statistical analysis have demanded reconsideration of the ways in which these sites and associated assemblages can be understood (Bayliss *et al.* 2007; Whittle *et al.* 2007). That the foci of interpretations have remained on the deposition of human bone, animal remains in the context of this research appearing as radiocarbon repositories (Bayliss *et al.* 2007), as offerings (Whittle *et al.* 2007: 141), or as resources (Whittle *et al.* 2007: 135,136), further reinforces the pressing need to re-examine and interpret faunal material, the newly available data providing potential to develop more nuanced understandings of human-animal biographies based upon refined temporal resolutions.

There now exist many different archaeological approaches that have implications for the understanding of faunal remains associated with long barrows, including zooarchaeology, social zooarchaeology (see Chapter 5) and scientific analysis, but synthesis is broadly lacking. Interpretations that privilege the human in long barrow assemblages remain the dominant approach, but recognition of the mutually constitutive interactions and fluidity of human-animal relationships demands reappraisal of the nature of long barrow assemblages. In order to address these issues, theoretical concepts developed for the consideration of excavated material at a more general level, most notably Pollard's studies on the nature of deposition (2004, 2008), Harris' writing on 'vibrant matter' (Harris 2014) and philosophical approaches developed under the cross-disciplinary remit of posthumanism, particularly the work of Barad (2007), Bennett (2010), and Haraway (2008), as well as ideas emerging within the fields of zooarchaeological studies and multi-species ethnography will be introduced, and it is these approaches that will next be examined.

Chapter 3. Approach: finding the White Rabbit[1]

> "… we do not need more data, we need a different starting point." (Harris 2014: 340)

As the previous chapter demonstrated, interpretations of long barrow faunal deposits have commonly understood animals either in functionalist, economically determinist terms as resources for human exploitation, or as symbolic currency within human cosmologies, both approaches underpinned by an anthropocentric world view (Ray and Thomas 2003). These perspectives are historically situated and have remained largely untheorized. Pollard provides two notable exceptions. The first, his 1993 thesis exploring deposition in Neolithic contexts approaches deposits as assemblages often composed of diverse materials that are meaningfully constituted, and interpretations are developed from an expressly postprocessual position (Pollard 1993). The second is his 2008 study, 'Deposition and Material Agency' (Pollard 2008), which includes a brief mention of a cattle bone deposit from Kingston Deverill long barrow; in it, he articulates ideas that engage with concerns emergent in posthumanist discourse. It is the latter approach that informs the framework within which this study is structured.

Reasoned assumptions? The Cartesian catch

> "Absorbed in these illusory images… I felt myself to be, for an unknown period of time, an abstract perceiver of the world." (Borges 2000: 48)

Despite the dearth of explicit theorising in interpretations of long barrow faunal deposits, most are underpinned by a latent Cartesian humanist ontological position, that reifies the human to become the modernist 'Man', and is characterised by an understanding of existence as structured by conceptual oppositions, for example: culture and nature; mind and body; male and female; human and animal, that has in recent times been the focus of sustained critique (Braidotti 2013; Derrida 2008; Foucault 2002a; 2002b; Haraway 1991; Robb and Harris 2013; Sofaer 2006; Wolfe 2010). From this perspective, phenomena are discrete, bounded entities, defined by essential qualities that mark similarities with, and differences from, other phenomena. Cartesian ontology has been, and continues to be, dominant in modern western contexts, appealing to a 'common sense' understanding of existence founded upon (and foundational to) a reassuringly long history of thought that can be traced back to ancient Greek myth via the books of the Old Testament (Derrida 2008: 20-21; Thomas 2004: 4-8).

[1] (Carroll 2009)

Promoting the idea(l) of Man – and here the use of gendered language is both quite deliberate and appropriate for the case in point – as a learned, knowledgeable, agentive, thinking being at the hierarchical apex of worldly existence and second only to a (Christian) God, uniquely possessed of the gift of reason, wielded with the cool, dispassionate distance of objectivity and scientific rigour, the Cartesian position provides its own vindication: to think otherwise would be un'reason'able, an admittance of intellectual and thereby, existential inferiority (cf. Thomas 2004). Identified as lacking the essential reason that defines and sets the human apart from other species – and that provides both its own mode of enquiry and evidential basis – animals are considered objects fit for exploitation, a position that finds support in the writings of Genesis (Derrida 2008: 20-21, 93, 101). The reach of this hierarchical structuring (and biblical accordance) extends further; set in dichotomous opposition against man, woman finds herself cast as that which is not (ideal) (hu)man. Indeed, 'human' is, as such, a remarkably exclusive and divisive category, reserved for an educated western, Christian male subset: a loyal, sycophantic son begotten of the father.

The different manifestations of this dichotomous configuration of experience are thus allied: culture, the realm of the human, of rational thought, knowledge, power and creativity is set against nature, the animal and the wild – all that is uncontrolled and irrational. Mind and interiority, with its concomitant associations with rationality, and therefore both culture and the male is placed in opposition to the body and exteriority, the natural, wild, irrational, the female (Braidotti 2013: 34; Harris and Robb 2013: 16; Harris *et al.* 2013: 174-175 Haraway 1991). In some instances, categories appear to transcend their places in this grand schema, for example, in the case of past (modern) understandings of existential order of the Neolithic. The spheres of the wild and domestic are often associated with those of the male and female respectively, which would seem to stand in contradiction to the correlation between the male and culture and the female with nature. But under the influence of the same Cartesian logic, the Neolithic is traditionally presented as a revolutionary moment in which Man domesticates the wild to become farmers 'just like us' – an origin story/foundation myth of children's stories as much as history (see and compare Childe 1981; Du Garde Peach 1961). The female becomes associated with the domestic following submission to the domesticating influence of Man, who all the while continues his quest to dominate the wild and bring it under his control. The situation is, however, the reverse in the Mesolithic: man is uncivilised, like animal and therefore somehow less than human. As a synthetic model, Cartesian ontology is thus both dogmatic and pervasive, a supremely effective political tool, representing itself as an ontology of truth and natural order in which oppositional categories are presented as obvious, natural archetypes rather than historically situated devices that act to mediate experience, and all the while providing justification for inequality. Although demonstrably the outcome of specific historical processes (see Latour 1993 and Thomas 2004 for much more comprehensive discussion than there is space for here), given its superficial innocuousness, populist appeal and viral potency, it is maybe unsurprising that Cartesian ontology established itself as normative in modern western contexts and has infiltrated archaeological discourse: as the framework upon which academic practice is structured, it generates its own means of defence.

For archaeology, the implications are far reaching. At the coarsest resolution, it arguably underpins the remit of the archaeological project as a whole (although this is not a necessary condition for archaeological practice, as shall be argued throughout, and exemplified through this study); archaeology is the study of the *human* past, whereby all evidence that informs on the human story is of interest, which in itself need not be problematic, but the way in which this has been actioned is. The findings of the antiquarian investigators of the emergent discipline revealed evidence of change through time, which was equated with evolution and conflated with notions of teleological improvement (Thomas 2004: 51-52). Appearing thus accordant with social evolutionary and imperialist rhetoric of the modern west that claimed a moralistic stance, purporting concern for the 'betterment' of humanity whilst promoting the interests of the educated elite, archaeology became implicated in, and its goals shaped by, positions that are underwritten by Cartesian ontology that sets the human – with all that this entails – apart from that which is not, and which continues to exert an (often covert) influence to the present day.

And this influence is endemic. It may be discerned in the division of disciplinary specialisms, be that zooarchaeology, human osteology, landscape archaeology, archaeological theory, a period specialism, or any other archaeological sub-discipline, which infers that existence is partible, divisible into common-sense categories that can be isolated for convenience. It can be seen through the separation of materials for specialist analysis and the generation of reports that rests on the notion of material types as a given, natural and timeless, each possessed of a suite of scientifically demonstrable properties, which when examined, reveal themselves to be the product of particular, historically situated forms of engagement (Conneller 2011; Lucas 2012: 215-257). It is evident in practice wherein human bone and artefacts that evidence human working are preferentially recovered and preserved, with animal bone and unworked materials more frequently overlooked as mundane and discarded (cf. Cooney 2009; Conneller 2011: 22). It is witnessed in the construction of artefact typologies that rest on notions of the development of form and style, the work of the human imagination coupled with socially driven imperatives, impressed upon inert substance as expression of cultural norms and affiliations. It is demonstrated through theoretical approaches that have embraced, or failed to recognise and challenge the Cartesian position. Further, it structures the systems traditionally employed to conceptualise and organise research and output: the nature of the relationship between the researcher and that which forms the focus of research, in which the researcher is located in a position of apparently detached exteriority relative to the subject of interest (Barad 2007; Fowler 2013; Latour 1999); the compartmentalisation of ideas which rely on abstractions and reified categories made manifest in the language employed; and the *form* of language – the use of text, images and the spoken word privilege particular modes of engagement that are deemed appropriate for archaeological and academic practice more broadly.

Posthumanism

> "Do not ask who I am and do not ask me to remain the same." (Foucault 2002a: 19)

Falling under the umbrella descriptor 'posthumanism', works that do recognise and challenge the Cartesian humanist position, that contest anthropocentrism, and recognise the historical specificity of attitudes and approaches that create and seek to maintain notions of human exceptionalism, offer opportunities for developing new understandings of archaeological material. Developing out of the anti-humanism of thinkers such as Derrida, Foucault, Heidegger and Nietzsche, theorists of performativity such as Butler, through the philosophical works of Deleuze and Guattari and Latour, and the writing of Barad, Bennett, Despret, Haraway and others (many of whom would contest identification with a posthumanist position (Wolfe 2010: xi)), posthumanist discourse emerges along and through disciplinary boundaries. It builds on and complicates concepts drawn from a list that includes (but is not limited to) philosophy, science, geography, technology, politics, ethics, animal studies, sociology, feminist studies, archaeology, anthropology, art and architecture to explore notions of boundedness, hybridity, causation and accountability. This (re)active cross-pollination *is* posthumanism: theory and practice are one and the same.

Posthumanism is a position that stands *in relation with* humanism. As a response, it necessarily follows the humanist position (cf. Derrida 2008), but cannot be understood either to be fixed in a temporal relation in the sense that the stances it describes may equally precede the humanist (Wolfe 2010: xv-xvi), or to be located in opposition. The relationship between the two may be understood as reactive and co-constitutive, an ongoing process of mutual challenge and response; 'with' and 'within' are fundamental conditions of situatedness (cf.

Fowler 2013: 56-58). But then I would say that – this study is written from (within) a posthumanist ontological position. Relationality is a key feature of posthumanism. It is predicated upon a relational ontology, which rejects the existence of temporally and spatially discrete, individuated and autonomous entities, but finds rather that entities are assemblages, or groupings, of transient stability, constituted through relationships. These relationships are differentially responsive, in an unending state of action (DeLanda 2006, Deleuze and Guattari 2004, Fowler 2013; Haraway 2008, Lucas 2012). The nature of this action, whether inter- or intra-action, is an important point of difference and will receive further attention later, but refutation of the existence of essences and/or essential qualities that define or predetermine the nature of entities is a recurrent theme[2].

Understood thus, all entities including the human, are assemblages of changing relations, particular in their composition; swarming intensities of linkages between diverse phenomena (both material and immaterial), already assemblages and constituent elements of countless other, multi-scalar assemblages. Pondering the example with which to illustrate this point, I pick up a stone which was on my desk. From a Cartesian humanist perspective, the stone, the desk and I are all autonomous, individual, bounded entities. Each is comprised of different materials with a suite of given properties that behave in broadly predictable ways when subjected to scientific investigative procedures. The stone, for example, is hard, durable, impermeable to liquids and has a particular chemical composition. Its mass and physical dimensions could be measured, should I be so inclined. I alone (in this group) seemingly possess agency to move and manipulate the stone, to subject it to the necessary conditions by which its properties may be observed. I alone (in this group) possess the reason that allows me to adopt a position of exteriority, to be at once subject and object of observation.

But this study emerges from a posthumanist position: *'with' and 'within' are fundamental conditions of situatedness*. At the moment I pick it up, the stone and I become part of an assemblage that also includes the desk, the chair I am sat upon, this document and the studies referenced within, the laptop upon which it is being written, Georges Perec, who describes in detail the items (which include a number of stones) on his work table (2008: 144-147), and Tim Ingold (2007), who has spilled many words ruminating over the relationally emergent properties of just such a stone, and both of whom appear in my thoughts as I sit here. But the assemblage (n.b. the use of the third person does not denote passivity – as part of the assemblage any position is always one of interiority (cf. Fowler 2013: 56-58) and thereby

[2] My understanding of Posthumanism therefore stands at odds with Object Orientated Ontology (OOO) (Harman 2011), which rejects anthropocentrism whilst embracing essences.

active) is not so neatly defined. It simultaneously branches to incorporate and form part of a multitude of assemblages at different scales, its reality emergent through the relations into which it enters and confirmed by the transformative affects it is thereby complicit in eliciting. I will focus on one branch, that of the stone, aware that this inevitably invokes the presence of others.

This particular stone emerges as such through our interaction. We emerge. Its mass transpires through the relationships between my skin, muscles, tendons, nerves, neural network and the relationally constituted structure of the stone, which is formed of crystalline minerals held in an irregular matrix, which in turn are formed through the binding of atoms, themselves formed of particular arrangements of sub-atomic particles, bonded under intense pressure. It is the work of geologists, chemists, biologists and physicists and the apparatus employed therein who have generated these narratives, and the academic institutions, funders and publishers that have been instrumental in the dissemination of their findings, each of these phenomena relationally constituted assemblages themselves. It presences the geographic locale from which the stone came, the work that I was undertaking at the time and associated memories of other events, people and places; it is also assembled absences and known unknowns. Further, it is also the postulated reactions of others as to this choice of myself with stone with desk, with and within study as exemplar – is it apposite or hackneyed, a self-aware cliché? And in imagining the judgement of others, am I revealing an underlying anthropocentrism that understands the coming together of myself and the stone as *my* choice to be judged, action that implicates the stone as passive object and thereby exposes reliance upon Cartesian ontological principles, or does it in fact provide a neat illustration of the relational nature of the Cartesian position – the stone as passive, inert object relationally emergent in assemblage with my activity and humanist discourse, an active passivity?

I believe that the answer to the latter question is yes. Humanism *is* shown to be a relational position, but crucially, one that fails to recognise itself as such. And whilst humanism presents itself as an ontology of absolute truth, posthumanism recognises its contingent status as relational *with* humanism, the two coexistent in responsive articulation. And herein lies one of the most important aspects of posthumanist relational ontology: it allows space for discord and difference to emerge and act. My reading of posthumanism is thus one of broad inclusivity – one of withinness – but it does not follow that I subscribe to all positions therein encompassed. I will next, therefore, return to my introductory paragraph *in* posthumanism, and attend to the issue of identity, examining the terms posthuman, anti-human and transhuman.

Posthumanim/anti-humanism/transhumanism

Posthumanism is paradoxical; inclusive, whilst remaining simultaneously nebulous and contested. Closely allied and therein encompassed are anti-humanism and transhumanism, and it is through examination of these positions that the understanding of posthumanism here presented will be further elucidated. In the simplest terms, anti-humanism is reactionary, a position that stands against humanism, criticising its anthropocentric focus (cf. Thomas 2002: 31-35), and as such is distinct from posthumanism's withness. Transhumanism is concerned with the transgression of boundaries through the interplay between and emergence of bodies with technologies in particular, and has strong associations with the cyborg 'branch' of posthumanism (Wolfe 2010: xiii). This would seem to suggest that anti-humanism is quite different from posthumanism, whilst transhumanism, with its challenges to humanist conceptions of corporeality has much in common with, and indeed could be understood as synonymous with posthumanism. But nothing is so simple.

The writings of Foucault are foundational to my understanding of posthumanism and to my approach, but are described both as anti-human (Paden 1987) and posthuman (Wolfe 2010) (and also as structuralist (Flynn 1994: 40; Gutting 1994: 18), post-structuralist (Flynn 1994: 31; Norris 1994: 161) and postmodern (Flynn 1994: 42-45; Gutting 1994: 6)). How can a single body of work be understood in such apparently conflicting terms? Through a diverse range of studies that examine the history of thought, discourse, power relations and the knowledge bases upon which they are shown to rely, Foucault deconstructs the architecture of modernist thought to explore its ontological underpinnings, and in so doing reveals tensions, inconsistencies and weaknesses that undermine the entire structure. It is in his 1966 thesis, The Order of Things, that this is, arguably, most forcefully and directly articulated:

> "… among all the mutations that have affected the knowledge of things and their order… only one, that which began a century and a half ago and is now perhaps drawing to a close, has made it possible for the figure of man to appear. And that appearance was not the liberation of an age-old anxiety, the transition into luminous consciousness of an age-old concern, the entry into objectivity of something that had long remained trapped within beliefs and philosophies: it was the effect of a change in the fundamental arrangements of knowledge. As the archaeology of our thought easily shows, man is an invention of recent date. And one perhaps nearing its end." (Foucault 2002a: 422)

Foucault's analysis of the ordering principles of experience, including language, classificatory systems, and economic practices, experiential loci that defy constraint within neat disciplinary boundaries, reveals the historical particularity of the knowledge base (or episteme) upon and within which such knowledge is constructed and supported (Foucault 2002a). His critique of modernity emerges as a core theme that develops throughout this volume, and his other work, and is anti-human insofar as it amounts to a sustained attack on the humanist position: it stands against, in confrontation and in judgement. As such, it would seem to take a position distinct from that of posthumanism, which offers a way forward; a means by which to proceed beyond the humanist problematic, building upon the ground cleared by the anti-humanistic deconstructive manoeuvre (Braidotti 2013). But I would argue that Foucault does this also.

Musing on its finitude, Foucault anticipates posthumanism's concern to decentre the modernist human subject *as such* (Foucault 2002a; 2002b; Gutting 1994: 18). This is achieved without recourse to denial of either the role of the human, or the human as a focus of study. His response is both subtle and elegant: through identification of issues emergent in the present that serve as catalysts, he develops heterogeneous approaches that are specific to each problem in question, which shift according to circumstantial demands (Gutting 1994: 3-4; Foucault 2002b: 226-227). Man, the modernist human subject, and the knowledge base with which he makes and is made manifest in emergent discursivity is deconstructed by the very means of his deconstruction: humanist theory and practice are undermined by anti-humanist-thereby-becoming-posthumanist theorypractice (although articulated in terms of a non-position at the time of writing (Foucault 2002b: 226-227)). Foucault tackles his questions from what can be understood as a proto-assemblage based approach, one in which no aspect of existence assumes an *a priori* position of hierarchical dominance (although Foucault's primary focus on language and discourse marks a point of difference with assemblage theory and posthumanism, which are concerned with phenomena in the broadest sense, and has arguably developed a strongly materialist agenda). The historical particularity of the phenomena under investigation is demonstrated through examination of multiple different aspects of experience (as defined by the modernist episteme), aspects that, upon inspection, are shown to be mutually, relationally constitutive and which form the epistemic assemblage itself. His questions and mode of exploration are, as such, inherently cross-disciplinary, simultaneously challenging and demonstrating the historically contingent nature of such classificatory systems. For example, Foucault's decision to reveal the underlying knowledge base of the humanist episteme through examination of, and by tacking between and through, multiple different aspects of experience in The Order of Things (2002a), destabilises the boundaries that regulate humanist thinking by questioning *through the method employed to raise the question asked* the givenness of any one set of classificatory structures that a humanist approach could only ever reinforce. Assemblage based thinking is also anticipated through the diverse approaches adopted by Foucault to address his questions; response is particular to the complex composition and interplay of elements emergent therein.

Foucault deploys what are arguably posthumanist practices to undermine humanist assumptions, resulting in discourse that can also be described as posthumanist (albeit retrospectively – but then Foucault never felt any obligation to be constrained by the standard protocols of linear models of historicity). This raises an important question: does a posthumanist approach necessarily result in a posthumanist outcome, or put another way, is posthumanism self-supporting in the same way that humanism is (cf. Alberti 2016)? Has one problematic ontology of circulating self-reference been meticulously deconstructed only to be replaced by another? Is this a case of post-modernity squared (cf. Fowles 2011: 907)? The answer, in keeping with a posthumanist spirit of relational inclusivity and the rejection of definitive absolutes, is both yes and no. Yes, insofar as the posthumanist decentralisation of the human and embrace of a relational, assemblage based position necessarily reconfigures the nature of practice: call and response are elements within a single assemblage. But also no, in the sense that a posthumanist outcome is not predictable because posthumanism does not claim to uphold a single, inflexible, totalising ontological position as humanism does, and is not subject to and constrained by a fixed suite of rules. It supports diversity, *it allows space for discord and difference to emerge and act*. Indeed, Foucault claims that his discursive practice *creates* difference (2002b: 226-227) – this point is of particular importance and will form the focus of further discussion, with specific reference to archaeological practice. And it is this discursive practice – this theorypractice – its fluid diversity, its transgression of disciplinary boundaries, its decentralisation of the human and embrace of relational, assemblage based engagement, and its provision for difference that necessarily encompasses and is founded upon Foucault's anti-humanist deconstruction of modernist thinking that shapes my understanding of posthumanism and emerges as a key element within the assemblage that is this study.

As a relative position, transhumanism, like anti-humanism is also *with* humanism and posthumanism. But whereas anti-humanism can be understood as a critique of humanism, transhumanism develops the humanist position, tracing its genealogy to the rational humanism of the Enlightenment, with its embrace of scientific empiricism and rejection of religious doctrine (Bostrom 2005: 2). Transhumanism locates itself between humanism and posthumanism, whereby the posthuman condition is envisaged as one in which the human, as a sentient, biological being, is transcended by means of scientific and technological intervention, through prosthesis, genetic engineering, assisted reproduction, immunology, artificial intelligence, nanotechnology and more (Bostrom 2005; Wolfe 2010: xii-xvii). The posthuman is thus the culmination of a process by which the human project achieves perfection through auto-enhancement, and transhumanism the state of posthuman-in-becoming (Garreau 2005: 231-232); to be transhuman is to be active, in process, with movement towards an 'improved' position. But notions of improvement and advance are rooted in and bound up with the modernist notion of Man, and are likewise historically and politically contingent, drawing association between the transhumanist agenda and eugenics, and with political manipulation and control (Haraway 1991: 149-181; Wolfe 2010: xiv). So whilst transhumanism complicates the humanist concept of the human body as a bounded, natural type, it ruptures its own foundations in so doing. In defining his understanding of posthumanism, Wolfe states that "my sense of posthumanism is the *opposite* of transhumanism, and in this light, transhumanism should be seen as an *intensification* of humanism." (Wolfe 2010: xv), and whilst I would rephrase this statement to read 'my sense of posthumanism is *oppositional with* transhumanism', it is a position that I broadly share.

Haraway's cyborg is, however, unlike the transhuman: neither transitory nor transcendent, it is a political device of embodied otherness (Haraway 1991: 149-181). Haraway's cyborg opens a field of possibilities for examination of identities in all their historical and political contingency. From a socialist feminist standpoint, gender identity, racial identity, sexual identity and sociopolitical identity are explored. What Haraway's cyborg does share with the cyborg of transhumanism is an interest in the question of corporeal boundedness, of the potential for technoscientific practice to act as a source of rupture at multiple scales, but Haraway uses it to problematise the humanistic concept 'nature', and the basis of modern western political ideology and power relations, and in this sense has much in common with the discourse of Foucault. And like Foucault, she reveals concern with "the production of universal, totalizing theory" (Haraway 1991: 181), although where this is implicit in Foucault's approach, it is, for Haraway, a statement of intent. Replicated, not reproduced, and despite having no "origin story" (Haraway 1991: 150-151), Haraway's cyborg remains tied to the humanist 'Man', by which its otherness is produced. Yet it refuses in its otherness to cast itself as victim (Haraway 1991: 173-177), and in this sense, does in fact transcend the human – not by means of an (auto)evolutionary manoeuvre, but through a process of identification, refutation, annihilation and reconfiguration of boundaries and ontological stances. Haraway's cyborg is thus more anti-human than transhuman; and ‘Cyborg Alice’ (Haraway’s digital-era protagonist of Wonderland-based exploits) would do more than merely note the new micro/macro dimensional possibilities brought about through boundary transgressive science and technologies (Haraway 1991: 153-154). Responsive with and reconfigured by her experience in such a Wonderland, she would launch a missile back up the rabbit hole to lay waste the realm of Man and ‘natural’ order above: a “world-changing fiction” indeed (Haraway 1991: 149).

And to continue on what I feel is a profitable theme through a return to Wonderland (Carroll 2009; cf. Derrida 2008: 7-8) – though not this time to the figure of Alice, but rather the liminal figure of the White Rabbit – I will summarise my understanding of the posthuman position. The White Rabbit is an intercessor, he moves between worlds, negotiating the different temporalities and ontological possibilities, whilst remaining alert to all. In connecting the two worlds presented in Carroll’s story through Alice, they enter into conversation. But where Carroll’s Alice is confounded by her experiences, and remains steadfast in her attachment to the humanist ontological position (Derrida 2008: 8), and cyborg Alice brings forth Armageddon, the White Rabbit offers the possibility for coexistent discord. My posthumanism follows and acknowledges the humanist position, but recognises its historical and political contingency and its reliance on self-referential, self-sustaining myth. It recognises that adoption of the humanist position restricts the possibilities for insight beyond its own standpoint, and thereby demands a different means of approach – one of inclusivity and withinness that allows difference to emerge and act. But the White Rabbit is not afraid to field objections and set his house in order when something does not accord with his perspective, and he makes his opinion known (Carroll 2009: 31-37). I find the transhumanist vision of the posthuman problematic: I acknowledge, but do not support or find it useful.

As rabbit-human with a pocket watch, cyborg White Rabbit is a boundary transgressive hybrid. He is one of many in Carroll’s story that explore the notion of being as assemblage of composite elements (human playing cards; the mouse’s tale/tail as discourse made corporeal; the Cheshire Cat with its partible voice and grin (Figure 2)), and having found his way into this story, will resume his role as guide a little later, weaving a thread of connection and continuity that will run throughout the remainder of the study. Breach and reconfiguration of boundaries are key to my understanding of posthumanism, as are questions of scale and connection brought about and made possible by technoscientific means (more of which later). The theme of human-animal relations as hybrid identities, hybrid beings ‘becoming together’ is recurrent in Haraway’s work; it is central to my understanding of posthumansim and will too be explored in detail. But first, it is necessary to discuss relationality and assemblage theory, which underpin and give form to my understanding of boundedness, connectivity and hybridity, and inform my engagement with archaeological material. As has been alluded, assemblage theory and relationality are by no means unified positions, but are contested and 'processual'[3], with points of difference and discord. Through critical appraisal of key texts and concepts, points of contention will be teased out and worked through, and the particular position exemplified in and through this study explicated.

Figure 2: The Cheshire Cat with its partible grin. Carroll 2009: 58, illustration by J. Tenniel

[3] Though not, of course, in the sense traditionally meant in archaeology.

Chapter 4. Altogether now[4] (and then): assemblage theory and relationality

> "[C]hange is constant in all materials and as a result… the many heterogeneous assemblages that make up our world are always in motion." (Crellin 2017: 111)

Thinking about archaeological faunal deposits as assemblages, as typological groupings – often comprising elements of larger, mixed assemblages at deposit, site or regional scale – is certainly not new and has much to commend it. But, with a few notable exceptions (see especially Hamilakis and Overton 2013a), engagement and understanding has rarely ventured beyond this point. Separation of substances into material types is a product of a particular way of engaging with the world, in which experience is compartmentalised into discrete zones, resulting in the reification of categories, which, through unreflective practice, become unquestioned, natural types. This has potential to limit understanding by reinforcing latent assumptions about the nature of the material under investigation, whilst producing outcomes that are confined by their terms of analysis. Approaching archaeological animal remains as elements in mixed, often complex deposits of diverse materials provides a means of broadening the potential for understanding the role and meaning of faunal deposits, whilst complementing and developing zooarchaeological analyses.

But conceptualised as straightforward groupings – aggregations of sub-assemblage elements – assemblages remain descriptors, convenient units permitting certain forms of analysis and little more. Assemblage theory, however, clears space for development of the concept of assemblage beyond this narrow perspective: through the work of Deleuze and Guattari (2004) and DeLanda (2006), assemblages become real entities, individual phenomena with ontological weight that are greater than the sum of their parts. This approach provides the opportunity to develop new, more nuanced insights into the role and meaning of faunal deposits in long barrow assemblages and will form the focus of discussion in this chapter. The assemblage theory (or neo-assemblage theory) of Delanda (2006) will first be examined and problematised, before setting out my understanding of it, drawing on the work of Karen Barad and others. Concerned with the nature of scientific questioning and apparatus therein employed, and developed from a perspective within science philosophy, Barad (2007) grapples with one of the key issues that emerges in DeLanda's discourse: the ontological status of the agency of observation. Lucas (2012) and Fowler and Harris (2015) assist examination of the temporal dimension of assemblages, whilst Fowler's (2013) relational realist discourse serves to ground many of the concepts introduced in every sense – developing ideas that address

[4] (The Farm 1991: Track 10)

many of the concerns raised, but also reorienting them for engagement within archaeological practice. The emergent, agentive qualities of assemblages will then be explored, through the writing of political ecologist Jane Bennett (2010) and Chantal Conneller (2011), who introduces an explicitly material-focused perspective.

Readers will notice the reappearance of certain themes that emerged in the previous chapter, and which will continue to reoccur throughout the subsequent text. They may also contend that the structure of this chapter may have equally taken a different form and order, given the multiple possibilities for linkages that present. This I readily acknowledge and welcome: non-linearity is a key characteristic of assemblages (see Deleuze and Guattari's rhizome (2004)), and the relational connections are demonstrative of the value and integrity of the approach.

Assemblage theories …

Ideas that form the assemblage theory of Deleuzian philosophy are succinctly and directly articulated in the work of Manuel DeLanda (and by his own authority). He develops a synthetic model, drawing together and developing the organic, diffuse, and sometimes contradictory Deleuzian concepts to produce a coherent theory of assemblages (DeLanda 2006: 3-4). It is for this reason, and whilst acknowledging the foundational position of Deleuze and Guattari's work, that it is DeLanda's assemblage theory that will here be discussed, and specifically aspects that are pertinent to the present study. Assemblages as explicated in the writings of DeLanda (2006) are substantial gatherings of matter, configurations that form individual wholes with permeable boundaries that permit constituent parts to leave the assemblage to join others, or to be part of multiple assemblages, without necessarily impacting upon the identity of the whole (DeLanda 2006: 10). Assemblages as such have a temporal dimension: they are always in process, events in which the material act of assembly is ongoing (DeLanda 2006: 3, 27-28). It is the 'historical processes' by which assemblages are formed that are here key and confirm the existence of fixed essential properties to be a fallacious notion: the properties of assemblages are emergent through relations (DeLanda 2006: 27-28, 38-39). And for DeLanda, it is the relations of *exteriority* through which the identity of each assemblage is emergent; the potential for properties to emerge is realised through the interaction between different assemblages (DeLanda 2006: 4-5, 10). This focus upon relations of exteriority is foundational to DeLanda's argument: an assemblage is always more than the sum of its parts, so the properties of an assemblage can never be understood as a straightforward aggregate of the properties of the individual constituents. Assemblages are multi-scalar; the individual constituents of one assemblage are therefore each themselves assemblages. Assemblages are always assemblages of assemblages, and are always capable of joining other assemblages to become constituents of larger and/or different agglomerations. Assemblages are affective, since the meeting of two or more assemblages draws forth particular affects in all parties that are capable of causing reaction and difference, thereby changing all of the assemblages implicated in the meeting, and evidencing their ontological status as real entities (Bhaskar 1997, cited by Delanda 2006: 34).

This all has resonance for understanding archaeological material. The assemblage has been productively employed in just such a capacity, notably by Crellin (2017), Fowler and Harris (2015), Harris (2014), and Fowler (2013) whose work will form the focus of discussion later. But the concept of the assemblage, as very briefly illustrated above, first needs developing and unpicking as some ideas are problematic. This in itself does not detract from its utility as an approach, but rather offers opportunities to refine and develop aspects that will be both useful and important for exploring the questions posed in the current study.

And assemblage queries …

Each of the assertions regarding DeLanda's assemblage theory detailed above will next be addressed (and are presented as direct quotes from the preceding section in italics[5]) and where necessary, modified.

Assemblages are substantial gatherings of matter, configurations that form individual wholes.

My understanding of assemblages concurs with this statement, but whereas for DeLanda language and genes are special entities that play a codifying role in assemblages (DeLanda 2006: 3, 15), I understand all entities to exist on an ontological par with more substantial phenomena (cf. Fowler 2013: 48). Language, in whatever form it may take, is therefore every bit as affective as a physical material and may play a catalytic role in ongoing assembly. This is of particular significance for engaging with and understanding archaeological material, as it locates discourse and discussion at every stage of practice firmly within the framework for consideration and analysis. The archaeological project is a cumulative exercise, building upon and developing knowledge and experience, so each intervention is an affective act of assembly and may include, for example, artefacts, contexts, people, words, writing and drawing. And each intervention is particular, which has resonance for the next point of discussion.

[5] These also appear in Chapter 5

Assemblages have permeable boundaries that permit constituent parts to leave the assemblage to join others, or to be part of multiple assemblages, without necessarily impacting upon the identity of the whole (DeLanda 2006: 10).

The penetrability of boundaries and potential for mobility in constituents of assemblages is of central importance for the current study; it permits examination of material as part of multiple different assemblages and makes possible a more developed and alternative understanding of the faunal remains in the long barrow deposits. Deleuze and Guattari (2004) and DeLanda (2006) label the processes of assemblage creation and dispersal 'territorialisation' and 'deterritorialisation' respectively. From a relational perspective, the possibility of a constituent part leaving an assemblage is troublesome: detachment remains a relationship – albeit negative – which problematises the notion of partibility. Indeed, Deleuze and Guattari (2004: 8-9) state:

> "There is a rupture in the rhizome whenever segmentary lines explode into a line of flight, but the line of flight is part of the rhizome. These lines always tie back to one another."

Decontextualized artefacts are an instructive case in point: many of the assemblages of which they are a part may not be traceable in the present. But do these relationships still exist if we cannot detect them? The answer has to be yes, as this is a realist ontology (DeLanda 2006: 1) – and not least, in the form of an absence. Decontextualised artefacts emerge as such through their relations, both positive and negative, and are differentially articulate: they tell stories of presences and absences, and at root, archaeology is about exploring and giving shape to what is absent – the past – and constructing our present(s) (cf. Fowles 2010).

The next point for discussion concerns the identity of the assemblage. Whilst the constant changes to the composition of an assemblage in the form of introductions/additions (territorialisation) and departures (deterritorialisation) *may* not affect the identity of the whole (but see Deleuze and Guattari 2004: 22), which is defined in terms of relations of exteriority (more of which to follow), it does mean that the assemblage is changed. The reason for this is that the constituents of any assemblage are themselves assemblages and may be part of multiple other assemblages. The relations that they emerge from are therefore particular and infinitely variable (Fowler 2013: 48). The maintenance of the assemblage and its identity are dependent upon the presence of critical territorialising elements (which are multiple and relationally variant) without which, the assemblage would lose its cohesive force, disperse, and lose its identity. This issue is identified and explored by Karen Barad (2007). In her study, she explicates 'agential realism' and problematises the nature of phenomena, with a specific focus on scientific enquiry and the nature, role and boundedness of apparatus, rooted in a relational understanding of existence and the science philosophy of pioneer of quantum theory, Niels Bohr. Her presentation of apparatus as *particular* configurations of materials and processes that extend beyond traditional understandings to include subjects, objects, agencies of observation, which may or may not be human, places emphasis upon the relational nature of materials and phenomena. To explicate this point, I will return to the example of the stone on my desk introduced in the previous chapter:

At the moment I pick it up, the stone and I become part of an assemblage that also includes the desk, the chair I am sat upon, this document and the studies referenced within, the laptop upon which it is being written, Georges Perec, who describes in detail the items (which include a number of stones) on his work table (2008: 144-147), and Tim Ingold (2007), who has spilled many words ruminating over the relationally emergent properties of just such a stone, and both of whom appear in my thoughts as I sit here.

The desk, for example, could be replaced by another without necessarily changing the overall identity of the assemblage, but it would be different insofar as the desk is particular, it is itself an assemblage with its own history. The desk is of such a size that it facilitates not only reading, and typing on a computer, but also the gathering and curation of large quantities of *stuff*, a quality that emerges through the relationships between me, the desk and the numerous other relations here implicated; a smaller desk – or indeed a different person – *may* not permit the development of such accretions. Particular relationships create the possibility for some outcomes to present, whilst prohibiting others (Barad 2007), a key point in Barad's thesis. This has important implications for engagement with archaeological material: it would seem to locate the emergence of archaeological assemblages firmly in an ever-changing present, raising the question of whether archaeological practice is able to address questions about the past at all (cf. Holbraad 2009). I would contend that archaeological assemblages are indeed phenomena unfolding in an ongoing present, in accordance with the relational, agential realist philosophy of Barad (2007), but that some of the relationships of which they are constituted are articulate of other assemblages, other relationships no longer directly perceptible within the field of possibilities provisioned by the assemblage of the present, ideas that are developed in the work of Lucas (2012), Fowler (2013) and Fowler and Harris (2015) and to which I will return later.

Barad's argument is robustly defended and convincing up to a point. However, her contention that objective observation is possible – and without this possibility, the validity of scientific enquiry as traditionally defined is undermined – rests upon her notion of agential separability within phenomena, and an assumed universality of perception and experience which, given her dependence upon relational ontology is unsustainable. The particularity of all phenomena, which can also be understood as assemblages, the transience of their coming together and their configuration the result of unending networks of relations also particular in their configurations precludes any possibility of objectivity. For archaeological investigation, the particularity of engagement, far from being problematic, provides an opportunity: it has long been recognised that the past is politically contingent, and that archaeology is inherently product and productive of an ever-changing past-present, but consideration of the existence of this particularity in the past as well as the present enables new insights, with possibilities for multiple interpretations to coexist and compete (Harris 2014).

Fowler (2013) does just this. He demonstrates the potential of a relational approach that embraces particularity for consideration of archaeological material in a volume exploring Bronze Age mortuary practices. He constructs a persuasive argument for an approach he brands 'relational realism', which rejects the separation of reality from its interpretation thereof (Fowler 2013: 1-2), so would seem to have much in common with the agential realism of Barad. But crucially – and unlike Barad – he does not insist upon objectivity. Fowler's relational approach finds that each engagement makes a real difference to the past and present; it "transforms what there really is in the world." (Fowler 2013: 2). Faunal deposits in long barrows will therefore give rise to a range of interpretations through which different relationships, actions and interests both past and present emerge, and approach to their study will be informed by the possibilities it can provide for ongoing reinterpretation.

But this emphasis on particularity and subjectivity of perception would also, and somewhat troublingly, seem resonant with a relativist position in which all perspectives are understood to be equally valid. There are two points to be made here. Firstly, real, material entities are the focus of engagement; there is a common basis for perception in the form of the material focus, so there exists the possibility of meaningful communication and recognition of, if not shared, perspectives. Secondly, the configurations of assemblages are particular, allowing some possibilities for emergence, whilst precluding others (Barad 2007; DeLanda 2006: 29). Anything is therefore not possible: assemblage theory is not and does not support a relativist position.

Assemblages have a temporal dimension: they are always in process.

Assemblages are transient, in a state of continuous change to become new assemblages. As such, can archaeologists reasonably attempt to understand aspects of past worlds if the material they base their analyses upon is thus unstable? One aspect of this has already been touched upon from the perspective of particularity, but the question warrants more detailed discussion as it is crucial for thinking through and understanding archaeological material as assemblages.

In a volume investigating the nature of the archaeological record, Lucas (2012: 193-214) examines in detail the nature of archaeological assemblages, and notes their inherent instability: he presents assemblages as events in an ongoing process of connection and dispersal. His examination of archaeological entities, viewed through the prism of formation theory, leads him to develop a theory of residuality (Lucas 2012: 204-214). This has much in common with the allied processes of territorialisation and deterritorialisation of Deleuze and Guattari (2004) and DeLanda (2006), but also draws on memory and absence, notably the work of Laurent Olivier, with his focus upon the role and importance of absence for understanding the past (Lucas 2012: 207, citing Olivier 2008: 274), and an understanding of objects/assemblages as processes, drawing on the work of Whitehead (Lucas 2012: 184-188). Although inevitably fragmentary and fractional, Lucas' archaeological assemblages are found to retain traces of past 'organisation' through processes of stabilisation (Lucas 2012: 210-212), which enable archaeologists to access and comment upon the past. Indeed, Lucas' emphasis on the physicality of change that assemblages are constantly undergoing, not least in the form of taphonomic processes – particularly pertinent to the present study as an established aspect of standard zooarchaeological practice – is of importance not only for archaeological intervention by enabling access to relational networks and the construction of biographies, but also more fundamentally, allowing us to identify and create 'the past' in the first place (Fowler and Harris 2015: 136).

The 'processual' qualities of assemblages are explored by Fowler and Harris (2015), who too develop an understanding of assemblage theory based upon Deleuze and Guattari (2004) and DeLanda (2006) (albeit implicitly), which they build upon with ideas drawn from Barad in particular. Fowler and Harris (2015) also dispute the existence of essences and argue for stabilisation in the form of 'enduring relations'. They contemplate the utility and implications of considering archaeological entities as bounded, ring-fenced objects, 'things-in-themselves' constituted by their enduring relations, as complementary to a purely relational approach that stresses the constant mobility of assemblages. This deployment of boundaries references Latour's concept of the 'black box' (Fowler and Harris 2015: 143), but also recalls Barad's 'agential cut' (Barad 2007). This is not a retreat to a safe, familiar Cartesian position in which objects with essential qualities are effectively rebranded; rather, it is a device born of relations and creates the conditions for new relations and new possibilities to emerge. I find the concept of enduring relations helpful for approaching archaeological material, but notions of boundedness, whilst useful, are more problematic: the distinction (or boundary, if you will) between creating a black box and reification is decidedly fuzzy, so must be treated with care and caution. I understand assemblages and their constituent parts to be in a state of perpetual motion (contra Fowler 2013: 63), enduring relations emerging due to differing temporalities of the constituent parts of assemblages. They are transient but differentially so; relations that endure are those that have a slower or different tempo of mobility than those that appear absent (Bennett 2010: 58).

The previous point aside, my understanding of assemblages has much in common with the relational realist position established by Fowler (2013), with its emphasis on assemblages as relationally emergent, as constitutive of all entities, as active and changing but with potential for aspects or residues (cf. Lucas 2012) of past relations to endure through multiple assemblages (Fowler 2013: 62-63). But one of the most critical aspects of Fowler's position – and indeed the position established in Fowler and Harris (2015) – for the present study, is the stance taken with regard to the locale of relational emergence.

For DeLanda (2006: 4-5, 10), it is the relations of exteriority through which the identity of each assemblage is emergent; the potential for properties to emerge is realised through the interaction between different assemblages.

DeLanda (2006: 11, citing Deleuze 1991: 98) stresses the importance of understanding the emergent properties of assemblages to be sited in relations of *exteriority*, a pivotal position, and vital if claims that the emergent properties of an assemblage amount to more than the sum of its parts are to be upheld. DeLanda illustrates this through discussion of Deleuze and Guattari's example of the symbiotic relationship between the wasp and the orchid (DeLanda 2006: 11-12, citing Deleuze and Guattari 2004: 9). He presents the wasp and orchid as "self-subsistent components" (DeLanda 2006: 11) entering into relations, and it is the relations of exteriority emergent of each that DeLanda prioritises. Whilst I understand DeLanda's intent – to construct a robust theoretical basis by which the identity and affective power of assemblages as amounting to more than the sum of their parts may be upheld and defended –

there is a fundamental problem with his assertion. As Fowler (2013: 56-58) contends, as soon as an assemblage enters into relations with another assemblage, the two form a larger assemblage; the properties drawn forth are concomitant with the act of combination. Put another way, relations emerge in the ongoing act of fusion, in the coming together of the heterogeneous elements to form a new assemblage. Relations can only therefore emerge from a position within the new assemblage and cannot precede it, as relations of exteriority would seem to suggest: relations can *never* be exterior. Indeed, Deleuze and Guattari state:

> "In short, we think that one cannot write sufficiently in the name of an outside. The outside has no image, no signification, no subjectivity." (Deleuze and Guattari 2004: 24)

A more coherent rendering of assemblage formation is offered by Fowler (2013), who describes assemblages as being in a constant state of growth, constituted by and changing older assemblages (Fowler 2013: 56). He stresses the interior situatedness of relations, but asserts the emergence of localised intensities within the assemblage (Fowler 2013: 56). In my understanding of assemblages, these intensities are mobile. They manifest as prominent nodes, concentrations of particular relations, and facilitate engagement of the kind being undertaken in the present study. But given the expansiveness and interiority of the relations that constitute assemblages, it would be impossible to explore every intensity, every emergent path. So how is it possible to delimit the bounds of assemblages (or apparatuses, in the case of Barad) for exploration? Both Fowler and Barad address this question and find resolution in the form of Barad's 'agential cuts' (Barad 2007: 172-175; Fowler 2013: 58), which enable objective observation of phenomena from a perspective described as "exteriority-within-phenomena" (Barad 2007: 175). For Barad, it is the apparatus that perform this act of separation (Barad 2007: 175), but given that "apparatuses are not bounded objects or structures; they are open ended practices. The reconfiguration of the world continues without end." (Barad 2007: 170), it remains unclear how a boundary – not least one that permits objective observation – is drawn. Once again, Fowler offers greater clarity. He states:

> "Perhaps ultimately what is at stake is where we identify the limits of one assemblage and its border with another – *but we cannot do that in advance, it has to emerge from the entangled process of investigation itself.*" (Fowler 2013: 58, original emphasis)

It is through practice within the assemblage that the borders of intensities emerge. The particularity of relational assemblages dictates that these borders will shift as the assemblage changes, the implication being that all investigations will inevitably be individuated.

This study is therefore personal: I am part of the assemblage(s) under investigation, and whilst there are many relations that endure in the form of identities, for example, the archaeological sites and the animal bones, the boundaries drawn emerge from the relationships that I pursue – and these are inevitably and explicitly personal choices. Is this wrong? Does this leave this study open for criticism on the basis that it is a personal perspective and therefore of limited value? My response is an emphatic no: I contend that all such studies are intensely personal but that under the rubric of modern western scientific practice, the ideal of impartiality and objectivity precludes the recognition and articulation of such. Engagement within the phenomena being investigated demands response to emergent relations *as* they unfold, which may have unpredictable outcomes, and this, for me, defines what meaningful research is. Two studies that demonstrate the potential of this approach will shortly be discussed, forming the penultimate section of this chapter. Both explore materiality, relations and boundedness in useful ways that help give shape to my understanding of assemblage theory and inform the approach taken in the present study. Both depend upon the multi-scalar nature of assemblages to develop their arguments.

Assemblages are multi-scalar; the individual constituents of one assemblage are therefore each themselves assemblages.

The multi-scalar nature of assemblages is a core precept of DeLanda's argument (DeLanda 2006). Assemblages are constituted of elements, each of which is also an assemblage. As argued above, the meeting of two assemblages forms a new assemblage, with different properties and capacities to affect and be affected (more of which below). Assemblages are thereby fluid and reactive; ready to become constituents of larger groups and of more than one simultaneously. This nested quality is important as it enables analyses to move across and to incorporate multiple scales, which offers great potential for addressing archaeological questions that are often inherently multi-scalar (Crellin 2017: 113; Harris 2017). It permits exploration of a multiplicity of different relations that create archaeological evidence as such, so that the assemblages in which a (hypothetical) Neolithic polished stone axe found itself, for example, can be examined as a deposit in a pit; as a textured surface that was created through its contact with a polissoir and was complicit in the performance of lithic-human identities; as part of a dispersed network of petrographically similar examples found at locations across the British Isles; or as an apotropaic device to prevent lightning from striking a cottage. The axe is simultaneously part of all of these assemblages that operate at different geographic and temporal scales, and as an assemblage forming parts of other assemblages, these scales can enter meaningfully into dialogue.

Assemblages are affective

Drawing on and developing the ideas of Barad (2007) as well as Deleuze and Guattari (1987, cited by Bennett 2010), Bennett (2010) approaches her examination of materials and assemblages with a focus on politics, accountability and the ethical implications of contemporary phenomena through their relational constitution: in short, their affective potential. She describes assemblages as transient, composite entities, comprised of vibrant, agentive materials with causative power. In her vibrant materialist reading of the North American electrical grid, she describes:

> "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 – to name just some of the actants" (Bennett 2010: 25).

This thronging assemblage of materials, ideas and intentions reaches out to encompass seemingly diverse phenomena and offers a vision of the variety and dynamism of relations that may be implicated through attendance to archaeological materials – although many would seem to be inaccessible. But in her volume 'An Archaeology of Materials', Chantal Conneller (2011) demonstrates the potential of just such an approach, showing how scrutiny and careful reflection upon archaeological materials, approached as assemblages of relations, may be ontologically articulate, revealing aspects of past lives that may not at first appear obvious:

> "This is not simply a question of extending a biographical approach (Kopytoff 1986) to an animal artefact back to encompass the life of an animal. Things do not just move through different contexts, as if cultural context were something added on to an essential material presence. Rather I suggest that things drag the effects of past encounters with them and present opportunities for future action." (Conneller 2011: 54)

Conneller traces relations that emerge from the archaeological materials under investigation to provide new insight. In her consideration of artefacts formed from animal body parts, she contrasts Mesolithic human-deer relations manifest in the barbed points and antler frontlets from the British site of Star Carr, arguing persuasively that they retain deer-like qualities, with Aurignacian mammoth ivory beads, which are worked to imitate the polish, gloss and form of shells and animal teeth, with apparent disregard for its mechanical properties (Conneller 2011: 40-75). The material qualities drawn forth emphasise the significance of some relations and downplay others, revealing the importance and intimate character of human-deer relations as shared, interwoven lives in the Mesolithic of Star Carr, and suggesting that sub-fossil mammoth ivory may have been part of a substantial assemblage in which the animal origin of this material was less significant than its potential for achieving a specific form and surface texture. Conneller's work enables the emergence of aspects of human-animal relationships not previously accessed and provides a useful exemplar. Her approach informs the current study, which recognises the value and potential of such a new materialist focus for examination and developing new understandings of the faunal remains in long barrows, and that moves beyond considering faunal remains primarily as evidence of nutritional choices and patterns of exploitation. But before setting out the means by which this approach will be actioned, it is first necessary to return to Bennett's electrical grid, for in it she includes two elements that highlight issues that are of particular importance for the present study: (economic) theory; and sweat.

I will first attend to theory. The theoretical position within which this study is undertaken is part of the assemblage that is the study; it is an actant with affects. This raises a troubling question to which I have alluded earlier: will adoption of a posthumanist-relational assemblage-materialist position for investigation of archaeological material inevitably result in the emergence of a posthumanist-relational assemblage-materialist past? The answer must be yes, insofar as the past being (re)created is part of the study assemblage, so is inseparable from the position within which it emerges. But also no. As has been previously asserted, this is a posthumanist position that allows difference to emerge, so the past it creates is not a given. The posthumanist-relational assemblage-materialist position is emergent of engagement with the archaeological material as much as it is deployed in this engagement. It is a happening creative of new pasts-in-the-present and new futures (Conneller 2011: 54; Fowler 2013: 57): this approach changes our present understanding of the Neolithic faunal assemblages that form the focus of this study, and creates new possibilities for future engagement.

Now, let's focus for a moment on sweat. Sweat is a boundary transgressive substance that problematises notions of bodily borders, of inside and outside. Triggered by neural responses to heat and formed in the sweat glands, its intra-action with bacteria lying on the surface of the skin produces sensory affects whilst simultaneously cooling the organs within the skin's enveloping form. Sweat, like all of Bennett's assemblages, queries traditional notions of boundaries, not least between human and non-human. Her exploration of the ontological status of ingested material is a case in point (Bennett 2010: 39-51). Through discussion of the affective potential of omega-3 fatty acids derived from fish in the diet to regulate mood, she questions causal mechanisms and traditional readings of accountability (Bennett 2010: 40-43).

This also raises the question of hybridity, and the extent to which the human can be understood as a distinct species, issues that were touched upon in the previous chapter. This thread will be picked up again and discussed further in the next chapter in which the human-animal relations that sit at the core of this study are brought to the fore, with the help of Donna Haraway, philosopher Jaques Derrida and ethnographer Natasha Fijn.

Assembled thoughts

In this study, faunal remains are approached as material elements of relationally constituted assemblages of the ongoing present that permit past relations to be mapped and explored. One of these takes the form of typological assemblages, the stuff of standard zooarchaeological analyses that traditionally look for evidence of exploitation. But following Barad (2007), this holds potential to limit the field of possibilities for understanding to the terms of analysis: that of modern assumptions as to the (exploitative) nature of human-animal relationships. It therefore becomes necessary to do more. Understood as mobile and with permeable boundaries, assemblages allow their components that are also assemblages to occupy multiple different assemblages simultaneously, each different assemblage articulate of different relationships. This means that the investigation of the same archaeological material from multiple positions offers the possibility of accessing different aspects of the past and past relationships. Conneller's focus on materials provides another means of engaging with faunal material in long barrow assemblages. The emphasis that she places on context is key, drawing in other materials, other practices, other places (Conneller 2011).

Context also forms a point of discussion for Lucas (Lucas 2012: 193-198). He contemplates the productive nature of archaeological assemblages (Lucas 2012: 193-214) and through consideration of both depositional and typological assemblages, argues persuasively for their complementarity (Lucas 2012: 193-198). Whilst examination of archaeological material is undertaken at different scales, whether, for example, regional, temporal, or typological, it is excavation from depositional contexts that serve as the primary interface between past and present, and it is these unique, fragile arrangements, the assemblage of enduring relations, that are disassembled and reconfigured in the act of engagement through excavation. This point is powerfully demonstrated by Fowler and Harris (2015) in their re-evaluation of West Kennet long barrow. The site and its constituent material elements are discussed both in terms of spatial association and artefact and site type, and the different relationships of which these are manifest are drawn out (Fowler and Harris 2015).

The present study employs a combination of these approaches, thereby extending the field of possibilities for understanding. Animal remains are examined as typological assemblages using standard zooarchaeological techniques, permitting a mode of analysis in which particular forms of human-animal relations may be studied, whilst attendance to remains from a new materialist perspective opens up a web of multi-scalar, multi-directional relations that hold great potential for the development of new insight. Finally, consideration of their potentially meaningful associations within depositional assemblages enables investigation of relationships of a different nature also at a range of scales. Given the nature and complexity of the sites that form the focus of study, it is necessary to employ modes of analysis that will enable meaningful engagement with the depositional assemblages, but that are no less theory laden, and this will be addressed in Chapter 6. But next, the theme of boundedness will be further examined through concentrated focus on works exploring human-animal relationships.

Chapter 5. Human animals, non-human animals and hybridity

the robin and the worm

a robin said to an
angleworm as he ate him
i am sorry but a bird
has to live somehow the
worm being slow witted could
not gather his dissent into a wise crack
and retort he was
effectually swallowed …
he felt the beginnings
of a gradual change
invading him
some new and disintegrating influence
was stealing along him …
and he did not have
the mental stamina
of a Jonah to resist the
insidious
process of assimilation …
demons and fishhooks
he exclaimed
I am losing my personal
identity as a worm
my individuality
is melting away from me
odds craw I am becoming
part and parcel of
this bloody robin …
(Marquis 1931: 71-72)

Questions of boundedness and bodily distinction direct the focus of discussion in this chapter. Notions of separate, autonomous animal and human bodies typified by the modernist, Cartesian ontology that valorises individual (human) bodies and sets them in opposition against animal bodies whilst driving a conceptual wedge between mind and matter have been identified as problematic, but nonetheless underwrite many accounts of human-animal interaction. Issues concomitant with Cartesian ontology and pertinent to engagement with questions focused expressly upon human/non-human relationships will be addressed, before consideration of the opportunities afforded by exploration of the responsive, (re)active, social nature of engagement proposed by Derrida (2008), Despret (2004), Haraway (2008), Ingold (2000) and others, and their potential value for rethinking long barrow faunal deposits. The impact of the adoption of such an approach will be demonstrated in a contemporary context through a review of the ethnographic work of Fijn (2011), and the implications of ideas concerning the ontological status of animal bodies as food – already introduced through the work of Bennett (2010) – will be worked through. Analysis of Russell's 'Social Zooarchaeology' (2012), Sykes' 'Beastly Questions' (2014) and Hamilakis and Overton's 'A manifesto for a social zooarchaeology' (2013a) – a rallying call to action – signals a return to consideration of material remains that carry with them the enduring relations of past assemblages, and confirms their potential as an approach for understanding zooarchaeological material. Implicit in all examples cited is a concern with the nature of reality, agency, boundedness and the entangled emergence of relations discussed in the previous chapter. Finally, drawing upon the ideas examined, the approach taken in this study will be further defined.

Units of capital

One of the core issues identified in zooarchaeological reports is that animals have traditionally been viewed as inert resources, objects for exploitation by human subjects (Russell 2012: 7). Reflecting attitudes expressive of societal norms in which they were written, characterised by the industrialisation of food production that has seen individual animals transformed into units of capital gain, 'domestic' animal species have largely been denied agency (Russell 2012). The Cartesian human/non-human dichotomy is, again, central: industrialisation has acted as a catalyst for its own growth, the intensification in exploitation of animal 'resources' witnessed in the second half of the 20th century in particular, is dependent upon this ontological distance to ensure the commercial appeal of its products and to avoid the risk of arousing feelings of guilt and revulsion in consumers living in a period dominated by conflicts that have sought to justify the industrialised slaughter of both human and animal bodies (Clutton Brock 2012: 135-

136; Derrida 2008: 24-27; Haraway 2008: 335 n.19; Russell 2012: 1; Whatmore 2002: 163-164; Wolch and Emel 1998: xi).

This anthropocentric perspective has become crystallised within the structure of zooarchaeological practice, and continues to exert its influence. Standard analytical procedures seek evidence for the human exploitation of animal bodies, as demonstrated in English Heritage's 'industry standard' publication 'Animal Bones and Archaeology. Guidelines for Best Practice' (Baker and Worley 2014). In it, Maltby states:

> "A key goal in animal bones studies is to understand how humans exploited animal carcasses, including the use of primary and derived products (eg. skin, fur, meat, marrow, grease, sinews, glue, bone, horn and antler)" (Maltby 2014: 36)

The standard suite of zooarchaeological analyses typically deployed reaffirm this position, whether explicitly or implicitly. Identification of taxa present in a faunal assemblage usually follows the separation of animal from human bone for analysis by specialists, marking human remains as different from all other species from the outset. Not only subject to greater ethical regulation (see British Association of Biological Anthropology and Osteoarchaeology 2010), the standards established for the recording and analysis of human bone are distinct from those deployed in the study of faunal assemblages (see Brickley and McKinley 2004). For example, the format of recording sheets for human remains assume the potential presence of a coherent skeleton, with remains that can be associated with an individual, whereas faunal recording tends to focus on taxonomic and body part representation at the level of the specimen, with a view to identify taxonomic abundance, exploitation, and modes of carcass processing. Sound reasoning certainly underpins this difference when, for example, approaching material of recent date for which the nature of human-animal relationships are known. However, the treatment of much of the Neolithic osseous material that forms the focus of this study does not show a clear distinction between human and animal remains, thereby highlighting the potential for standard osteological methodological divisions to inhibit understanding.

Quantification of faunal remains in the form of NSP (number of specimens), and MNI (minimum number of individuals) is utilised to characterise the osseous assemblage. From NSP and MNI counts, the nature and intensity of activity at any given site may be inferred, with different ratios of taxa interpreted as indicative of particular modes of exploitation. Degree of fragmentation is used to inform on the taphonomic history of the assemblage, and may be used to identify the intensity of animal carcass processing by humans. Mortality profiles and sex data are captured for their potential to further inform on modes of exploitation, at the level of the 'herd'; high numbers of young male cattle alongside older females, for example, is suggestive of dairying. Metric data are employed to assist identification, where distinct size difference is evident between domestic and wild taxa, to determine sex in species that exhibit sexual dimorphism, and for identification of selective breeding practices instigated by humans. Self-evidently, identification of butchery marks on bones permits comment on details of human diet, carcass processing, economy, cultural and religious practices. Through combination, taxonomic, body part, mortality profile, sex and butchery data are used to determine whether animals were raised, slaughtered and consumed on site, or whether their remains arrived on site as butchered joints of meat. Evidence for burning is used to identify cooking for human consumption, but may indicate cremation. Gnawing is recorded as a means of examining treatment of animal body parts after death, being indicative of exposure to scavengers, whilst identification of pathology provides a basis for inferring human care of animals (or lack thereof) as well as the presence of disease (Thomas and Worley 2014: 34-35). Archaeological analysis of worked bone amplifies the anthropocentric division of human from animal. Typically separated from faunal remains assigned for zooarchaeological analysis, it seemingly performs an ontological shift within the Cartesian terms that structure its analysis, from nature to culture, in the process of becoming 'artefact'. That each of these analyses seek evidence for human action through the modification of animal remains need not be problematic; that the animals find themselves cast as inert resources, lacking agency and the potential to affect is.

The question of animal(s)/the animal/animalkind/animality has been addressed through the philosophical works of Descartes, Kant, Heidegger, Lacan and Levinas but has too (and rather obviously in the case of Descartes) been subject to the influence of Cartesian thinking (Derrida 2008: 13-14). It is in the work of Derrida (2008) that this ontological schism between human and non-human is examined, its roots in Greek myth and Genesis identified (Derrida 2008: 20-21) and its shortcomings exposed.

Cats!

Serving as a basis upon which he constructed (a ten-hour long) conference paper delivered at Cerisy, northern France in 1997 (Mallet 2008: ix-xiii), Derrida recounted a paradoxically brief, but – for Derrida, at least – troubling encounter between himself and his very real 'little cat' (Derrida 2008: 6). The confrontation occurred in his bedroom; the cat's gaze met with Derrida's nakedness, eliciting in Derrida feelings of embarrassment and shame, and prompting reflection. Drawing upon his experience of this particular encounter, Derrida argues for the capacity of animals to both respond and to elicit response from a responsible other, countering Descartes' proposition that animals are only capable of mechanistic reaction (Derrida 2008; Veitch 1901: 188-190). This perspective offers potential for reimagining Cartesian notions of human-animal interaction and those associated with the adoption and process of domestication in particular. Working in the field of animal behaviour, Price (2002: 22-24) considers the importance of a suite of behavioural traits associated with domestic vertebrates described as 'pre-adaptations', behaviours that make non-human species suited to domestication, which, with apologies to Derrida, are largely inapplicable to the cat (Price 2002: 24). These include behaviours that can be characterised by a propensity or willingness to engage with humans (Price 2002: 23, Table 4.1, modified from Hale 1969) but with a focus on animal husbandry, they are presented in terms of observable actions and responses; exploitation and management of animals by humans are central concerns of Price's study. Recognition that such behavioural traits allow not only unidirectional exploitation, but enable engagements that are mutually beneficial have led some to consider the potential for animal agency, rooted in these behaviours, to have played a central role in the development of domesticatory relationships of some, if not all domesticated species (Clark 2007: 60-62; Coppinger and Smith 1983; Grandin and Deesing 2014: 2), a process that is ongoing.

Joining the social club

Following Derrida, we move from action to interaction, but this manoeuvre does not trouble standard notions of boundedness, as has been augured. It is therefore necessary to aggravate a shift in perspective through invocation of the social entity. Interaction is a social encounter between parties, all of whom are participants in their coming together – whether intentionally or unintentionally, willingly or otherwise – and as Derrida demonstrates, to be human is not a condition of play. Conjoined within a single assemblage, the reactionary intercourse that unfolds is multi-causal, divisible and attributable to neither party, but all are changed – albeit to different degrees.

The social relationships that both constitute and are emergent of such human-animal interaction are the focus of a growing body of recent scholarship (Armstrong Oma 2010; Birke *et al.* 2004; Despret 2004; Fijn 2011; Haraway 2008; Ingold 2000: 61-76; Orton 2010; Russell 2007). Although the product of work in the discipline of anthropology, Ingold's discourse has been particularly influential in archaeology (Armstrong Oma 2010: 175) and has impacted directly upon interpretation of animal remains in long barrows (for example, Field 2006: 125).

Recognising the agency of animals, Ingold argues that the transition from hunting to herding can be characterised in terms of a change in the nature of relations between humans and animals, from trust, typified by the hunter-prey relationship, to domination – the domesticatory relationship (Ingold 2000: 69-75). Ingold's study is useful insofar as it places emphasis upon the social nature of engagement, one that is enmeshed in and is inseparable from all aspects of existence, but interpretation of the agential relationships as two discrete modes of interaction is simplistic and limiting (Armstrong Oma 2010: 175-176). In a critique of Ingold's model, Armstrong Oma recognises the complexity of human-animal relationships involved in both hunting *and* pastoralism and asserts that a more profitable approach would be to think through relations as a 'social contract' (Armstrong Oma 2010: 177-179, citing Larrère and Larrère 2000 and Lund *et al.* 2004), and demonstrates that the terms of Ingold's hypothesis could equally be inverted (Armstrong Oma 2010: 176-177). Armstrong Oma (2010: 176-177, and quoting Knight 2005: 4-5) finds that the trust Ingold ascribes to hunter-prey interaction, based on ethnographic observation, describes a specific relationship between human individuals and animal species as types, rather than between individuals of different species, a relationship demanded by and intrinsic to herding.

Both Ingold and Armstrong Oma offer interesting and valid perspectives, rooted in shared recognition of animal agency and the existence of social relationships between humans and animals. Differences in scales of analysis are here key, whether in terms of numbers of individuals involved in relationships, or the temporal and geographic resolution at which change is being considered: domination is, arguably, a characteristic of human-animal relationships engendered in western industrialised farming (Derrida 2008: 24-27), and contrasts markedly with interactions observed in groups subsisting on hunting (Ingold 2000: 69-72). Conversely, small scale pastoralism can be understood as based on relations founded upon trust and mutual nurture (Armstrong Oma 2010: 177, citing Knight 2005: 5; Fijn 2011). Also a factor of scale, generalisation can act to mask the realities and complexities of often simultaneously contradictory relationships. But it is Armstrong Oma's vision of a social contract that offers scope for driving incursions into and complicating standard conceptions of human-animal relationships on behalf of a more holistic approach to understanding archaeological material. It seeks not to create and perpetuate dichotomous segregation of practice and experience – trust and domination are not understood as necessarily competing categories, holding potential to be complementary – but rather to explore and trace the particularity and historical specificity of relations (cf. Orton 2010).

Investigation of the relational complexity of human-animal intra-actions is intensified in the work of Donna Haraway to far exceed the limits of Cartesian perspectives through the transgression and deconstruction of modernist western conceptions of bodily boundedness. As has been demonstrated in Chapter 3, Haraway's studies form a pivotal point of reference for posthumanist discourse, albeit a position she expressly rejects (Haraway 2008: 16-17; 19). Nonetheless, 'When Species Meet' (Haraway 2008) *is* both an elegant expression and product of posthumanist relationality. In it, she explores the complex, responsive relationships engendered by the shared human-animal lives implicated in domesticatory practices in the broadest sense, working at and moving between multiple scales, from the most intimate microbial and personal interactions, through to species level whilst stressing the importance of focus on the *real*, providing a useful model for approaching understanding of the human-animal relationships that gave rise to and are presenced by faunal deposits in long barrows. Drawing on and responding to a multiplicity of sources including the philosophical works of Derrida and Deleuze and Guattari, which address and explore ideas concerning animal(s), the animal, animalkind and animality, with consequent implications for concepts of human(s), the human, humankind and humanity that are so firmly rooted in Cartesian ontology, academic scholarship, popular culture, and experiences and interactions, she presents a complex, powerful argument dismantling the validity of notions of human exceptionalism.

Despite exciting some stinging criticism (Haraway 2008: 27-30), Deleuze and Guattari's ideas – and their assemblage theory in particular, which, as has been noted, forms the basis of DeLanda's assemblage theory – would seem to play a foundational role underpinning Haraway's conception of 'becoming with' in which human and non-human are active participants in mutual constitution (Haraway 2008); indeed, a remarkable parity can be observed between key structuring concepts of all. It is therefore instructive to explore how the ideas of Haraway, Deleuze and Guattari and DeLanda intersect, as this will give shape to the conception of human-animal relationships that will inform the approach to archaeological material taken in this study.

Assemblages are substantial gatherings of matter, configurations that form individual wholes.

Jim's dog is:

> "the burned out redwood stump covered with redwood needles, mosses, ferns, lichens – and even a little California bay laurel seedling for a docked tail – that a friend's eye had found for me the year before..." (Haraway 2008: 5).

Also implicated are:

> "a fine digital camera, computers, servers, and email programs... the primate visual system… other primate beings, both in their ordinary habitats and in labs, television and film studios, and zoos… the biological colonizing opportunism of organisms… the leisure-time promenading practices of the early twenty-first century in a university town on the central Californian coast …" (Haraway 2008: 5-6).

This list is by no means exhaustive, but provides a flavour of the relations that Haraway pursues in her introductory illustration of what it means to be companion species. Haraway's partners – her companion species – are assemblages that both Deleuze and Guattari and DeLanda would recognise, that presence diverse phenomena, and are constituted by and through their relations (Haraway 2008: 17). Identification and pursuit of such diverse linkages offers scope for rethinking the breadth and kinds of relationships that it may be possible to trace through engagement with archaeological material.

Assemblages have permeable boundaries that permit constituent parts to leave the assemblage to join others, or to be part of multiple assemblages, without necessarily impacting upon the identity of the whole (DeLanda 2006: 10).

The chicken and the industries in which it has become assembled forms the focus of a chapter in Haraway's volume (Haraway 2008: 265-274). The chicken meat industry, and its identity as such, is predicated upon the disposability and replaceability of individual chickens: the rapid muscle development of Broiler chickens necessitates their slaughter at 39 days (Nicholson 1998); their bones are unable to sustain the exponential weight gain for which they have been bred beyond this point. The identity of this assemblage demands that constituent parts should have mobility to leave and to join, and is articulate of a specific kind of (exploitative, asymmetrical) relationship; constant, rapid change is a critical force in this case. Fast food indeed. This very particular human-animal relationship stands in stark contrast with those characterised by the practices of genetic cloning of individual pets and the protection of endangered species. The departure and introduction of individual animals is also critical to the identity of the assemblage, but it is their identity as known individuals, their uniqueness, rather than their 'disposability' that is central and necessitates response (Haraway 2008: 133-157).

These examples can also be drawn upon to demonstrate that *assemblages are affective*. They change the world in their emergence (cf. Fowler 2013): the exploitation of broiler chickens results in the production of cheap, readily available sustenance for humans and in turn becomes entangled, for example, in the issue of healthy eating and obesity epidemics; it raises ethical dilemmas as the welfare issues associated with rapid weight gain selected for in the breed, coupled with poor standards of care are made public, resulting in campaigns to improve conditions of production and the growth of the organic foods industry. The protection of endangered species has impacted upon the lives of humans that share habitats that have been assigned as safe-havens, resulting in tensions that sometimes have dramatic consequences; the value assigned to some animals such as rhinoceros has accelerated illegal exploitation, arguably fuelling the problem and necessitating coordination at international levels to tackle it. Change thus occurs both on the scale of individual response as well as broad-reaching social movements with international reach, as well as a multiplicity of scales in between.

Exploration of human-animal relationships as affective assemblages and constituent assemblages in the past, through attendance to archaeological material, and (following Haraway) informed by the rich variety of possible forms these may take, offers scope for development of different understandings, thereby changing the present and expanding the futures that are possible.

Assemblages have a temporal dimension: they are always in process.

> "[T]he partners do not precede their constitutive intra-action at every folded layer of time and space" (Haraway 2008: 32).

Haraway's companion species make and are made by each other in their 'becoming' – the active form of the verb expressive of the temporal aspect of co-emergence as an ongoing relationship in development. The active constitution of relations as processual and with temporal qualities are resonant with Deleuze and Guattari's concepts of territorialisation and deterritorialisation; the aforementioned Jim's dog had a short life as such (Haraway 2008: 5), presumably succumbing to the bacteria, fungi, weather and the growth of the plants that were co-conspirators in his assemblage. Haraway stresses ongoing processes of production that are 'becoming with', whereby deterritorialisation is a creative force. This is implicit, for example, in her reflections upon the reorganisation of the corporeal bodily assemblage after death, whereby organisms such as bacteria assume greater prominence through processes of decomposition (Haraway 2008: 3-4), and the animals that die in the course of the development of new pharmaceutical products (Haraway 2008: 69-93). Certain forms of relationships make others possible, resulting in change and reconfiguration of relationships. Attendance to the changing, fluid relationships in the past and the-past-in-the-present holds potential for fresh insight. Changes in human-animal relationships over time – shifts in assemblages – can certainly be identified through archaeological material, and the typical structure of long barrows, which evidences multiple episodes of activity, is particularly well suited to this.

For DeLanda (2006: 4-5, 10), it is the relations of exteriority through which the identity of each assemblage is emergent; the potential for properties to emerge is realised through the interaction between different assemblages.

Haraway's emphasis upon intra-actions and interiority marks an important point of difference with DeLanda (2006) and in this sense accords much more closely with my understanding of relational assemblages. Citing the work of philosopher of science, Vinciane Despret (Haraway 2008: 207) and anthropologist Anna Tsing (Haraway 2008: 218), she describes relationships characterised by ongoing, unbounded, mutual, responsive, symbiotic, contextually specific change and development: relationships of 'becoming with', in which interaction and reciprocity, both conscious and unconscious, intentional and unintentional, are factors (Haraway 2008). Through examination of a series of case studies, and with a focus on the mutual creation of identities through interaction and learning, Despret describes such relations as "'anthropo-zoo-genetic practice', a practice that constructs both animal and human" (Despret 2004: 122), whilst Birke *et al.*, appropriating approaches developed within feminist theory, describe these relationships as 'mutual becoming' and 'co-creation of behaviour' (Birke *et al.* 2004: 174). 'Becoming with' is thus a position whereby relations between are relations within – within a single assemblage formed by the condition of between-ness – providing a much more satisfactory and cohesive model that can be drawn upon to inform on the kinds of human-animal relationships possible, and thereby the types of questions that can be asked of archaeological material.

The intra-activity of 'becoming with' constructs heterogeneous assemblages with distinct identities: human with dog, for example, becomes an agility or a shepherding team in constant communication and acting as a single unit (Haraway 2008: 205-246). Both human and animal assemblages that come together to shape and change each other through ongoing, responsive action, thus problematise corporeal boundedness. Who or what is orchestrating such an encounter at any one time? How are decisions made? Where does human end and dog begin? And critically for archaeology, what are the implications for tracing and understanding the human past? Haraway's vision of companion species makes cyborgs of us all. Cyborg Alice and cyborg White Rabbit make each other; they become together, are active participants in each other's creation. And they are so much more than human child with rabbit – their assemblage includes the rabbit's clock, time and modern western concepts of productivity, the social role of animals from participants in vivisection and wider scientific practices and the ethical questions this raises, to pet keeping and diet; it draws in issues of class politics, entertainment, ritual and superstition, education and the concept of human childhood… the list goes on.

The implications are both profound and exciting. When considered with regard to the human-animal interactions suggested by the adoption and development of pastoralism, these concepts provide interesting ways to rethink the character of these relations, and suggest new ways of approaching understanding of the relationships underlying, and given expression in, the deposition of animal remains in long barrows, deposits that include some of the earliest evidence in Britain for the appearance of domesticates. Recognition of the intra-active interplay of humans and animals and the resulting complex, interwoven lives, ways of being, and identities that have room to emerge, open new avenues for exploration with potential to develop richer, more holistic understandings. Relations that endure (cf. Fowler 2013) can be traced through the archaeological record to inform on diverse aspects of life and death that reach across multiple temporal and geographic scales. But *how* can such relationships be accessed and identified in practice?

Work emerging from within the developing field of multi-species ethnography, bearing the influence of ideas developed in the arenas of posthumanist thought, assemblage theory and the writing of Haraway in particular (Kirksley and Helmreich 2010; Ogden *et al.* 2013; for example, see Fijn 2011) offers a useful point of departure. As an example of the power of such an approach, Natasha Fijn's ethnographic study of two herding communities in the Khangai Mountains of Mongolia provides a beautiful illustration of this human-animal social complexity (Fijn 2011). Working at multiple geographic scales, whilst maintaining a focus on two discrete communities within a single region, and observing humans and animals interacting at individual, herd and species levels, Fijn's work offers interesting modes of approach for understanding the meaning of Wiltshire Neolithic long barrow faunal assemblages. Interactions depicted are expressive of the notion of 'mutual becoming' (Fijn 2011: 22, citing Haraway 2003; 2008) and describe a relational, non-anthropocentric ontology that incorporates all aspects of existence. Rhythms and routines are dictated by, and are specific to, the needs of each of the other five species that the herders live with (Fijn 2011: 28). The nature of the relationships is dependent upon scale of interaction: individual sheep and goats born early in the spring may initially be raised within the family ger (living accommodation), creating a close bond (Fijn 2011: 141); the characters of animals who are milked are known and understood (Fijn 2011: 133-134, 137-140); but when moving pastures, species groups are herded and communicated with *en masse* (Fijn 2011: 112-115).

Relationships with herd animals are founded on reciprocity and mutual nurture (Fijn 2011: 47) and are maintained on the basis of ongoing interaction (Fijn 2011: 140-141), but they are complex: each animal is a named individual (Fijn 2011: 100-103) and considered a member of the extended family (Fijn 2011: 28) with a known genealogy interwoven with that of the human group (Fijn 2011: 83). However, with notable exceptions, most will be consumed. Of particular interest is the importance ascribed to bones: belief that the souls of animals are located in the bones dictates their treatment after death and defleshing (Fijn 2011: 228, citing Even 1991), and while most are left to decompose naturally, specific bones are retained to perform distinct roles as powerful objects. The spirit or essence of the once living animal is manifest in these bones and harnessed through particular forms of treatment including curation and display. The physical materiality of bone is also significant; the behaviour of dried sheep tibia when subjected to fire is employed in divination (Fijn 2011: 229-230). This use of bone as a material device with the capability of developing its own biographical history reveals the potential for the existence and expression of different modes of human-animal relationships constituted of living and dead bodies and in which connections between bone and the animal from which it originated may or may not be important. Fijn's study highlights the need to maintain awareness of the potential for long barrow faunal deposits to express multiple, possibly contradictory meanings, the results of complex relationships between humans and animals both in life and death, working at multiple scales simultaneously.

Work in the fields of social zooarchaeology and multispecies archaeology develops these ideas for engagement with archaeological material and has made important advances (for examples, see Armstrong Oma 2010; Hamilakis and Overton 2013a; see also responses and discussion: Argent 2013; Boyd 2013; Larsson 2013; Mannermaa 2013; Pluciennik 2013; Hamilakis and Overton 2013b). The emergence of a specifically social zooarchaeology is a recent development that seeks to highlight the ways in which traditional practice may be augmented through extending expectations of what it is possible for archaeological animal bone to articulate. In a volume dedicated to this approach, Russell (2012) provides a breadth of perspectives that reach beyond those based on a unidirectional agency seated solely in the realm of the human. Using ethnographic data in conjunction with zooarchaeological and more broadly archaeological analyses, she constructs evidentially grounded interpretations of archaeological material to find relationships that include animals as symbols (Russell 2012: 11-51); as participants in ritual (Russell 2012: 52-143); in hunting (Russell 2012: 144-175); and domesticatory relationships (Russell 2012: 207- 258) and suggests how such relationships may present in the archaeological record. In her analysis of animal wealth, for example, she suggests utilisation of herd demography profiles, metrics and identification of diagnostic pathological conditions (Russell 2012: 331-333) whereas for shamanic practices, graves are determined as those of shamans through the species assemblages and contextual associations. She exemplifies the utility and potential made possible through a broadening of themes beyond seeking evidence of past diet and butchery practices, and makes explicit the value of attendance to context and other materials (Russell 2007: 142; 400), but the extent to which this is pursued remains frustratingly limited. Critically, her narrative maintains the classic Cartesian, colonialist stance – that of an implicit position of authority and logical common sense – of what can be considered ‘really real’, for example:

> “Hunters do not really have an equal relationship with their prey: The predator-prey relationship is inherently unequal. Moreover, hunters do not really have relationships with animals in the same way they do with human beings. They relate to humans as individuals, but to animals as species. It could hardly be otherwise with wild animals. An animal that is known individually is very close to being a pet.” (Russell 2012: 169)

I find this statement troubling, not least for its ethnocentric arrogance. As a means of approaching archaeological material, this position denies the validity and relevance of non-western, Cartesian ontologies, which stifles the degree and level of possible engagement and shuts off opportunities for understanding (Sykes 2014).

Sykes, by contrast, queries and problematises this position. In an original and ambitious volume, she identifies the limitations inherent in approaches that fail to recognise and/or theorise the historical specificity of the methods they adopt (Sykes 2014). Using these shortcomings as a means of departure, she explores the potential for understanding the role and meaning of animals in the past through drawing on a combination of standard zooarchaeological and other forms of evidence, such as environmental data and documentary sources, weaving the different elements together. Her interpretations are innovative and thought provoking, providing a convincing, persuasive vision of how a more mature social zooarchaeology can challenge established approaches and transform current understandings of past worlds. Whilst her study far exceeds the scope of Russell’s volume, Sykes describes her theoretical position as a ‘mirror/windows’ approach based on the early work of Mullin (1999), which understands human-animal relationships as a means by which human-human interactions may be approached, making explicit its distinction from the form of approach that is adopted in the present study (Sykes 2014: 5). I have strong reservations about Sykes’ stance, as it once again privileges the human, positioning it in a hierarchical relationship above the animal, resulting in the implicit subjection of the latter to the position of conceptual tool, but find the multiple evidence based focus on human-animal relationships very useful.

An interesting example that demonstrates the potential of utilising Sykes' broad approach (although predating it), whilst also drawing on the posthumanist perspective developed in the work of Haraway *et al.*, is provided by Hamilakis and Overton (2013a). In this paper the treatment and roles of, and relationships given expression in, archaeological animal bone are explored from what is described as a social zooarchaeological position. They confirm the value and potential of decentralising the human and exploring the implications of human-animal interaction and shared lives, ideas they present as 'A manifesto for a social zooarchaeology' (Hamilakis and Overton 2013a) through re-examination of two assemblages that include whooper swan bones from the Danish Mesolithic sites of Aggersund and Vedbæk-Bøgebakken (Hamilakis and Overton 2013a: 117-135), contrasting their findings with the original interpretations, products of a traditional zooarchaeological approach influenced by Human Behavioural Ecology and Optimal Foraging Theory.

Hamilakis and Overton do not reject traditional zooarchaeological methods, but use them as a foundation for development, drawing also on behavioural studies (Hamilakis and Overton 2013a: 122-127, citing Brazil 2003, and citing Wilmore 1974: 134) to explore human-swan interaction. Concerned with seasonal rhythms and the movement of the animal and human groups, their approach is phenomenological and multi-scalar, sharing ideas developed in animal geography (Emel *et al.* 2002; Whatmore 2002; Wolch and Emel 1998) that recognise the agency of human and non-human animals, space and place as interactive, interwoven, mobile and inseparable. Contextualisation is central: the association between the bones of whooper swans and a range of other species, together with flint artefacts at Aggersund, and the positioning of the bones of an adult human female, a human infant, and the bones from the wing of a whooper swan in Grave 8 from the Vedbæk-Bøgebakken cemetery inform interpretations of deposits that reach far beyond the scope of the originals, evoking shared lives and deaths (Hamilakis and Overton 2013a: 117-135).

Although propositions are open to challenge – for example, their argument for the significance of the position of the infant in relation to the bones of the swan's wing from Grave 8 of the Vedbæk-Bøgebakken cemetery (Hamilakis and Overton 2013a: 131-132) is contested by Mannermaa (2013: 154-155) – the emphasis placed on material associations, as Pollard has previously demonstrated, provides a useful and very practical means of approach (Pollard 1993). In his discussion of deposits from a range of southern British Neolithic contexts that include human and animal remains, Pollard considers the transformative potential of material association in terms resonant with the assemblage theory of Deleuze and Guattari (2004) and Delanda (2006) for the creation of something new, that forms more than the sum of its parts (Pollard 2004: 62): the very process and expression of 'becoming together'. It is through attendance to and assiduous scrutiny of the different materials comprising assemblages, (see Chapter 4) there exists the possibility for the emergence of greater subtleties and depth of meaning: materials are ontologically articulate (Banfield 2016; Conneller 2004; 2011; Holbraad 2009).

To bring this chapter to a close, it is necessary to return once more to the work of Chantal Conneller. In her seminal paper 'Becoming deer. Corporeal transformations at Star Carr', Conneller (2004) explores the specifically cervid materiality of the red deer antler frontlets (that include a substantial portion of the cranium) from the Mesolithic site of Star Carr. These elements form part of a depositional assemblage that reaches across and through the landscape to incorporate other artefacts, other materials, other places and, notably, absences, and uses it to problematise traditional notions of human-animal bodily boundedness. The character of the evidence, which includes 21 red deer antler frontlets along with barbed antler points and mattocks, animal bone, and bone and stone tools has been interpreted variously as evidence for a seasonal camp or base (Conneller 2004: 39), the antler frontlets thereby becoming hunting accoutrements or elements in ritual costume (Clark 1954: 170 cited by Conneller 2004: 37). But Conneller takes a different approach, one that begins with the materiality of the frontlets.

Drawing particularly on Viveiros De Castro's concept of animal effects (Viveiros De Castro 1998), and Deleuze and Guattari's affects and assemblages (Deleuze and Guattari 2004), Butler's performativity (Butler 1993) and Haraway's hybridity (Haraway 1991), she finds evidence of human-animal interactions that can best be described as becomings (Conneller 2004). Focusing on the possibility for human wear, suggested by the holes bored through the cranial portions of the frontlets, she finds the emergence of human-deer hybrids as living human bodies enter into relations with the deer body parts. These hybrids are neither deer nor human, but are different assemblages with a different identity, *something new, that forms more than the sum of its parts* (cf. Pollard 2004: 62). Human-animal relationships are demonstrated to be multiple and complex, incorporating hunting, consumption (see also Bennett 2010: 39-51), processing and bodily transformation. Both human and animal bodies are implicated in and transformed through practice, and it is through detection of variance in the construction and treatment of different artefacts, different materials and the depositional assemblages at different locales around Lake Flixton that aspects of past ontologies may be glimpsed.

This example provides a model of the approach that is taken in the present study, drawing together key aspects of the positions that have been explored over the course of the previous three chapters. Human-animal relationships are explored as assemblages that transgress corporeal boundaries to incorporate diverse phenomena, achieved by drawing on multiple archaeological assemblages – the typological (in this case, osseous) assemblage, and multi-scalar depositional assemblages – and through engagement with the materials composing and emerging from each. In the context of this study, multiple long barrow assemblages will be analysed: the osseous assemblages, using the standard suite of techniques for animal bone, which in keeping with the posthumanist remit includes human bone (see appendices 3-10); and the depositional assemblages, with a particular focus on materiality and working at different geographic and temporal resolutions. As the published reports for the sites that form the focus of this enquiry provide limited information regarding depositional context, a return to archive data (where surviving) provides a means of approach. But the volume and complexity of these data demands a response that has the capacity to engage with and enable analyses that are meaningful whilst allowing space for creativity and the unexpected to emerge. It is with this agenda that the next chapter concerns itself, and it is the cyborg that shows us the way …

Chapter 6. Deposition and digital analytics: the congress of data

This study is undertaken within a posthumanist ontological position in which the relational, assemblage based thinking introduced over the course of the previous chapters informs approach. Multiple archaeological assemblages are investigated: the site level assemblage; the osseous assemblage; and discrete spatial, depositional assemblages at site and sub-site level. Each site will be approached in turn; the osseous assemblages will be analysed in accordance with the standard suite of techniques deployed in current zooarchaeological practice, but with human remains approached as another animal species, in keeping with posthumanist remit of the study (see appendices 3-10 for osteological reports on each site). The depositional assemblages, however, demand different modes of engagement. They are large and complex, with numbers of individual artefacts running into the thousands for each site. Further, it is necessary for the information collected from the analysis of the osseous material to be integrated into the depositional dataset (a nesting of assemblages). Geographic Information Science (GISci) offers means by which this can be achieved.

GISci facilitates the visualisation and statistical analysis of digital spatial data with qualitative attribute information, enabling exploration of a range of relationships that have potential to inform on the nature of human-animal relationships presenced in long barrow assemblages. But to engage with GISci is also to engage with a host of theory-laden practices that are themselves constituent parts of complex, nested assemblages and which demand scrutiny. It is therefore somewhat surprising that theorisation of Geographic Information Systems (GIS) engagement in archaeology, a well-established set of approaches that have (problematically) emerged as a sub-field, is notable if not for its paucity (Lock 2001), then its preoccupation with grappling with the problematic connotations of cultural ecology and environmental determinism and the degree to which GIS is therein implicated (Gaffney 1995: 371; Gaffney *et al.* 1995: 211-212; Gillings 2012; 2017; Hacigüzeller 2012, Llobera 1996; Wheatley 1993).

Theory and the archaeological use of GIS

> “In GIS the concept of theory is less mature. The very existence of theory is in question… there are substantial numbers of practitioners and writers who believe GIS is a technique and thus has no theory.” (Zubrow 1990: 69)

The dearth of theoretical engagement in archaeological GIS use is a problem that until recently has been overlooked, if not actively avoided in some spheres (Gaffney 1995; Hacigüzeller 2012; Wheatley 1993; Zubrow 1990: 69). Its machinistic, digital functionalism has been drawn forth and embraced, GIS emerging as a spatial analytical *tool*, enabling the revelation of essential, pre-existent truths confirmed as such and granted validity by means of an apparent scientific objectivity. Understood thus, GIS is theoretically transcendent, its outputs facts (Gillings 2012: 603-604). This would seem to be confirmed by a search of papers presented at the Computer Applications in Archaeology conference, the hub of a research community that brings together practitioners working with/interested in archaeology with information technology and mathematics. It reveals a near absence of explicit theoretical engagement, papers instead focusing on methodological concerns and potentials. Given its remit, this may be unsurprising and should not be construed as a criticism, but it is nonetheless salient and raises the question as to why should this be so? Attendance to its historical emergence is here instructive: GIS developed as a set of cartographic resources with analytic capabilities in collaboration with military and government organisations (Wheatley and Gillings 2002: 14). These origins have arguably – and maybe unsurprisingly – determined its mode of adoption and development in archaeology, initial projects having focused on landscape scale analysis, and often driven by questions pertaining to environmental variables (Biswell *et al.* 1995: 269; Gaffney and Stančič 1991). Indeed, the critique most frequently levelled at archaeological GIS usage has been the charge of technological determinism (Gillings 2012: 603).

The establishment of technical primacy has been further compounded by the timing of GIS's introduction to archaeology, a period during which the influence of postprocessualism emerged and exerted a particularly powerful pull, a response to the processualist position concerned with empiricism and practices whose authority could be justified through recourse to scientism (Risbøl *et al.* 2013: 511-512). This paradigm shift occasioned fierce and protracted debate; arriving in the context of this fragile new concordance, GIS was perceived by some as a threat to the post-processual agenda. Framed as a shiny, seductive toolkit beholden to anachronistic concerns, GIS and its practitioners found themselves forced on to the far side of the theoretical schism. Moves by a small number of innovative practitioners to respond creatively to post-processualist concerns, particularly in the area of archaeo-phenomenology (for example, Gaffney *et al.* 1995; Llobera 1996;) has established a precedent for theoretical engagement, but has achieved little more, further hindered by reluctance on the part of some academics to engage in meaningful debate and cross-sub-disciplinary work (Gillings 2012 and see Tilley 2004: 218 for example). It is therefore all the more significant that some notable, more recent GIS-centric studies have sought to make headway, broadening the scope of questions asked of their data, engaging critically with current theoretical discourse and publishing in high impact journals with a broad archaeological remit, whilst straining against the limits of what may be achieved with GIS.

In a paper reporting on question-driven research into the nature of late Mesolithic and Early Neolithic human engagement with the East Anglian fens, Sturt (2006) draws upon Lefebvre's discourse on experiential encounter with space, practices more typical of maritime than terrestrial archaeology, and harnesses the analytic power of GIS as a means by which these questions may be addressed. Sturt's work is remarkable for its recognition and frank discussion of the limitations and potentials of GIS, particularly his discussion of the theoretical implications of GIS systems' reliance on a Cartesian understanding of space and the possibilities he finds for working creatively within this constraint (Sturt 2006: 130-132). Building upon Lefebvre's contention that 'lived space' is active, an ongoing production resulting from the combination and interweaving of its perception, conception and experience (Sturt 2006: 130-131), which Sturt identifies as "three distinct realms of analysis" (Sturt 2006: 131), he finds GIS a profitable means of examining and querying the realm of conception, specifically: "What we are doing in using GIS is exploring our conceptions of the spatiality of the past" (Sturt 2006: 131). To this I would add, drawing on Fowler's discourse on assemblages (2013) and with reference to Chapter 4 of the present study, that in so engaging with GIS, we are changing the past-in-the-present, creating new pasts that are necessarily contingent upon the assemblages which include the specific historical make-up of our present engagements, a point to which I will return. Where Sturt's study falls short is in his failure to challenge the constraint of the Cartesian space he identifies, asking archaeological questions for which there are no prescribed toolkits or workflows within the GIS, or allowing space for the emergence and pursuit of unexpected leads.

Gillings (2012) and Hacigüzeller (2012) also highlight the necessity for theory building and the establishment of theoretically informed GIS engagement within archaeology. Gillings (1998; 2007; 2012), like Sturt (2006) picks up on the constraints and opportunities presented by GIS, and argues for their potential value for exploring 'experiential affordances' of space as a relationally constituted medium. He uses this opportunity to reflect upon past projects and their potential for development within such a framework (Gillings 2012: 608-609), an approach that he subsequently puts into practice and develops further. In his 2017 paper exploring the possibility of mapping liminal places, a creative project that challenges traditional ideas of mapping by seeking to map what is not, and which falls well beyond the remit of traditional GIS-inclusive projects, Gillings develops a means by which a landscape zone that is sensed, but not otherwise physically defined, may be identified and queried using GIS (Gillings 2017). Using the example of Exmoor, a landscape of high plateaus and low coombes or valleys, he investigates an idea that emerged through embodied experience in the field that a connection exists between prehistoric monuments and places that are located in between its landscape extremes. Map algebra, a functional capacity of GIS, is employed to combine mapped zones of visibility from different perspectives, thereby drawing forth liminal zones – the areas that fall in between the visible cracks – with intriguing results (Gillings 2017). Through the prism of new materialism, drawing on assemblage theory and relational understandings of phenomena, and harnessing the powerful potential of (GIS based) viewshed analyses as media of emergence – assemblages and constituents of other assemblages themselves – the role of liminality in the location of Late Neolithic/Early Bronze Age standing stone groupings of Exmoor is tested (Gillings 2015a; 2015b; 2017). The role of the researcher, the capacities of the apparatus implicated, and the affective, relational emergence of the digital outputs are recognised. Importantly, the emphasis placed on the ontological position of GIS engagement as relationally emergent, both constituted by and constitutive of multiple assemblages, shifts the focus of digital output as the target end product to that of collaborator and enabler with the potential to answer – and also to pose – questions whose reach extends far beyond the limits prescribed by an obstinately technologically determinist standpoint: the cyborg made manifest (Haraway 1991).

Archaeological GIS is thus currently inhabiting an interesting and potentially very exciting position: there is the heady scent of revolution in the air. But despite this – and somewhat dispiritingly – continued reliance upon and recourse to the processualist agenda by the majority has created a note of dissonance within the discipline. This conservatism has arguably served to confine GIS practitioners to an archaeo-technoscientific subset operating on an all but independent platform. It must be asked, therefore, whether this manoeuvre represents the deliberate construction of a defensive ontological boundary, shielding processualist archaeo-technoscientific practice from the potentially destabilising forces of theoretical scrutiny, or rather, an unawareness of GIS's theory-ladenness predicated on over-reliance on GIS manuals, established workflow models and standards that simultaneously enable engagement and inhibit creative development, much as osteology has been constrained (see Chapter 5)? In this respect, it is interesting to note the contrast between GIS use in archaeology and geography (Hacigüzeller 2012). In the latter, the development of critical GIS which seeks to bring GIS and geographical social theory into dialogue, is well established and serves to confront and embrace the challenges of theoretical engagement (Sheppard 2005), standing as an exemplar of what may be achieved (Hacigüzeller 2012).

(DeLanda x assemblage theory) + information technology = 0

Gillings' 2017 study has a clear sense of purpose and represents an important theoretical development, but the integration of assemblage based thinking and information technology is not completely without precedent. DeLanda's 'Philosophy and Simulation: The Emergence of Synthetic Reason' (2011) explores the utility and applications of simulation software for modelling archaeological processes, with a focus on agent based modelling (ABM), through assemblage theory (see Chapter 4). Despite the suggestion of broader engagement hinted at in the volume's subtitle, the locus of discussion remains centred upon the use and benefits of computer simulation – and the validity of its outputs in particular – and does not stray far into the expansive territory that the term 'synthetic reason' suggests, and that which lies beyond the confines of ABM. Whilst he makes brief, implicit acknowledgement of the deterministic power of the software and its potential to be programmed to be responsive with and affected by input data (DeLanda 2011: 44; 54), he fails to fully recognise the impact of hardware and software requirements upon the process of data acquisition, selection and input. DeLanda (2011) understands simulation technology as a suite of tools, albeit agentive, but ultimately, and as its name suggests, methodological processes to be deployed *by* humans *to* data. Furthermore, data are conceptualised as unproblematic. Although affective, both within the structure of the program and through their productive capacities as parts of the output assemblages, the question of what it *is* that the 'raw' data are, what they represent and whose reality they are manifest of, goes untheorized. It is perhaps unfair to make an example of DeLanda's discourse; this issue is seemingly pervasive in the published literature on computer applications in archaeology, and the questions it raises are pertinent to the use of GIS in the present study.

Theoretical engagement in GIS and archaeological computer applications more broadly must not, then, be limited to the broader archaeological questions we ask of our data, it must also be inverted, turned in upon itself – as exemplified in Martin's exploration of geographical GIS practice considered through Actor Network Theory (Martin 2000) – to query the processes underpinning its structure, its means of, and implications for, data selection and management. It remains that data must be shoehorned into GIS-compatible formats, and it is here useful to return to Foucault's discourse on modernism and its relationship with institutional disciplinary practices to facilitate exploration of this issue.

Disciplined data: digitisation and Foucault's discourse on power dynamics

> "It is worth emphasising that GIS is not an objective, value neutral, unbiased technology. Data is likewise not value neutral. GIS thus represents the social reproduction of knowledge and, as such, the development of a GIS methodology cannot be divorced from the development of the theory needed to sustain it." (Harris and Lock 1995: 355)

> "The location of phenomena such as artefacts and sites and their contextual relationships may be partially a result of the algorithm chosen as much as the cultural or even analytical reality." (Zubrow 1990: 69)

Foucault's dissection of modernist thought finds as its focus the regulation of the human body in seventeenth to nineteenth century Europe in 'Discipline and Punish: The Birth of the Prison' (1991). His exploration of institutionalised power and control exerted through legal discourse, codified systems structuring activity, and the experiential practices of architecture as designed and inhabited space reveals within the period of his study an ontological shift in the nature of authority, which he finds to be historically situated, geographically and temporally particular. Treatment of the condemned body shifted from public humiliation that could include torture and conclude in death, to incarceration and subjection to rules and routines intended to repress non-conformity and bring about compliance with expected social norms. Institutions were selective; certain groups targeted for treatment. From a new materialist perspective, the processes of selection and treatment described are understood to be prescriptive but also reactive; manipulative, thronging assemblages of people, places, ideas, and social structures etc. with affects that fed back (and continue to feed back) to modify the institutional assemblages themselves.

Much as the technology of punishment of the modern era thus creates disciplined bodies, so GIS technologies create disciplined data, and thereby disciplined practitioners, in an unceasing spiral of discursive domination. Suitable data that enable research questions to be answered but also permit digitisation and incorporation into a database must be identified and selected before being conditioned and standardised (Llobera 1996). This chain of action and the processes therein implicit has affects. Zubrow (1990) discusses the implications of such transformations, and the inevitable biases that will be introduced, for example:

> "Hardware, software, and algorithms are based upon digital concepts and thus there are significant biases toward Boolean logic and standard set theory. Hence GIS are unable to handle such concepts as 'maybe', 'fuzzy sets' or 'phenomena' which are sometimes located in a space and sometimes not." (Zubrow 1990: 69)

> "[D]ifferent GIS packages use different algorithms for interpolating spatial data. The location of phenomena such as artefacts and sites and their contextual relationships may be partially the result of the algorithm chosen as much as any cultural or even analytical reality." (Zubrow 1990: 69)

Prior to inclusion data must be: identified and collected in a form that renders them suitable for GIS based spatial analysis; they must be primarily quantitative, with qualitative data introduced in the form of attributes; quantitative data must be digitised and entered into a database prior to visualisation and analysis; quantitative data must be decimal; data must be binary (present or not present) and defined; data must be standardised for compliance with the demands of the program. The use of 'characterful' archive data therefore raises challenges; some data are inconsistently recorded with intra-site variance and all are partial, the forms of data available are varied, some have been collected from analysis of physical remains and others from documentary sources, or a combination of the two. Cooper and Green (2016: 279-281) note the multiple transformations that archaeological data may undergo in the processes of archiving and digitisation, the result of not only technical and archival requirements, but also the motives, interests and skills of practitioners and data managers, with potential for their meanings and relationships between physical remains and data forms to change in so doing. The creation of the geodatabase demands that choices are made regarding the coordinate system within which the data are located, which has implications for the global positioning of data, access to the data outputs (as some platforms support particular coordinate systems and not others), and raises issues concerning the suitability of the use of Euclidian space upon which GIS are structured. This in turn draws forth concerns that such a conception of space amounts to a colonializing manoeuvre by which space is arbitrarily segmented, visualised and viewed/owned/consumed from a God's eye perspective (Haraway 1988: 581) that may fail to account for the complex interplay of sensory engagement of experiential space or to engage with past modes of spatial engagement. It also raises the question of whose perspective it is that is being explored – an issue that resonates throughout the processes of analysis-interpretation.

The analysis-interpretation, the questions being asked of the data, will inform choices made regarding the GIS applications engaged and therefore the algorithms deployed, which may introduce bias. The visualisations produced are an interplay of the possibilities coded into the program (Hacigüzeller 2012: 250) and the choices of the practitioner – and all that she/he brings to the assemblage – not least, and on a fundamental level, whether to use vector or raster systems and the potentials and limitations each brings, with implications for memory, data storage and processing power, problems of fuzziness and the potential for misrepresentation and misinterpretation associated with the requirement for binary presence/absence of phenomena. Issues of perspective and whose reality it is that is being explored are again raised. This list is by no means exhaustive, but highlights the complex and often subtle – even covert – ways in which the digitisation of data and their engagement within GIS may result in transformations, not all of which will be desirable. This would seem to confirm that the changes effected through the use of archaeological data with GIS are profound, and supports arguments tendered by Thomas (2004) and Tilley (2004) that GIS hold potential to undermine the purpose of archaeological enquiry, if not render the partnership unworkable. Archaeological data are inherently characterful, they are partial, often piecemeal and have a temporal aspect; they incorporate ranges and probabilities. How, then can GIS use be justified within the present study? The nature of the implications of exploring archaeological datasets within GIS fall into two broad categories: the problems of integrating characterful datasets into rule driven systems; and the historical particularity of perspectives that are produced.

Some of the challenges of working with characterful archaeological data in a digital environment are identified and examined by Cooper and Green (2016). They highlight the usefulness of and need to work with such data, and the need for response, but their understanding of what makes data characterful is limited to the functional, to the inconsistent and messy. Their treatment of data *as if* they were accurate is coupled with spatial binning in GIS, a means of modelling the presence of tendencies, whilst modelling out problematic replications of data resulting from, for example, inconsistent use of descriptors, are particular to the complexities of synthesising multiple, large datasets. More broadly, their study stresses the need for decisions to be made in accordance with the binary logic of GIS systems – which for the present study means that the GIS-data assemblage for each site must be responsive, reactive and individuated, and whilst this will inevitably impose limitations at some scales, opportunities will be created at others – and importantly, recognises the affective, *productive* agency of GIS. To elucidate this point, a return to assemblage theory and Barad's (2007) writing on the nature of scientific enquiry is here, once again, instructive. *Engagement with GIS effects translation and changes the data such that a new body of data with different capacities to affect and to be affected emerges: it becomes primed and useful (docile, cf. Foucault 1991) within the confines of the analytical apparatus*. GIS permits some possibilities for engagement, but precludes others. Thus, in manipulating data into a GIS-acceptable format, some avenues of enquiry are created, whilst others are shut down. The input and querying of data in GIS is, therefore, not an act of simulation, but rather, recreation (Cooper and Green 2016: 280-281; Hacigüzeller 2012: 255-256), and the products of analyses thereby further iterative articulations. It must then be asked how this can tell us about the past? Is this not simply a self-indulgent academic exercise with an internal logic that tells us much about our own historically located choices but little about past events?

Reliance on Euclidean space and Cartesian co-ordinates as structuring principles upon which GIS operate certainly delimit the terms of engagement, but they need not prove definitive; it is possible for GIS to participate in the production of data that permits questions pertaining to experiential encounter with phenomena in the past that challenge modernist, colonialist perspectives and negotiate the aforementioned God's eye view (Haraway 1988) to be posed (see above for discussion of Gillings' work exploring liminality). The perspective afforded by GIS enables such analyses, revealing explanatory possibilities that warrant further investigation whilst in no way asserting that the outputs are seeking either to be directly representative of past perspectives, or that they can be considered as ends in themselves. Crucially, these newly created data are linked and remain linked with those from which they emerged. They are rooted in archaeological evidence, but have grown with the GIS to become something other – yet not entirely separate (Cooper and Green 2016: 280-281). The realities created and the insights enabled are evidentially emergent and possess an ontological reality, and may exceed understandings of the material realities of the past from which they first emerged. Understood thus, these changes are no longer problematic subversions of a truth that exists 'out there' to be discovered (Hacigüzeller 2012: 247, 255), but rather, following Fowler (2013: 48-63) and Lucas (2012: 169-257), extend the assemblages of which the 'original' data (so far as anything can be originary) are a part, producing different understandings and different (multiple) pasts (Hacigüzeller 2012: 255; cf. Latour 1999).

The present study

The use of GIS in the present study is determined by a question-driven approach whereby GIS has been identified as most suitable for exploring and answering the archaeological questions that are being asked rather than the inverse in which the questions asked would be technologically determined. Nevertheless, it remains the case that data are selected and in many cases transformed for their incorporation into a GIS compatible format. The spatial data upon which the study is developed comprise artefactual and documentary archive material, which has important implications for their nature and the outcomes of exploratory engagement with them. The data are characterful: the motivations, interests and assumptions of the original excavators are not readily available and therefore hold the potential to introduce bias; they are recorded in particular ways, for example using imperial measurements that have necessitated transformation into a decimal format for input; some of the data are awkward, they are partial and some exhibit intra-site variance, meaning that decisions have been made as to what can and cannot be included and what the implications are for the models produced and the analyses that are thereupon dependent. From this short list of examples, it becomes clear that these data are inherently value-laden from their inception, before their collation, input and digitisation ever begins.

This raises another fundamental question, and one that has been touched upon above: is there a 'truth' (cf. Fowler 2013), an ideal whole to which these data pertain, which is compromised by the analysis of selective, 'partial' datasets? The answer is an emphatic no. Firstly, archaeological data are always partial, a consequence of excavation procedures adopted, processes of post-excavation analysis, curatorial practices etc. Secondly, in a relational ontology, the potential existence of multiple perspectives, multiple engagements with and understandings of the past in *its* present as well as the present in which the archaeological engagement is undertaken preclude the existence of any such single, monolithic truth. Further, e*ngagement with GIS effects translation and changes the data such that a new body of data with different capacities to affect and to be affected emerges: it becomes primed and useful (docile, cf. Foucault 1991) within the confines of the analytical apparatus.* Archaeological intervention in all forms augments the pasts we seek to understand and the presents in which we seek such understanding, and this does not negate the value of attending to the material realities of the evidence such as it is, in an attempt to arrive at meaningful interpretations. This body of research is a cyborg assemblage (cf. Haraway 1991) comprising the data in all their iterations, and it is productive. The outcomes of the investigations here undertaken have raised as many questions as they have answered; some have been pursued and folded back into the body of research, whilst other inevitably remain unresolved, revealing new possibilities for further research in an ongoing process of emergence.

And now, in pursuit of the cyborg White Rabbit, all that remains is the recreation of worlds past and present.

Chapter 7. Down the Rabbit Hole[6] Part 1: multi-scalar human-animal relations presenced in the Neolithic long barrows in and around Salisbury Plain

> "'…being so many different sizes in a day is very confusing.'
> 'It isn't,' said the Caterpillar**."** (Carroll 2009 [1865]: 41)

An assemblage based approach to engagement with archaeological entities enables movement between multiple scales of analysis, which is crucial for unpicking the complex, multi-scalar doings that gave and continue to give rise to their emergence. Far from complicating understanding of the archaeology, such mobile engagement enables a different, holistic perspective grounded in the materiality of the archaeology, communicated as narrative. In this chapter, the four long barrow osseous assemblages from the Salisbury Plain region that have been reanalysed as part of this study (Amesbury 42, Netheravon Bake, Woodford G2, and Cold Kitchen Hill or Kingston Deverill G1) will be discussed. Reference is made to other Neolithic sites in the region throughout; these are included in Figure 4 and Table 1. So following the White Rabbit's lead – as did Alice – this exploration shifts between scales and begins with an encounter with the micro.

Figure 3: "Alice opened the door and found that it led into a small passage, not much larger than a rat-hole." (Carroll 2009: 12, illustration by J. Tenniel)

[6] (Carroll 2009: 9-15 (Chapter 1))

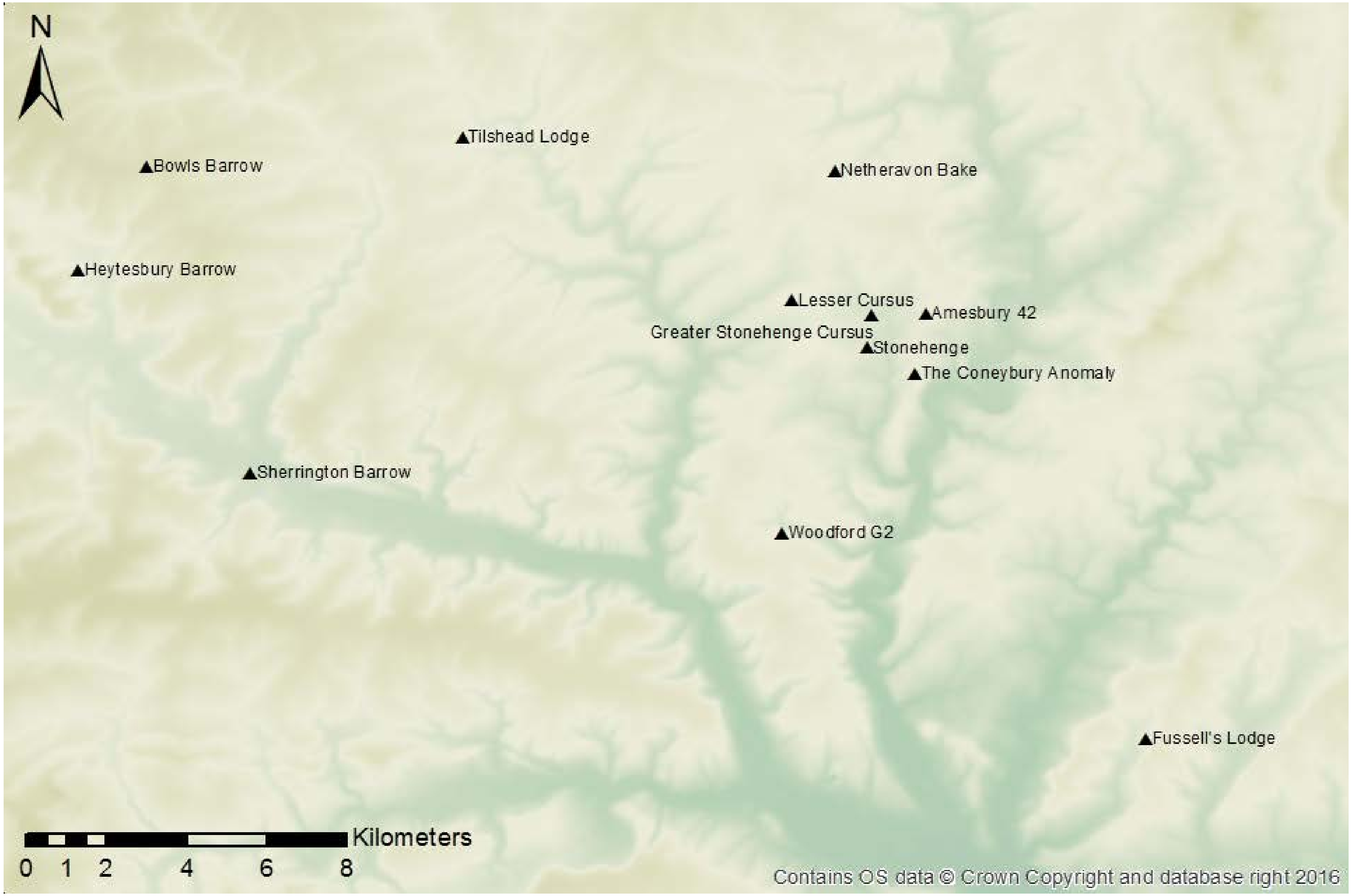


Figure 4: Elevation map of Salisbury Plain, Wiltshire showing key sites. Contains OS data © Crown Copyright and database right 2016

Table 1: Radiocarbon date ranges for sites in the Salisbury Plain region

Site	**Laboratory number**	**Small finds no.**	**Material**	**Taxon**	**Context**	**Date range cal BC**	**% confidence**	**Reference**
Amesbury 42	OxA-20594		Antler	Red deer	Base of ditch	3630 – 3371	95.4	Richards and Thomas 2012: 35, Table 5.1
	SUERC-24308		Antler	Red deer	Base of ditch	3520 – 3360	95.4	Richards and Thomas 2012: 35, Table 5.1
	OxA-21961		Bone	Human	Ditch	3357 – 3100	95.4	Richards and Thomas 2012: 35, Table 5.1
Netheravon Bake	OxA-1407	W85, A, 42, 7	Antler	Red deer	Base of phase 1 ditch	3640 - 3520	95	Healy *et al.* 2011: 198, Table 4.13
Woodford G2	SUERC-76736 (GU46030)	125	Bone	Human	In flint cairn	3364	95.4	
	SUERC-76737 (GU46033)	138	Bone	Human	East ditch	1361 - 1059	95.4	
	OxA-35176	68	Bone	Human	East ditch	1397	95.4	
	OxA-35177	68	Bone	Corvid	East ditch	3428 - 3120	95.4	
Fussell's Lodge	Multiple samples				Construction of chamber	3840 - 3710 or 3755 - 3660	95	Wysocki *et al.* 2007: 76-77
	Multiple samples				Extension of chamber	3686 - 3645 or 3657 - 3640	95	Wysocki *et al.* 2007: 76-77
	Multiple samples				Construction of barrow	3645 - 3475 or 3645 - 3590 or 3650 - 3605	95	Wysocki *et al.* 2007: 76-77
Robin Hood's Ball	OxA-15320	RHB 1 (65)	Ceramic sherd with internal residue		Inner ditch	4050 - 3950	95	Healy *et al.* 2011: 197, Table 4.12
	OxA-15254	RHB 1 74	Ceramic sherd with internal residue		Inner ditch	3640 - 3370	95	Healy *et al.* 2011: 197, Table 4.12
	GrA-30038	RHB 1 (50)	Ceramic sherd with internal residue		Inner ditch	3650 - 3370	95	Healy *et al.* 2011: 197, Table 4.12
Coneybury Anomaly	OxA-1402	W2, 1981, IL, 2538, 420	Bone	Unidentified animal	Base of pit	3950-3790	95	Healy *et al.* 2011: 198, Table 4.13
Lesser Stonehenge Cursus	OxA-1404	W55, A, 51, sf 219	Antler	Red deer	Primary fill of ditch. Phase 1	3360 - 3130	95	Healy *et al.* 2011: 198, Table 4.13
	OxA-1405	W55, A, 21, sf 7	Antler	Red deer	On floor of ditch cutting. Phase 2	3500 - 3360	95	Healy *et al.* 2011: 198, Table 4.13
	OxA-1406	W55, C, 320, sf 42	Antler	Red deer	In cemented chalk rubble, secondary fill	2890 - 2140	95	Healy *et al.* 2011: 199, Table 4.13
Greater Stonehenge Cursus	OxA-17953	032	Antler	Red deer	Base of western ditch terminal	3630 - 3370	95	Healy *et al.* 2011: 199, Table 4.13
	OxA-17954	032	Antler	Red deer	Base of western ditch terminal (replicate of OxA-17953)	3360 - 3370	95	Healy *et al.* 2011: 199, Table 4.13
	OxA-1403		Antler	Red deer		2840 - 2580	95	Healy *et al.* 2011: 199, Table 4.13

Amesbury 42

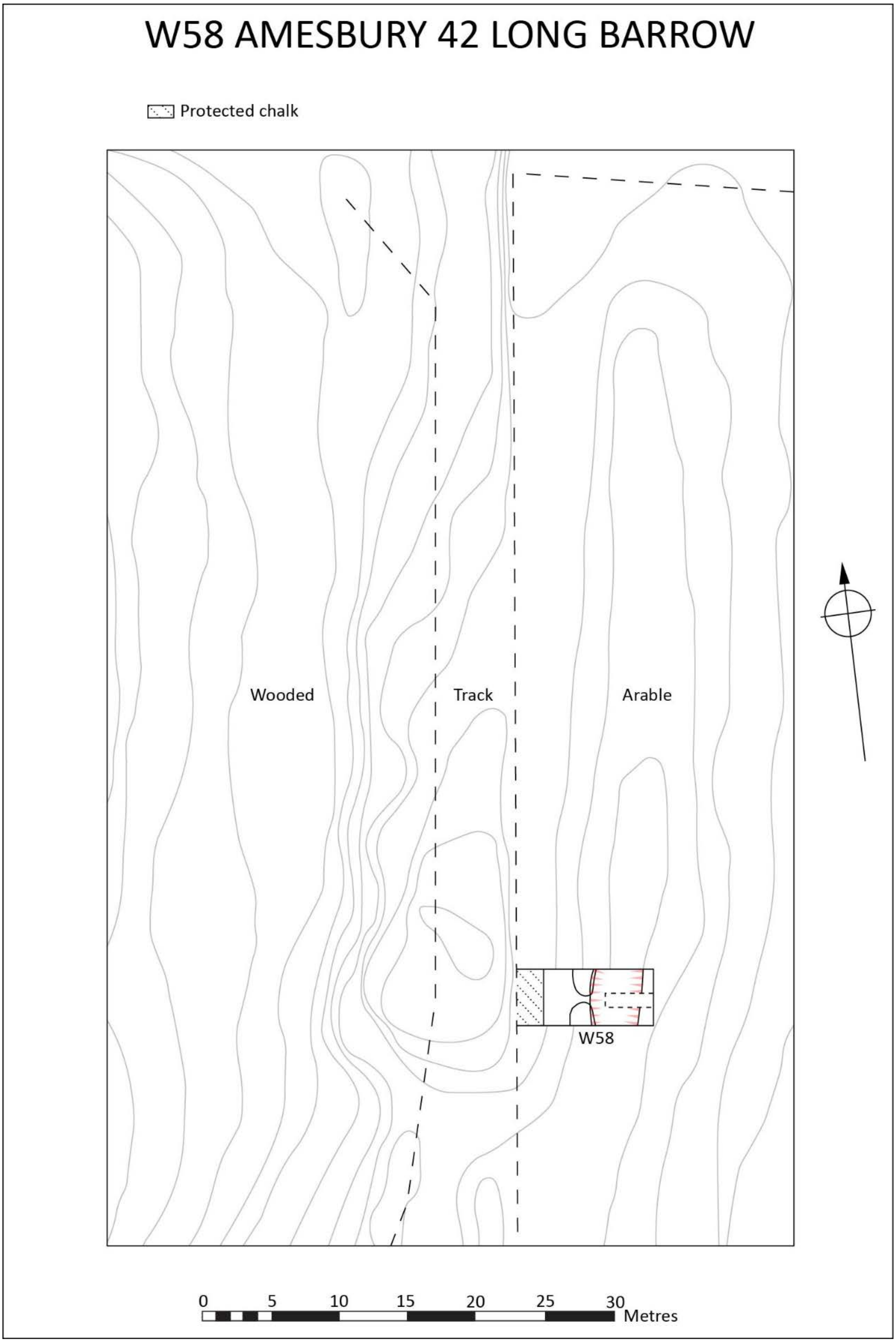


Figure 5: Plan of Amesbury 42 long barrow, © Historic England

It is fair to assert that Amesbury 42 is not a site that has established a place in the popular imagination, despite its position at the core of the Stonehenge landscape. Its location just beyond the east end of the Greater Stonehenge Cursus, the 2.9 km earthwork that defiantly scores the land to the north of Stonehenge itself, dwarfs the site in terms of physical scale as much as the entity that is Stonehenge itself overshadows all else in its orbit in terms of notoriety – at least in the present day. This minimising influence has not been a constant. Amesbury 42 has been assigned radiocarbon date ranges of 3630-3371 cal BC and 3520-3360 cal BC from antler recovered from the primary deposits of the long barrow ditch (see Table 2; Richards and Thomas 2012: 35), and analysis of the flint assemblage has found that the characteristics of the Amesbury 42 assemblage accord with local Early Neolithic comparatives (Harding 1990: 103). This suggests that Amesbury 42 predates the earliest phase of Stonehenge and is broadly contemporary with the Greater Stonehenge Cursus. The latter appears to engage with and respect the barrow structure (Richards and Thomas 2012; Thomas *et al.* 2009: 51; Parker Pearson 2012: 143) and may be considered a responsive gesture whereby the significance and visibility of the barrow were heightened.

The terms of archaeological engagement with Amesbury 42 have proved likewise variant. Its image was recorded in an illustration of the Cursus by Stukeley (1740) and in a brief reference, its form likened to but not recognised as a long barrow by Colt Hoare (1975a [1810]: 158), who considered it integral to the structure of the Cursus. It subsequently drew the attention of Thurnham as part of an extensive programme of barrow digging across the region, who uncovered secondary human interments along with what appears from the description to be a primary deposit of a cattle cranium and articulated foot bones from an estimated four or five individuals (Thurnham 1869: 180, 182). Thurnham records his inquiries as ‘not successful’ (Thurnham 1869: 180). More recently, Amesbury 42 long barrow has been investigated under the Stonehenge Environs Project (SEP) (Richards 1990), and as part of the Stonehenge Riverside Project (SRP) (Parker Pearson 2012; Richards and Thomas 2012), forming the focus of sample excavations. The former encompassed an area of 10m x 4m of the southern end of the east ditch, the mound having been heavily impacted by agriculture (Richards 1990), and the latter revisiting and extending the former’s trench. These small interventions, an archaeological form of key-hole surgery, followed a programme of surface collection and, in keeping with the remit of both projects, were framed more broadly within the (macro) Stonehenge landscape setting. The SEP work resulted in the recovery of over 5000 artefacts, which were subsequently analysed and the findings published, and are here reconsidered alongside Thurnham's documentary evidence for their potential for articulating past human-animal relationships.

The archaeological assemblage that is Amesbury 42 is a product of action, of human and animal bodies, weather, soils, plant roots and artefacts of different materials that have engaged in frictional and chemical exchanges to produce and shape the character of the archaeology encountered during excavation – a statement that holds true for all of the sites here explored. It may therefore be of little surprise that a theme of breakdown, of transformation and reconfiguration emerges as a dominant trope (cf. Fowler 2003). With the exception of teeth and a single small flint nodule, no complete specimens were recovered during the SEP excavation. This is not however simply a response to processes of degradation that inadvertently impact archaeological material, but also to the deliberately deconstructed material bodies – and the possibilities this material presents for further deconstruction – that comprise the ditch fill of Amesbury 42.

Anticipatory deconstruction

Beginning with the focus of traditional zooarchaeological engagement, the physical presence of animal bodies from primary Neolithic ditch contexts is limited to small find (sf.) 157 comprising nine bone fragments including a heavily weathered and degraded cattle calcaneum, likely introduced through the primary weathering of the ditch edges. Deliberate primary deposition is, however, evidenced in the form of two spatially discrete flint knapping deposits, sf. 155 and sf. 158, identified in lenses of dark, humic sediment (105) and (106), within the primary chalk rubble (unpublished site archive 1983). Notes in the archive suggest that a quantity of material pertaining to sf. 158 permitted refitting. In analysis of what was interpreted as primary knapping activity in the SEP publication, but has subsequently been demonstrated to post-date activity in the main ditch (Richards and Thomas 2012), Harding (1990: 99-104) identifies three in-situ knapping sequences, representing the sequential breaking down of three flint nodules. He suggests that flake production was the intended outcome of activity (Harding 1990: 99-104), but that these flakes, like those in the two primary deposits of the main ditch, remain in-situ and unused rather places emphasis on the significance of the *process* of flint working (cf. Richards and Thomas 2012: 36-37 for discussion of analogous patterns observed in the ditch of the adjacent Greater Stonehenge Cursus) as well as the latent potential of the prepared material, with the possibility of its complicity in the deconstruction and transformation of animal bodies.

This concept has been explored elsewhere. In an archaeo-anthropological study of a series of sites in Archibarca, Argentina, a 'high altitude basin' encompassing springs and grasses in its lower plain and rocky scrub to the higher ground and undertaken from a post-colonial perspective, Haber (2009) draws on animism as 'a local theory of relatedness' (Haber 2009: 424) to develop insightful understandings of 'meat cache' sites dating from c. 1000 BC to 500AD (Haber 2009: 425). The term 'meat cache' is informed by local terminology and describes low, heterogeneous stone assemblages that incorporate lithic cores and in some instances, struck debitage (Haber 2009: 420).

Haber describes these stone groupings as 'un-structured structures' (2009: 419), collectives that seemingly obfuscate evidence of anthropogenic involvement, but that are, in fact, quite deliberately distributed across their landscape context. They form part of a network of related structures including stone-walled 'trenches' and lines of stones, all participants in the human hunting of vicuñas. The walled trenches make possible the concealment necessary to permit human hunters proximity to the vicuñas that are their intended targets. Erected in strategically selected locations, evidence confirms that they are used repeatedly, a practice that appears to have occurred over extended periods of time (Haber 2009: 425). The trenches thus lie in wait, in readiness for participation in future episodes of hunting in which they will reassemble with humans in response to the gathering of vicuñas nearby. And it is this notion of readiness, of anticipation, that Haber (2009) draws forth in his examination of the meat cache assemblages. The presence of stone suitable for working, sometimes accompanied by struck debitage, and found in the context of a landscape already intimately bound up with hunting, is interpreted as an anticipatory act. The potential for the lithics to become blades in expectation of future need is relationally emergent within the broader assemblage. And this anticipatory act of gathering stone not only enables readiness, it *invokes* it by materialising the requisite circumstances of possibility.

Although not directly analogous with the long barrow debitage deposit, the concept of potentiality, and more specifically for a latent form of human-animal interaction, is certainly pertinent. The act of striking flint flakes from nodules, many of which would be suitable for further working to produce a range of tool types used for the hunting and processing of animal bodies, for example, are instead left suspended in a state of possibility. Their accumulation and conservation as discrete groups in the various ditch contexts reinforces the deliberateness of focus on process, and more specifically, on process arrested. The state of anticipatory tension therein achieved is key and will re-emerge shortly in relation with deposits of animal bodies.

Unmaking animal bodies

It has been noted that the disarticulated state of the animal bodies that account for the entire Amesbury 42 osseous assemblage has undoubtedly been exacerbated by taphonomic processes of weathering, the adverse effects of soil chemistry, erosion compounded by agriculture, non-human animal burrowing, and antiquarian burrowing. Evidence that deliberate deconstruction of bodies occurred prior to deposition is, however, provided by the latter. Thurnham's recovery of cattle cranial and articulated pedal bones from the barrow mound may have aggravated personal feelings of disappointment – which themselves inform on a particular form of human-animal relationship bound up with anthropocentric, colonialist attitudes expressive of and reinforcing concepts of class and gender identity that underwrote the archaeological project in the 19th century – but it confirms the presence of a mode of treatment also encountered in primary, Early Neolithic long barrow contexts by Thurnham (1869: 182) and more recently during excavation at Fussell's Lodge (Ashbee 1966; cf. Ashbee 1970: 158). Precise accounts of stratification and the spatial distribution of the cattle bones recovered by Thurnham at Amesbury 42 are absent, but access to the forms of human-animal relationships here presenced may be considered through recourse to the geographically proximate Fussell's Lodge deposits. Fussell's Lodge was excavated and published by Ashbee (1966) to standards that compare favourably with modern practice, therefore permitting ongoing interrogation; Grigson's analysis of the zooarchaeological assemblage in particular is remarkable for its rigour (Grigson 1966).

Fussell's Lodge long barrow is just under 12 km to the south east of Amesbury 42, although it lies outside, and is distinctly separate from, the monumental complex of the Stonehenge environs and thus did not form one of the long barrow assemblages selected for primary reanalysis as a part of this study. As a result of a recent, extensive radiocarbon dating programme, preferred interpretation sees activity at the site as falling in two phases between the thirty-eighth and thirty-seventh centuries cal BC (see Table 2; Wysocki *et al.* 2007). At the core of its proximal (east) end, three pits demarcated deposits of disarticulated human bone representing a minimum of 34 individuals (Wysocki *et al.* 2007). A weathered cattle cranium was placed at the eastern-most extent of the human bone deposit, which was capped with a cairn of flint nodules, on top of which rested cattle pedal bones representing three feet (Grigson 1966) (Figure 6). In what now (in the context of this argument) becomes a circular reference, this structurally striking composition prompted Grigson to allude to Piggott's 'hide burials', a form found to manifest archaeologically in the recovery of discrete deposits of cranial and pedal bones interpreted as resulting from the deposition of prepared hides (Piggott

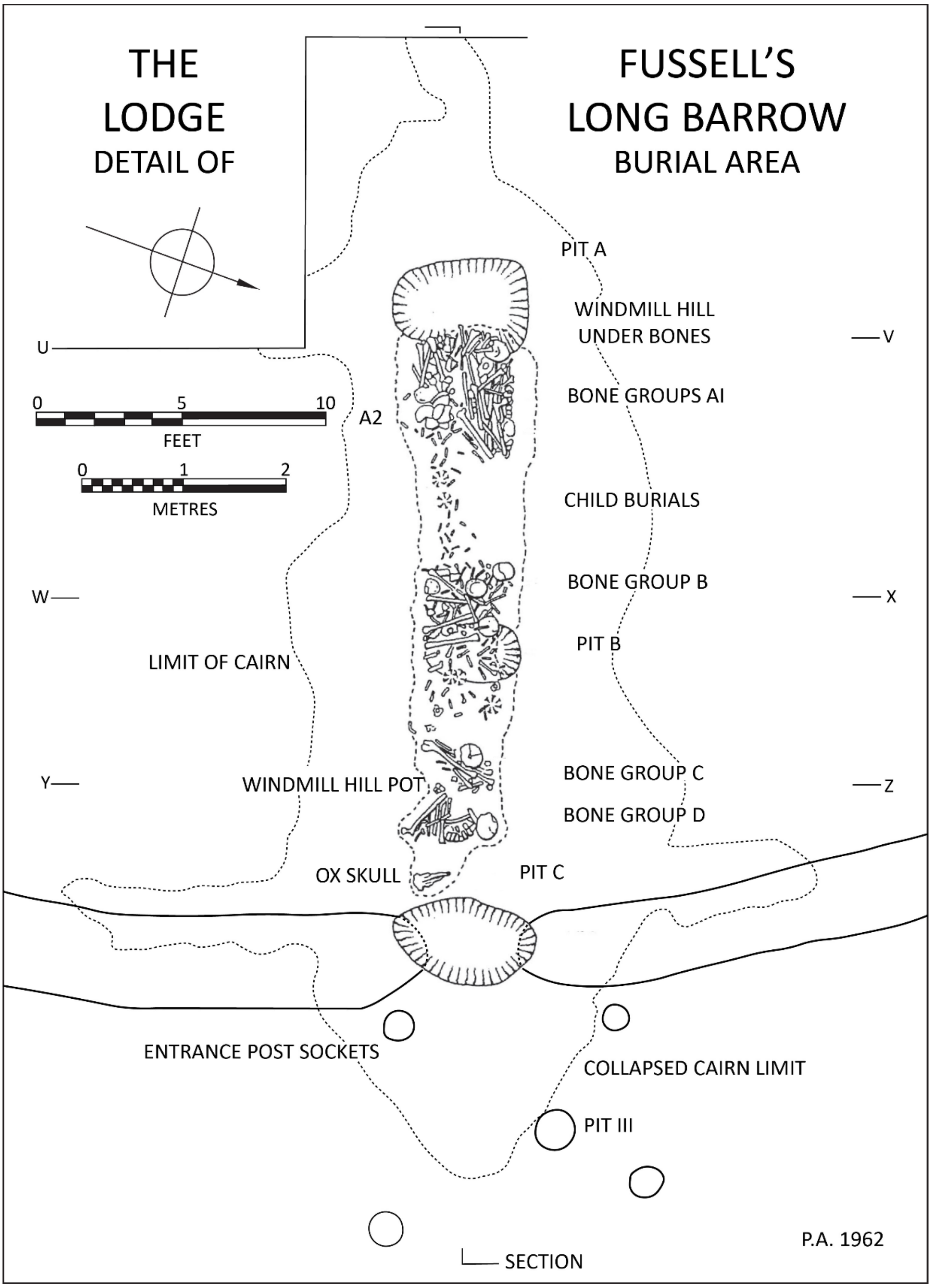


Figure 6: Plan of the central cairn, Fussell's Lodge long barrow adapted from Ashbee 1966: 13, Figure 4, by kind permission of the Society of Antiquaries of London, and Wysocki *et al.* 2007: 68, Figure 2 © McDonald Institute for Archaeological Research. With permission, Cambridge University Press

1962b, cited by Grigson 1966), and which Piggott (1962b: 116, 118) links with Thurnham's findings – of which the Amesbury 42 deposit forms one example (see Chapter 2 for discussion of Piggott's text). Implicit in the concept of a hide burial – and the Fussell's Lodge deposit in particular – are notions of interconnection, of individuality confluent with community, whereby the remains of the individual animal physically envelope the human and flint multiplicity within and thereby become *something* different (cf. Pollard 2004: 63). Whilst this dialogue between the individual and the group remains key as a fertile avenue for exploration, the findings of Wysocki *et al.*'s radiocarbon dating project demand a renegotiation of the terms of debate. The cattle skull and pedal bones returned date ranges that likely preclude their contemporaneity, suggesting that they derived from different animals (Wysocki *et al.* 2007: 79, 81), an interesting reference to, and parity with, practices observed in the treatment of some of the human remains from Wysocki *et al.*'s human Bone Group D from beneath the cairn (2007: 67). The focus therefore shifts from a human-cattle chimerical comingling to one of intra-species individual-becoming-group identity with inter-species correspondence, whereby many corporeally distinct individuals of a single species are joined to become one, a practice mirrored in both humans and cattle. This equity of treatment expresses a form of segregated togetherness whereby the degree of difference and proximity is relationally emergent and scale dependent; different relations emerge depending on whether the group is addressed as a single entity, or is broken down into its sub-assemblages. Like the potential human-animal relationships identified in the deposition of flint debitage from the ditch at Amesbury 42, the cattle-human-flint hybrid of the Fussell's Lodge mound provides new possibilities for being and articulating the ongoing, interdependent nature of cattle-human-flint lives and deaths, possibilities dependent upon the death and deconstruction – and thereby reconstruction – of animal and human bodies.

The presence of partially articulated cattle remains comprising a mandible, partial vertebral column, ribs and a left tibia shaft positioned above the primary silts of the south ditch of Fussell's Lodge (Grigson 1966: 64-65), which contained a clustered deposit of knapping debitage (Ashbee 1966: 23), forms a significant point of structural difference between the two sites, marking a development[7] of ideas materialised in the Amesbury 42 primary and secondary deposits. The radiocarbon date range returned from a vertebra from the ditch deposit at Fussell's Lodge provided a near match with the date range obtained from the pedal bones at the top of the flint cairn (Wysocki *et al.* 2007: 72); it is therefore possible that the two

[7] Development here refers to the ideas emerging through the present study, rather than a linear, historical process.

spatially discrete deposits derive from the same animal. Following the argument for the deposition of knapping debitage as an anticipatory act, the stratigraphic position of the bone assemblage in the ditch places it in a responsive relationship to the earlier knapping deposit, and is thereby expressive of resolution – of expectation satisfied – and provides a platform for a newly configured form of human-cattle becoming to emerge.

Although the relationship between the comparable Amesbury 42 deposit and other material in the barrow is unknown, beyond the fact that it was recovered from the mound, the deposit is iterative, forming a circulating reference (Latour 1999: 24-79) with other such long barrow assemblages, when viewed from the present and at a macro scale. It is thereby at this regional, macro scale that the nature of the human-animal relationships it presences emerge, to articulate shared experiences of human-cattle relations that permitted communication at a local and regional level. The centrality of cattle and the unmaking of cattle bodies with potential for remaking in different, expressive formulations therefore asserts itself and finds support in the flaked flint debitage in primary ditch contexts. The importance of performing these acts within a broader human-human and cattle-human framework places emphasis upon interlinked social networks with regional reach that informed and transformed local practices. Deconstruction of further bodies is revealed in the ditch fill and introduces a dynamic, temporal dimension.

Unmaking the mound

Time passed. The aforementioned efforts of diverse taphonomic agents took effect and renegotiated the form of the barrow mound. As it crept its way into and slowly filled the ditches, so the osseous remains that had been locked into its matrix, were joined by other, younger collaborators. Cattle, and much lower numbers of pig, red deer, roe deer and fox bones were encountered in the secondary ditch deposits (see Table 2), along with Bronze Age pottery fragments, flint, soils, taphonomic processes, human action and intention, the latter conclusively demonstrated through the presence of a butchery mark typical of disarticulation rather than the removal of flesh on sf. 116, a cattle scapula fragment. This butchered bone communicates a brief and energetically intense episode of past human-animal interaction in which an individual animal was dismantled, its body merging with its human butcher as blood, fat, marrow and sweat were brought forth and mixed in messy, multi-sensory union.

Table 2: Taxonomic representation per context (NSP), Amesbury 42 long barrow. * denotes the inclusion in this total of sf. 145 which falls within the size range of both large domestic cattle and small aurochs

Context	Horse	Cattle	Pig	Sheep/ goat	Fox	Human	Red deer	Roe deer	Large mml	Medium mml	Indeterminate	Total
Ditch: primary silt		1									8	9
Ditch: secondary silt		23*	4		1		1	1	46	2	117	195
Ditch: tertiary silt	1	12	1	8	1	4	1	1	17	7	107	160
Ditch: early phase plough soil											12	12
Ditch: plough soil									1	1	4	6
Unidentified context		5		2					21	4	90	122
Total	**1**	**41**	**5**	**10**	**2**	**4**	**3**	**2**	**85**	**14**	**338**	**504**

Whilst remaining mindful of the effects of preservation bias that favour the survival of the more robust bones of large taxa (Lyman 1994: 234-258), the low numbers of specimens representing other species is a reality that requires consideration, and is further complicated by uncertainties as to their provenance. It is unclear whether they entered the ditch as part of the migrant mound material or whether they joined the ditch fill with the Bronze Age pottery – either as the remains of isolated but deliberate deposits; as residual material introduced by chance; or a combination of the two. What is prescient is that these deposits are fragmentary – both in terms of their relationships to the body as a whole, and on a closer scale, with regard to the individual skeletal elements to which they pertain – and so in structural terms, reaffirm themes of partibility with potential for reformation (cf. Fowler 2001).

Of significance is the low quantity of red deer remains, which are comparable in size and robusticity with cattle, and so should survive if originally present in deposits. Given the survival of equal numbers of much more gracile roe deer bone and low, closely comparable numbers of pig specimens, explanations for the marked proportional differences observed between cattle and other species present seem unlikely to rest solely in the capricious hands of taphonomy. Explanations for such differences in Neolithic assemblages frequently recourse to familiar domestic/wild dichotomies (for example Thomas 1991; Whittle *et al.* 1999b), but are here untenable, and not least because the date of the secondary deposits cannot be clearly defined; what emerges, then, is an emphasis on the centrality of cattle and of human-cattle relationships that reasserted themselves – albeit in potentially varied and mobile articulations – through time.

The pattern broadly continues, in outright disregard of temporal divisions imposed on the stratified layers during the course of archaeological engagement that identify a meaningful change through the appearance of Romano-British pottery in the tertiary fill of the ditch. Cattle bones remain the most abundant of all the species with pig, red deer, roe deer and fox represented by a single specimen each. But the bone assemblage becomes a little more diverse, with the presence of a horse tooth, four fragments of human cranium and eight teeth from a sheep or goat. These presence different human-animal interactions, with different possibilities for shared lives and deaths, although further understanding of the nature of these interactions is stymied by the volume and quality of the evidence. Again, this material is fragmentary; its provenance is insecure; it has undoubtedly been impacted and transformed by taphonomy – it is *possible* that the sheep or goat teeth may pertain to a single animal, but this seems unlikely given that they are spread across five different contexts. But there is a deposit of flint knapping debitage comprising a core and 63 flakes, some re-fitting. Past happenings at this locale continued to have resonance – the presence of the Romano-British pottery attests to this – and aspects of past practices were referenced through performance, whether knowledgeably or not, through the deposition of knapping debitage. Indeed, the aforementioned deposit of flint knapping debitage analysed and interpreted by Harding as primary, in-situ, and appearing consistent with Early Neolithic practice, may in fact date to the recutting of the Greater Cursus ditch on the basis of structural similarities with the Amesbury 42 recut pit sequence from which the knapping debitage was recovered (Richards and Thomas 2012: 36). The Greater Cursus recut has been assigned a radiocarbon date range of 2840-2580 cal BC (Richards and Thomas 2012: 34-35), placing this activity almost a millennium after the primary deposits in the long barrow ditch.

Remaking bodies: a posthumanist becoming

These reflections on an assemblage of fragmentary material have enabled a reformulation of new possibilities for understanding the nature of past human-animal relationships presenced at Amesbury 42 long barrow. Cattle, horse, pig, sheep/goat, fox, human, red deer and roe deer bone fragments together with pottery sherds, flint cores and flakes, soils, taphonomic processes, museum archives, documentary records, digital data, GIS software, human (re)action and intention have come together in transformative collaboration to remake each other. Human-cattle relationships have emerged as an ontological centre of mass in the Neolithic phase of this site around and through which interwoven multi-species lives and deaths could be structured and negotiated at multiple scales. Cattle and human bodies made demands of each other, and required particular forms – even a degree of parity – of treatment in death. Relationships were heavily imbued with concern for a situatedness; practices were iterative, referential, reactionary and looked both to the past and future in anticipation of future possibilities. There is a dynamic, multi-temporal aspect to the assemblage, which is transformed and transforms lives therein implicated, from the Bronze Age and Romano-British periods up to the present.

Key to this reading of the data is the combination of both micro and macro scales of analysis: Amesbury 42 is an assemblage that nests and is nested in a multitude of other assemblages, which permits rich and varied contextualisation. Regional, inter-site comparison has proved especially insightful as demonstrated through the example of Fussell's Lodge, and it is at Netheravon Bake long barrow that this regional picture will be further developed.

Netheravon Bake

Netheravon Bake long barrow is located close to Robin Hood's Ball causewayed enclosure and five kilometres from Durrington Walls henge. It is one among a small constellation of long barrows that cluster around the causewayed enclosure, and formed the focus of two phases of excavation as part of the SEP during 1984 and 1986 under the direction of Julian Richards. The 1984 excavation targeted the ditches, confirming the existence of encircling ditches which typically accord with long barrow structures of more compact dimensions – as indeed this is. The construction sequence of the ditch was explored further in the 1986 excavations, which focused on a section through the terminal of the south ditch. Further trenches were placed over the area where the ploughed-out mound would once have stood (Richards, unpublished notes). The earliest phase of the long barrow ditch is dated to the Early Neolithic, with later phases of Middle Bronze Age activity, which saw the site transformed into the form of a round barrow. The outcomes of the excavation have yet to be published, but full records were deposited and remain curated by the Salisbury and South Wiltshire Museum.

In so many respects, the Netheravon Bake archaeological assemblage appears a facsimile of Amesbury 42, providing a platform for the reinforcement of ideas established above. Like Amesbury 42, Netheravon Bake is a multi-period site, comprising Neolithic and Bronze Age ditch cuts (Richards, undated: site archive). Fragmentation is a dominant theme at both site and context levels: of a total 532 osseous specimens, just four elements – all robust tarsal bones – survive complete, excluding loose teeth (Table 3); 448 ceramic sherds and a total of 523 worked flints were recovered (Table 4). With no mound surviving, and no records pertaining to antiquarian excavation, all evidence derives from the ditch fill. With the exception of a single red deer antler tine that returned radiocarbon date ranges of 3646-3378 (1 sigma); 3776-3350 cal BC (2 sigma) cal BC (see Table 1; Richards 1990: 259), evidence for primary deposition is limited to a cluster of knapping debitage (sf. 485) comprising 48 flakes. The osseous assemblage is concentrated in the secondary and tertiary fills of the main ditch with cattle remains representing all zones of the body dominating (Table 5). Pig, sheep/goat, roe deer and fox are represented by low numbers of specimens in the secondary fill, with horse, pig, sheep/goat, and roe deer joining cattle to form the osseous component of the tertiary ditch fill. That loose dentition accounts for all but three specimens representing taxa apart from cattle and fox suggests that like Amesbury 42, taphonomic factors have had a significant impact. The composition of the Bronze Age osseous assemblage further attests to this, with low numbers of cattle, sheep/goat and pig specimens comprising loose teeth and two fragments of tarsal bones which seem likely residual inclusions; a series of incidental human-animal encounters.

Table 3: Taxonomic representation per context (NSP), Netheravon Bake long barrow

Context	**Horse**	**Cattle**	**Pig**	**Sheep/ goat**	**Red deer**	**Roe deer**	**Fox**	**Large mammal**	**Medium mammal**	**Indeterminate**	**Total**
Primary fill of main ditch					1						1
Secondary fill of main ditch		25	1	1		1	10	13	42	210	303
Tertiary fill of main ditch	1	16	1	7		1		10	3	58	97
Secondary fill of recut BA ditch		1	1							2	4
Tertiary fill of recut BA ditch		1						1		2	4
Fill of recut BA ditch		3		8						11	22
Mixed soil below plough soil		4			1			4		36	45
Contemporary soil profile		1								2	3
Plough soil	3	1	1	3					1	27	36
406										17	17
Total	**4**	**52**	**4**	**19**	**1**	**2**	**10**	**28**	**46**	**365**	**532**

Table 4: Ceramic and flint specimens per context (NSP), Netheravon Bake long barrow

Context	**Ceramic total**	**Rim sherd**	**Base sherd**	**Body sherd**	**Decorated**	**Smoothed**	**Flint total**	**Flint flakes**	**Flint core**	**Flint tool**	**Knapping cluster**
Primary fill of main ditch							53	53			sf. 485 (417) 48 flakes
Secondary fill of main ditch	1			1			443	439	4		sf. 469 (391)118 flakes; sf. 470 (370) 118 flakes
Tertiary fill of main ditch	184	6	2	104	3	33	11	11			
Primary fill of recut BA ditch							13	13			
Mixed soil below plough soil	189										
Contemporary soil profile	11			11							
Plough soil	63	1		3		2	3			2 retouched flakes; 1 hollow scraper	
Ovoid feature											
Total	**448**						**523**				

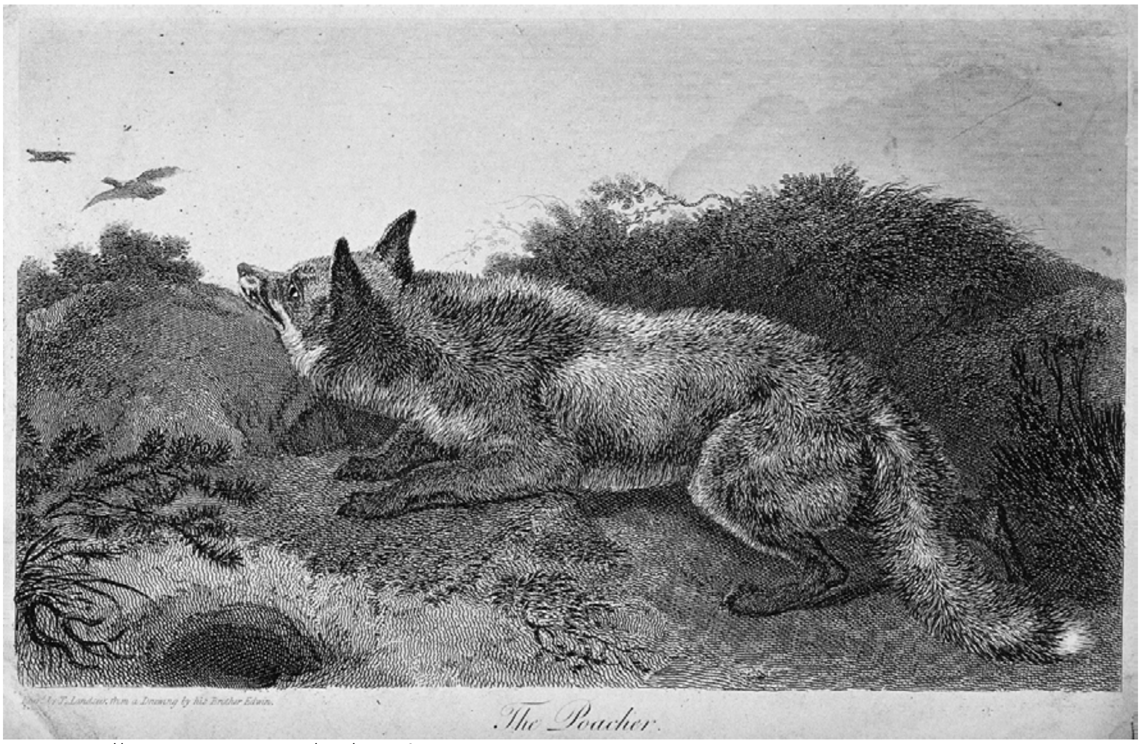
Table 5: Body part representation (NSP), secondary and tertiary fills of main ditch, Netheravon Bake long barrow

Element	**Horse**	**Cattle**	**Pig**	**Sheep/goat**	**Red deer**	**Roe deer**	**Fox**
Secondary fill							
Head							
Cranium							2
Mandible		4					2
Tooth		6	1			1	6
Spine							
Lumbar vertebra		1					
Scapula		5					
Pelvis		1					
Forelimb							
Metacarpal		1					
Hindlimb							
Tibia		1		1			
Hands/feet							
Calcaneum		3					
Astragalus		3					
Tertiary fill							
Head							
Tooth	1	10	1	6			
Scapula		3					
Pelvis		1					
Forelimb							
Humerus		2					
Hindlimb							
Tibia				1			
Metatarsal						1	

The presence of two deposits of knapping debitage in the secondary deposits of the main ditch implicates an ongoing concern with fragmentation analogous to that witnessed at Amesbury 42, seven kilometres to the south west, with iterative practice spanning temporal and geographic topographies. Indeed, it is through reference to the Amesbury 42 and Fussell's Lodge assemblages that the fragmentation encountered at Netheravon Bake need not all necessarily be understood as chance outcomes of broader processes, as familiar patterns of deposition re-emerge between long barrow sites. For example, the presence of relatively high numbers of cattle remains in the secondary main ditch deposits at Netheravon Bake represent all zones of the body, but crucially, some of the larger, more robust elements that might be expected to survive well are not identified in the assemblage. Whilst the familiar assertion that absence of evidence cannot be considered evidence of absence stands, when considered in a regional context against the deposits recovered from Amesbury 42 and Fussell's Lodge, it seems reasonable to hypothesise that at least some of the Netheravon Bake cattle deposits may represent the remains of a cattle body or bodies that entered the ground in a state of either full or partial disarticulation. That much of this material, comprising mandible, vertebra, tibia, and metacarpal fragments along with three loose teeth and a quantity of bone fragmented beyond identification was found 'clustered at bottom & associated with dog skull' (unpublished site archive 1984), certainly suggests the kind of spatial proximity that results from deliberate deposition such as that observed in the Fussell's Lodge deposit. However, the presence of an alleged 'dog' skull nestled alongside a highly fragmented and seemingly disorganised deposit hints at mediation by vulpine agency.

So it is through site scale analysis, coupled with a broader, inter-site level perspective that the Netheravon Bake deposits reaffirm concern with the deconstruction of bodies, of action emergent as recurring cycles of anticipatory fragmentation and realisation, and of the centrality of human-cattle interaction. But to dwell further upon this particular articulation of a human-animal relationship risks unnecessary repetition; a different relationship – one between humans and foxes – is now tracked and its archaeological significance explored.

In tension and intension: human-fox becomings



Source: https://commons.wikimedia.org/wiki/File:A_fox_stalking_ducks_in_the_heath._Engraving_by_T._Landseer_Wellcome_V0020859.jpg

Figure 7: The Poacher

The presence of fox in the Netheravon Bake assemblage has been noted above, with the suggestion that it may post-date the associated cattle bone found together with it, a relationship commonly described in zooarchaeological literature as ‘intrusive’ (for example, de Mallet Morgan 1959: 25; Bunting *et al.* 1959: 48; Grigson 1962: 53, but see Serjeantson 2011: 5 for alternative guidance). Such an assertion requires substantiation; as a native of the British Isles, it is perfectly possible that fox bones could have formed deliberate deposits in Neolithic and later contexts (cf. Harris 2005: 45; 2017: 131-132; Pollard 2008: 56-57; Pryor 1998: 370). Indeed, the excavators carefully packed the fox remains separately, suggesting that the specimens were thought to be particularly significant – although this treatment may be a consequence of their misidentification as dog, rather than a factor related to their entry into the archaeological record. However, that Maltby (1986) notes the presence of the fox skull in an unpublished report pertaining to the first phase of excavation, but does not accord it further comment suggests that it was in fact considered a late arrival to the assemblage. Whilst fragmented, the fox remains are noticeably more complete than the associated osseous material, and comprise bones that have a tendency to be more susceptible to fragmentation than the latter. The context from which the fox assemblage derives appears unaffected by recutting, thereby precluding the likelihood that the assemblage is formed of redeposited material comprising elements derived from different sources. Further, although there is no mention of animal burrows on the context record, animal burrowing is noted in records pertaining to other areas of the site during the second phase of excavation and appears to have impacted the archaeology (unpublished site archive 1986). Thus, although the evidence is not conclusive, it seems probable that the fox bones joined the long barrow assemblage at a later date than the associated cattle bone, and likely on the fox's own (if not deliberate) terms.

But contrary to the sentiments of regret, irritation and consequent dismissiveness that arguably underscore the term 'intrusive' when conjured as a perceived limitation to analysis, the presence of the fox elucidates interesting human-animal relationships – and not least the archaeologist-fox relationship here described. It is intriguing that the engagements between burrowing animals and the archaeology of this region are being actively discouraged by humans (see Simmonds and Thomas 2015: 96-97). The area, ironically, is preserved for training military personnel for participation in activities that implicate the rupture of human, social, cultural, political as well as animal bodies, with the paradoxical objective of their preservation or reconstruction. Animal bodies are rarely considered in such contexts, but take advantage of the niches made available. The burrowing actions of foxes, badgers, moles and rabbits constitute a shift in agentive forces that trouble anthropocentric perspectives: animal engagement with a structure created, and maintained in the present, as part of an assemblage understood to be steered by human intention, undermines notions of human dominance of the wider environment. Further, the burrowing acts as a stimulant for human archaeological response, all of which supports the posthumanist cause that finds agency to be dispersed and in a constant state of motion.

Evidence certainly suggests that barrows appear to be inviting animal habitats, raising the question of whether this form of relationship was a factor intentionally acknowledged, or even folded into barrow structures in the Neolithic. Foxes and badgers were the only species present in Britain in the Neolithic that occupied and regularly moved between terrestrial and subterranean environments which, in addition to their characteristic crepuscular behaviour, omnivorous diet, and distinctive sound and smell, may have marked them out. It has been suggested elsewhere that aspects of this behaviour may be associated with movement between different realms of the living and dead (cf. Pollard 2004: 62), but this rests upon problematic conceptual binaries and so will not be pursued. However, burrowing does act to remodel earthen structures, thereby rapidly creating a patina of age; a manifestation of temporal dissonance that enables a sense of pastness (cf. Bradley and Williams 1998). Ashbee

(2004) posits that the form of some Neolithic long barrow ditches that feature steep sides were engineered to age rapidly as the effects of weathering take their inevitable course. The processes of burrowing and subsequent inhabitation can be added to this, as they serve to destabilise both the mound and ditch structures. This concern for anachronism finds support in other long barrow constructions, but at an inter-regional scale; the neighbouring Cotswold-Severn group provides examples that include 'false entrances', external blocking that suggests the existence of concealed chambers beyond – but that are in fact absent – thereby giving the *impression* of antiquity (for example at Belas Knap and Rodmarton, Gloucestershire). The significance of a concept of ancientness repeatedly re-emerged as long barrows formed the focus of subsequent phases of activity from the time of their construction through to the Anglo-Saxon period, which saw humans burrowing into the mounds and ditches to deposit the human and animal dead (for example, Bowls Barrow (Thurnham 1869: 180), Tilshead Lodge (Thurnham 1869: 180, 196) and Woodford G2, Wiltshire), and through the later actions of antiquarian investigators who sought to recover them in a curiously correspondent mode of human-fox behaviour. And so it is to Woodford G2 long barrow that we next move – in true vulpine fashion – by way of a rabbit hole.

Woodford G2

Woodford G2 Neolithic long barrow, Wiltshire, has proved a popular locale for rabbits of the physically manifest and fictional varieties (more to follow), but in contrast, has suffered neglect at the hands of human agriculturalists and archaeologists. Situated on the southern slope of a spur of higher ground on Salisbury Plain, five kilometres to the south of Stonehenge, it was subject to total excavation in 1963 by a team headed by Major and Mrs Vatcher in response to plough damage and impending, destructive agricultural activity. Excavation encompassed the entirety of the surviving structure, which included a flint cairn at the core of the barrow mound, the surviving body of the mound, two flanking ditches and a series of associated pits. Unpublished by the excavators, it was over 20 years before analysis of archive material was undertaken and published by Gingell (1986). With a focus on unpicking and establishing the nature of the structural components and phasing of the barrow features, which had been complicated by the presence of rabbit burrows (Gingell 1986: 18), the osseous remains received limited attention; discussion of faunal remains extended to two sentences:

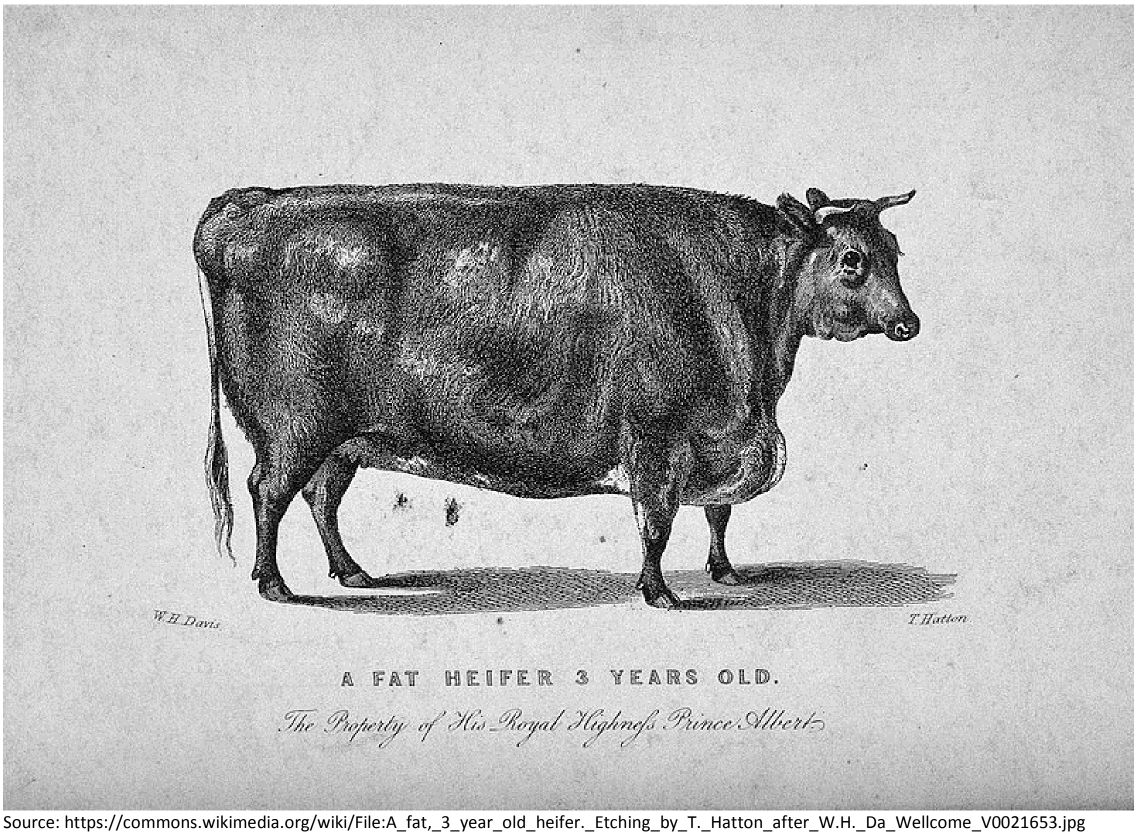
Figure 8: Plan of Woodford G2 long barrow adapted from Gingell 1986: 17, Figure 7, with permission © Wiltshire Museum, Devizes

> "Very few animal bones were recovered from the excavations, and are insufficient to form the basis of a report. An unused fragment of red-deer antler was found near the base of the E ditch." (Gingell 1986: 21)

An adult inhumation from the ditch was analysed by I. W. Cornwall and findings reported in a brief comment (Gingell 1986: 21), and although recorded as present, two cremation deposits recovered from pits located to the east of the northern end of the east ditch, and the 'few' disarticulated human bones from beneath the flint cairn at the core of the barrow structure (Gingell 1986: 16) were not analysed. However, reanalysis undertaken for the present study finds that the Woodford G2 osseous assemblage is substantial, comprising 3464 bone and tooth specimens. It would, therefore, be fair to assert that the potential of these deposits for informing on past lifeways – and human-animal relationships in particular – had been underestimated. It would also be fair to argue that the rabbits are not entirely innocent parties; as diminutive but influential elements of the Woodford G2 assemblage, they are certainly implicated in its fortunes, and have not quite exhausted their role in this story. They will return again, a little later, but first give way to some other human-animal relationships that demand exploration and we begin in the Neolithic with humans and cattle.

Bovid?

In keeping with patterns identified at other sites here examined, cattle remains are the most abundant of the non-human animal species. Cattle teeth and pedal bones were recovered from primary mound contexts, close to the flint cairn that lay at its core. The cairn was topped by a single (possibly residual) red deer toe bone and human skull fragments, and swaddled the disarticulated human bone, four sheep/goat specimens and five Neolithic pottery fragments that rested below; preserved relatively intact prior to excavation. Once again, this assemblage invites comparison with Fussell's Lodge, the survival of the flint cairn at Woodford G2 revealing some striking structural similarities between the two sites. Both feature flint cairns that overlay pits and post holes; both sealed deposits of disarticulated human remains; and cattle



Source: https://commons.wikimedia.org/wiki/File:A_fat,_3_year_old_heifer._Etching_by_T._Hatton_after_W.H._Da_Wellcome_V0021653.jpg

Figure 9: A Fat Heifer 3 Years Old

cranial and pedal bones are recorded as having been spatially proximate if not directly associated with both. An argument has been made for this structural configuration to articulate certain modes of citational treatment (cf. Butler 1993; Jones 2007; 2012) with regard to the assemblages from Amesbury 42 and Netheravon Bake, and it is arguably more germane to Woodford G2. To develop an idea first posited in the discussion of the Amesbury 42 assemblage by way of Fussell's Lodge, the gathering of disarticulated human, sheep/goat, red deer and cattle bodies to form a single architectural composite with the flint nodules is an act of reconfiguration in which corporeally distinctive forms and identities therein manifest are broken down and remade, presencing a complex, creative interweaving of new and potential human-animal relationships that are emergent at different scales; simultaneously one and many manifestations. As a single assemblage, the different elements are united to become a cattle-red deer-flint-pottery-human-sheep/goat hybrid with nested qualities, a 'fantastic beast' (cf. Rowling 2009) of multi-species heritage, born of shared lives and deaths (cf. Ray and Thomas 2003). Drawing on Ray and Thomas (2003), whose rejection of anthropocentric interpretations of human-cattle relations in the Neolithic of southern Britain, rooted as they were in subsistence models and the symbolic role of domestic cattle, made space for consideration of the social character of this relationship. The nature of these shared lives and deaths are now considered through recourse to the macro scale.

Animal Farm. Domestication, dominance and disciplinary practice

Long barrows are amongst the earliest structures to survive extant in the archaeological record of the British Isles. Neolithic activity at these sites began around 150 years after evidence suggests the earliest emergence of Neolithic lifeways in Wessex (Ard and Darvill 2015; Healy *et al.* 2011: 198-199, Table 4.13; 202-205; Whittle *et al.* 2011: 102-109, Table 3.4). During this period, the character of human-animal relationships was undergoing fundamental processes of renegotiation, as concepts of care, ownership, temporal rhythms and continuity impacted human lives in response to and with the needs of domesticated animals. Central is the argument that the onset of the Neolithic in the British Isles is distinctly different from the process of gradual emergence that describes its development in the Near East and its spread across mainland Europe. Evidence confirms that certain aspects of what are now recognised as characteristically Neolithic lifeways took the form of novel arrivals or introductions (Thomas 2013). Already morphologically and behaviourally domestic animals made their debut with the lure of the exotic, a promise of human-animal cooperation and convenience; a package that would ultimately prove irresistible. Aspects of such forms of human-animal interaction did have precedent: the human procurement and processing of animal bodies for meat, fat and skins has a long history (Conneller 2004) and it has been suggested that the provisioning of fodder for deer may already have been an established practice (Fletcher 2011: 32; Simmons and Dimbleby 1974; Worley and Serjeantson 2014). (This relationship may have relevance for exploring the presence of the red deer first phalanx that was found resting on the top of the flint cairn, but as Gingell (1986: 18-19) suggests, the top of the structure may have been left exposed, so the disarticulated bone find may well be residual and not form part of the Neolithic assemblage.) But – following Foucault (1991) – bodies both human and animal would need to become disciplined.

Archaeological evidence emphasises the centrality of the human-cattle relationship in the Neolithic of southern Britain. Ensuring ongoing human-cattle relations that included human access to cattle meat and dairy products (Copley *et al.* 2005: 531; Cramp *et al.* 2014) necessitated the establishment of viable herds (Thomas 2013: 405). Genetic studies support a hypothesis that domesticated and wild species, for the most part, did not interbreed (Burger and Thomas 2011: 375; Edwards *et al.* 2007: 1383; Thomas 2013: 406), which has implications for the containment and security of herds. Humans would need to adapt accordingly, providing a means by which to control access to and movement of cattle. Human and animal bodies thus responded to each other – through movement, through negotiation of space, through communication – to become knowledgeable, reactive, disciplined bodies attuned to the particular demands peculiar to domesticated cattle and to increasingly domesticated humans. Further, successful maintenance of the herd demographic would require the development of knowledge of and response to the breeding and lifecycles of domestic cattle, which in turn would support their genetic success.

Human manipulation of cattle habitats and movement has implications for animals' access to food. Domestic cattle are ruminants that thrive in open landscapes of mixed pasture (Lynch *et al.* 2008) (although see cattle and aurochs isotope data from pre-barrow contexts from Ascott-under Wychwood, which is indicative of grazing in more wooded areas (Hedges *et al.* 2007)). The maintenance of cattle herds over the course of the year would thus necessitate either movement between sites or the provision of enough food to last through the winter months – or a combination of the two. Also critical for cattle is the necessity for access to water. Analysis of isotopic evidence obtained from human and faunal remains from Hazleton North long barrow by Neil *et al.* (2016) is indicative of residential mobility whereby groups move between two or more sites; evidence from this site is suggestive of locales separated by a distance of at least 40 km. Support for the viability of this hypothesis can be found in ethnographic literature, which confirms that such mobility is a well-established strategy in pastoralist lifeways, and demands that at least some members of the human group move with – and stay with – the animals (for example, see Fijn 2011).

Evidence indicates that dairying was a feature of the British Neolithic from its inception (Copley *et al.* 2005: 531; Cramp *et al.* 2014). A comprehensive program of lipid analysis of pottery sherds by Copley *et al.* (2005) recovered from Abingdon causewayed enclosure, Oxfordshire; Eton Rowing Lake, Buckinghamshire; Hambledon Hill, Dorset; Runnymede Bridge, Surrey; Windmill Hill causewayed enclosure, Wiltshire; and Yarnton Floodplain, Oxfordshire, found evidence of both dairy and adipose (non-dairy) animal fats, with significant proportions of the sherd assemblages from each site returning evidence indicative of dairy processing (Copley *et al.* 2005: 531). With a focus on the northeast Atlantic archipelagos, Cramp *et al.* (2014) also find strong evidence for early dairying. The gathering, processing and storage of dairy products all have particular temporalities and are manifest of particular actions, or bodily techniques (Mauss 1973). Milking demands regular, daily contact and the development of close relationships based upon trust in which humans must learn how to behave around animals (Fijn 2011: 134) and they must develop strategies that allow them access to animal milk, for example, intervening to limit access between mothers and their young (Fijn 2011: 133-134).

> "A calm, quiet person will extract more milk from a cow than a loud extrovert. Having a strange person present can also be inhibiting. Cows, particularly sarlag, are sensitive to any new people during milking, because they are not part of the cow's recognition of the milker as part of her 'herd', which includes both cattle and human members." (Fijn 2011: 134)

What is being described above is selection for docile humans, a relationship in which both humans and cattle adapt their behaviour in response both to their own desires and to the needs of the other. This dairy-based co-species reactivity also has intriguing implications at the level of human genetics and population scale. Neoteny describes the retention of juvenile features into adulthood. It is recognised in morphological traits in some domesticated animals, and can be readily identified for example, in modern dog breeds; features include reduced body size, floppy ears, large eyes, a short muzzle etc. The development of such traits is thought to be associated with selection for docility. Whilst it has been proposed that the morphology of the human skeleton evidences selection for neotenous traits (for example, see Penin *et al.* 2002; Pinhasi and Stock 2011), it seems pertinent to also consider the development of lactase persistence – the ability to digest lactase beyond childhood into adulthood, which is a trait particularly associated with north-western European groups, and occurs some time after the widespread adoption of dairying in the Neolithic (Burger and Thomas 2011; Gerbault *et al.* 2011; Olalde *et al.* 2018: 194) – as potentially *akin* to a neotenous trait, and one that has been selected for in humans in a process of human-cattle becoming.

The implications of dairying for the development of new articulations of human-cattle relations in the Neolithic extend further, to different forms of dairy processing, which demand different frequencies and intensities of action. The importance of processing should not be understated; it serves to reduce levels of lactose, enabling digestion of dairy products where there is an absence of lactase persistence, as has been suggested for British Neolithic populations (Olalde *et al.* 2018: 194). Fermentation; the production of butter, cheese and yoghurt; the collection, processing and storage of dairy products, which demands the production of storage vessels and therefore the development of suitable ceramic technologies; and the opportunities afforded by the ability to store and transport processed dairy products all impact upon and transform human and cattle lives. Beyond the sheer physicality of quotidian corporeal human-cattle interactions, the social prestige that has been suggested was bound up with the human ownership of cattle, evidenced by the dominance, ubiquity and mode of treatment of cattle remains in Neolithic archaeological contexts (Ray and Thomas 2003; Thomas 2013: 404-410) provides further possibilities for considering the entwined nature of human-cattle relationships. Ethnographic data certainly support proposals that the movement of cattle and people between groups holds potential to enable the materialisation and memorialisation of origins and alliances (Fijn 2011: 29-30; 83-85): cattle as social media.

Humans have thus developed adaptations, both corporeal, and in terms of their lifeways, to care for and ensure the successful establishment of domestic cattle, who have likewise adapted. The maintenance of herds and daily practices such as milking are human labour intensive, fuelling demand for reliable sources of nutrition. Human-cattle lives became interdependent and inextricable, mutual dependencies of asymmetric relations emerged with mobile, transient power dynamics of mutual domestication and genetic selection to form a bond that rapidly became impossible either to untangle or to sever.

Also present in the 'beast' assemblage are low numbers of sheep/goat specimens. The arrival of sheep/goat in the British Isles contrasts with that of cattle (and pig) insofar as there were no morphologically comparable wild antecedents resident but, like pig, butchery evidence and the findings of lipid residue analysis suggest that sheep/goat were reared and kept for human consumption of their meat (Copley *et al.* 2005: 528). In the absence of the close contact typified by dairying activity, the nature of these human-sheep/goat relationships would seem more asymmetric and less intimate than those with cattle, but would nonetheless have been characterised by a mutual interdependence. Sheep/goat communities demanded a human duty of care and protection to ensure health, security and access to fodder in the winter months in return for their meat, and these demands would have impacted upon the lives and responsive decisions made by the human group, but to a lesser degree than cattle. The human-sheep/goat relationship was inherently social, but crucially, with significant inter-species distance.

Inspecting the evidence: a fantastic beast[8] dismembered

From the macro, it now becomes both possible and necessary to return to the micro to pursue the human-cattle relationships articulated in this particular, sub-site scale assemblage. Examination of the Woodford beast's own sub-assemblages reveals the details of distinctly different strata: the cattle remains pertain to the head and feet and include at least one old individual; the human material comprises multiple individuals, all of adult-size and some with pathologies; the sheep/goat assemblage is small and somewhat dispersed; the flint layer is composed of nodules; and then there is the overarching relationship between each of these components that foregrounds a concern with enfolding. Each of these will next be considered.

The combination of cattle cranial and pedal bones that form the outer extent of the 'beast' align structurally with other Neolithic long barrow deposits from the region that have been interpreted as potential 'hide burial' deposits, are particularly associated with the deposition of human remains, and are conceptualised in terms of their potential for physical envelopment (Grigson 1966; Piggott 1962b, cited by Grigson 1966; Piggott 1962b: 116, 118; Thurnham 1869: 182). This emergent quality conjures a sense of closeness, of embrace – an emotive expression of human-cattle interdependency. That the deposit comprises seven teeth, an astragalus and a naviculo-cuboid bone recovered from the top 20-28 cms of the mound material within a 30 cm^2 area suggests that this material was deposited in close spatial association, the teeth potentially forming part of a complete mandible that has subsequently been fragmented. Tooth wear analysis indicates that at least one of the teeth derives from an 'old adult' (Halstead 1985). This would, therefore, have been an animal with a long biography, known as an individual, its story bound up with those who incorporated its remains into the long barrow structure. But an increased focus in on the evidence further reveals a critical flaw in the argument for a domesticatory kinship of mutual becoming: at least one – and potentially all –

[8] (cf. Rowling 2009)

of the elements comprising this deposit pertain not to *domestic* cattle (*Bos taurus*) (as has been implicit and will henceforth remain the case for all other deployments of the term 'cattle'), but to aurochs (*Bos primigenius*), the wild progenitor of domestic cattle.

This changes some – but importantly not all – of the ways in which this deposit can be explored, with different possibilities for meaning. It remains that the structure bears strong similarities to other cattle hide burials, that the deposit was spatially discrete, and that the remains of an old animal with a long biography, potentially interwoven with human lives is present. However, metric data reveal that the aurochs astragalus came from a very large animal indeed, falling within the upper threshold for prehistoric aurochs (Wright 2016), indicating that this animal was a bull. The sheer physical presence of this animal would have commanded attention and demanded response – arguably considerable fear, awe, respect or a combination therein[9]. Considered thus, the implications of envelopment within the hide can be further developed. The notion of the enfolding embrace remains tenable, but the material combination may also draw on behavioural characteristics to articulate ideas of fearsome protection or even consumption by the beast – a particular form of becoming together and assemblage reconfiguration that breaks down corporeal boundaries as far as a molecular level to remake all parties (cf. Bennett 2010: 39-51). As a physically imposing presence, potentially with a lengthy lifespan, this animal may have been well known by those who included its remains in the barrow. But as an individual occupying a different environmental niche from cattle – that of forested areas – this knowledge may have taken the form of story-telling, legend and myth, developing and explaining the similarities and differences between it and the domestic cattle that lived with humans. It is possible that all the remains comprising this deposit derive from this one animal. The heavily gnawed and fragmented naviculo-cuboid certainly appears to come from an animal of comparable proportions, but damage prevents meaningful measurement. It is also possible that the pedal bones and teeth assemblage is itself a composite, a fantastic beast within a fantastic beast (cf. Rowling 2009), amalgamating both aurochs and domestic cattle elements to create a material fusion articulate of linkages, of ancestry, genealogy, continuity and change. The inclusion of mixed aurochs and cattle deposits is noted at other long barrow sites, for example, 163a on Thickthorn Down, Dorset (Jackson 1936: 93), suggesting that this combination was meaningful and articulate of ideas and practices that had a broad geographic range.

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[9] Although it is acknowledged that the attribution of prehistoric emotion is far from straight forward (cf. Harris 2010: 359-361; Harris and Sørensen 2010).

Human cranial and mandible fragments recovered from the top of the cairn echo this form of treatment and may have formed part of the same deposit. Discrepancies between the spatial data recorded in the site record and projected position on the site plan render some of the locations of this material inconclusive. However, at least two fragments, one pertaining to the cranium and the other comprising a substantial fragment of mandible were recovered from a central position at the southern end of the cairn. Analysis of the surviving teeth found both to be heavily worn, the first molar worn down to the root on the lingual side, suggesting that the remains belonged to an older adult – another individual with a long biography. The parallels observed between this human and cattle/aurochs deposit further develop ideas of inter-species proximity and interconnectedness.

The human material from the mound and old ground surface beneath comprises 86 disarticulated human bones, with a minimum number of three individuals. Given that the average adult human skeleton is made up of 206 bones, just under 60% of elements that might be expected to be present if bodies were inhumed in ideal preservation conditions are absent. This may be the result of taphonomic factors; surface preservation is poor resulting from root damage, the effects of soil chemistry and surface abrasion, and fragmentation levels are high. However, given that nearly all elements of the skeleton are represented (Table 6), the assemblage may in fact be the outcome of selective deposition of already skeletonised remains, inadvertent loss of elements as a consequence of secondary deposition, or a combination of these factors. Brought together as a single assemblage, human corporeal boundaries are broken down and identity renegotiated, problematising notions of the individual and the group (cf. Brontë 2008 [1847]: 288-289) for a creative reflection upon post-mortem skeletal/identity mingling). Evidence for the deliberate selection and recombination of human skeletal remains can be found, once again, at Fussell's Lodge; Wysocki *et al.* (2007: 67) suggest that the osseous remains comprising human bone group D from the cairn deposit represents two composite skeletons, the elements deriving from four individuals and deliberately arranged to appear in articulation. Whilst there is no evidence for analogous deliberate modelling of bones at Woodford G2, their collection in a single locale, architecturally defined by the flint cairn argues for the meaningfulness of their combined deposition.

Table 6: Human skeletal element representation (NSP), old land surface and mound contexts, Woodford G2 long barrow

Element	**No. of fragments**
Head	
Cranium	12
Mandible	1
Tooth	1
Spine	
Atlas	1
Lumbar vertebra	3
Sacrum	1
Clavicle	1
Rib	3
Pelvis	2
Forelimb	
Humerus	7
Radius	2
Ulna	4
Metacarpal	5
Hindlimb	
Femur	9
Tibia	10
Fibula	5
Metatarsal	5
Metapodial	1
Hands/feet	
Calcaneum	2
Astragalus	1
Tarsal	2
Phalanx 1	6

Osteological analysis reveals that the human remains that evidence degree of bone fusion, a process that occurs at different times in different skeletal elements and signals the completion of growth to adult size, all show full fusion. All remains therefore pertain to individuals of at least 12 (biological) years at death, and likely considerably older. Three fully adult vertebrae exhibit osteophytes – a proliferation of new bone growth in response to mechanical stress. One of these has osteophytes at the ventral edge of the inferior articular facets, encroaching on the vertebral foramen, potentially impacting upon the spinal cord. Osteophytes are also present around edges of facets of vertebral bodies and there is asymmetry in the left anterior articular facet, a possible response to destabilisation of the spine. Further, pitting of faces of the vertebral body is indicative of osteoarthritis. The nature and severity of these pathologies suggests that this was an older individual, although it should be noted that the impact of severe mechanical stress can result in similar responses in the skeletons of younger people. These data provide an argument that the individuals comprising the human element of the beast assemblage share important similarities with the associated aurochs/cattle remains previously discussed; these are individuals with long biographies, brought together after having potentially been subject to deconstructive processes and selectively recombined in meaningful acts of assemblage.

Submersed deep within the multi-human mass of bone, the sheep/goat assemblage is tiny, comprising a group of three teeth found on the old ground surface and one of which, tooth wear indicates is aged at or over a range covering 6-24 months, and a spatially discrete unfused cervical vertebra from an animal aged at or below 48-84 months at death. Although the spatial proximity of the teeth suggests that they may derive from a single deposit, one is from a left mandible, the second from a right maxilla and the third fragmentary, making it highly unlikely that the deposit was formed of an entire skull; more teeth would be expected to survive in-situ in a sealed deposit as one of the most robust elements of the skeleton. It seems, therefore, that the sheep/goat assemblage may, like the red deer bone, represent chance inclusions. Under the circumstances, the most that can be confidently asserted is that the human-animal relationships that both assemblages engender allude to shared landscapes of social relationships of varying proximity, quite distinct from the human-cattle relationships identified more broadly in this period and region. The enfolding of the sheep/goat material within the strata of the beast would therefore appear to be incidental, swept up and along by the human-within-aurochs/cattle layers/relations – sheep/goat remain a presence, an important human-animal relationship of becoming, but a relationship eclipsed by the shadow of that of human-aurochs/cattle. Also present and of note are five Neolithic pottery fragments, four of which, it is suggested, may derive from a single bowl (Gingell 1986: 20). It is tempting to speculate as to the nature of the bowl's participation in human-animal relationships – perhaps as a vessel in which blood or dairy products were collected or processed, or meats cooked. Whilst this remains a tantalising unknown, its presence in the assemblage nevertheless stands as a physical reference to such practices and is therefore woven into the fabric of human-animal relationships here expressed.

The final assemblage of the beast to be explored (although it is acknowledged that there are countless others that could be pursued) is the flint nodule element that encases the human and sheep/goat deposits. Through discussion of the flint layer in the east ditch, the documentary evidence infers that these nodules are unworked and compare with those that can be collected from the surrounding environs (Gingell 1986: 18-19). The cairn is thus an act of assembly that both reaches out across and draws in parts of the wider landscape, presencing other places and different times. The extent of the cairn confirms that its construction would have been an undertaking implicating the involvement of many hours of labour to gather, transport and deposit material. This may have taken the form of a gradual process of accumulation, a short burst of intense physical activity or a combination of the two, with one or (likely) many bodies involved. The selection of unworked nodules is important. The dense concentration of nodules would have had multi-sensory impact: the visual contrast of this critical mass against the more dispersed scatters peppering the soils of the surrounding chalkland landscape; the amorphous minerality of the individual nodules, cold to the touch and heavy, prohibiting straightforward access by living human and animal bodies to the dead within, and discouraging attempts to cross or scale the structure. The nodules appear not to have been investigated or exploited for their value as potential tools and so remain inviolate; corms of possibility, of unrealised potential. As such, their gathering and deposition can be understood as a sacrificial act, and thereby, a medium of communication of this particular form of human-flint becoming, with the capacity to enter into dialogue with the human and sheep/goat material beneath as well as the associated aurochs/cattle and red deer elements. The flint pulls the different elements of the beast assemblage together and draws forth its latent potential for creative, unpredictable transformation in which human-animal bodies can be remade and new articulations of human-animal relationships explored.

The fantastic beast (cf. Rowling 2009) is thus an assembled site of liminality. The Woodford G2 Neolithic mound deposits constitute a redefinition of human-animal as well as human-human and animal-animal boundaries, creating the space for a rich seam of new possibilities for identities and relationships to be negotiated (cf. Fowler 2004: 63), a true multi-species emergence. But subsequent engagement with the barrow in the Bronze Age presents a contrasting position and troubles assertions of a Neolithic multi-species becoming by way of a circulating reference (Latour 1999: 24-79).

Becoming human: retrograde translation

A burial in the east ditch of the barrow of a single, near complete human in the Bronze Age forms the next focus of consideration. The only osseous material known to have been analysed and discussed in detail in the excavation report, it was found lying in a crouched position, its cranium absent from the group (Gingell 1986: 19, 21). In direct contrast with the human material from the mound deposit that incorporated and mixed the bones of multiple individuals, emphasis is here very definitely placed upon the corporeally discernible human individual with an identity as such. This individual was fleshed and would have been recognisable to those who knew her or him in life when placed in the long barrow ditch, and the body was deliberately manipulated into the crouched position, suggesting that the physical arrangement and appearance of the burial mattered. Fusion evidence confirms that these are the remains of a young adult, with a biological age range of 17-23 years at death. Four roe deer specimens found in association with the human remains are all limb bones and may represent a single butchered haunch deposited with the human body. Considered thus, the nature of human-animal relations here presenced describe one of inter-species becoming that references the intimate comingling of bodies manifest in the act of eating, yet foregrounds a social hierarchy whereby the partial roe deer body is placed in a supporting, subordinate role to the human element. A distinction is made between the animal and human elements through the selection and treatment of body parts deposited; a part to (nearly) whole relationship.

Also forming part of this assemblage, and also forming a part to (nearly) whole relationship with the human bone group – but in a very different articulation – are four sherds of Middle Bronze Age pottery identified in the excavation report as globular urn decorated with shallow groove impressions, and which are listed in the archive records as deriving from the 'level of skeleton's jawbone, where skull should have been' (1963: unpublished site archive). This interesting combination draws forth a citational reference (cf. Butler 1993; Jones 2007; 2012) linking the morphologically analogous forms of the cranial vault of the human skull and the rounded body of a globular urn. Given that no mention is made of any evidence for prior disturbance of the inhumation, the absence of the cranium coupled with the presence of the sherds seem likely deliberate placements expressive of meaningful material exchange, the nature of which suggests the existence of an ontology supportive of partibility. Notions of corporeal partibility and reconstitution presenced in the archaeological record have been explored by Fowler (2004). He considers the complex relationships between human and pottery bodies (Fowler 2004: 63), and contends that (Late Neolithic/Early Bronze Age) Beaker vessels can be understood as "a key component of each person" (Fowler 2004: 64), noting the practice of curation of sherds. Although the pottery fragments in the Woodford G2 inhumation date to the Middle Bronze Age, placing them in the region of a thousand years later than the Beaker pottery tradition and practices described by Fowler, the mode of their deployment as a mnemonic for the absent cranium argues for an understanding of the individuated body as holding potential to exceed that as defined by its epidermal veil, to incorporate other materials. Their positioning 'in place of' rather than 'in addition to' the human bone, the latter describing the relationship with the roe deer remains, confirms that the ceramic and roe deer bone elements of the assemblage are performing very different roles, but roles in which the human element is placed in a central position. Both pot and roe deer are engaged in a process of becoming human.

The Bronze Age human-pottery-roe deer group[10] is sealed beneath a layer of flint nodules that occupies the central section of the east ditch. In the excavation report, this layer is described as a "dump of flint nodules, perhaps cleared from cultivated fields, perhaps from the surface of the mound itself" (Gingell 1986: 19). The precise nature of the relationship between the human remains, roe deer and pottery and the flint is unclear; the wording of the excavation report suggests one of close, stratigraphically defined physical if not temporal proximity (Gingell 1986: 19). Whilst it may simply be coincidence that the flint nodules cover the only area of the site impacted by secondary inhumation activity – a position implicit in Gingell's comments (1986: 19) – structural reference to the Neolithic mound deposit is a reality that requires exploration as it holds potential to transform interpretation of the latter, enacting a re-articulation of terms; a retrograde translation.

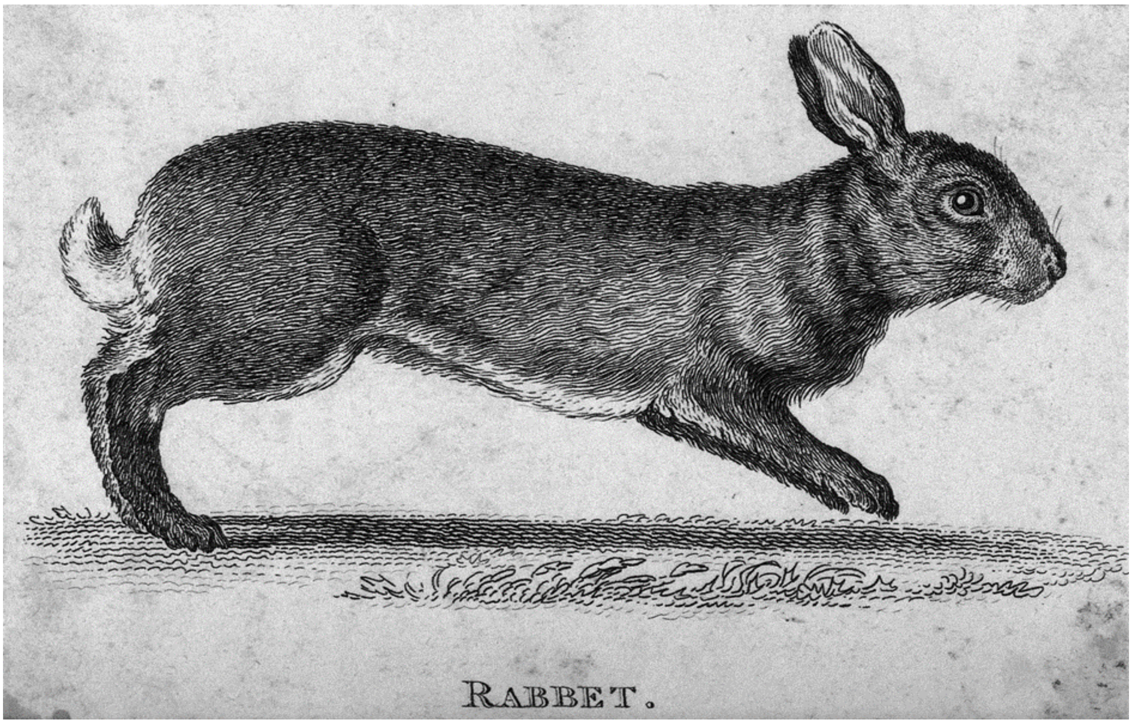
Association between Neolithic sites and Bronze Age (and indeed later) funerary deposits is well attested (Smith and Brickley 2009: 138-146). Long barrows were identified in the latter period as appropriate places to place the human dead, suggesting that this citational practice (cf. Butler 1993; Jones 2007; 2012) was performed knowledgably, making direct reference to activities that had previously occurred at these sites. The deposit of the human-pottery-roe deer assemblage overlain by a mass of flint nodules certainly accords with this pattern. The deposition of the flint spread (less loaded than the term 'dump') occurred sometime following the inhumation and before soils developed over its surface. Within the flint layer were sherds of pottery, including one identified in the archive records as Romano-British, along with disarticulated limb and foot bone fragments and teeth of horse, cattle, pig, sheep/goat and roe deer. Detailed spatial data for this material is partial and absent in most instances, but descriptions of the general location of specimens within the context give some broad indications of position. One horse tooth was recovered with a cattle radius fragment along with further unidentified fragmentary tooth and bone under the flint layer, but approximately 3.7 m from the inhumation, and just below the flint layer and a little over a metre from the human deposit lay sf. 25, a cattle humerus fragment from a very young animal. Lacking the temporal resolution and spatial organisation of the Neolithic cattle bone deposit associated with the flint cairn, it is not possible to assert that any of these animal bone deposits represent intentional placement; they may equally have entered the ditch as a result of the degradation of the barrow mound, as a consequence of later agricultural activity disturbing and dispersing material from the surrounding area, or a combination therein. The nature of the human-animal relationships presenced in the flint ditch deposit relative to the inhumation can

[10] See Chapter 8 for further discussion of roe deer in long barrow deposits.

therefore only be discussed in broad terms. There is a clear contrast between the spatially structured human-pottery-roe deer deposit and the dispersed, fragmented animal bone from the overlying flint that serves to heighten the distinction between human and animal, already emergent in the former. The human element is capped and closed off by the flint-with-animal bone, simultaneously preserving and reifying the human-centred assemblage and transforming the animal bone within the flint layer into an architectural substance.

And this substance is vibrant (cf. Bennett 2010): it acts back. As an articulation and development of the Neolithic flint cairn assemblage, it changes the ways in which it was (and is) subsequently possible to understand the Neolithic material, to become a means of articulating difference, rather than similarity. This does not alter the meaning of the Neolithic deposit as it was understood *in the Neolithic*, but rather, augments it through later engagements, to become a more complex expression of human-animal relations when viewed from a broader temporal perspective that incorporates the changing engagements with the site. Lurking in the site archive, there exists further evidence to support this argument; it too begins in the Bronze Age and in the ditch, but has had a more tangled history, which will next be unravelled.

Becoming human: no fluffy tale



Source: https://commons.wikimedia.org/wiki/File:A_rabbit._Etching._Wellcome_V0021260.jpg

Figure 10: Rabbet

It is at this point that we become reacquainted with the rabbit. In so doing, the ditch will emerge as a crucible for facilitating a process of becoming human, through a human-archaeologist-fictional rabbit entanglement in a story of mistaken identity that has been over three thousand years in the making, and it all begins with an unremarkable box of finds in a museum archive. The labels on the box in question describe its contents as animal bone; upon opening, an abundance of polythene bags were found to populate their cardboard environment, taking full advantage of every available space, each carefully labelled with site name, small finds number, context and contents: animal bone. The bag containing small finds number 68 informs the reader that its contents were found 'In rabbit hole in rainwashed chalk' and spatial data indicate that it was located close to the adult inhumation, under the flint spread, in the east ditch. A cursory glance at the contents through the lens of their archive-standard plastic skin, now prejudiced by the circumstances of their discovery, suggested that the tiny bones within had once belonged to a rabbit – an interpretation that broadly accorded with that of the excavators who first identified it as belonging to an animal. But these bones had not always belonged to what in fact emerges as a fictional rabbit, and after having spent over half a century as such would shortly enact another identity-shifting manoeuvre.

Once relieved of their identity-defining packaging, the bones revealed themselves to comprise a large proportion of a remarkably well-preserved human neonate, pertaining to an individual aged 40 weeks from conception (Scheuer *et al.* 2010); potentially a still birth (Figure 11). A radiocarbon date of 1379 cal BC OxA-35176 (95.4% probability) obtained as part of the present study confirms that like the nearby adult remains, this individual died in the Middle Bronze Age and therefore predates the current estimated date for the introduction of rabbits to the British Isles by approximately 2500 years (Sykes and Curl 2010). Given the near completeness of the skeleton and the fragility of neonate bones, the deposit appears to have formed an inhumation. As such, it would be an outstanding survival in a rabbit warren – should one have been constructed sometime later coincident with the inhumation – thereby problematising the excavators' interpretation of the feature from which it was recovered. Indeed, the impact of rabbit activity has further complicated interpretation of the Woodford G2 assemblage wherein rabbit burrows have been interpreted as archaeological features (Gingell 1986: 18). There are a number of interesting human-animal relationships emergent within this particular assemblage, and the first to be unpacked develops arguments introduced earlier through the discussion of human-fox relationships; that between the human archaeologist and burrowing animals.

Figure 11: Human neonate from 'rabbit hole' context in east ditch, Woodford G2 long barrow, sf. 68, courtesy of The Salisbury Museum

The circumstances surrounding the misidentification of the human neonate are a tangled human-human-animal becoming in which the tiny bones emerged from their depositional context with their archaeologist intermediary, joined the site record, entered into a curatorial relationship with human archivists and became the focus of research; all parties acting to remake each other in the process. The presence of rabbit activity elsewhere on site, the assumptions, expectations and experience of the excavator and archivists, a failure to recognise human foetal/infant remains – a pattern that has repeatedly re-emerged through the reanalysis of the other long barrow archive assemblages that form this study – and the time and financial constraints that place limitations on research carried out on archive material are all implicated in the variant fortunes and identities of the assemblage. These relationships emerge through the interplay of factors with linkages to multiple temporal locations, but place emphasis upon contemporary and recent-past engagements. The second human-animal relationship to be explored is likewise inherently multi-temporally manifest, but the balance of weight is shifted to focus on Middle Bronze Age engagements that constitute a core element of the assemblage.

The human neonate remains were deposited just over one metre from the site of the young adult. Although no explicit information regarding the depth of the deposit was recorded, it falls within the area covered by the flint spread and given the depth and descriptions of the soil layer sitting above the flints, seems very likely to be situated below the flint. The proximal end of a corvid humerus was recovered in spatial association with the human deposit, but appears to be residual, returning a radiocarbon date range of 3428-3120 cal BC OxA-35177 (95.4% probability). Of possible significance, however, is the aforementioned sf. 25, a cattle humerus fragment from a very young animal, which was located approximately 30cm from the neonate and below the flint layer, but in an unknown stratigraphic relationship with the human bone. The nature of this burial and its possible associated limb bone deposit echoes that of the adult inhumation: the human element appears to have entered the ground in an articulated state; the cattle bone with a possible association is a disarticulated limb bone fragment; and the deposit seems to have been sealed beneath the flint spread. This evidence extends and reinforces arguments developed with regard to the adult inhumation for the expression of a hierarchical relationship that placed the human in a reified position.

Some possible structural parallels can be identified between the treatment of the neonate and a deposit of roe deer bones of the right forelimb from the mound/berm area close to the edge of the east ditch and approximately three metres from the human burial. The roe deer radius is unfused at both epiphyses indicating an age at death of under 5-8 months. Both the human and roe deer bones therefore pertain to very young individuals and interestingly, both were recovered from contexts described as ‘rabbit holes’, which has been demonstrated to be untenable for the human remains. This calls into question the reliability of the contextual description assigned to the roe deer deposit and raises the question of whether the nature of the deposits, their depositional contexts and practices of deposition of were linked and were particular to the ages of those there interred. Despite this apparent correspondence, what the evidence does not do is trouble the assertion that the human-animal relations here presenced are profoundly asymmetric and expressive of a (consuming) hierarchy: the (animal) part as against the (human) near whole. This part to whole relationship is, however, complicated by two further deposits, also dating to the Bronze Age and it is to these that discussion will now turn.

Ashes to ashes: monk to monkey?[11]

Sited to the east of the north end of the east ditch, two pits containing burnt bone were revealed during excavation and their contents recovered. Analysis undertaken as part of the present study reveals that the Pit I assemblage, the northernmost of the two pits, comprises 859 specimens (NSP) and contains a human individual aged under 15 years if female, or under

[11] With apologies to David Bowie (Bowie 1980: Track 4)

18 years if male. Pit II comprises 1448 specimens (NSP) and includes a human individual aged 13-15 years if female, or 15-18 years if male. Uncertainty as to the sex of the individuals is a consequence of the changing skeletal morphology associated with puberty that make it difficult to make a confident identification, which is further complicated by the effects of fragmentation and burning. Weights of cremation deposits were measured (Table 7). The weight of material from Pit 1 is less than might be expected for the complete cremated remains for a fully adult female (1615.7 g (McKinley 1993)) which, when considered alongside the age data, lends support to an argument for the presence of a sub-adult individual, or may be indicative of a particularly gracile individual, or indeed of material having been removed or missed during excavation. The weight of material from Pit II fits well within the expected range for an adult male, but the age data suggest the presence of an individual of comparable age to Pit I. This may therefore indicate the presence of remains from more than one individual.

Indeed, sheep/goat metapodials are present in the cremated material of both pits, and a fragment of pig tibia was also identified in Pit II. These bones all pertain to the limb and feet and that the degree of burning accords with the associated human material argues for their deliberate inclusion in the cremation assemblage. Although complicated by the process of cremation and redeposition of material in the pits, which undoubtedly impacts upon the composition of the assemblage to favour recovery and identification of the more robust elements of the skeleton, the combination of partial animal bodies to human bodies that are represented by all zones of the skeleton reflects patterns observed in the Middle Bronze Age inhumation assemblages that have been suggested to represent a human-animal hierarchy. However, through the process of burning, all bodies are rendered down in the same manner; there is an equality of treatment and arguably, an equality of output – all bodies are fragmented, some as far as dust, and are mixed together to become a new substance that complicates the separation of human and animal. Further, the pungent, cloying materiality of the ash is insistently inclusive, adhering to all that enter into relations with it, simultaneously drawing in and reaching out to become with and transform other matter in a (re)active process

Table 7: Sieved cremation weights, Woodford G2

Small finds no.	Other ref. no.	Museum description	Context	Total weight	10 mm sieve	5mm sieve	2mm sieve
137	D4	Cremation	Pit I	938g	530g	200g	50g
136	D4	Human bone	Pit II	2375g	1332g	294g	124g

of assemblage. This form of human-animal relationship would seem to simultaneously reinforce and upend the hierarchical separation observed in the inhumations, but crucially, cremation is a rite that is overwhelmingly associated with human funerary practice. Scant evidence exists for the cremation of entire animal bodies in this period, although two assemblages of sheep and pig bone from the Early Bronze Age round barrow at Mockbeggar Lane, Hampshire have been tentatively suggested as representing the remains of entire animals and interpreted as 'sacrifices', and importantly, accompany human cremations (Serjeantson 2011: 74).

The Middle Bronze Age treatment of humans and animals has emerged as distinctly different from that presenced in the Neolithic deposits in the Woodford G2 assemblage, the former enacting a hierarchical asymmetry as opposed to a multi-species becoming in which identities could blur and change. It is the latter form of relationship that will next be encountered as this study moves on to explore a new site: the (short) long barrow at Cold Kitchen Hill.

Cold Kitchen Hill (Kingston Deverill G1)

Cold Kitchen Hill Neolithic long barrow (Kingston Deverill G1), Wiltshire lies at the south-western extent of Salisbury Plain and forms part of a multi-period complex of monuments in the environs of Cold Kitchen Hill that includes Brixton Deverill Neolithic long barrow, Bronze Age round barrows and a Roman temple (Harding 1986: 7). Its earliest phase is identified as falling within a broadly Neolithic date (Pollard 1993: 133; 2008: 45), with pottery evidence suggesting later phases of activity in the Bronze Age, Romano-British and post-Medieval periods. Shorter than its counterpart, the Brixton Deverill long barrow, by some considerable measure, its identity has been somewhat fluid, labelled variously as a bowl barrow (Grinsell 1957: 179); an oval barrow by Harding (1986: 7), who also describes it along with Woodford G2 as a long barrow (Harding and Gingell 1986: 7); and also as a long barrow by its excavators (unpublished site archive). It was subject to total excavation in 1964 by Major and Mrs Vatcher at the behest of the Ministry of Public Buildings and Works, in response to severe plough damage (Harding 1986: 7). Like Woodford G2, it went unpublished by the excavators; analysis of archive material was undertaken and published by Harding (1986), but discussion of faunal remains was limited to the antler specimens recovered and missed some significant contextual information. Interesting and very visible structured material associations went unexplored, revealing a human-animal relationship that implicitly prioritises human exploitation of animal bodies, and which will be discussed in further detail below.

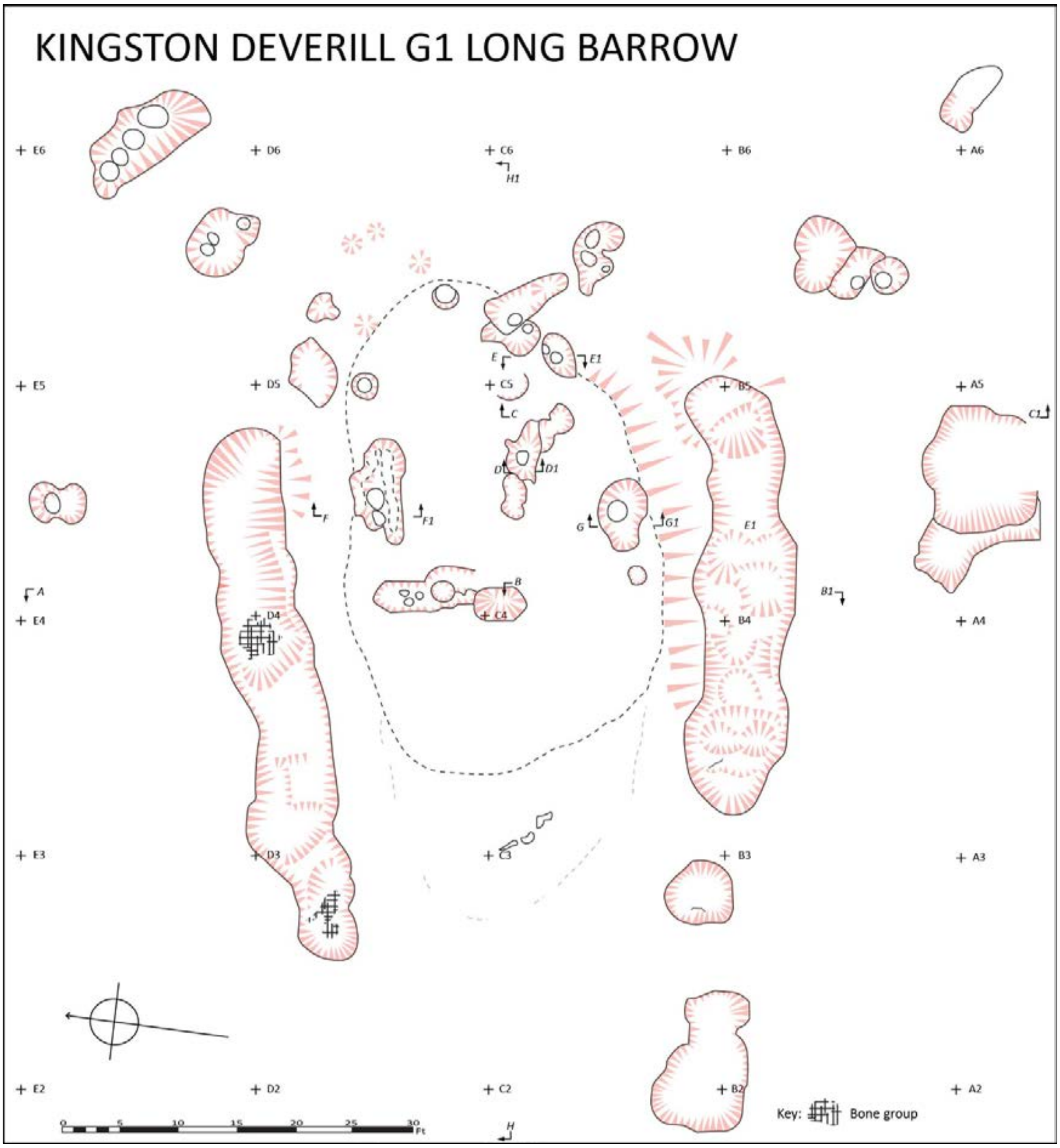


Figure 12: Plan of Cold Kitchen Hill long barrow (Kingston Deverill G1) adapted from Harding 1986: 9, Figure 2, with permission © Wiltshire Museum, Devizes

Post-excavation taphonomic processes have had a profound influence on this assemblage. Just 23 splinters of flint recovered from antler were found in the archive, and antler, pelvis fragments, two loose teeth and a small number of fragmentary scapulae are the only elements of the osseous assemblage to survive extant. The preservation of documentary records has, however, enabled access to the translated site (Fowler 2013), albeit frustratingly limited and ambiguous in places. For example, in many cases, the presence of bones is logged in the site records book but quantities and identifications are absent. The skeletons of what are listed as

Figure 13: Archive image of cattle bone and antler deposit at the base of the north ditch, Cold Kitchen Hill long barrow, with permission © Wiltshire Museum, Devizes

a wolf or dog (sf. 178), and a (highly dubious) jackal[12] (sf. 131) – which in fact appear to refer to the same deposit on the basis of coordinates – are recorded but the number of bones and identity of elements are missing. As such, cattle emerges as the only taxon positively represented in the bone assemblage, with the presence of the axial elements of a partially articulated skeleton at the base of the north ditch, bones identified using photographic evidence from the archive (Figure 13). And it is to the human-animal relationships presenced in this assemblage that we first turn.

Conspicuous consumption? Human-cattle-(red deer) becomings

The placement and subsequent recovery of a compact deposit of a partially articulated axial cattle skeleton together with red deer antlers, in a primary context in the centre of the north ditch of the long barrow encompasses a knot of human-cattle-red deer relationships as entangled as the physical elements forming the deposit itself. Beginning with Harding's concise commentary, which extends to "the N ditch… contained a large deposit of cattle bones… Two antlers from the N ditch were associated with a deposit of cattle bones" (Harding 1986: 11-12),

[12] The range of modern species of Jackal extend across southern and sub-Saharan Africa, south-eastern Europe and south-western Asia.

a relationship in which the significance of the animal, as well as the human-animal interactions expressed in the generation and placement of the deposit are overlooked, emerges. This stands in stark contrast with the human-flint relationship expressed through the analysis of the lithic assemblage, which given Harding's disciplinary specialism may be unsurprising, but also too with his engagement with the antler. The latter is revealing; the antler is understood primarily as a material resource and discussion is concerned with its mechanical capabilities and deployment as tools. The anthropocentric ontology that underwrites this attitude is historically particular – as was argued in Chapter 3 – and implicitly presumes its applicability to those who participated in the creation of the assemblage in the Neolithic. Whilst asymmetric relationships that placed humans in a position of exploitation may have been a reality, this study argues for a much more complex and nuanced set of emergent and often competing realities.

Analysis of the composition and arrangement of the cattle-antler assemblage reveal that the remains were at least partially fleshed when deposited. The limbs and skull were removed and the cranium and mandible were separated before being laid alongside each other. The vertebral column, ribs and single scapula that are visible in the photographic evidence are in anatomical alignment, with some of the vertebrae in articulation. The arrangement bears comparison with the aforementioned Fussell's Lodge cattle bone primary ditch deposit; the presence of red deer antler in the former, and the presence of a tibia shaft, a sheep/goat humerus and the absence of cranial bones and scapulae in the latter, the main points of difference. Both deposits appear deliberately placed if not carefully organised, although stratigraphic positioning within their respective ditch fills and relationships with flint debitage preclude any attempt to infer parity of practice beyond the broad reference that associates cattle remains with long barrow ditch deposition. Unlike the Fussell's Lodge ditch deposit, the Cold Kitchen Hill group rests directly on the ditch base and just one flint tool, an end scraper, was recovered from any context in the north ditch (Harding 1986: 12). Noting the close spatial concentration of the Cold Kitchen Hill group, Pollard (1993: 132) suggests that the bones may have been deposited in a container – potentially a hide. This interesting suggestion at once extends the assemblage to make potential links with other hide burials that, as has been noted, emerge as a particular feature of Neolithic sites in this region and beyond, but the absence of an associated human osseous element signals that something different is occurring.

At this point I stretch the assemblage further, arguably to a point of unsustainable tension – but in full recognition of the problems as well as the opportunities presented by straining against the bounds of academic caution. In his recent comprehensive study of the history of the figure of the witch, Ronald Hutton (2017: 197) notes the recurrent theme of the magical reanimation of cattle consumed by witches during feasts. This is achieved by way of the placement and wrapping of the animal's bones in the hide, in concert with the performance of additional procedures including stuffing the hide and hitting it with a 'baculum' – which translates as a staff or stick in Latin, but is also the label ascribed to the penis bone present in carnivores (so notably not ungulates) – describing it as a "possibly very ancient, folkloric motif" (2017: 197). Hutton cites research undertaken by Maurizio Bertolotti into the emergence of reports centred on the resurrection of cattle in the early modern witch trials of northern Italy. Betolotti (1991) seeks to uncover historical sources and the possible development of this motif, citing Medieval texts written on the life of Saint Germain, which he traces to the utterances of "an old hermit of English origin named Mark" (1991: 50), Norse myth, and the alleged beliefs of an unidentified generic class of archaic hunters.

The evidence is sparse, hugely problematic, cites vague sources and skips across vast geographic and temporal expanses to make tenuous links. But as an assemblage, these linkages have coherence – not in a relationship of historic linear causality, but as a non-linear, circulating reference within the emergent assemblage of the present study (cf. Latour 1999). To be clear, there is no suggestion that it is possible to draw direct analogy between practices specific to Early Modern ideas of witchcraft and those presenced in Neolithic long barrows. There are, in any case, details that fail to translate, not least that the bones of the cattle that feature in the witchcraft texts are explicitly preserved in their entirety to permit successful reanimation (Bertolotti 1991); the Neolithic material is almost always formed of partial bodies. It is, however, certainly useful to consider the possibility that this particular structure – that of bones returned to and enveloped within the animal's hide – may have had association with the reconstitution of the formerly living animal associated with notions of rebirth, continuity, or some form of reparation for the death of the animal. Such a model would certainly have implications for rethinking the placement of human remains beneath hides in other assemblages, such as Fussell's Lodge and as is suggested for Woodford G2, and it is a concept to which we will return a little later when considering the assemblage at Beckhampton Road long barrow in the Avebury environs.

The theme of consumption of the cattle body is picked up by Pollard (1993: 132), who asserts an interpretation of feasting to explain the absence of the limbs in the Cold Kitchen Hill cattle-red deer assemblage in conjunction with the deposition of fleshed body parts. Whilst this remains a robust interpretation, the additional presence of the antlers adds another dimension to this assemblage, and one that has yet to be discussed, referencing and drawing parallels with a canid deposit in the ditch terminal, and thereby troubling a straightforward explanation based on feasting/consumption activity. The significance of the antler in these multi-species deposits will first be explored as part of the human-canid-red deer assemblage, before returning to the human-cattle-red deer assemblage to enable the development of a more fully integrated picture.

Conspicuous conjunction: human-canid-red deer-cattle becomings

Notes in the site finds book record the presence of a "skeleton of jackal (?)" (unpublished site archive), also described as a wolf or dog – perhaps aided by the sketch shown in Figure 14 – under a separate finds number, located at the base of the western terminal of the north ditch. Records of the bones comprising the deposit are absent, but the use of the descriptor 'skeleton' infers completeness. Four red deer antlers and two halves of a cattle mandible formed a ring around the canid skeleton in what was clearly a deliberate and carefully created arrangement (Pollard 1993: 132). Two of the antlers included in this deposit evidence working, but working that was arrested in process (Figure 15), and although it was not possible to ascertain whether any of the antlers associated with this deposit were shed or removed from a dead animal, in all instances where this information is available in other contexts across the site, antler was shed and therefore collected from living animals.

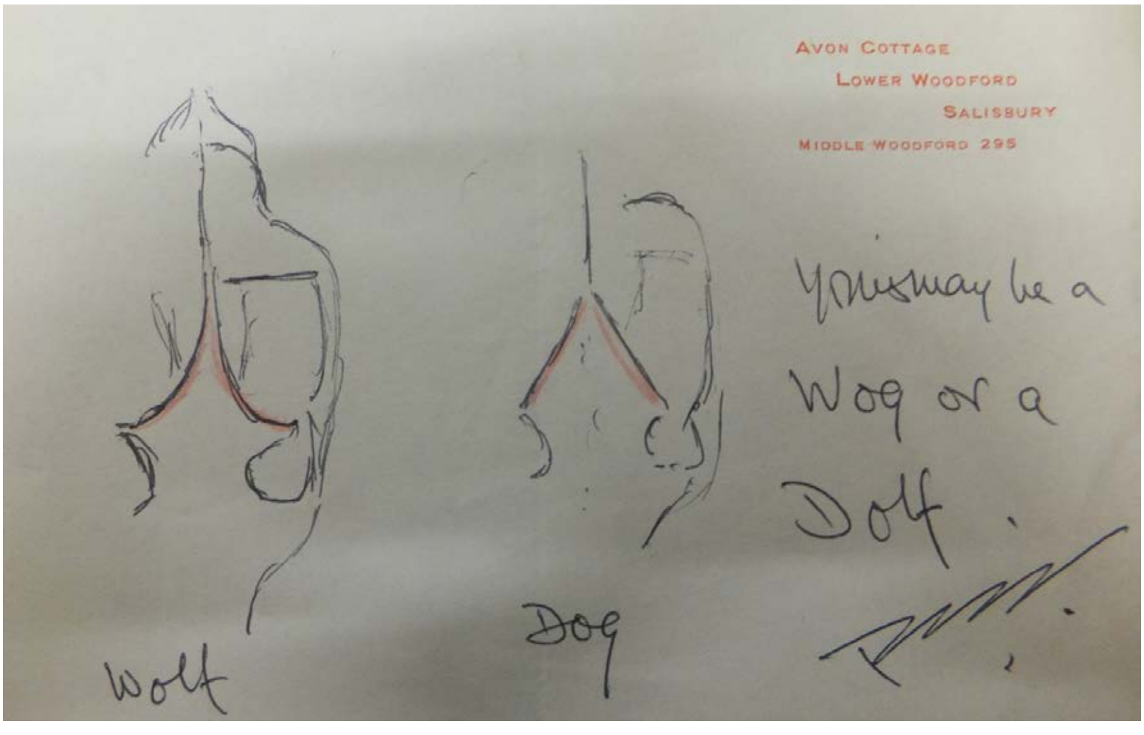


Figure 14: Drawing of superior views of wolf and dog crania, Cold Kitchen Hill long barrow archive, with permission © Wiltshire Museum, Devizes

Figure 15: Archive image showing 'groove and splinter' working (DZSWS.1985.183.27), Cold Kitchen Hill long barrow, with permission © Wiltshire Museum, Devizes

There are a number of human-animal relationships presenced here that need unpicking, and the first to be explored is that of humans and red deer expressed through the worked antler. The material properties of the antler are certainly important to those who assembled the deposit; captured in the very process of exploitation, this relationship arguably shows accordance with perspectives articulated in Harding's analysis, and seems if not to overlook, then to reduce the importance of the animal origin of the antler. The fact that the working is partial and unresolved recalls the anticipatory deconstruction argued for earlier in connection with the deposition of flint debitage at Amesbury 42 and Netheravon Bake. But given their placement in intimate horizontal rather than distinctly separate vertical stratigraphic relation with the canid, an analogous argument on this basis for anticipatory deconstruction of the canid carcass is unsustainable. What emerges instead is a becoming together of canid-with-embryonic tools in the making. The final form of the antler blanks under manufacture remains suspended in a state of potentiality; as Elliott and Milner (2010: 75) note, blanks can be worked up into a number of tool forms. It here becomes useful to look to other examples of canid-antler burials to explore what the nature of this relationship might be. Although geographically proximate dog burials are known from the period in question, for example at Windmill Hill causewayed enclosure near Avebury (Smith 1965: 9), these are not recorded as being accompanied by other materials. Extension of the temporal and geographic field of focus, however, enables comparison with a dog burial, grave XXI from the Scandinavian Mesolithic site of Skateholm II. The dog skeleton was accompanied by a red deer antler placed parallel with its spine, an antler hammer and flint blades, an arrangement that Larsson (1993: 53) identifies as analogous with the treatment of human males from the same site. In his exploration of personhood in the Mesolithic, Fowler (2004: 144) cites this example, and finds that the treatment of some dogs is suggestive of an emergent personhood, drawing on a series of possible human-dog social partnerships, notably hunting (Fowler 2004: 144-148).

The nature of human-with-canid hunting finds the latter embroiled in a complex and mobile set of roles/relationships, working as respected collaborator but also as agent of the human party. Returning to the Cold Kitchen Hill assemblage, such a set of relations can be discerned. As a composite hunting assemblage, the canid *can* be conceptualised within a strongly asymmetric, anthropocentric perspective as potentially instrumental and subject to human exploitation alongside and in an equivalent ontological position with the antler tools-in-process. But this misses the integration inherent in any such performance, in which human-canid-deer-prey bodies work together to choreograph action, articulating a series of shifting social relationships both intimate and distanced in an emergent multi-species becoming. This hunting group is not so much a ‘doing-to’ as a ‘doing-with’, the role of the canid fluid and responsive, at times working alongside the human in an emergent dialogue, and at others subject to the human’s bidding. Further, the composition and organisation of the Cold Kitchen Hill canid-red deer assemblage creates a focus on the canid as a corporeally bounded individual, heightened by its visually striking antler frame; this is a human-animal relationship in which the physical identity of the canid mattered to those who placed it in the ditch, suggesting that its role in life was one of significant social integration – although not necessarily close physical proximity.

Also present in this assemblage, but as yet unexplored, are two halves of a cattle mandible. Interpretation is frustrated by the scant evidence; measurements would enable taxonomic identification to either cattle or aurochs, which would inform on the nature of relations presenced – the mandible may pertain to a hunted animal captured as a part of a human-canid team. Without this information, it is still both possible and fruitful to reflect upon the relationship between the mandible halves, the red deer antler and the canid deposit. As a body part, the mandible stands in marked contrast to the (presumed) canid whole. Developing the argument for canid personhood, the cattle mandible could represent a grave good or offering to the dead canine person, reinforcing the assertion that the canid deposit can be thought of as a burial rather than routine disposal, and forms the central focus of the assemblage.

The human-red deer relationships explored thus far have tended to understand the presence of the antler primarily as a *material*, and it is worth considering whether shed antler was conceptualised in any way differently from antler derived from the carcass of a dead animal. Indeed, the apparently selective deposition of shed antler at this site would seem to be important, marking out the practices presenced as distinct. The act of shedding could represent an ontological rupture, a transformation whereby the antler was de-animalised to become a different form of gathered material. The animal origin of the antler might, however, have been of central importance. Antler materialises multiple temporal rhythms, drawing associations between the times of year that antler is grown, utilised and shed and the timing of the canid deposit. Human-red deer interactions manifest in the collection of shed antler thereby construct particular temporalities, situating action within a temporal frame. The combative role that antler plays for male deer in the assertion of sexual dominance and reproductive success could also be significant, identifying or conversely reassigning the sex or identity of the canid remains, or maybe the behavioural traits in the once living animal. The capacity for growth and shedding of bony substance that materialises in other species only through death and decomposition sets male deer apart. As animals whose bodies are manifest of such a transformative cycle that transcends the normative processes of life, death and decay their slaughter may have been proscribed, at least at a local scale and could account for the presence of only shed antler and the possible absence of butchered deer bones (although the latter is inevitably contingent upon the partial dataset).

Ambiguous conjunctions: human-cattle-red deer-(canid) becomings

Having interrogated the nature of human-canid-red deer relationships presenced in what has emerged as the burial of a canid person, it now becomes possible to return to the axial cattle remains discussed earlier to explore the significance of the associated antler deposits. The presence of a central focus of the deposit, in this case the cattle remains, in close association with red deer antler forges a structural link with the canid burial. But unlike the latter, and based upon photographic sources, the antler in this assemblage shows no obvious signs of working – although its positioning in the ditch may have masked evidence. Documentary sources provide no further information as to the treatment of the antler. Coupled with the partial disarticulation of the body and removal of the limb bones, this evidence contrasts with the canid burial and articulates a different, and yet related form of human-animal relationship. The cattle body was partially broken down, but the retention of the fleshed axial skeleton and the head – and possibly the hide – would have rendered the individual recognisable to those who placed it in the ditch. Like the canid, in life, this individual formed part of a human-animal social relationship in which the needs of both species orchestrated the structures of daily life in an ongoing responsive dialogue of action. But the canid and cattle remains describe key differences in the form of that sociality; it was appropriate and acceptable to consume cattle bodies, whilst still recognising their identities as persons.

The presence of the seemingly unworked antler remains unresolved, however. Citing, once again, the Mesolithic dog grave XXI, Skateholm II, the position of the antler in the Cold Kitchen Hill cattle ditch deposit appears in broad alignment with the spine. Although it is unclear whether the precise location of this corporeal conjunction was meaningful in itself in either the Skateholm II or the Cold Kitchen Hill examples, its interpretation as a grave good in the former (Fowler 2004: 144) has resonance. Drawing on this example, and arguments made above for the treatment of the Cold Kitchen Hill cattle ditch deposit remains as expressive of cattle personhood, the antler may be considered a grave good or offering analogous with the cattle mandible halves in the canid burial. In accordance with arguments made for the canid burial, the significance of an emphasis on shed antler as a medium of temporal, sexual and behavioural negotiation may be important. What can be asserted with some confidence is that at the time the deposits were placed at the base of the ditch, the dry, bony materiality of the antler would have appeared in sharp contrast against the cloying, bloodied cattle remains, creating a memorable, sensory impact upon those present.

Anticipatory reconstruction: becoming science

The final human-animal relationship to be briefly examined at Cold Kitchen Hill returns us to the recent past and the archaeological interrogation of the excavated material. Post-excavation analysis of the assemblage led to the generation of 18 vials containing splinters from the tips of flint tools found in the worked red deer antler (Figure 16). This small assemblage of tiny pill-like celluloid capsules is accompanied by a set of photographic images of fragments lodged within the antler, and tells a story in which human, flint, red deer and celluloid (to name just some of the parties implicated) are engaged in a process of becoming science with mediating instruments of magnification, photographic imaging and human judgement. The focus of this activity appears to be a study of humanly deployed technological process, the animal origin of the antler thus appearing incidental to the antler-as-material as repository of human action under investigation. The outcomes of this study appear unresolved. As has been noted, the project went unpublished by the excavators, and a further publication concerning the flint chippings from the antler alluded to in the excavation report (Harding 1986: 12) could not be identified, so the flint fragments lay dormant in their pods in readiness for a future role in a scientific performance: a case of anticipatory reconstruction.

The Cold Kitchen Hill assemblage is partial, complex, and reaches out across broad geographic and temporal spans to make linkages that help to explore the evidence, whilst drawing in and translating the very references it draws upon. The Neolithic deposits comprising the assemblage are articulate of differing forms of animal personhood, revealing complex ontologies that find animals and humans engaged in multiple roles that are fluid and may appear simultaneously contradictory. Also significant are the human-animal relationships emergent in the recent past, through archaeological engagement with the archive that straddle and complicate understandings of the Neolithic material. The value of these relationships should not be underestimated as they emphasise the importance of theoretical reflexivity whilst extending the assemblage in directions and preparing the ground for future research.

Figure 16: Flint chip extracted from worked antler, Cold Kitchen Hill long barrow archive, © Wiltshire Museum, Devizes

Beastly conclusions: part 1

This exploration of human-animal relations presenced in the Neolithic long barrows in and around Salisbury Plain has revealed some common themes and key differences, which are factors of scale. Distinct practices have been identified at both site and sub-site level, some of which articulate shared motifs that can be discerned at a regional scale and beyond, and some which lose coherence from a long-range perspective. Before picking up on these themes, it is important to stress that although these sites are identified as dating to the Neolithic, they are all inherently multi-period, not least insofar as they are being engaged with in the present, so for clarity, a linear temporal structure will inform the following overview.

The human-animal relations identified as pertaining to specifically Neolithic engagements *in the Neolithic* reveal closely entangled, interdependent lives; becomings together that were multiple, of varying degrees of asymmetry, in which the ontological status of humans and animals was fluid (Pollard 2004: 61). Evidence suggests that distinctions were made between species, but it has been argued that these were relationally emergent and subject to negotiation. The canid and cattle burials from Cold Kitchen Hill, for example, presence differentially emergent personhood, whereas the fantastic beasts of Woodford G2 and Fussell's Lodge trouble notions of corporeal boundedness and through structural reconfiguration, make space for new possibilities, for different forms of human-animal relations to be explored that also implicate other media, including flint, soils and ceramics. Also woven throughout this study has been the thread of anticipation, of deposits created in readiness for, if not expectation of, future response. This argues for these long barrows as sites of temporal architecture, whereby concepts of past, present and future were linked with meaningful practices to construct a sense of experiential time. This is borne out in the later evidence; the placement of secondary deposits that reference and enter into direct dialogue with earlier assemblages is a recurrent feature, for example, in the ditches at Amesbury 42 and Netheravon Bake.

There is also evidence of significant change through time. Deposits at Woodford G2, for example, reveal marked differences between the nature of human-animal relations manifest in the Neolithic and Bronze Age, with a degree of ontological distance emergent between humans and animals in the latter, as evidenced through the human interments. The human-animal relationships presenced in Neolithic long barrows have demonstrably multi-temporal resonance and tell us as much about past engagements as near-past and current attitudes and agendas. The impact of modern attitudes to the status of animals has been shown to have shaped the nature of archaeological intervention and interpretation and it has been worthwhile reflecting upon the implications of the underlying assumptions. But it is also important to recognise that assemblages are constantly growing and changing (cf. Fowler 2013). They are circulating references (cf. Latour 1999) that develop the ways in which human-animal relationships can be understood both in the past and in present practice. Mindful of this, and with a view to find out whether the findings from this region can be further developed, it is time to go further down the rabbit hole… and it leads us to Avebury.

Chapter 8. Down the Rabbit Hole[13] Part 2: multi-scalar human-animal relations presenced in the Neolithic long barrows in and around Avebury

This chapter shifts the focus of discussion to the long barrows of the Avebury region, specifically to the four reanalysed long barrow osseous assemblages from Horslip or Windmill Hill long barrow, South Street, West Kennet and Beckhampton Road. As in the previous chapter, reference is made to other Neolithic sites in the region, which are included in Figure 18 and Table 8. A broader consideration of the assemblages discussed in both the Avebury and Salisbury Plain regions concludes the chapter, drawing together findings that have emerged across and through the multiple scales educed.

Figure: 17 "[B]efore her was another long passage, and the White Rabbit was still in sight, hurrying down it. There was not a moment to be lost…" (Carroll 2009: 11-12, illustration by J. Tenniel)

[13] (Carroll 2009: 9-15 (Chapter 1))

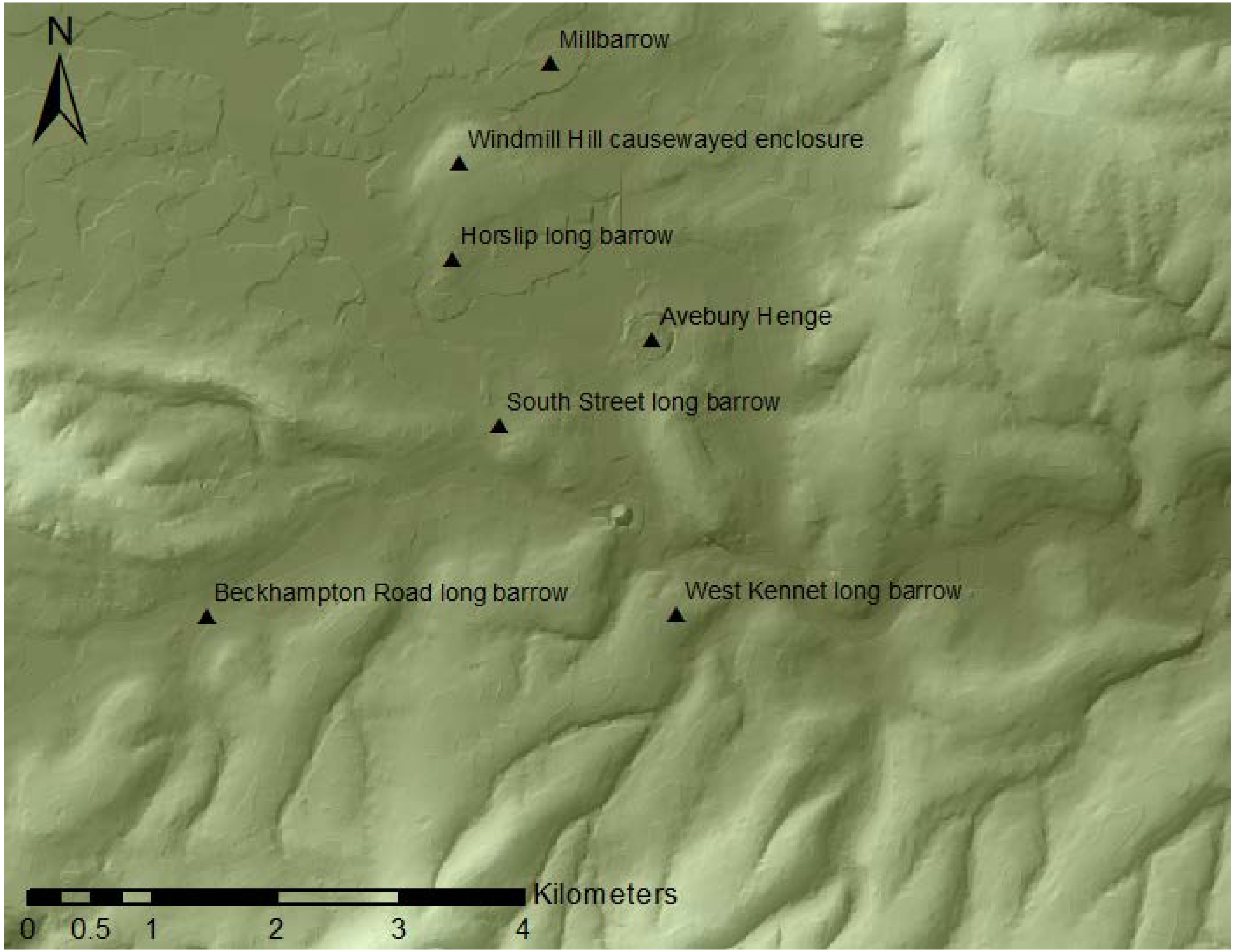


Figure 18: Elevation map of the Avebury region, Wiltshire showing key sites. Contains OS data © Crown Copyright and database right 2016

Table 8: Radiocarbon date ranges for sites in the Avebury region

Site	Laboratory number	Small finds no.	Material	Taxon	Context	Date range cal BC	% confidence	Reference
Horslip	BM-180		Antler	Red deer	Base of east butt of east ditch	4350 - 3650	95	Whittle *et al.* 2011: 108, Table 3.4
South Street	BM-356		Charcoal	Oak	Buried soil beneath mound	3800 - 3120	95	Whittle *et al.* 2011: 108, Table 3.4
	BM-358b		Antler	Red deer	In coombe rock of mound, Bay II	3630 - 2900	95	Whittle *et al.* 2011: 108, Table 3.4
	BM-357		Bone	Cattle	On base of east butt of north ditch	3760 - 3020	95	Whittle *et al.* 2011: 108, Table 3.4
	BM-358a		Antler	Red deer	On base of east butt of north ditch	3660 - 2910	95	Whittle *et al.* 2011: 108, Table 3.4
West Kennet	Multiple samples				Construction and start of primary phase of use	3670–3635 cal BC (81%) or 3575–3545 cal BC (14%)	95	Bayliss *et al.* 2007: 93. Table 2
	Multiple samples				End of primary phase of use	3640–3610 cal BC (77%) or 3550–3520 cal BC (18%)	95	Bayliss *et al.* 2007: 93. Table 2
	Multiple samples				Start of secondary infilling	3620–3240 cal BC	95	Bayliss *et al.* 2007: 93. Table 2
	Multiple samples				End of secondary infilling	2545–2065 cal BC	95	Bayliss *et al.* 2007: 93. Table 2
Beckhampton Road	NPL-138		Charcoal	Oak	Charcoal patch beneath buried surface	4360 - 3650	95	Whittle *et al.* 2011: 107, Table 3.4
	BM-506a		Antler	Red deer	On buried surface	3100 - 2580	95	Whittle *et al.* 2011: 107, Table 3.4
	BM-506b		Antler	Red deer	On buried surface	3500 - 2890	95	Whittle *et al.* 2011: 107, Table 3.4
Millbarrow	OxA-3171	4096	Bone	Human	Pit in area formerly east chamber end of mound, possibly predating it	3780 - 3120	95	Whittle *et al.* 2011: 108, Table 3.4
	OxA-3172	6005	Bone	Human	Pit in area formerly east chamber end of mound, possibly predating it	3960 - 3370	95	Whittle *et al.* 2011: 108, Table 3.4
	BM-2730	2047	Antler	Red deer	Chalk silt and rubble immediately overlying initial silt of inner north ditch	3520 - 3020	95	Whittle *et al.* 2011: 108, Table 3.4
	BM-2729	1344	Antler	Red deer	Earthy material from interior, near the top of primary silts of the inner south ditch	3360 - 2910	95	Whittle *et al.* 2011: 108, Table 3.4
	BM-2731	1126	Antler	Red deer	Fine chalky silt from near the bottom of the outer south ditch	3500 - 3090	95	Whittle *et al.* 2011: 108, Table 3.4
	OxA-3169	4169	Bone	Human	North side of supposed chamber area	3640 - 3090	95	Whittle *et al.* 2011: 108, Table 3.4
	OxA-3198	5331	Bone	Human	North side of supposed chamber area	3490 - 2900	95	Whittle *et al.* 2011: 108, Table 3.4
	OxA-3170	5716	Antler	Red deer	Pit beyond east end of barrow	3640 - 3020	95	Whittle *et al.* 2011: 108, Table 3.4
Windmill Hill	Multiple samples				Construction of inner circuit	3685 - 3635	95	Whittle *et al.* 2011: 87
	Multiple samples				Construction of middle circuit	3655 - 3605	95	Whittle *et al.* 2011: 88
	Multiple samples				Construction of outer circuit	3685 - 3610	95	Whittle *et al.* 2011: 91
	Multiple samples				Reduction in intensity/possible hiatus in activity	3300 - 3000		Whittle *et al.* 2011: 92
	Multiple samples				Recut in outer ditch	3020 - 2870	95	Whittle *et al.* 2011: 93
	GrA-25367		Bone	Human	Child burial, surface of layer 4, OD V	2200 - 1980	95	Whittle *et al.* 2011: 93

Horslip (Windmill Hill long barrow)

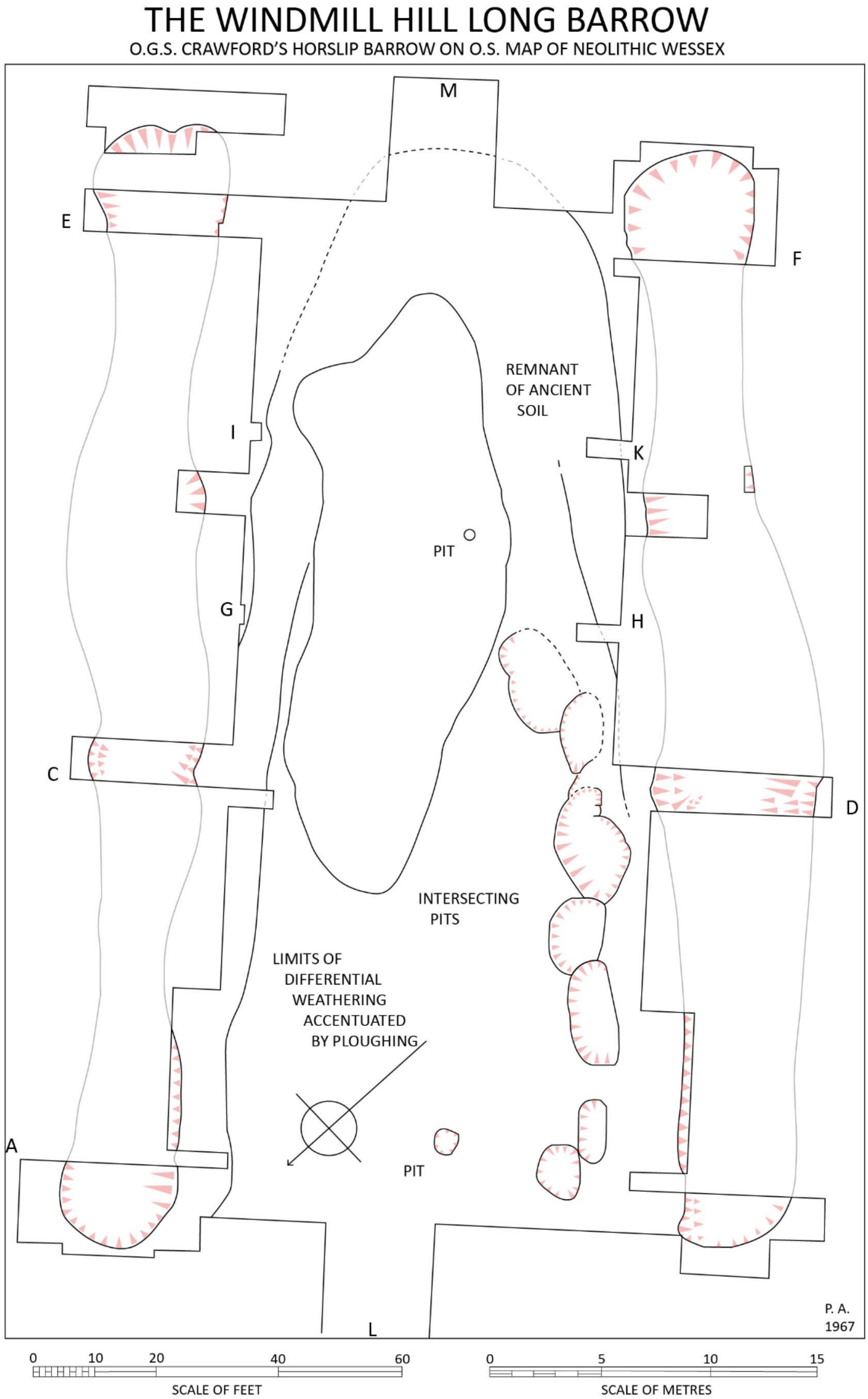


Figure 19: Plan of Horslip (Windmill Hill long barrow) adapted from Ashbee *et al.* 1979: 210, Figure 2, with permission, Cambridge University Press, © The Prehistoric Society 1979

Horslip or Windmill Hill Neolithic long barrow, Wiltshire is awkward. It clings awkwardly to a south facing spur projecting to form the southern slope of Windmill Hill, Avebury, below the site of the Windmill Hill Neolithic causewayed enclosure. Dated – potentially problematically on the basis that the sample selected may have been curated prior to deposition and due to queries raised as to the accuracy of the dating methods employed – to 4350-3650 cal BC, it is possible that the construction of the long barrow and the first phases of the causewayed enclosure were broadly contemporary (Whittle *et al.* 2011: 91, 102-109). Horslip forms part of a complex of Neolithic and Bronze Age monumental structures, which have been a locus of activity through to the present. The long barrow was excavated in 1959 by Ashbee and Smith (Ashbee *et al.* 1979: 207-228) at the request of the Ministry of Works, its mound having been all but destroyed by ploughing since Stukeley recorded it (Stukeley 2010 [1743]: 46, Tab. XVIII). The finds and documentary material were deposited with and remain curated by the Alexander Keiller Museum, Avebury; the extant assemblage is significantly larger than the excavation report and finds book suggest and the osseous assemblage does not correlate well with data presented in the published report. The bone is stored in its original packing replete with description of the bags' contents, which generally prove correspondent, and detailed contextual information including three dimensional coordinates recorded by the excavators. However, in the absence of spatial information detailing points from which measurements were taken, it defies the logic of GIS and stubbornly refuses to disclose anything more than general depositional locations. Further, trench identifiers employed during excavation do not appear to match up with those represented in the published report. The few notes of artefactual spatial association that can be identified in the excavation report make it difficult to ascertain whether this reflects a general absence of such evidence, or rather, a failure to record this information during the processes of excavation and/or reporting. Given the sheer volume of finds, which total in excess of 5500 individual specimens, it would seem somewhat surprising if further spatial associations had not existed.

The Horslip assemblage thus emerges as a somewhat troubled entity, defined by problems and limitations, and exceeded in notoriety by its more famous neighbours that include the aforementioned Windmill Hill causewayed enclosure, the later Avebury Henge, its stone circle and conjoined avenues and the West Kennet long barrow. Further, it is remarkable as one of a group of long barrows that appear to have had no primary human interments (Ashbee *et al.* 1979: 212), thereby undermining traditional interpretations that seek to define long barrows primarily as human funerary architecture. As I said, awkward. However, the assemblage such as it is permits a different scale of analysis in comparison to the long barrow assemblages explored thus far – that of broad zonal features within the site – and given its remarkable proximity to other Neolithic sites, this provides an opportunity for comparison and dialogue with other sites that have unequivocal spatial associations. But we begin with what is now becoming a familiar routine – as well as an intra-study iterative practice worthy of the depositional patterns observed in the long barrows themselves: an exploration of human-cattle relationships.

Keeping it veal: the continued cachet of cattle

Cattle are a ubiquitous presence at Horslip, their remains impressing a taxonomic dominance in all but the pit and plough soil contexts (Table 9), and although adverse preservation conditions have undoubtedly impacted the survival and present composition of the assemblage, this is not simply an effect of taphonomy – the human treatment of cattle remains attest to their difference. Placed in a 'compact deposit' at the distal terminal of the west ditch, 0.4 m from the base and compared in the excavation report with the Fussell's Lodge cattle ditch assemblage (Ashbee *et al.* 1979: 214), were a group of fragmented cattle remains. Reanalysis of the extant assemblage suggests that this deposit also included a sheep/goat pelvis fragment. The cattle assemblage includes elements of the cranium and forelimb that fusion evidence confirms pertain to a minimum of two animals, one aged around 12-18 months at death (not mentioned in the excavation report) and another aged at or above 42-48 months, reflecting the mortality profile of cattle from the Windmill Hill causewayed enclosure assemblage (Grigson 1999: 219). Also present is a large fragment of frontal bone (sf. 111) with multiple fine, parallel cuts marks indicative of skinning (Figure 20), the only specimen from the assemblage that shows such treatment – although the aforementioned poor preservation may have obscured further evidence. The location and composition of this deposit can certainly be understood as a citation (cf. Butler 1993; Jones 2007; 2012) of the earlier Fussell's Lodge example; it is associated with the primary silting of the ditch, it comprises a partial – albeit composite – cattle skeleton and is allied with a sheep/goat element, and archive records note the presence of flints found directly beneath the bone. But there are also key differences. Cranial fragments were not recovered from the Fussell's Lodge cattle ditch group and no reference can there be found to skinning; the sheep/goat pelvis from Horslip evidences butchery, but such evidence is not noted with regard to the Fussell's Lodge sheep/goat bone; and whereas the Fussell's Lodge flint deposit is described as a 'nest' of struck flakes that are neither retouched nor utilized (Ashbee 1966: 15-16), the assemblage from beneath the cattle bone at Horslip comprises just two flakes, one of which *is* utilized. Further, from the same broad primary chalk silt context at Horslip, a lump of calcined sarsen and 25 flints, two of which are serrated, one retouched, four utilized, five fragmentary cores, one partly worked nodule re-used as a hammer stone and one calcined piece were recovered, although their precise locations and associations are unknown.

Human-cattle relationships are undoubtedly foregrounded in this assemblage, expressing clear connections with practices that have been explored at long barrow sites in the Salisbury Plain region, but the specificity of the treatment and deployment of the Horslip material argues against directly analogous understandings of the relationships presenced. The Horslip cattle assemblage comprises multiple individuals, animals at different stages in their lives, that would have been embedded within different social relationships perhaps based on their interactions with humans as well as with other animals of their own species, so shows more in common with the Fussell's Lodge cattle and human cairn groups than with the cattle deposit from the ditch. It thereby presences the herd – cattle as collective – and its lineage in terms of ancestry, which is simultaneously particular and traceable through individuals, but also generalised insofar as the passing of time acts to break down individual identity through the creation of a past that reaches beyond memory. It also implicates the practices and routines associated with the maintenance of herds both bovine and human, the close interpersonal relationships and knowledge of the needs and expectations of the other. Such human-cattle becomings have already been identified in long barrow assemblages from the Salisbury Plain region, and have been discussed in some detail in the analysis of the Woodford G2 assemblage, drawing in practices associated with the provision and production of nourishment, shelter, and protection. What emerges are notions of complex webs of human-cattle kinship and interdependency, characterised by asymmetric but constantly shifting relationships in which agency is dispersed (cf. Fijn 2011; Ray and Thomas 2003).

Table 9: Taxonomic representation per context (NSP), Horslip (Windmill Hill long barrow). * denotes the inclusion in this category of sf. 130 which falls within the size range of both large domestic cattle and small aurochs

Context	Horse	Cattle*	Pig	Sheep/ goat	Dog	Human	Aurochs	Red deer	Roe deer	Badger	Hare	Oyster
Plough soil	2	25	1	25								13
Mound		1										
Pit			1									
Stone hole		1		1								
Z feature												
Ditch (total)	6	106	29	9	1	1		5	1	9	1	
Ditch: layer 2	3	5										
Ditch: layer 3	3											
Ditch: layer 4		80*	28	7	1	1		5	1			
Ditch: layer 5		21		2			2			9	1	
No layer			1									
Total	**8**	**133***	**31**	**35**	**1**	**1**	**2**	**5**	**1**	**9**	**1**	**13**

Figure 20: Cattle frontal sf. 111 showing fine cut marks indicative of skinning, Horslip (Windmill Hill long barrow) with permission, Alexander Keiller Museum

These human-cattle relationships acquire added complexity through the documented presence of a partial aurochs cranium and maxilla from the ditch base. These specimens, having been noted in the original animal bone report (Higham and Higgs 1979: 225), are absent from the archive assemblage and somewhat surprisingly go unremarked in Ashbee *et al.*'s general discussion of the site. Details regarding taphonomy and treatment of the remains and any association with other material are absent, placing restrictions upon understanding the character of this deposit and its possible spatial relationships with the other material. Once again, the precise location of this material within the ditch is frustratingly ambiguous, described as having been recovered from "the base of one of the ditches" (Higham and Higgs 1979: 225), although stratigraphically, this does preclude the possibility of its having formed part of the composite cattle assemblage discussed above. Despite these limitations, the presence of this deposit in the ditch and its placement in a context that permits the prospect of its having been accessible to those who deposited the composite cattle remains makes possible the articulation of extended ancestral linkages reaching across greater time depths. The morphological relationship between aurochs and domestic cattle creates this connection, whilst attributes such as physical size, behaviour, habitats, and social relationships with humans simultaneously place emphasis upon differences. The placement of both aurochs and cattle in broad association enables both similarities and differences to be drawn upon to enable the articulation of new relationships between aurochs and cattle, humans and cattle, and humans and other humans wherein, for example, the ferocity of the aurochs may be understood to be subdued and yet remain latent in domestic cattle that permit certain human individuals the physical proximity to share their produce, whilst denying others this privilege.

In broad terms, this combination cites the Woodford G2 aurochs-cattle mound deposit. The presence of the aurochs remains creates further connections with Knook Barrow (Colt Hoare 1975a: 83) that also appears to evidence aurochs cranial elements. Likewise, the presence of the cattle cranial fragment draws the deposit into a geographically wide-ranging assemblage, with other such long barrow deposits, for example, at Amesbury 42, Bowls Barrow, Heytesbury Barrow, Sherrington, Tilshead Lodge (Colt Hoare 1975a: 88; Thurnham 1869: 180, 182-183) and Beckhampton Road (Ashbee *et al.* 1979: 228-250). In joining this assemblage, it adds emphasis to the significance of cattle and the cattle cranium in particular in the Neolithic of this region and beyond (Piggott 1962b), but also translates the reference: the Horslip cranium has been skinned; it does not form part of a 'head and hoofs' deposit as described by Piggott (1962b), making its presence on the Horslip specimen a mark of difference. The removal of the hide suggests that in this case, exposure of the bone was sought, although it is unclear whether the skin was removed some considerable time prior to the deposition of the skull or whether the action occurred concurrent with its placement in the barrow ditch. The former would suggest that the different parts could have been differentially deployed to fulfil unknown roles in different assemblages, thereby drawing further connections, further past actions into the assemblage, whilst the latter would have made for a dramatic, bloody spectacle, heightened by the contrast between the cattle remains and the stark whiteness of the chalk ditches. In either eventuality, the separation of the hide from the bone would have been a sensorial undertaking, bringing cattle, human and flint together in a smeared blurring of corporeal boundaries, an interaction that would have impacted upon and changed all parties. Of course, it also remains a possibility that the hide may have formed part of the original deposit, further extending and elaborating the relationships presenced, but has succumbed to the decompositional processes of time and soil chemistry. Whilst this must remain unknown, what does emerge from this assemblage is a concern with transformative processes, with material interventions; the cattle remains are broken down, individuals unmade and recombined, and in addition, the sheep/goat element has been butchered, and the flint elements worked and/or utilised. Unlike the ditch assemblages at Amesbury 42, Netheravon Bake, and Cold Kitchen Hill, the dialogue between the flint and bone elements is not arrested in a state of anticipatory tension, loaded with a diversity of possibilities for different articulations of human-animal interaction. The Horslip primary ditch assemblage seems to focus rather on outcomes and processes pursued along a particular course to a point of resolution, if not conclusion.

This theme has vertical resonance, it bleeds into the fill above. The Late Neolithic secondary ditch deposit also includes a significant quantity of cattle bone, dominating the identifiable assemblage and including a large section of cattle frontal, replete with horn cores, that cites the example from the primary fill (Figure 21). Some of this material can be said with certainty to derive from the ditch end, positioned directly over but seemingly discrete from the primary cattle deposits, and includes an unfused distal radius fragment that falls within known ranges for both large domestic males and small female aurochs (Wright 2016). It seems probable that the majority of the cattle bone assemblage from the west ditch in fact pertains to this locale on the basis of spatial metric data, but broad inconsistencies with accompanying written descriptions preclude definitive attribution. The cattle assemblage includes elements of the head, spine and limbs representing at least four individuals and with two butchered elements, and seems to reside in broad spatial association alongside pig bones of the head and limbs; a sheep/goat first phalanx; a worked bone 'pendant' (Figure 22) (Ashbee *et al.* 1979: 218); five Beaker pottery sherds; unidentified ceramic sherds; a piece of sandstone; daub; 107 flint flakes, two of which are utilized and two worked; four scrapers; one point, one unidentified

Figure 21: Cattle frontal sf. 95 from secondary ditch deposits, Horslip (Windmill Hill long barrow), with permission, Alexander Keiller Museum

worked piece; one knife; and one transverse arrowhead. This is a complex, multi-temporal, mixed deposit of multiple individuals, and multiple materials woven together within a loamy earthen matrix to become a conglomerate substance of diverse actions, incorporating the citation (cf. Butler 1993; Jones 2007; 2012) of the earlier deposit and earlier practices, as well as the processes engendered in the breaking down of animal bodies, of butchery and subsequent bone working, as well as the care of the animals prior to their deaths. It includes the selection of flints, their knapping and working into diverse forms, the selection of pottery for deposition, its prior uses, the social relationships it entered into, and its creation – the selection of suitable clay, the preparation and addition of temper, its shaping, decoration and firing.

The composition of the east ditch assemblage is less clear due to the aforementioned inconsistencies in the recording of contextual information, forcing reliance upon the published documentary records. The presence of a worked red deer antler pick, its beam end fashioned to form a 'comb' shared the primary silt of the proximal ditch end with a burrowing badger, a flint scraper and a sarsen rubber, the excavators attributing the company of the latter two to the stratigraphically reckless industry of said badger (Ashbee *et al.* 1979: 214). No further mention is made of an animal presence in this ditch, although it seems unlikely that bone is entirely absent, particularly since the dearth of pottery fragments in the proximal terminal and a "concentration of flint implements and knapping debris" in the distal end are remarked upon

Figure 22: Worked large mammal metapodial sf. 46, B20, Horslip (Windmill Hill long barrow), with permission, Alexander Keiller Museum

(Ashbee *et al.* 1979: 218). Nonetheless, a zonally defined depositional patterning emerges, with spatially discrete groupings contrasting with practices observed in the west ditch, a product of the translation of the material assemblage to documentary form, developing and creating new articulations of the assemblage. But like the west ditch assemblage, a concern for process followed through to conclusion is apparent.

This is the stuff of *life*, of quotidian existence, and the patterns identified here are born out in the plough soil assemblage that includes material likely deriving from the mound as well as that introduced through ongoing interaction with the site through time, and agricultural processes in particular. A multi-temporal conglomerate incorporating cattle remains, including 14 skull fragments, sheep/goat and pig bone, Neolithic Windmill Hill and Beaker pottery fragments, Romano-British period grey and Samian ware, glazed and decorated Medieval and post-Medieval ceramic sherds, horse teeth, clay pipe stems, the cutting edge of a flint axe, a clay 'weight' (Ashbee *et al.* 1979: 224), and sarsen quern fragments re-used as pounders, oyster shells, iron nails, a coin of unknown date listed in the finds register, and the glass neck of a wine bottle forms a happenstance midden sheltering the intact stratigraphy below, whilst presencing diverse human-animal relationships and the actions therein implicated that thread across time and space; a fertile substance for archaeological (re)production.

(S)ite-rations: doings, memory and a sense of pastness

The Horslip assemblage confirms the barrow's position as a site of intensive human-animal activity through time. The repeated deposition of cattle bone and crania in particular, of worked flint, and ceramic material implies deliberate citation, iterative practices of response to what went before (cf. Butler 1993; Jones 2007; 2012). It establishes a sense of rhythm, a temporal pulse, whereby actions remembered create and recreate memory and thereby a sense of pastness through their thematic repetition, coupled with subtle changes of terms. The stratigraphically transitory presence of pig and sheep/goat remains, the momentary appearance of dog, human, red deer and roe deer bone in the secondary ditch fill, and horse and oyster in tertiary and plough soil contexts alter the composition of the assemblage through time, but not its identity; these elements join the cattle 'constant', the flint, and the ceramic material, to articulate a range of different human-animal relationships whilst remaining anchored to a common root. For example, that body part representation coupled with fusion and tooth wear data for pig from the secondary fill reveal that all but one of the specimens analysed evidence age-at-death estimates falling between 12 and 42 months, suggests that they pertain to animals raised for meat. This infers a very particular, strongly asymmetric relationship in which the lifespan of one species is determined by the other as well as an ontology in which such modes of interaction are thinkable and crucially, doable. It contrasts with that observable between humans and cattle, mortality profiles from the secondary fill reflecting those of the primary deposits, and indicating a much more mixed herd demographic including a young adult aged under 36 months and an individual or individuals aged between seven and nine years. This evidence suggests more varied and proximate inter-species relationships of care in comparison to pig, involving the provision of feed, protection and nurture – a mutually beneficial currency of broad spectrum support and stability in an unpredictable world that both humans and cattle could tender, and one that persisted through time. And although it could be argued that taphonomic processes favour the preservation of robust cattle remains, comparable evidence from other long barrow assemblages would seem to confirm its veracity: the importance of cattle in long barrow contexts is a phenomenon with a substantive material reality. The introduction of pig to the assemblage serves to reinforce the difference of cattle and the continued importance of human-cattle relationships, and this point is echoed in the secondary sheep/goat and red deer assemblages, which are limited to the bones of the limb, again suggesting a concern with human consumption of the animal body. The addition of horse and oyster remains in the tertiary and plough soil layers associated with mixed Romano-British, Medieval, post-Medieval and Modern pottery sherds marks another significant change, but one again suggestive of a continuation of this relational asymmetry, both representing species that would have been introduced to this place through the medium of human transference.

The Horslip long barrow was a place of human-animal doings. It presences humans and animal lives engaged in unending dialogue, expressing different forms of relationships that make demands on the routines of human and non-human lives. These include the rhythms of the daily, seasonal and annual, and also the generational; the multi-phase activities evidenced by the stratified ditch deposits are confirmation of practice through time. It is a place of reactive, memory-driven and memory-making practices that enabled the articulation and renegotiation of ontologies, a role it continues to perform to the present through archaeological engagement, feeding into broad ranging investigations of shared pasts and their role in present identity making, to the seemingly insignificant and micro-scale. The appearance of isolated and fragmentary hare, dog, human and roe deer bone in the assemblage may be considered stray inclusions, but they serve as reminders of individuals who nonetheless had a presence in this locale – albeit dwelling within different environmental and social niches – and so enrich understanding of the human-animal relations therein. That these animals did not form substantial deposits is interesting, and given the survival of elements from animals of comparative skeletal robusticity (with the exception of hare), it seems unlikely that this pattern can be attributable to taphonomy alone. Indeed, Ashbee infers that the near absence of human remains may be considered deliberate, stating:

> "Although bone was found in the plough soil over the ditches, there were no human bones, with the exception of a single femur head. If there had been human skeletal material, more scattered bones would have been found. It may be assumed that burials, if any, were few and secondary." (Ashbee *et al.* 1979: 212)

This once again forces a return to consideration of the material that *did* form the focus of deposition and the human-animal relations presenced, adding to the weight of evidence arguing for the importance of the human-cattle relationship. The Horslip assemblage is, then, highly selective; it has been processed and picked through, in its phases of creation both prior and subsequent to excavation (data and their analysis are relational; they are inherently creative and form an assemblage with all who interact with them, precluding the possibility of objectivity (cf. Fowler 2013) – see Chapter 6), a theme that extends as far as the treatment of individual deposits. It is to this concern with process that stands in direct contrast to the anticipatory action that characterised many of the long barrow assemblages examined in the Salisbury Plain environs, that discussion will next turn.

'Processual' archaeology

protecting

feeding

killing

butchering

skinning

knapping

recycling

forming

firing

sharing

breaking

repeating (repeating)

remembering *citing* *translating* *transforming…*

Materials processed to a point of resolution, having engaged in multiple episodes of transformative interaction, emerge repeatedly in the Horslip site-scale assemblage and spatially/temporally coherent sub-assemblages. These deposits convey a sense of potential realised, of *a degree* of possibility exhausted – their deployment as constituents of barrow fabric is testament to the existence of other opportunities under exploration. They incorporate worked and utilized antler and flint, the skinned cattle skull and the butchered sheep/goat pelvis fragment from primary deposits; to this list can be added worked bone and sarsen, further (re)worked flint, butchered pig and cattle bone, ceramic sherds – themselves worked and fired clay – from the secondary fill; and with butchered sheep/goat bone, glass fragments, nails, a lead disc, an iron ring, a coin, burnt sarsen, and daub joining the mix in the tertiary and plough soil contexts. Whilst remaining mindful of the taxonomic specificity of treatment discussed above, the broad handling of animal bodies as mediated matter shows a symmetry with that of other substances incumbent within the barrow assemblages, situating them within broader practices of quotidian life and confirming the absolute integration of human-animal relationships therein. The butchery of animal bodies, for example is a moment in an extended human-animal relationship incorporating care, the selection, preparation and utilization of flint with which to action disarticulation, the collection of clay, the mixing with temper and its firing to make pottery to enable the cooking and thereby consumption of meat, the management of these body parts post-butchery/consumption, including selection for placement in the barrow structure. Human bodies are thereby also processed through these diverse interactions through the performance, adaption, and refinement of bodily techniques (cf. Mauss 1973). Further, consumed animal bodies transform the consumer (cf. Bennett 2010: 39-51), providing nutrition (with the possibility for poisoning or, a little less dramatically, indigestion) enabling the perpetuation and responsive manipulation of the practices that gave rise to its consumption. So whereas the long barrow assemblages from the Salisbury Plain region support an argument for anticipation, this tension is largely absent from the Horslip assemblage. It articulates instead a concern for reflection on the state of being; it is an ontological crucible – a place of world making.

At this point it becomes necessary to return to the apparent exclusion of human remains from primary contexts – a phenomenon that is common to other long barrow sites in the immediate environs. It has been argued that the near absence of some species, and the selective deposition of body parts suggestive of consumption serves to place emphasis on the importance of cattle, and of human-cattle relationships, through marked contrasts in the specific modes of treatment. But in light of the processing hypothesis, which finds the impact of processing to manifest in human and animal bodies alike, albeit differentially articulated, the question of why cattle and not cattle-with-humans form the focus for these particular deposits is raised. It must be considered whether dead human bodies went unprocessed, were unsuitable for processing in this locale, were an unnecessary addition to the assemblage given the implicit human presence manifest in the processes presenced, or whether an ontological separation of humans from all other animals in the Neolithic, including cattle underwrote these relationships.

It is here useful to refer to findings from the adjacent and temporally proximate Windmill Hill causewayed enclosure. Early Neolithic deposits from this site include both human and animal remains, although human remains are few, particularly when compared with the sizeable faunal assemblage that includes material from the earlier Keiller excavations, which found "large numbers of complete, or nearly complete, skulls and horncores of cattle" (Grigson 1999: 204). The human group comprises: an adult male inhumation (707) with a radiocarbon date range of 3690-3370 cal BC (OxA-2403) (Ambers and Housley 1999: 119; Whittle *et al.* 2011: 77, Table 3.2), accompanied by teeth from a one year old pig, amphibian and small mammal bones, and a flint flake; from context (630), a human child's femur inserted into a distal cattle humerus (Whittle *et al.* 1999a: 110, 108 Figure 97; Grigson 1999: 205, Fig. 161, 206), radiocarbon dates for this context returning 3640-3320 or 3240-3180 or 3160-3130 cal BC (OxA-2394) (Ambers and Housley 1999: 119, Whittle *et al.* 2011: 69, Table 3.2); from context (117) a fragment of a human child's cranium nested within a skinned cattle frontal (Whittle *et al.* 1999a: 89-90, 89 Figure 82) radiocarbon date ranges for the child showing as 3640-3500 or 3410-3380 cal BC (OxA-2399) (Ambers and Housley 1999: 119, Whittle *et al.* 2011: 74, Table 3.2); and from the pre-bank surface, two loose teeth, an immature cranial fragment and a fragment of tibia that is identified as "probably human" (Brothwell 1999: 345-346). The nature of these deposits, and those of the cattle-with-human-children in particular, in which the cattle remains physically envelop the human share structural similarities with the fantastic beasts (cf. Rowling 2009) of Fussell's Lodge and Woodford G2, suggesting that the assertion of an anthropocentric world view in the Neolithic assemblages at both the Windmill Hill causewayed enclosure and long barrow sites is unsustainable. Human and cattle lives were interwoven and inextricable, and the placement of human child remains within cattle bodies suggests a recognition of the caring, nurturing role of cattle for their human counterparts (cf. Harris 2011: 368; Ray and Thomas 2003), in death as in life. Key to understanding the Horslip assemblage, then, is the absence of *dead* human bodies – the human presence is a living one, and one that is sustained by the cattle herds that find themselves represented in the long barrow ditch deposits, a pattern that will re-emerge in the Beckhampton Road long barrow assemblage and has resonance for understanding that of South Street.

South Street

Just over a kilometre south from Horslip and resting at the foot of Windmill Hill, South Street long barrow sits between the modern villages of Beckhampton and Avebury Trusloe, Wiltshire. Beckhampton Avenue, part of the Avebury megalithic complex, passes close by as it nears its terminus at Longstones Cove, but respects the barrow structure. Noted by Stukeley (2010 [1743]: 45-46), and featured in his plan of the complex (Figure 23), the site of the barrow now lies under pasture with the southern ditch subsumed beneath the road with which it shares its name. Stukeley's serpentine rendering of the henge, stone circles and avenues provides a strangely fitting companion for South Street, which has been engaged in a slow process of physical metamorphosis, shedding its earthen skin with the astringent, reductive forces of agriculture and then archaeological excavation to transform from a three-dimensional mound with ditches and sub-soil features, to a three-dimensional archive, and is in the process of shedding one of its dimensions as much of the excavated osseous material has become cast adrift and now exists solely in documentary form.

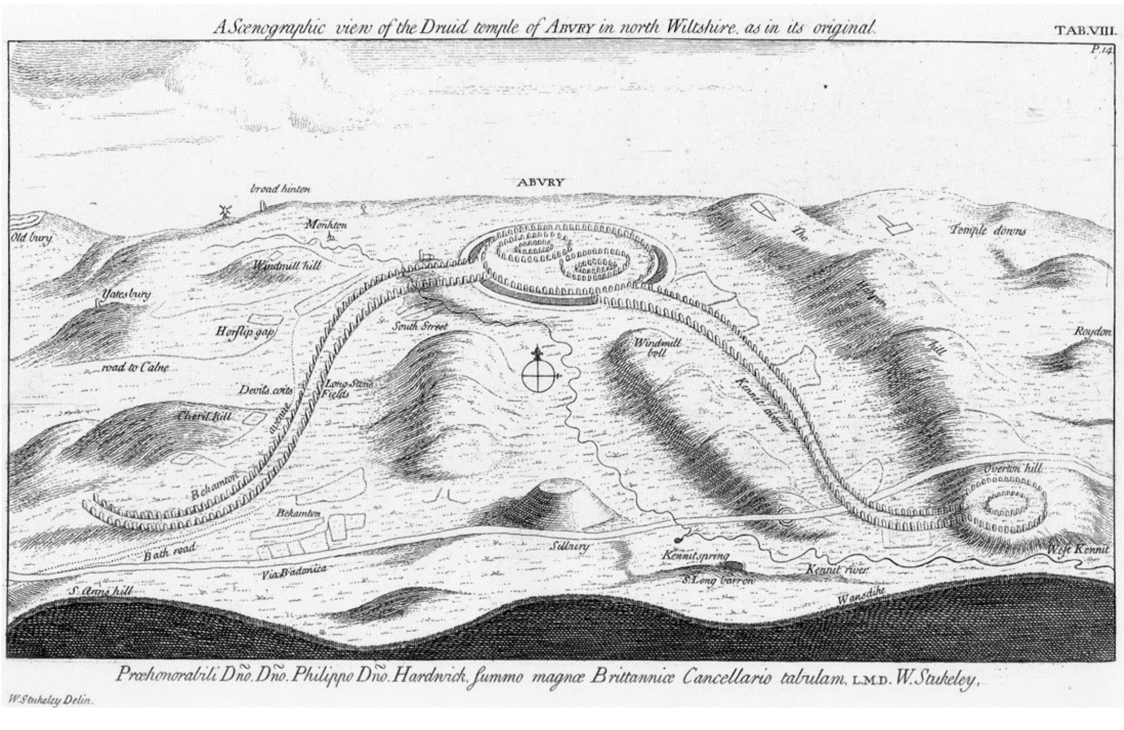


Figure 23: Stukeley's plan of the Avebury megalithic complex including South Street long barrow, Horslip (Windmill Hill long barrow), and Windmill Hill. (Stukeley 2010 [1743]: TAB.VIII)

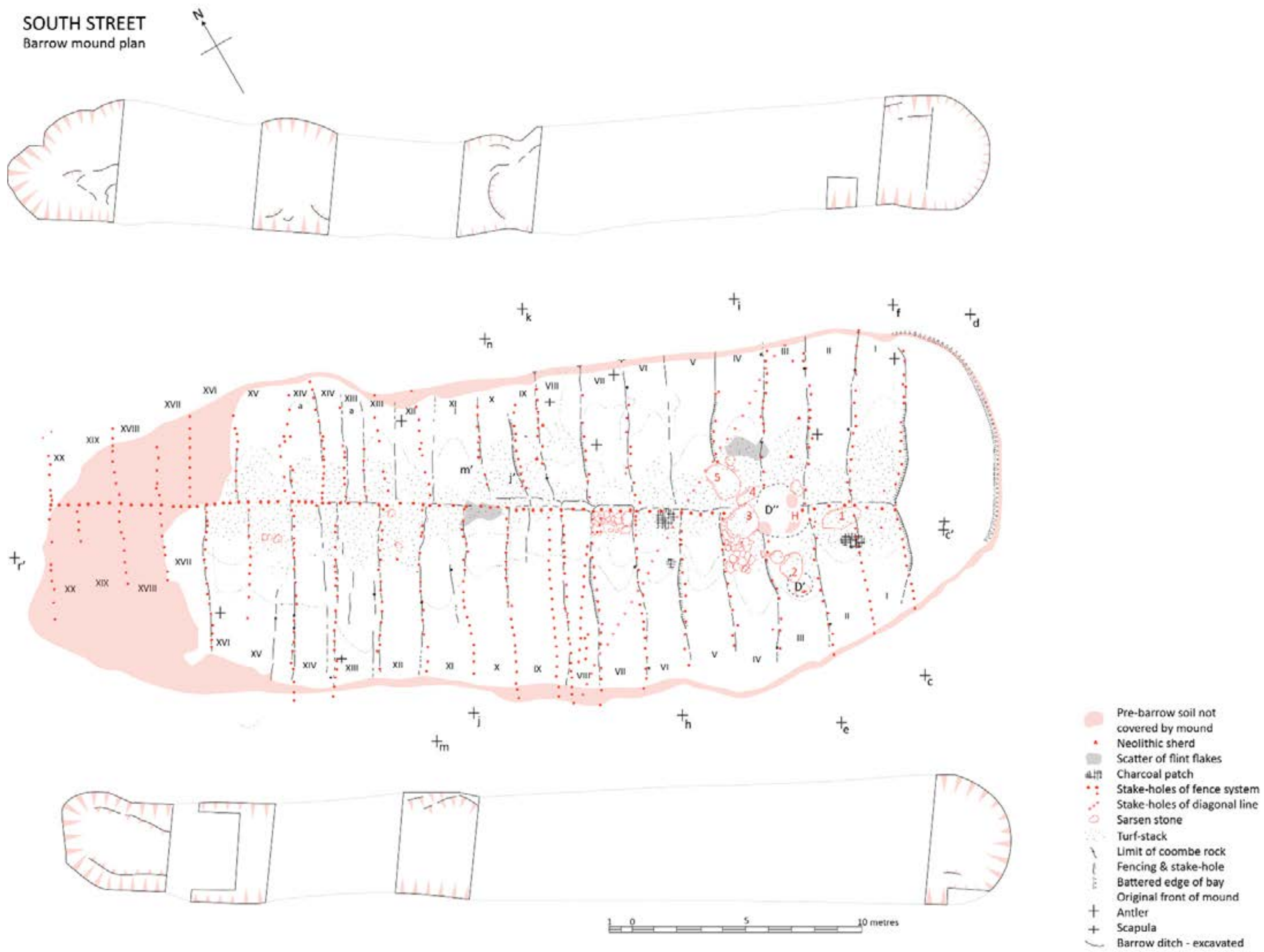


Figure 24: Plan of South Street long barrow adapted from Ashbee *et al.* 1979: 253, Figure 23; 256, Figure 25, with permission, Cambridge University Press, © The Prehistoric Society 1979

Excavation of South Street long barrow was undertaken between 1964 and 1967 by Smith and Ashbee (Ashbee *et al.* 1979: 251-252) in a somewhat extended process, resulting in no small part from the barrow's seemingly relentless enthusiasm for caprice. Stukeley's illustrations suggest variously the presence of a structure with a single, coherent long mound; a mound of two morphologically contrasting halves; a long mound capped by a round barrow on its western half; and the presence of variant numbers of large, upstanding stones, some forming a border, and which had the apparent capacity to disappear. Initial archaeological intervention responded to concerns raised by the farmer whose plough had encountered large stones beneath the soil surface, and was followed by environmental sampling. Next, a five-week excavation was undertaken, which grew to 16 weeks over two seasons, as the structure of the barrow refused to conform to expectations – a combination of the recent archaeology at the site, Piggott's findings from West Kennet, and Stukeley's aforementioned depictions (Ashbee *et al.* 1979: 251-252). What was revealed was a mound formed of composite materials packed into a massive rib cage structure of bays (Figure 24), which enabled and demonstrably motivated relatively fine-grained recording of find spots for certain categories of artefact, and contrasts markedly with the quality of spatial data for others, particularly from ditch contexts that are much more limited to broader structurally defined zones. Radiocarbon evidence confirms that primary activity at South Street occurred between the 37th and the 29th centuries BC (Ashbee *et al.* 1979: 264; Whittle *et al.* 2011: 108, Table 3.4).

Pastoral symphonies: of soils and savannah

The South Street osseous assemblage is very small indeed, with just 183 specimens identifiable to taxon (Table 10). Cattle remains account for 70% of this number, a proportion inflated by the relative profusion of disarticulated cattle scapulae. Scapulae aside, bones of the head, spine and limbs representing at least two individuals comprise the cattle assemblage from the buried soil and turf stack of the mound – the two contexts having been conflated in the excavation report and now indistinguishable due to the absence of this artefactual evidence and the documents pertaining to it. Pig from this context are represented by bone fragments of the head and limbs, as are sheep/goat, which are additionally represented by bones of the spine and ribs and whose assemblage includes a worked metapodial in the form of an awl; red deer is represented by a fragment of pelvis and an unfused phalanx 2. The absence of records describing treatment places restrictions upon understanding the nature of the human-animal relationships expressed, and is further exacerbated by the dearth of detailed spatial information, any depositional associations now inaccessible. This may, of course, be because none were clearly discernible; Ashbee states:

> "The only objects which can be considered to have been incorporated deliberately into the mound, apart from the sarsen stones, were six fragments of red deer antler and four scapulae of *Bos* sp." (Ashbee *et al.* 1979: 263).

Similarities in the spatial arrangement of the scapulae and antler within the barrow structure which, with one exception, are focused around its outer edges, suggests a connection between the two (Figure 24; Table 11). They are discussed together in their own section as a category of find discrete from the animal and human bone in the excavation report, under the assumption that they can be thought of as digging/excavation implements – a human-animal relationship in which emergent material properties of particular animal body parts are foregrounded – although in contrast to the antler, it is important to note that no conclusive evidence is found for the use of the scapulae as such (Ashbee *et al.* 1979: 268-269). This finding rests on an expectation that the scapulae would have been used as shovels, based upon morphological similarities with modern implements, but that five out of the six scapulae that could be identified come from the left side of the body appears significant. It raises the question of whether right scapulae had been preferentially selected and thus employed – and as relatively fragile bones, damaged beyond recognition prior to deposition – leaving unused left scapulae for deposition either as extraneous or representative of the missing other. The presence of 135 unidentifiable fragments recorded as pertaining to scapulae on the packaging would seem to support this hypothesis. However, it could also be that left scapulae *in particular* were deliberately chosen for inclusion in the long barrow structure to perform an unknown role; the

Table 10: Taxonomic representation per context, South Street long barrow. * denotes presence of an additional unknown number of specimens recorded as present in documentary sources

Context	**Cattle**	**Pig**	**Sheep/ goat***	**Dog**	**Human**	**Red deer**	**Badger**	**Large mml**	**Med mml**	**Indeter minate**	**Total**
Buried soil and turf stack of mound	27	12	35			2			1	170	247
Bay VII north, coombe rock	1									31	32
Bay XIII south, chalk rubble	3									57	60
Chalk capping. Frontal chalk rubble	1									22	23
Bottom of east end of north ditch below chalk rubble of primary fill	2							1			3
Primary fill of ditches	7									25	32
Secondary fill of ditches	87		*	2	2		2				93
Total	**128**	**12**	**35**	**2**	**2**	**2**	**2**	**1**	**1**	**305**	**490**

presence of a curious perforation of the glenoid cavity of a cattle scapula from the frontal chalk rubble of the mound is here of interest, and compares with an antler tine from Cold Kitchen Hill similarly perforated at the distal end. The positioning of antler and scapulae recovered from the ditches suggests a further degree of distinction, if not difference; a shed red deer antler was recovered from the base of the eastern terminal of the north ditch, whereas a deposit of two cattle scapulae were placed in a central position within the primary chalk rubble of the west ditch.

Both the antler and scapulae form deliberate, meaningful deposits, but appear to have played different roles in the construction of the barrow – the antler in the excavation of the ditch, the cattle scapulae seemingly important and possibly associated in some way with the antler, but in ways not clearly communicated through the archaeology, and both forming part of the barrow structure. The correlations and differences in the ways in which these materials have been deployed reveal human-animal relationships of subtle particularity, which are suggestive of taxonomic distinction, informed by complex social as well as morphological factors. Where evidence for shedding is observable, the red deer antler comprising the South Street assemblage confirms that all specimens were collected from live animals; there is no evidence for the use of unshed antler (Ashbee *et al.* 1979: 268). The selection and use of shed antler as opposed to antler derived from dead animals has been discussed in detail in the previous chapter as part of the Cold Kitchen Hill assemblage, and is pertinent to the present focus of study. It simultaneously places emphasis upon the identification and exploitation of the emergent material qualities of the antler as *substance*, which may give rise to a process of 'de-animalisation', but also potentially alludes to the temporal rhythms and behavioural traits of red deer that set them apart from other species. That antler could be collected without the requisite death of the animal could have rendered it especially suitable for transformation into tools that would become rapidly worn and damaged through use; the paucity of other red deer body parts in the assemblage suggest that there may have been a prohibition against killing red deer, or against depositing them in this context. The cattle scapulae, by contrast as well as necessity, must have been extracted from dead animals, their material properties thereby inherently connected with the death of an individual, potentially of close social proximity. Access to scapulae would therefore have engendered occurrences that would have had a marked impact on cattle and human groups alike, especially given the arguments made in the analysis of other sites for the centrality of cattle in the Neolithic of the Wiltshire region, and it is thus somewhat unsurprising that the human use of cattle scapulae may have been bound up with proscribed practices quite different from those associated with red deer antler.

Table 11: Red deer antler occurrence per context (NSP), South Street long barrow

Context	NSP	Small finds no.
Old land surface	2	88
Coombe Rock of mound, bay I	3	119
Coombe Rock of mound, bay II	1	121
Coombe Rock of mound, bay VII	7	117,118
Coombe Rock of mound, bay XII	3	120
Chalk of barrow mound. Bay XIV	1	68
Base of north ditch	1	182
Secondary fill of ditches	1	
Ditch cutting V. Beaker clearance	1	50
Total	**19**	

The difference of cattle again emerges through a return to the primary ditch deposits. The only recorded bones from this context, apart from the aforementioned scapulae, are four articulated cattle vertebrae, recalling the partially articulated cattle bone group in the ditch at Fussell's Lodge and the ditch deposit at Cold Kitchen Hill. As a much reduced version forming a discrete deposit, it serves as a shorthand, or token reference to the cattle body, and in the absence of the remains of other species, places emphasis on the significance of cattle specifically, whilst bringing the South Street assemblage into regional scale dialogue. The human-cattle relations of shared lives and interdependence identified at Fussell's Lodge and Cold Kitchen Hill, as well as those at Woodford G2, Amesbury 42, Netheravon Bake and those that are yet to be discussed from Beckhampton Road are cited and made manifest through citation (cf. Butler 1993; Jones 2007; 2012).

It is here useful to pull all of the threads of evidence together: the treatment of cattle remains is distinct from other species whose bones are absent from primary ditch contexts, and whilst displaying some structural similarity with the form of the antler deposits, show differences in treatment and presence very different human-animal relations. A familiar, cattle-themed long barrow story. But the South Street primary osseous assemblage is also utterly idiosyncratic. The emphasis on used antler picks, some clustered and placed around the perimeter of the structure, the apparent selection for and inclusion of disarticulated left scapulae similarly arranged, the ostensibly random, incidental inclusion of bone from other species, and the absence of human remains from primary contexts; familiarity, it seems, is scale dependent.

Stranger things

South Street's strangeness is given further expression through its non-osseous components, its location, internal structure and sub-assemblages therein. The bays that compartmentalised the body of the mound were demarcated by fencing of "stakes, withies and brushwood"

(Ashbee *et al.* 1979: 258), and filled in individually with differing volumes and ratios of soils, sarsens, flints and pottery sherds, resulting in variance in form between the halves of the mound either side of its axis (Ashbee *et al.* 1979: 256, Figure 25, 258-263) (Figure 24). The materials were clustered and appear from plans to have been carefully placed with clear spatial demarcation. Bays that incorporated antlers or scapulae – the two never being found together – were filled by coombe rock, turf stacks and soils, but no other form of material, whereas sarsens were either found with soils alone, or in association with pottery sherds. Amongst the huddle of sarsen boulders grouped towards the eastern, proximal end of the mound were three stones under which three sherds of burnished carinated bowl pottery, two of which conjoin, had been placed (Ashbee *et al.* 1979: 256, Figure 25) (Figure 24). Earthen substances – the coombe rock, turf stacks and soils – and the wooden fencing are the only elements common to all of the bay contexts, these (literally) grounded materials quietly but insistently asserting their significance. This terrestrial theme continues; the long barrow structure was sited at a location that had been the focus of intensive activity; it had been ploughed before being replaced by grassland, which Ashbee argues would have been maintained by 'grazing stock' (Ashbee *et al.* 1979: 264), the sarsen element possibly representative of land clearance undertaken as part of this earlier agricultural phase (Ashbee *et al.* 1979: 266). And within the old land surface were folded discrete patches of charcoal, flint microliths, and clusters of knapping debitage.

Also from this context, but very definitely an osseous component that like the antlers and scapulae occupies a somewhat liminal space problematising traditional archaeological find categories (and hence demands its very own miniature paragraph), is a worked bone awl fashioned from a sheep/goat metapodial (Figure 25). Derived from a dead individual but deliberately shaped for a purpose, its animality is preserved and projected through the retention of the bony articular condyle. As a possible inadvertent inclusion in the long barrow assemblage – a position implicit in the documentary sources – it draws together the life and death of the animal of whose body it once formed a part, the practices associated with its extraction, shaping and subsequent deployment and the times and locations in which all of these happenings occurred. It formed part of complex, interconnected human-animal relationships that were relationally emergent and crucially for South Street, emplaced.

Figure 25: Awl formed from worked sheep/goat metapodial sf. 87, South Street long barrow, with permission, Alexander Keiller Museum

A return to the fold

From this evidence emerges a concern with place; an active, changing environment of soils and vegetation that incorporated human-animal groups and their activities, bound together by the particularity of their situatedness. The mound structure, with its bays and carefully deployed deposits suggests an importance attached to substances and their combination, which has been identified at other locales in the Middle and Late Neolithic Avebury landscapes, and has been found to be deliberate, meaningful and purposeful (Banfield 2016). This combination of earth, wood, antler and cattle scapulae, of pottery sherds and sarsens, overlaying grassland incorporating charcoal patches, flint debitage, worked bone and pottery – the stuff of life – all of which rests on bedrock scored by ard marks is an expression of interconnectedness and continuity. It brings together place, substance and action, and places it within the earth in a corporeal form analogous to the fantastic beasts (cf. Rowling 2009) of Fussell's Lodge and Woodford G2 to become an anticipatory act of propagation, thereby forging connections at a regional sale, with reference also to Amesbury 42 and Netheravon Bake. And so familiarity resurfaces at a broader scale. But this is not solely a horticultural undertaking; aside from the very formal antler and scapulae deposits, the remains of cattle, pig, sheep/goat and red deer and the human-animal relationships they express are woven into the fabric of the mound structure despite their apparent indiscriminate distribution and somewhat nebulous presence within the assemblage. These are animals that depended upon the graze that grew in these soils and that in turn, as Ashbee *et al.* (1979: 264) assert, maintained it. The human-animal relations implicated are therefore integral within the assemblage whilst being simultaneously implicated through the broader practices presenced by the non-osseous materials, as residues (cf. Lucas 2012), echoing the mode in which human presence is manifest in the Horslip assemblage. And this assertion finds further support languishing at the bottom of the ditch in the form of the aforementioned articulated cattle vertebrae, the token deposit that says so much – makes so many connections – in the briefest of utterances.

Later engagements attest the ongoing significance of South Street as a locus for activity permeated by human-animal relationships. A Late Neolithic/ Early Bronze Age pit set into the compacted chalk that formed the proximal end of the mound contained a large assemblage of flint debitage, including retouched pieces (Ashbee *et al.* 1979: 272, 298), human-animal relations presenced through the manifold uses to which the flakes and worked flint forms could be put – the human slaughter of animals, the butchering of their bodies, processing hides and bone, milk and blood, as well as consumption of their flesh. This pit assemblage represents responsive, meaningful action in which the pre-existing barrow structure and the human-animal relations that are folded through and into it are referenced, augmented and transformed. By contrast, material recovered from the secondary ditch deposits is seemingly relatively thick with osseous remains, including 87 cattle specimens representing at least one animal, what appears to be a deliberate deposit of 'part' of a young sheep/goat from the distal terminal of the south ditch, described as having occupied a 'restricted area' (Ashbee *et al.* 1979: 268), the base of a shed red deer antler, two badger bones, two dog teeth, and two human skull fragments. Inclusion of spatial information pertaining to the sheep/goat deposit suggests, by inference, that the substantial cattle assemblage was found dispersed throughout the context. Also present in this context was a quantity of pottery sherds, including seven from vessels identified as bowls and two as Beaker, a flake from a burnt, polished Neolithic flint axe, and a utilised flake from a non-local source. No information as to spatial distribution of associations are recorded, but the presence of "an exceptional quantity of finely divided charcoal" (Ashbee *et al.* 1979: 289) noted during the course of molluscan analysis suggests that much of this material may be redeposited, thereby drawing practices undertaken elsewhere into relation with the long barrow assemblage and going some way to explicate the nature of the cattle assemblage. That this material is the stuff of life (and death), suggesting human-animal gatherings involving butchery and consumption, makes reference to the primary mound and ditch deposits, and thereby invokes memory, notions of past and continuity, and so the articulation of temporalities.

And activity at the site continued; pottery sherds were recovered from the buried turf line within the ditch, together with incomplete barbed and tanged arrowheads – damaged in the human pursuit of an animal quarry? Romano-British and Medieval pottery sherds, and Romano-British nails were found in the base of the plough wash, and interpreted as evidence of manuring (Ashbee *et al.* 1979: 289), although it is also noted that the Medieval sherds may be the result of a deliberate dump of domestic material on the basis that "[s]uch finds are not normal in Medieval field" (Fowler cited by Ashbee *et al.* 1979: 289). Human-animal doings thus participated in the ongoing emergence of South Street, through manuring and possibly through provision of traction in the complex, directional choreography of power and intent that is ploughing, and in a pleasingly cyclical manner, return us to the point at which we started, the core theme of the land, of soils and savannah. The South Street long barrow assemblage is about place, the environment and the lives and life processes therein enmeshed. Human-cattle relations once again find themselves thrust to the fore and despite the relative paucity of osseous remains, human-animal presences are very much in evidence through the residues of practice (cf. Lucas 2012): the interdependence of humans, deer and cattle in construction projects; the deliberate human deposition of articulated animal remains alongside and in possible contrast with the exclusion of the dead of other species; and the deposition of anthropogenically altered bone that (quite literally) pierces through and brings together different aspects of human and animal lives and deaths. The story that here emerges, then, is one of interwoven, interdependent lives lived with reference to past practices, within and through a known landscape.

Post-script: Magic! Materials and de-materiality

Now that the lost bones of South Street have been fleshed out a little, it would be a shame to neglect those large, flighty, upstanding sarsens that featured in Stukeley's publications. Ashbee reports that he found no evidence for their presence during his excavation and concluded that South Street long barrow had, in fact, never been engaged in lithic entanglements of the like (Ashbee *et al.* 1979: 250-251). But that they remain in Stukeley's documents, were capable of troubling Ashbee, appeared briefly at the start of this section and have rematerialized in the present discussion, demonstrates their place as affective, real – albeit fictional and somewhat spectral presences – in the South Street story. This capacity for long barrow assemblages to exercise such documentary caprice, to lose and regain elements, whilst all the while expanding as the reference circulates (cf. Latour 1999) leads us on to the West Kennet long barrow – a site that has demonstrated an obstinate commitment to such morphogenesis, and continues to do so, with a zealous ferocity of intent.

West Kennet

West Kennet chambered long barrow is located on a spur of high ground in the Marlborough Downs, four kilometres south east from Windmill Hill, just under two kilometres south east from South Street long barrow, and close to the Swallowhead Spring, one of the sources of the River Kennet. Its structure identifies it as belonging to the chambered long barrow group of the Cotswold-Severn region, incorporating five chambers constructed from massive sarsen slabs and dry-stone walling that open from a central passage, a forecourt area fronted by a later façade, a turf and rubble mound constructed over a sarsen boulder core that exceeds 100 m in length, and two flanking ditches (Piggott 1962a). West Kennet is therefore very different from the other barrows here considered within the Avebury region, although it is by no means alone. To the north of Windmill Hill, Millbarrow was excavated by Whittle in 1989 and also features a stone structure at its core, including a terminal chamber (Whittle 1994: 47). It is not reanalysed here due to the high quality of analysis and reporting and low volume of faunal remains.

West Kennet has long been a focus of interest, having been sketched and described by Aubrey (1982 [1665-1693]), Stukeley (2010 [1743]: 46, TAB XXXI), and having undergone repeated excavations since at least the 17th century. It purportedly attracted the attentions of the infamous Dr Toope (Piggott 1962a: 4), an 18th-century physician whose interventions at the nearby Sanctuary saw him requisition “many bushels” of human bone “of which I made a noble medicine that relieved many of my distressed neighbours." (Toope 1678, cited by Piggott 1962a: 4). Presumably the looming menace of its imminent dispensation effected a speedy recovery. In 1859, the prolific barrow digger John Thurnham oversaw the excavation of the west chamber and passage, identifying the remains of six burials. Despite significant limitations in his approach, which is left wanting by modern standards and restricts the spatial resolution of the current analyses, findings were recorded and published (Thurnham 1860; 1869) and some of his excavated material survives in the Duckworth Laboratory Collection. It was, however, the findings of an ambitious programme of carefully planned and scientifically motivated excavation undertaken by Professor Stuart Piggott, Professor Richard Atkinson, and a team of archaeology students from the University of Edinburgh to modern standards that

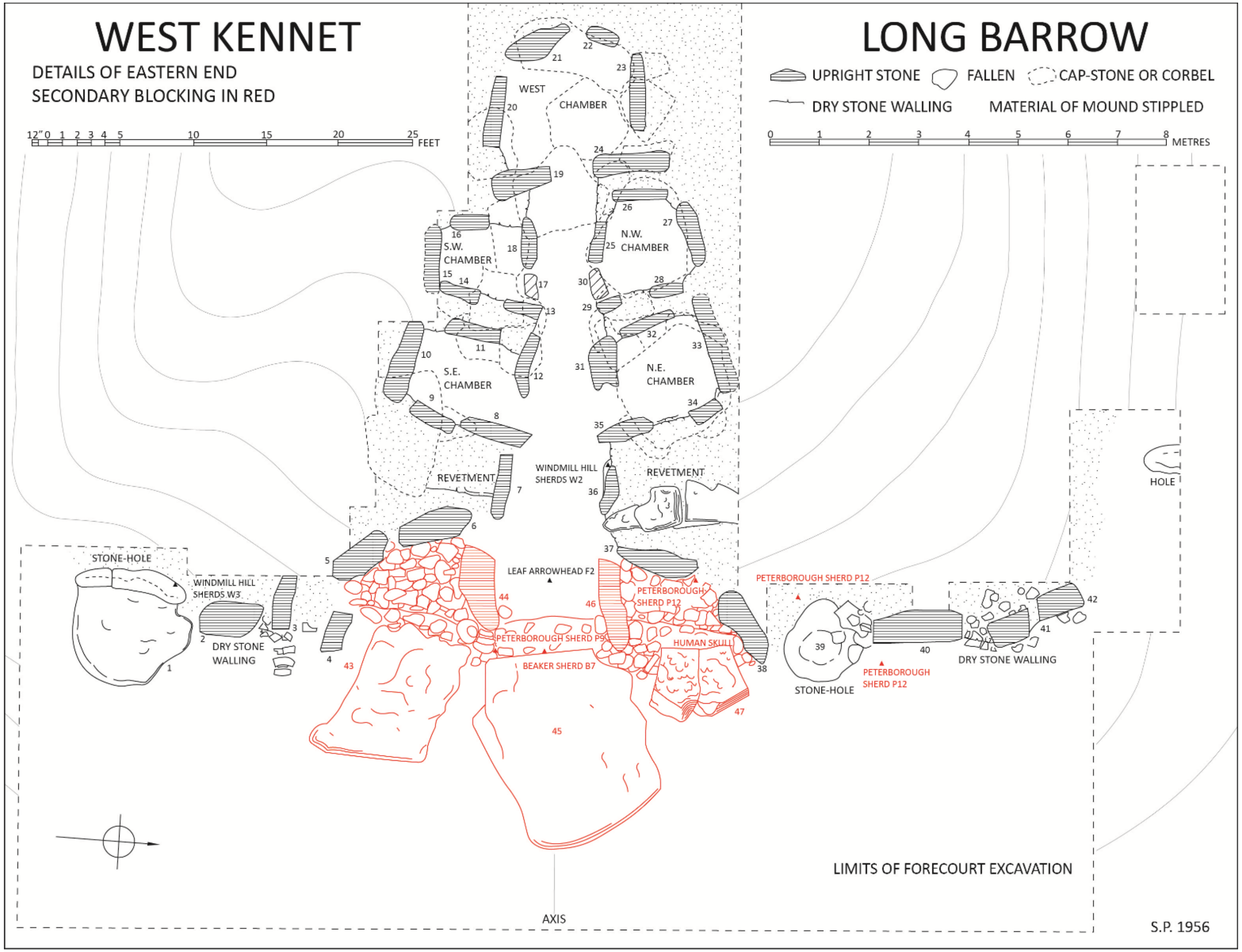


Figure 26: Plan of West Kennet long barrow. By permission of Historic England

provided the basis for current understandings of the site. Piggott and Atkinson excavated the chamber and forecourt structures to ground level alongside a sample section of the mound and ditch. They enlisted the assistance of a specialist team to analyse the excavated material and published the results shortly afterwards (Piggott 1962a). Piggott and Atkinson's West Kennet excavation arguably set the standard for subsequent British excavations, and not least through its broadcast on the then novel medium of television, but their findings have benefitted from ongoing engagement by Thomas and Whittle (1986), and more recently by Bayliss *et al.* (2007). The Bayesian analytical approach to radiocarbon dating employed by the latter has transformed our understanding of the temporal resolutions involved in the various episodes of deposition at West Kennet and other sites, enabling the construction of detailed chronologies.

Despite the project's broader achievements, animal-shaped shadows of absence haunt Piggott and Atkinson's excavation archive, telling a familiar tale of anthropocentrism. The animal bone report from this seminal publication amounts to just five short paragraphs (to be compared against the 18 pages devoted exclusively to human bone analysis) that provide scant detail, not all of which accords with the large extant assemblage, which the present programme of reanalysis finds to comprise 1749 bone and tooth fragments, amounting to 1733 specimens (NSP) (cf. Thomas and Whittle 1986: 146). Meanwhile, the human remains that Piggott accorded such a central position have suffered subsequent – transient – losses that have profoundly altered the assemblage and its understanding to date.

Missing persons report: Left over on table after analysis. 1956. Human.

Although thorough, the human bone analysis published by Piggott (1962a) is limited by its failure to create records of individual specimens, emphasis instead placed upon the identification of individual skeletons and numbers of individuals represented. Whilst undoubtedly useful, this precludes meaningful quantitative analysis, and has arguably diminished interest in the disarticulated 'odd' specimens, which despite holding less diagnostic potential than more complete skeletons, pertain to individuals nonetheless and represent depositional activity. The value of reanalysing the West Kennet human bone assemblage was identified by Thomas and Whittle (1986) and pursued in earnest by Bayliss *et al.* (2007), whose work revealed stratigraphic inconsistencies, misidentification of elements to individual skeletons, and apparent overestimation of MNI counts in the original analyses undertaken and reported in Piggott *et al.* (1962a). However, it emerges that this programme of reanalysis was based upon an incomplete dataset. Identification of the complete human assemblage was impeded as a result of the peculiarities of archiving undertaken following the original excavation, which has seen the assemblage dispersed between The Duckworth Collection, Cambridge; Wiltshire Museum, Devizes; and the National Museums of Scotland archives. The full whereabouts of the human material had not been documented by Piggott, and compounded by the frequent misidentification and/or mislabelling on the original packaging, and oversights resulting in material entering the archive under the description "Left over on table after analysis. 1956. Human" (Figure 27), the extent of the complete archive human bone assemblage has only come to light as a result of the present study. The Devizes collection includes a substantial hoard of calcanei and astragali – which holds potential to impact understanding of the assemblage and revised MNI counts.

The sheer volume of material therefore requiring synthesis and urgent reanalysis, and its potential impact upon understanding of this critical site demands a focused research programme. Reanalysis of the human bone and of the full osseous assemblage will be undertaken upon the conclusion of the current study, with the kind support of the researchers who recently conducted and published the reanalysis of the Duckworth material to modern standards. As a consequence, it is solely the non-human animal bone that has here been reanalysed, which sits ill at ease with the posthumanist remit of the present study. However, the value and importance of recording and reanalysing this unapologetically partial dataset necessitates its inclusion, and whilst precise details of numbers of human elements and individuals and their spatial distribution must remain unclear, evidence of their presence as an assemblage and as a series of sub-assemblages enables a level of engagement, albeit limited. To this end, the findings published in Bayliss *et al.* (2007) will inform discussion, as the most recent analysis undertaken. Even without exact numbers, it is clear that the West Kennet human assemblage is substantial, occupying in excess of 30 archive boxes at The Duckworth Collection, two dedicated boxes at Wiltshire Museum, Devizes, whilst also infiltrating others housing animal bone, flint and pottery, and dispersed throughout the numerous bags containing the animal bone collection at the National Museums of Scotland archive. Human remains utterly dominate the osseous assemblage, which along with its stone-chambered structure, marks it out as very different from the other long barrows in its immediate environs here considered, and this will be reflected in the discussions that follow.

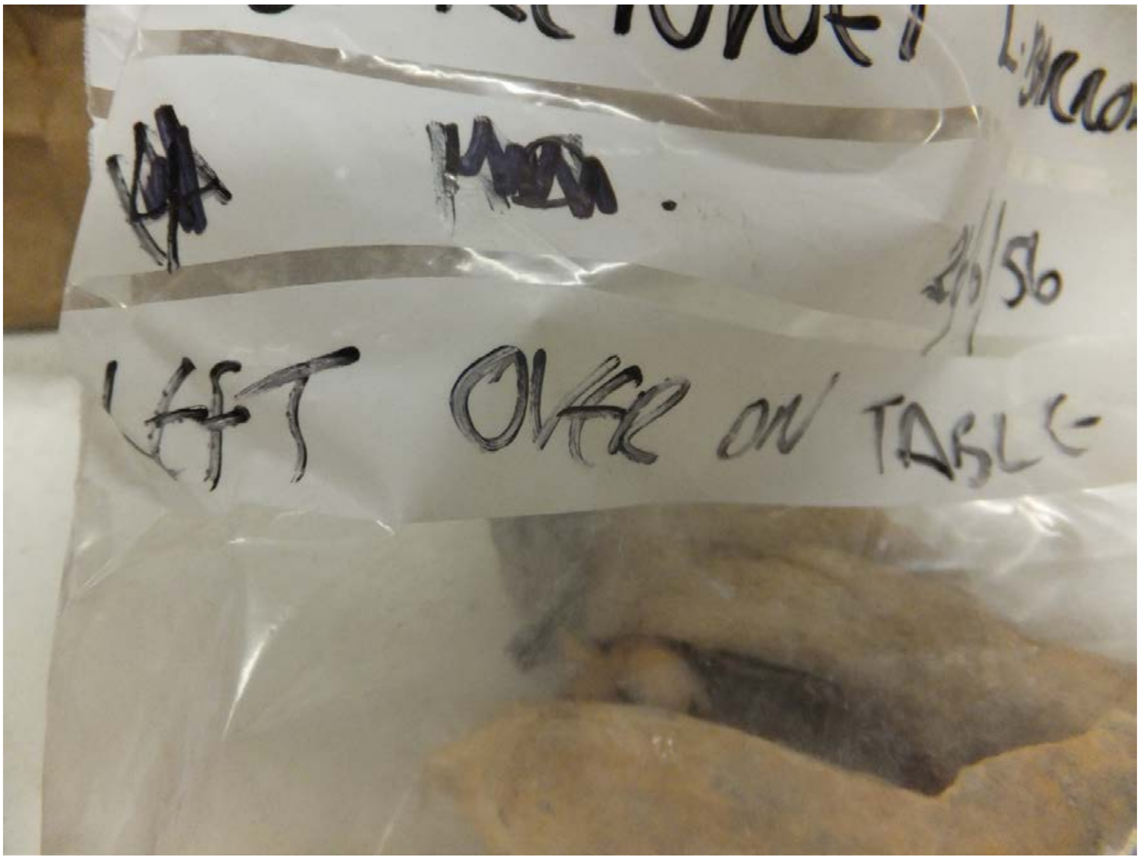


Figure 27: “Left over on table after analysis. 1956. Human.” Label on West Kennet long barrow archive packaging, National Museums of Scotland archive, Edinburgh, with permission © National Museums Scotland

Human-animal relations, sarsen structures, and the taxonomic diversity of paradoxical taphonomy

The West Kennet long barrow faunal assemblage is diverse, incorporating a minimum of 16 different taxa (Table 12). Joining the customary band of domesticates, canids, cervids and digging enthusiasts of the smaller mammalian varieties, are wild boar, mustelid, field vole, frog/toad, duck, and goose. Also implicated are an absent beaver and the remains of blackbird, jackdaw, mouse and bat, which are listed in Piggott’s excavation report and extend the taxon count to 21. Explanation for such diversity, which is remarkable by long barrow standards, lies tangled within a knot of multiple conspiring factors, each of which is articulate of particular human-animal relations.

The majority of the extant osseous assemblage was recovered from the stratified deposits filling the stone chambers at the east end of the barrow mound. Sheltered within their sarsen cocoon, remains of the human and animal dead alike were afforded an equity of protection from plough and weathering damage. This symmetry of treatment is, however, scale

Table 12: Taxonomic representation per context (NSP), West Kennet long barrow

Context	Horse	Cattle	Pig	Sheep / goat	Goat	Dog	Fox	Dog/ fox	Red deer	Roe deer	Boar	Badger	Mustelid	Rabbit	Field vole	Frog/ toad	Duck	Goose	Large mml	Med mml	Small mml	Med bird	Small bird	Indeterminate	Total
West chamber. Walling						11															2			5	18
West chamber. Behind walling		2	3	2				2											4	2				8	23
North west chamber. Primary deposit																								27	27
North west chamber. Paving			8					1		1										7				1	18
North west chamber. Secondary fill	3	16	17	81	7	2		12	3		1	1		5					14	121	3			61	347
North west chamber. No defined context		1	2																1	3				5	12
North east chamber. Hearth		2																							2
North east chamber. Secondary fill	1	28	13	8	1	1	1	5	4	2	1	1		1		5			43	40	2			113	270
North east chamber. Stone hole 32																								8	8
North east chamber. No defined context		3	13	8		5	2	11	1				1	1	1				13	50	2			88	199
South west chamber. Primary deposit		2	4	5								1							2	2				4	20
South west chamber. Secondary fill		10	8	2		1			1				2			1		1	39	35				16	116
South east chamber. Primary deposit		2	4	3															1	3				3	16
South east chamber. Secondary fill								1						1					3	5				6	16

Context	Horse	Cattle	Pig	Sheep / goat	Goat	Dog	Fox	Dog/ fox	Red deer	Roe deer	Boar	Badger	Mustelid	Rabbit	Field vole	Frog/ toad	Duck	Goose	Large mml	Med mml	Small mml	Med bird	Small bird	Indeterminate	Total
South east chamber. Walling																								9	9
South east chamber. No defined context			1																					15	16
South east chamber?																								1	1
Passage																									13
Floor of entrance between portals			2					1																	3
Floor of passage between S. E. and N. E. chambers		1	1																	1					3
Chalk rubble between portal stones		1	4																						5
Secondary fill		1	1																						2
West chamber/ passage																									149
Thurnham's fill	1	10	23	11		1			1	2				1		16			3	35				45	149
Forecourt																									3
Blocking		1	1																					1	3
Façade																									16
Old surface near base of stone 39	1	1	1	1				1								1			6	4					16
Mound																									12
Chalk rubble of mound behind stone 39																						1		11	12
Cutting III between stones 39 & 50, layer 1.																									21
Refill of modern disturbance		3		1												1			9	3	1			3	21
Pit between stone 43/44																									6

Context	Horse	Cattle	Pig	Sheep / goat	Goat	Dog	Fox	Dog/ fox	Red deer	Roe deer	Boar	Badger	Mustelid	Rabbit	Field vole	Frog/ toad	Duck	Goose	Large mml	Med mml	Small mml	Med bird	Small bird	Indeterminate	Total
Top of pit																								6	6
Secondary fill: location unknown																									76
Peterborough levels		1																						1	2
Chalk rubble layer			2	1					1										7	2				1	14
Top of filling	2	1	5	5	1		3	3		2			3			1			9	12	2			11	60
Context uncertain		6	9	2		1		2					4			3	1		20	55	6		2	208	319
Total	**8**	**92**	**122**	**130**	**9**	**22**	**6**	**39**	**11**	**7**	**2**	**3**	**10**	**9**	**1**	**28**	**1**	**1**	**174**	**380**	**18**	**1**	**2**	**657**	**1733**

dependent. The primary deposits from the north east, south east and north west chambers were sealed by a block sarsen 'pavement', a feature that may have resulted from the collapse of internal dry-stone walling and is absent from the south west chamber (Piggott 1962b: 24-26), which both afforded protection, but simultaneously likely crushed fragile elements. These deposits were dominated by, but not – as Piggott's account would suggest – limited to, human remains, suggesting that practices were focused *primarily* upon the processing of the human dead. Bayliss *et al.* (2007: 87) suggest a human MNI count of 36 individuals for primary contexts, but the present study also finds low numbers of specimens representing cattle, pig, sheep/goat and badger recovered from the chamber floors, which will be discussed in further detail below. Access to the chambers and their contents appears to have been possible for humans, and potentially also small mammals and birds, until secondary deposits filled the chambers and passage (Thomas and Whittle 1986: 135), with successive interments that resulted in the disturbance of, and damage to, earlier deposits, alongside what has been interpreted as the deliberate removal of human material for circulation in other contexts (Piggott 1962b: 23-24, 68; Thomas and Whittle 1986: 130; Wells 1962: 80-81). Evidence thus starts to accrue to construct a case in support of the separation, if not the promotion, of the human species above others in the Early Neolithic assemblage. Certainly, the reported absence of gnawing evidence on human bone suggests that larger mammals were deliberately prevented from entering (Thomas and Whittle 1986: 135), further supporting an argument for the separation of the human. However, it may be that access was limited to *particular* humans, whilst others were denied entry. Such circumstances could complicate concepts of taxonomic hierarchy; it may be that those whose remains were included in the structure and those who were able to access them were differentiated from those who were not, and taxonomic identity may not have been the determining factor.

In their preferred interpretation of the radiocarbon data, Bayliss *et al.* (2007) posit that the secondary deposits formed gradually over around 1000 years and after a hiatus following primary activity probably lasting over 100 years (Bayliss *et al.* 2007: 93-95) and during which part of the internal drystone walling and blocking collapsed (Piggott 1962b: 26-29). These data evidence marked changes in forms of human and animal engagement with the structure as material was introduced from a position above the chambers, in episodes, and likely originating from multiple sources (Bayliss *et al.* 2007: 97-98). Parity of human-animal treatment can here be observed, with the inclusion of partial, disarticulated human and animal remains, deposits of burnt bone, and through the placement of a juvenile goat and a human child skeleton in the upper fills of the north west and south east chambers respectively (Bayliss *et al.* 2007: 97). With respect to the latter two, age emerges as an important concern and will be discussed further below. A wholly anthropogenic basis for the formation of these deposits is here not a given; although remains of the wide range of wild species may have been deliberately included, they also could have entered of their own volition. The limited gnawing evidence noted in secondary deposits could be indicative of changes in accessibility, with scavenging carnivores able secure entry to chambers. The duck coracoid, for example, may well have been introduced to the assemblage (context uncertain) by a canid in an interesting parallel to human-animal deposition practices (Figure 28), although it is also possible that this activity did not occur in-situ, instead forming a residual inclusion.

The chambered structure of the long barrow, then, paradoxically facilitates simultaneously good and poor preservation. The robust stone structure affords some protection for deposits whilst enabling the access that promotes disturbance and damage to earlier deposits, these twin forces facilitating the accumulation and preservation of a diverse, but highly fragmented and abraded osseous assemblage articulate of multiple, complex and changing human-human, human-animal, and animal-animal relations through time. And, as has been noted, these changing relations continue to emerge in the site's subsequent history to the present. The latent anthropocentrism underwriting the practices involved in the excavation of the site, the post-excavation analysis, archiving, and reanalysis of the resultant assemblage has (often quite unintentionally – and especially so in the case of Bayliss *et al.* (2007)) influenced the ways in which this site has been understood. Analysis has been trained overwhelmingly upon the human to the detriment of other assembled elements, not least the sarsen that forms a crucial, central territorialising force within the assemblage, and which has participated in permitting the development of these asymmetric human-animal relations. And so it is to the particular human-animal becomings that are presenced in this assemblage that we next turn, in a bid to redress the balance of enquiry.

From secondary status to a primary position? Animal presences in the base layer deposits

Reanalysis of the West Kennet long barrow faunal assemblage confirms the presence of animal remains in what appear to be primary deposits of the south east and south west chambers, below the paving layer – layers that are described as layers 11 and 6 respectively in the documentary records. This finding was not discussed in the excavation report, despite having been logged in Table III (Piggott 1962a: 54), revealing in Piggott and Atkinson's engagements a human-animal relationship firmly situated within a modern, western ontology, in which animals are assigned an *a priori* secondary status relative to the human. Quantities of extant

Figure 28: Duck coracoid sf. 264 showing evidence of carnivore gnawing, West Kennet long barrow, with permission © National Museums Scotland

bone are indisputably low, with just four cattle, eight pig, eight sheep/goat and one badger specimen represented, alongside a further three large mammal, five medium mammal and four indeterminate specimens. But they are presences nonetheless, and presences that afford important information revealing very particular human-animal relations that emerge as recurrent patterns in both the primary and secondary assemblages. In addition to the surviving remains, the aforementioned Table III (Piggott 1962a: 54) also records the presence of polecat remains in the south west chamber, red deer and beaver in the south east chamber, cattle, pig, roe deer and badger in the north west chamber, and cattle, pig, roe deer, frog/toad, blackbird, polecat, and a questionable dog in the north east chamber. Frustratingly, although with the exception of the beaver, details of skeletal element representation and numbers of these specimens are absent, limiting discussion to acknowledgement of their former presence.

Given the findings at other long barrow sites already discussed, it would be something of a shock if cattle were absent from primary Neolithic long barrow deposits. Whilst remaining a reassuring presence at West Kennet, their quantitative outperformance by pig and sheep/goat remains is surprising and raises questions. Does the sarsen chambered environment favour the survival of the less robust bones of medium sized mammals in comparison to the soily matrices provisioned by earthen long barrows, thereby undermining arguments for the elevated status of cattle at other sites? Or does the West Kennet assemblage express very different relationships in comparison to its local earthen counterparts? Bone fusion data reveal that the cattle specimens exhibit full epiphyseal fusion and pertain to adult sized animals. The presence of a loose deciduous tooth is of limited diagnostic value, but may also have come from a young, adult sized animal. By contrast, pig and sheep/goat bones are all unfused, with one proximal pig radius in the process of fusion. The bones of such juvenile animals are much more friable than those of adults, so their survival in less favourable preservation conditions would potentially be compromised, skewing specimen counts in favour of adults and larger animals, such as cattle. However, taphonomy alone does not account for this difference. The composition of the primary osseous assemblage at West Kennet is quite unlike that of the other sites here investigated, with low numbers of disarticulated animal body parts, and a focus on limb bones in particular, to relatively high numbers of human skeletal 'wholes' in addition to disarticulated material, and there is scant evidence for the presence of cattle cranial elements, which would be expected to survive if they had been present.

And cattle do appear to emerge as a little different from the other species represented. The incorporation of older cattle, likely known to those who placed their remains within the chambers as individuals with particular, developed biographies stands in contrast with the juvenile pig and sheep/goat, which is suggestive of a relationship in which the animals were slaughtered, and possibly raised expressly, for human consumption (a relationship to be explored in further detail below). Although the meaningfulness of this inference must here be tempered by acknowledgement of the low sample sizes upon which it rests, this contrast would seem to suggest that at least some human-cattle relationships were lengthy. Such extended temporal relationships have been identified between humans and cattle at the other long barrow sites here discussed as well as at the nearby Windmill Hill causewayed enclosure, and it has been argued that they can be understood as inherently social, proximate and mutually interdependent in a way that marked them out as distinct from other species (Grigson 1999: 219, 228). But despite this difference, the human-cattle relationships presenced receive notably less emphasis than those between humans. And this is interesting; there is a clear difference between the osseous communities in West Kennet long barrow and those of the earthen Horslip, South Street and Beckhampton Road, a theme that will resurface.

Mutton for nourishment: human-pig-sheep/goat becomings

As noted above, the pig and sheep/goat remains deriving from the primary levels at West Kennet long barrow are dominated by meat-bearing limb bones alongside mandible, maxilla and vertebral fragments, and pertain exclusively to young animals most of whom would have died at or before reaching two to three years. This mortality profile suggests that animals were slaughtered for human consumption, an assertion that despite the absence of butchery marks, is supported by body part representation. Coupled with the presence of (near) complete human skeletons, the partial nature of the animal bodies is emphasised to become somethings lesser than human, somethings that can be deconstructed and divided up whilst still fleshed, their parts selected in humanly imposed hierarchies of desire in colonializing acts of consuming passion. A highly asymmetric human-animal relationship emerges, centred upon the human exploitation of animal bodies.

Similar patterns can be observed in the faunal assemblage from Windmill Hill causewayed enclosure, which are also interpreted in exploitative terms (and also contrasted with human-cattle relations), with pig remains recovered during the 1988 excavation almost all disarticulated and deriving from animals who died at or before two years, and despite the presence of two burials: an Early Neolithic new-born piglet from the outer ditch circuit; and a complete skeleton of a pig found during Keiller's 1929 excavation (Grigson 1999: 221-222). Discussion of the Windmill Hill sheep/goat deposits also suggests a focus on young animals, with two left horn cores of young male sheep recovered from an Early Neolithic context in the middle ditch circuit; the skeleton of a young goat found in the outer ditch during Keiller's excavations; and two bone groups representing very young animals (Grigson 1999: 224). However, Grigson later asserts a trend towards an older mortality profile, which is interpreted as possible evidence for a role in fibre and milk production (Grigson 1999: 229). Nonetheless, pigs and sheep/goat are considered to have played a limited role in the lives of those who frequented Windmill Hill – and presumably also West Kennet long barrow, on the basis of radiocarbon dating and geographical proximity (Ambers and Housley 1999: 116-120; Bayliss *et al.* 2007). Grigson states: "These smaller ungulates may have had a role as providers of small units of meat, and in risk management, should cattle herds fail" (Grigson 1999: 229).

Grigson's position is arguably constrained by traditional zooarchaeological concerns for identification of exploitation and subsistence strategies, and whilst in agreement with her assertion of a human-pig-sheep/goat relationship of asymmetry focused upon human consumption of the animal other, and of different and lesser centrality than the human-cattle relationship, it is useful to recall the multi-species ethnography of Fijn (2011) and the vibrant materiality of consumption described by Bennett (2010: 39-51). As part of an interconnected, multi-species existence, or a 'co-domesticity' in the terminology deployed by Fijn (2011), humans, cattle, pigs and sheep/goat along with other elements comprising their environment emerge in relation with each other. The needs and wishes of all within the assemblage contributed to its form and tempo at any one time, in a mobile state of existential interdependence in which humans, cattle, pig, sheep/goat, the weather, climate, emotions, water and light (for example) engaged in a frictional jostling to assert their agency whilst all the time being shaped by and becoming inseparable from the other. The human decision to slaughter and process another animal body is no less imbricated than interactions focused upon the cultivation of life. Moving on from slaughter to consumption, and following Bennett (2010: 39-51), food is agentive, the other becoming one-with in corporeal terms and on a molecular scale. Bennett argues for food as:

> "an actant inside and alongside intention-forming, morality (dis)obeying, language-using, reflexivity wielding, and culture-making human beings, and as an inducer-producer of salient, public effects" (Bennett 2010 39).

The human consumption of animal bodies thus transforms the human body, affecting its physical dimensions, its capabilities, its health, emotions and desires, and as an affective element of the assemblage we call the human body, it thereby goes on to transform the lives of other animals and other humans. Understood thus, the role of pig and sheep/goat in the West Kennet long barrow, and indeed other such assemblages, is transformed from that of inert convenience food to one of affective, transformative agent.

Badger, bone pins, and an absent beaver

Source: https://commons.wikimedia.org/wiki/File:Badgers_and_badger_setts_in_woodland_habitat,_13th_C_Wellcome_L0037343.jpg

Figure 29: Badgers and badger setts in woodland habitat, 13th C

Also lurking amongst the chamber floor deposits, a small group of recalcitrant animal presences add further voices to the West Kennet story; waifs who have escaped the physical confines of archival confinement, have undergone obscuring processes of metamorphosis that cloud their animal identities, or who established as standard a liminal identity confounding attempts to bound within neatly, socially defined categories. And it is with the last of these that we shall begin. A badger mandible from the floor of the south west chamber may or may not have had an anthropogenic introduction to its resting place. Given its poor state of preservation, which accords with the other faunal material from this level, and its presence as an isolated specimen, it is possible that it was deliberately included. Reasons for such an introduction could – as was discussed (and ultimately rejected) earlier with regard to fox remains at Netheravon Bake long barrow – rest upon behavioural traits bound up with ideas of liminality and transformation. As omnivorous burrowers that are active between the hours of dusk and dawn, their behaviour parallels aspects of living human engagement with the site as intercessory media with access to a transformative underworld shrouded in perpetual darkness in which fleshed bodies become bone (cf. Pollard 2004: 62).

It remains, however, that the specimen in question could have entered the chamber by alternative means and without the direct involvement of human activity. Certainly, Thomas and Whittle (1986: 134) note interference to primary chamber deposits on the basis of the photographic evidence, stating: "there are a few articulated or relatively undisturbed burials in the NE and SW chambers" (Piggott 1962, pl. 15a; pl. 17b). The absence of documentary evidence for burrowing in the secondary fill suggests that the accretion of bones pertaining to any self-motivated faunal agents and any animal-administered engagement with deposits occurred before the introduction of secondary deposits to the chambers, but subsequent to the decomposition of the biological components of the primary bone deposits, given the absence of gnawing. But human rearrangement of the bones – which in this case seems highly likely, foxes and badgers not being renowned for a fondness for morphologically-informed typological arrangements of human skeletal matter in space – could have been a response to and with animal action, the outcome being a very particular form of human-animal spatial becoming, in which place-making was constituted by (re)active human-animal processes of negotiation.

Next to be explored are the specimens from primary contexts that complicate traditional archaeological material categories to undermine divisions imposed between the environmental and artefactual – between nature and culture. Two points of worked bone pins recovered from layer 11 of the south east chamber fill, the layer with which the primary human deposits are associated, are of undisclosed osseous origin (Piggott 1962a: 49-50). Their extant forms, liberated of taxonomic or elemental identifiers, infer concern with bone as material, a plastic substance emergent through interactions between live human and dead animal bodies, human-animal becomings of faint linkages, in which animality recedes whilst the animal asserts itself yet as a whisper. But it may not have been ever thus; with reference to the South Street awl considered above that celebrates its bony origin, the absent ends of the West Kennet pins conceal their forms prior to breakage and the relations therein expressed. The point at which they were broken therefore matters. Were they snapped deliberately or by accident? Did breakage occur prior to deposition or at a later stage? These details matter, but remain unknown. Encountered during the course of the present study, complex human-animal relations of presence, absence, ghosts of the familiar hinting at presences beyond those made physically manifest are conjured, producing a space of creative possibility with multiple unformed and embryonic meanings jostling together and biding their time.

Like the bone pins, the documented beaver incisor from layer 11 of the south east chamber straddles established material categories and disrupts their dualistic underpinnings. Listed under ‘Bone Objects’ in the excavation report (Piggott 1962a: 49), but tellingly absent from the animal bone report, Piggott draws on North American ethnographic comparatives to suggest that the tooth may be considered a tool, thereby transcending its status as animal body part, which as such “may have no significance except as representative of the species among the animals local to West Kennet at the time” (Piggott 1962b: 49). Whilst articulate of particular, historically-situated attitudes crystallised in the (already problematised) writings of Descartes, Piggott’s explanations for the (documentary) presence of the beaver’s tooth are reasonable suggestions, but what Piggott’s account fails to recognise is that the tooth may occupy both positions and remain equally as significant in both, when approached from a posthumanist, assemblage perspective. And the role of the tooth can be further probed, if not developed, through consideration of beaver behaviour and the species’ emergent properties.

As a species that constructs and remodels its own environment through the felling of trees, the damming of rivers and streams and the construction of lodges, beavers, like badgers, hold potential to enter into responsive place-making dialogue with humans. They too exhibit nocturnal activity patterns and occupy a liminal niche, moving between aqueous and terrestrial environments, behaviours that may have contributed to their representation in the long barrow deposits. Association with watery places may have been especially meaningful, given West Kennet’s proximity to the Swallowhead Spring and the suggested centrality of riverine settings as a key symbolic theme in the Neolithic, as fluid, transformative expressions of life processes (Richards 1996; Parker Pearson 2012). As such, a beaver presence – and in the form of a tooth, already inherently bony in life – may have aided decompositional processes of bodily conversion to more mineral states.

To further pursue this concept of tooth as representative-token-of-beaverness, the tooth references and thereby forms part of an assemblage with absent and less resilient body parts. It is here certainly worth considering that later texts attest to the seemingly widespread use of their testicles for medicinal properties (Temple and Robert [Aesop] 2013: 115; Cambrensis 1908 [1146?-1223?]: 105-109; Figure 30), to which may be added the possibility of human processing of beaver bodies for furs. Evidence for human-beaver interaction of the latter form can be found in the primary deposits of the Coneybury Anomaly assemblage from the Salisbury Plain region (dated to 3980-3708 cal BC (1 sigma) or 4040-3640 cal BC (2 sigma)) (Richards 1990: 259); it is suggested that these deposits represent processing for skins rather than consumption (Maltby 1990a: 57-61). Such human-beaver becomings are transformative in ways that could be profoundly affective to all parties, whether through the creative biological-chemical unions brought about through ingestion (cf. Bennett 2010: 39-51), or the performative inter-species coupling emergent (whether intentional and explicitly acknowledged or not) through clothing in the skin of another (cf. Conneller 2004).

From absent body parts to absent bodies, the West Kennet beaver exists at a double remove, having absconded from the archive. Reasons for its loss may well be rooted in the status it was accorded in the excavation report, which hints at human-animal becomings that have elevated its position, to be kept separate from the animal bone assemblage as 'special' or unusual. In so doing, the performance of an ontologically articulate divide and amputation of nature from culture unfolds. But the beaver tooth enacted its assemblage-deterritorialising manoeuvre in the company of other fugitives: absent presences include unquantified polecat remains from the south west chamber; red deer from the south east chamber; cattle, pig, roe deer and badger from the north west chamber; and cattle, pig, roe deer, frog/toad, blackbird, polecat – and a questionable dog – in the north east chamber, all unidentified to element (Piggott 1962a: 54, Table III). Assembled here in absent presence as part of the present study, as spectral manifestations of assemblages past and thereby of assemblages present, their current articulation is an outcome of the theoretical position here adopted, a human-animal relationship of the now.

Source: https://commons.wikimedia.org/wiki/File:Beaver_ (Aberdeen_Bestiary).jpg

Figure 30: A beaver engaged in auto-castration. "A beaver's genitals serve, it is said, to cure certain ailments. So when the beaver is spotted and pursued to be mutilated – since he knows why he is being hunted – he will run for a certain distance, and he will use the speed of his feet to remain intact. But when he sees himself about to be caught, he will bite off his own parts, throw them, and thus save his own life" (Temple and Robert 2013: 115 [Aesop 153, The Beaver]).

The mutability of matter: vibrant human-animal presences in the secondary deposits

The secondary deposits from West Kennet long barrow are every bit as mobile as the primary ones. Seemingly possessed of an impish delight in continual metamorphosis, engagement is rendered a disconcerting scramble through a tangled web of presences that multiply, move, or disappear. Unidentified in the extant assemblage, but documented by Piggott (1962a: 54,

Table III) are: vole, mouse and bat from the north east chamber; red deer, roe deer and wild boar from the north west chamber; cattle, pig, questionable sheep/goat, questionable wolf, and red deer from the south east chamber; jackdaw from the south west chamber; and questionable wolf remains from the passage. Additional species were identified in four of these contexts during the reanalysis undertaken as part of the present study: horse, red deer and wild boar from the north east chamber; dog, red deer, roe deer and wild boar from the north west chamber; cattle, pig and sheep/goat from the south east chamber; and red deer, frog/toad, and goose from the south west chamber. Also identified were small quantities of horse, cattle, pig, sheep/goat, dog, dog/fox, red deer, roe deer, mustelid, rabbit, frog/toad and duck recovered from the somewhat contextually ambiguous material of Thurnham's fill of the west chamber and passage, the façade, forecourt, mound, pit, cutting III and unidentified secondary contexts. The presence/absence of each of these species and the individuals therein encompassed is representative of particular human-animal relationships, exploration of which will be pursued in greater detail below, but is inevitably shaped by the apparent mobility of contextual identities. Indeed, although the proportional distribution of animal species in the later deposits published in Thomas and Whittle's reanalysis (1986: 146, Figure 5) are broadly accordant for the north east and south east chamber assemblages, they diverge from those of the north west and south west chambers.

Some of the artefactual elements of the West Kennet secondary osseous assemblage, then, appear to have vanished, but this is not just a consequence of the status accorded animals in the period post-excavation. Complications resulting from the dispersal of the archive have impacted the human assemblage and its understanding to date and further, it seems that pottery and other material 'types' have been similarly impacted. For example, the minimum numbers of sherds for each chamber in the Wiltshire Museum, Devizes collections counted during the present study bear little resemblance to totals recorded in Thomas and Whittle (1986: 144, Table 5), most recently garnered totals for the north east, north west and west chambers, and the forecourt being significantly lower than those published. Totals for the south west and south east chambers were higher, whilst numbers of sherds from the passage provided a close match. One consequence of this is that what can be said now about the assemblage is arguably more limited than it could be under different circumstances of preservation. However, archaeological preservation and recovery are *never* ideal; post-excavation taphonomic processes of ongoing territorialisation and deterritorialisation are part of the continuing circulation of the reference that is West Kennet and the growth of the site (Fowler and Harris 2015) and thus need not curtail engagement and development. Embracing the changes that the assemblage has undergone through a synthetic process that draws upon and merges the extant physical artefacts, the documentary archive and subsequent engagements in diverse media is a productive, creative process permissive of growth and change, and enables new understandings of the archive as an active assembled phenomenon to emerge.

The temporal architecture of place

Comparison of the current, synthetic datasets for the proportional taxonomic distribution in the primary and secondary deposits (Figures 31 and 32) produces a picture of both continuity and change in the composition of the faunal assemblage through time. The three most prominent taxa identified in the sites examined in this study here remain dominant throughout. Cattle specimens maintain a consistent presence, accounting for one fifth of the assemblage in both primary and secondary groups, whilst pig and sheep/goat proportions remain closely matched across both phases, but their overall prominence is diminished as a consequence of the entry of other, additional taxa to the mix. Similarities in depositional practice are suggestive of deliberate referential practice, with cumulative phases creating a patterned and familiar aggregate of strata. Such repetition is rhythmic and creates a sense of what came before as well as what is to follow. The ongoing placement of substances prescribed and predictable in their composition subsumed the residues of earlier performances and consigned them to the past, to memory, whilst ensuring the necessary projection of that memory into the future, to be remembered again. The West Kennet faunal deposits were thus participants in the production of time, a human-animal relationship of ongoing, cyclical persistence; self-renewing, self-perpetuating, driven by the product of its own generation. Yet this was not the kind of closed system beloved of processual archaeology. As has been noted, change in the form of other animal presences can be detected. It seems likely that some animals initiated engagement with the long barrow structure and its deposits on their own terms, of which the aforementioned duck coracoid (sf. 264) that exhibits signs of carnivore gnawing may be evidence. The dark, cave-like interior of the chambers certainly would have offered attractive environs for a range of wild fauna, even as they began to be filled. Change is also evident within the seemingly stable component of the cattle-pig-sheep/goat triad: the proportional representation of skeletal zones in the primary and secondary phases show marked difference (Figures 33 and 34).

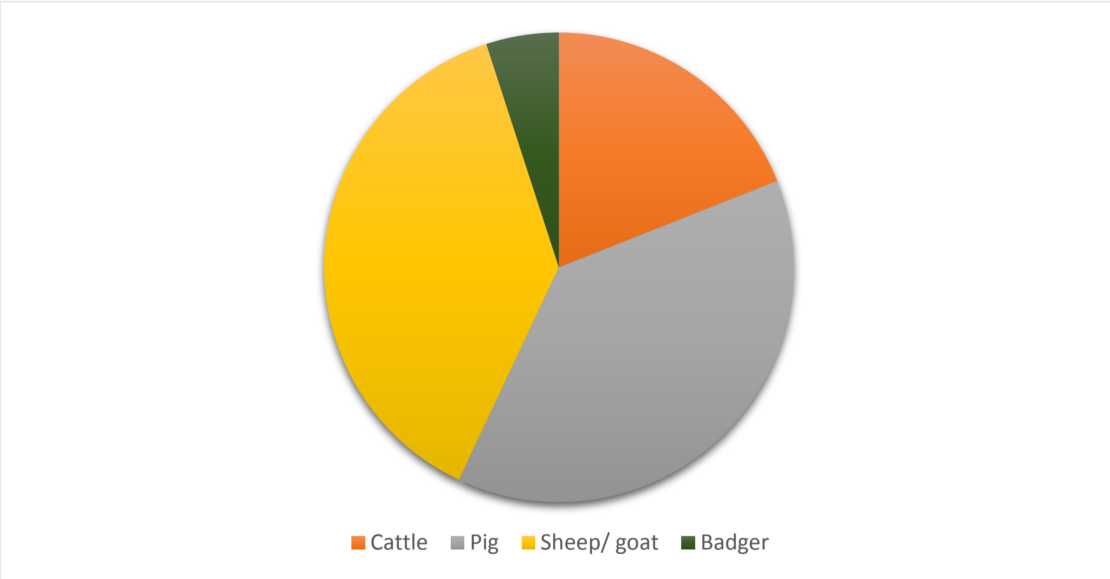


Figure 31: Proportional taxonomic distribution, West Kennet long barrow primary deposits

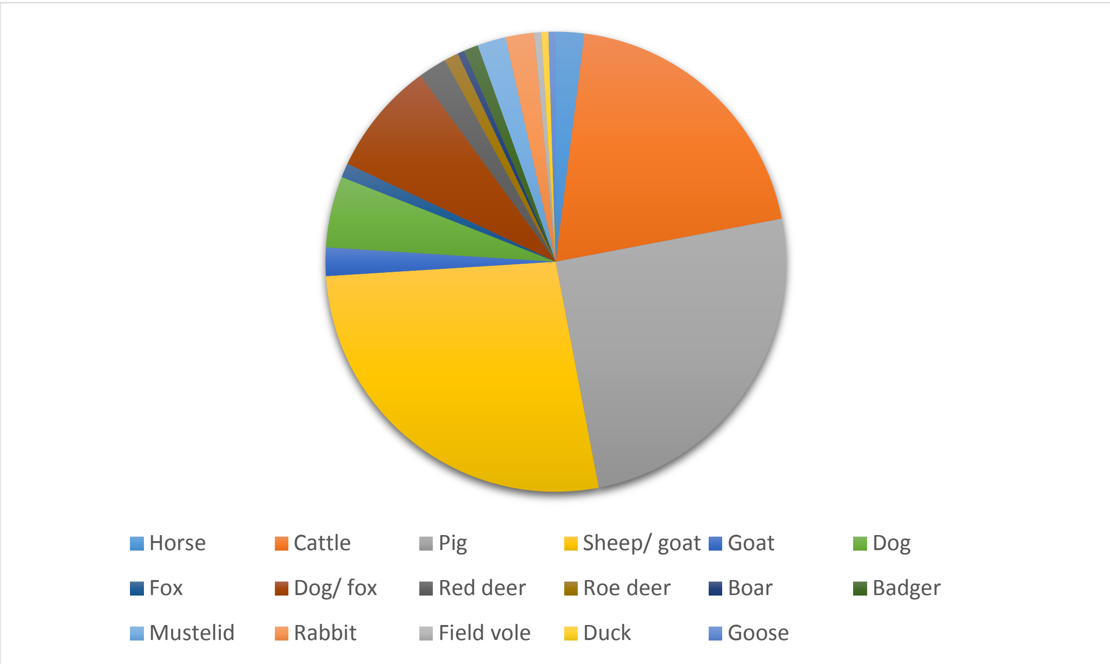


Figure 32: Proportional taxonomic distribution, West Kennet long barrow secondary deposits

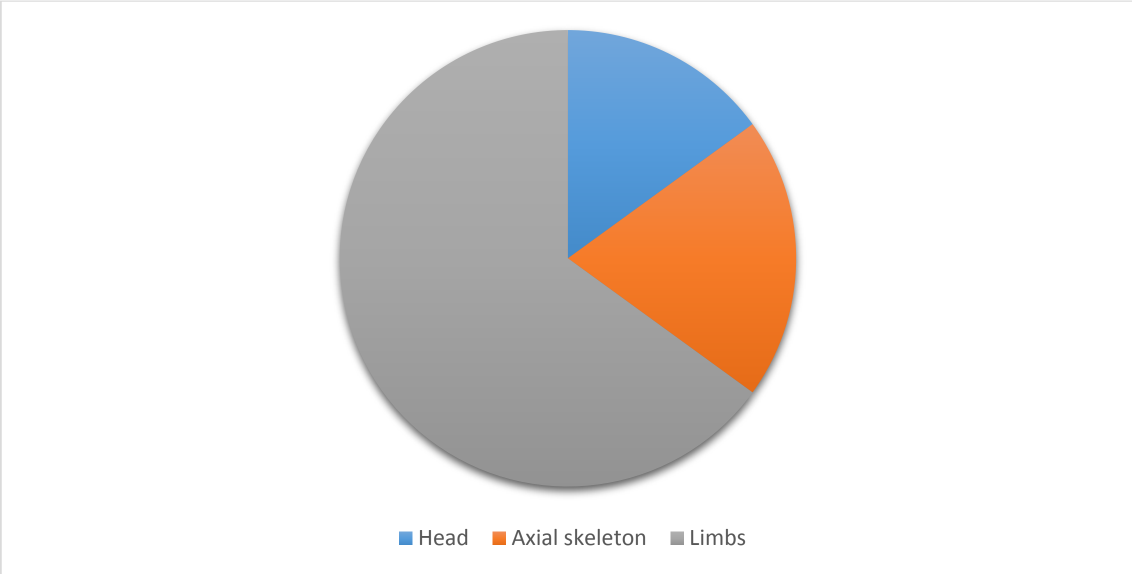


Figure 33: Proportional distribution of skeletal zones, West Kennet long barrow primary deposits

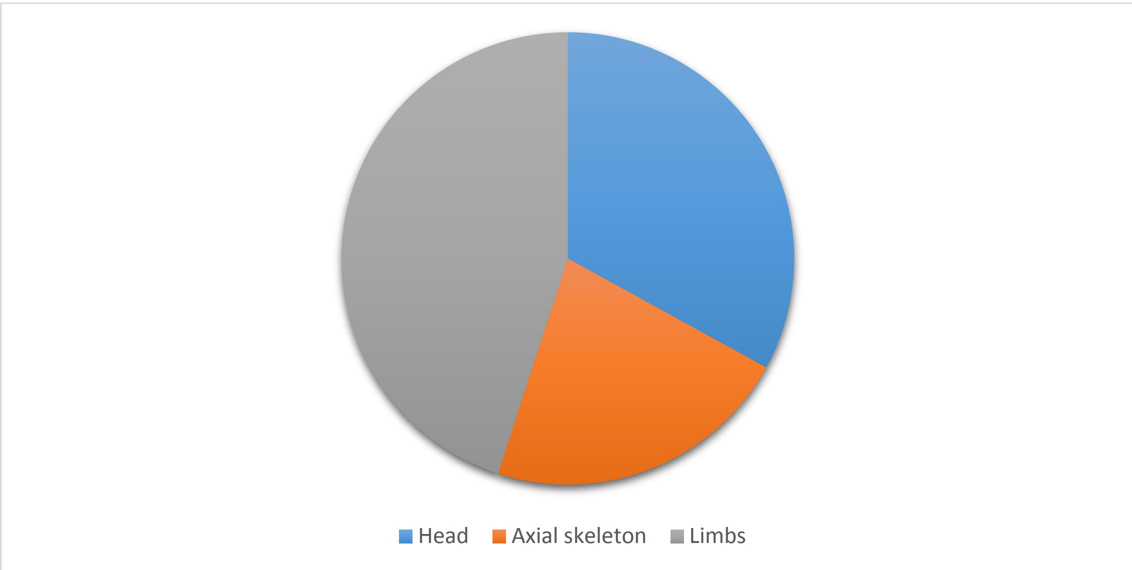


Figure 34: Proportional distribution of skeletal zones, West Kennet long barrow secondary deposits

There is a switch from a focus on deposition of limb bones in the primary phase of activity to a much more even distribution of body parts in the secondary deposits. Detection of patterns of deposition is, however, limited to this generalising, phase-based scale of analysis; ambiguity in the descriptions of layers forming the secondary fills – or outright absence of stratigraphic information in many cases – precludes meaningful analysis at a finer resolution. This is all the more frustrating, since following Piggott's Table III (1962a: 54), it would seem that faunal deposits were dispersed throughout the stratigraphic sequences of each chamber (with the exception of the south east, which appears to evidence concentrations in layers 9 and 11 only), and given the extended time period demonstrated to have been involved in the creation of this fill (Bayliss *et al.* 2007). The change identified at the coarse scale is nonetheless of interest and hints at different articulations of human-animal relationships between phases. It has been argued above that the character of the primary human and animal deposits suggest a prioritisation of the human, but the secondary deposits appear to show a contrast, comprising predominantly disarticulated human and animal bodies. Piggott suggests that this material was redeposited, having been transported to the site from elsewhere (Piggott 1962a: 68). Certainly, the poor surface preservation observed, the character of which is indicative of surface abrasion, coupled with limited evidence for butchery and burning, would seem to support Piggott's interpretation, hinting at practices concerned with the redeposition of midden material. Human and animal bodies had become disassembled as a result of multiple processes that for the latter include butchery, skinning and burning before being brought together in at least one context before moving on to, and coming to a (temporary) rest in another. The disarticulated human and animal bone, incorporated within a rich matrix of soils, ash, charcoal, pot etc. thus becomes a composite substance of undisclosed meaning, something different in which all elements are subsumed within a whole transcendent of taxonomic and material hierarchies, yet are capable of retaining elements of former identities (re)emergent through archaeological engagement. But not all osseous contributors to the secondary fill were fragmented. A complete goat skeleton – that had for some fifty years following its transformation into an archaeologically emergent manifestation, assumed the identity of a sheep (see Bayliss *et al.* 2007: 97; Piggott 1962a: 54; Thomas and Whittle 1986: 147) – found itself incorporated within the chamber fills.

Evidence suggests that this placement, which occurred post-mortem but prior to decomposition, can be attributed to anthropogenic agency (Thomas and Whittle (1986: 147), but beyond such introductory gestures, the nature of the human-animal relations underlying the deposit are somewhat ambiguous. Morris (2011: 149-180) discusses in detail the problems associated with understanding the nature of complete animal burials, which may represent death occasioned by non-anthropogenic means (such as accident or 'natural' death) or deliberate slaughter, which may take the form of sacrifice/offering. Another form of dispatch not typically considered is euthanasia, a suggestion that certainly invites accusations of essentialism, but is arguably no more so than assumptions that the motivations for the killing of an animal and burial in its corporeal entirety can be understood to be rooted in concerns for disease control or nebulous concepts of 'ritual'. Grigson, meanwhile, notes the presence of complete or near complete skeletons including a young goat and a very young lamb or kid from the outer ditch at Windmill Hill (Grigson 1999: 236), without offering interpretation. Whilst it seems that circumstances giving rise to the presence of the goat skeleton in the secondary deposits of the north east chamber at West Kennet must remain elusive, consideration of its contextual placement enables further development, if not clarification.

As a skeletal whole, the goat remains contrast markedly with human-animal-soil-ash-charcoal-pot substance associated with it, recalling the part to whole, animal to human relationship identified in the primary deposits, thereby raising the possibility of a reactive complication of former articulations of relationships. However, in addition to the whole goat, the near complete remains of a human infant aged approximately six to ten months were identified from the same context during reanalysis published in Bayliss *et al.* (2007: 93), reconfiguring relations and revealing inter-species references suggestive of ontological proximity. That the goat remains also pertain to a young individual aged between two and three years at death would seem to lend support to an argument for connection (indeed, youth emerges as a core theme and will be explored in further detail below). Given the assertions here tendered for divisions between the human and the animal in the primary deposits, whether the human infant-goat connection observed in the secondary material amounts to evidence of a profound change in the nature of human-goat relations through time, articulates in human infants a not-quite-human status, or represents an association solely located in the present, the product of archaeological engagement with the archive, the difference *is* a reality and is informative. The nature of the information offered is, however, multiple; space for the difference as well as further connections to continue to develop and emerge is thus left open.

***Blessed are the meek*[14]**

From a human-animal relationship elusive in all of its proximate specificity, to one in which elusiveness is maintained by distance, roe deer remains are a constant, albeit infrequent presence in all but two of the long barrow assemblages here examined. Contributing just one bone specimen to the Horslip assemblage, two specimens to Amesbury 42 and Netheravon Bake, ten to Woodford G2, six to Beckhampton Road, and seven to West Kennet, they maintain an ethereal, somewhat withdrawn position in the archaeology redolent of their

[14] (Matthew 2009: 1020, 5:5)

Source: https://commons.wikimedia.org/wiki/File:Le_chevreuil_-_Roe_Deer_Buck_-_Capreolus_capreolus_-_Gallica_-_ark_ 12148-btv1b2300253d-f34.png

Figure 35: Le chevreuil - Roe Deer Buck

behaviour in life; roe deer are small, shy, solitary animals that occupy a liminal niche, active at dawn and dusk and inhabiting woodland and forest edges (Fawcett 1997). The little skeletal evidence that exists is dominated by limb bones that form 86% of the total roe deer deposits across all sites, which for the most part are dispersed throughout contexts at the sites to which they contribute (the Woodford G2 'rabbit hole' and ditch deposits being the exception). In the absence of evidence for butchery, burning or gnawing, exploration of the human-roe deer relations articulated must rest upon skeletal representation and contextual information, and seems to suggest (in a hushed whisper) occasional, possibly chance, encounters in which roe deer were ultimately killed and the flesh of their limbs consumed.

Yet roe deer now find themselves thrust into the archaeological limelight at West Kennet. The presence of a shed roe deer antler in a primary position, placed on the floor of the entrance to the north east chamber seizes the attention of Piggott, who notes it in his description of the primary burial assemblage – a privilege not accorded any of the other faunal remains from this level (Piggott 1962a: 25). However, in true roe deer fashion, it retreats rapidly from view and receives no mention in the subsequent discussion of the faunal remains. The presence of this antler is interesting and unusual insofar as it is the only example identified from the sites examined as part of the present study. Further, it appears from the photographic image published in the excavation report (Piggott 1962a: Plate XIVb) to be entire and unworked. A similar example was identified at Windmill Hill, although from a secondary context of the outer ditch; Grigson offers the following thought:

> "Roe deer antlers appear to have had a special connotation for some groups of people. For example, a complete antler was found with the burial of a man in the Beaker site of Hemp Knoll… One can only guess at the significance of the inclusion of such an item, with little or no economic relevance…" (Grigson 1999: 206).

As a shed antler, the individual from whom the West Kennet specimen originated would have been living at the time of its bodily separation, which draws forth the living animal's qualities: its shyness; its elusiveness; its temporal and geographic liminality. Considered under the terms of its deposition, in a space in which the predominantly human dead were given space to transform from fleshed to bone, a place of darkness and withdrawal, a roe deer presence seems utterly appropriate; a solitary, independent intercessor between states – the Neolithic cyborg White Rabbit.

Hazy impressions of flighty presences

Also somewhat nebulous, avian osseous representation in archive long barrow assemblages is undoubtedly impacted by the fragility and diminutive dimensions of the evidence, which seemingly conspire to conceal all traces of having previously existed in physical form. This is certainly evident at West Kennet where just two specimens pertaining to a relatively robust goose from the secondary fill of the south west chamber and a duck from an unidentified context survive extant; the blackbird and jackdaw bones from layer 11 (primary deposits) of the north east chamber and layer 3 (upper secondary deposits) of the south west chamber respectively could not be found during reanalysis. But evidence for an avian presence is not limited to osseous media. Evidence for human-bird relations are captured – most inappropriately – in the terrestrial medium *par excellence*: clay (Figure 36). Negative impressions of the distal epiphyses of bird bones are present on the surface of pottery sherds from secondary contexts and interpreted as decoration (Thomas and Whittle 1986 143: Figure 4), although the proportional distribution between chambers does not accord with percentages encountered by Thomas and Whittle (1986 143: Figure 4). Thomas and Whittle (1986 143: Figure 4) find the north west and south east chambers to contain the highest percentages, whereas the reanalysed evidence now shows 45% of sherds with bird bone impressions are associated with the north east chamber, 32% with the south east, 18% with the west, and just 5% with the north west. No examples were identified in either study for such evidence in the south west chamber. This migration, strangely reminiscent of the missing bird bone, is likely impacted by the absence of quantities of ceramic material documented above.

There is no contextual correlation between the occurrence of bird bones and pottery with bird bone impressions, which may be unsurprising given the mobility of artefactual evidence, the possibility that the bird remains entered the assemblage by other-than-anthropogenic agency, and differences between modes of human-animal interaction identified through the nature of deposits in the assemblage. Whereas it may be accepted that the majority of large and medium sized (and mostly domestic) animal remains joined the assemblage as fleshed or defleshed osseous media, the pottery bird presences exist at a remove; human engagement with the bird bone occurred at some point before the pottery was fired and became incorporated into the structure and possibly at another location. Further, employment for decorative purposes may be indicative of the bone having undergone a process of de-animalisation, its abstract form achieving primacy, although equally, the quality of boniness and/or birdiness *is* emergent in the pot and may have been of central significance to those who engaged with its creation or subsequent use.

Figure 36: Peterborough sherd X94, west chamber, West Kennet long barrow, Thurnham's excavations, with permission, © Wiltshire Museum, Devizes

A local predilection for the hair of the dog

Next, we encounter an instance of human-dog becoming that recalls aspects of the human-beaver relationship explored above. Recovered from the topmost chalk fill of the north east chamber, a dog mandible fragment (sf. 1) shows a series of fine, parallel cut marks to the labial aspect, in between the mandibular condyle and angular process, indicative of skinning. Skinning is a messy, identity complicating process, producing a confusion of bodies as blood, fat, muscle and sinew of the skinned abscond from their former confines to mingle with the bodily tissues of the skinning other, coating and staining the surfaces of flint knives, and blunting their edges before seeping out further to integrate with soils and surrounding matter. It implies the relationships into which the skin could enter subsequent to its detachment, including the aforementioned transformative potentials that wearing a skin might engender (cf. Conneller 2004), but also drawing connection with the deployment of cattle hide at Fussell's Lodge, the regulatory ideal (Butler 1993) of which is cited in the Woodford G2 and Beckhampton Road assemblages. And such human-dog relationships seemingly have local precedent. An example of possible skinning was identified at Windmill Hill causewayed enclosure through butchery marks to a distal dog humerus deriving from an Early Neolithic context from the inner ditch (Grigson 1999: 231). The incorporation of complete dog skeletons (as well as human, cattle, pig and sheep/goat examples) are an interesting feature of deposits at Windmill Hill that hint at parity of treatment. However, the West Kennet example appears more partial, and derives from an assemblage identified under the same small finds number from the north east chamber containing the combined remains of: dog/fox bones of the foot, spine and limb; the remains of two foetal dogs or foxes; unfused fox mandible fragments; cattle cranial and limb fragments; a mustelid cranium; human cranial fragments; sheep/goat, pig (including a foetal animal), red deer and rabbit limb bone fragments; and a fossil. In an articulation of human-animal becoming that is differently rendered, but not necessarily oppositional to the Windmill Hill example, this motley, multi-species conglomeration of human, animal and fossil elements places further emphasis upon the disintegration of individual and taxonomic identities, expressing a human-animal becoming of togetherness. The potential for the constituents of assemblages to change and merge identities is demonstrable: identified as 'three flints', a flint knife, a sarsen flake and a human infant pelvis fragment occupy a small box in the Devizes Museum archive (Figure 37).

From the canine composite assemblage, two further themes emerge as significant, the first of which is the head. The head has been a recurring motif at a number of long barrow sites here examined, and its presence in osseous form is noted in antiquarian sources (Colt Hoare 1975a; Thurnham 1869), although it is typically cattle crania that form the focus of attention.

Figure 37: '3 flints found in cutting V of the East-West section, in loose chalk rubble at the base of the primary mound, at the back of stone 43'. West Kennet long barrow archive, Wiltshire Museum, Devizes, with permission, © Wiltshire Museum, Devizes

Getting a head

West Kennet evidences a relative dearth of cattle skull elements, with just 11 specimens pertaining to the bones of the bovine head (at site level), to be compared against 25 representing pig and 20 sheep/goat, exclusive of loose teeth. It is here informative to look to the heart of the Cotswold-Severn region for closer comparatives. Although still well represented, cattle in the Gloucestershire Cotswold-Severn long barrow assemblages appear to hold a position of arguably lesser centrality than is evident in the Avebury and Salisbury Plain regions, with other species, notably pig (Thomas and Whittle 1986: 147), sheep/goat and, interestingly, dog forming significant proportions (Thomas and McFadyen 2010: 107). Thomas and McFadyen's (2010) reanalysis of the faunal assemblages from Aldestrop, Belas Knap, Burn Ground, Notgrove, Sale's Lot, and Nympsfield looked also at results for West Tump (Brickley and Thomas 2004), all situated in the modern county of Gloucestershire, finding that taxonomic ratios show considerable variance between sites. An emphasis on elements of the head was noted in the Nympsfield forecourt assemblage in particular, which despite limited survival was found to comprise 84 pig and a further 11 wild boar tooth fragments (Thomas and McFadyen 2010: 108, Table 8) to which sheep/goat, cattle and horse dentition as well as human specimens may be added, on the basis of documentary information (Clifford 1938: 202; Thomas and McFadyen 2010: 105). Also noted is the Hazelton North forecourt assemblage, which is dominated by pig mandibles and loose teeth, and to a slightly lesser extent by cattle cranial and tooth specimens (Levitan 1990: 213; Thomas and McFadyen 2010: 106). Given that the structure of West Kennet marks it as belonging to the Cotswold-Severn long barrow 'type', this connection is unsurprising, but it raises questions as to the role of West Kennet, located as it is within the North Wiltshire downs, and whether this area represents a meeting point of different ways of being, informed by different articulations of human-animal relationships.

The shift in focus from cattle, which it has been argued share a social proximity with humans in the Wiltshire region in the Neolithic, to other species – notably pig and dog – may also have a social basis. Both pigs and dogs are omnivorous and consume human waste, both are commensal species that can live in close spatial proximity with humans and in a range of environmental conditions (Albarella *et al.* 2007: 1; Clutton-Brock 2017). In comparison with cattle, therefore, pig and dog are less exacting in their habitational requirements, their potential physical proximity is matched by a greater inter-species independence of interaction, a paradoxically proximate distance furthered by the fact that neither species provides the secondary products that form the axis around which the human-cattle relationship moves. Arguments for this more socially distant form of human-animal sociality emergent through the secondary deposits at West Kennet are rooted in evidence for taxonomic and skeletal element representation, and their particular combinations in assemblage. But it is also arguably evident in the primary deposits that suggest a human-animal separation, a separation that thereby emerges as inherently social and forged through lifestyle, but articulated in different terms. The human-animal communities manifest in the West Kennet long barrow osseous assemblage(s) that show such affinity with their more northerly Cotswold-Severn counterparts differ from those of the earthen barrows in the Avebury region as well as those in the Salisbury Plain environs, evidencing different ways of engaging with diverse aspects of existence. This assertion is emphatically not intended as support for a culture-historical position of a meeting of different 'cultures', but rather to argue for locally emergent ways of doing and being. Broad similarities in the external form of long barrow structures certainly suggest that themes could translate across considerable geographic and temporal expanses, indicative of connection and community.

Three. That's the magic number… (to be continued)

The second theme identified in the canine group is one that permeates the West Kennet assemblage as a whole: youth. In this, once again, Thomas and McFadyen (2010: 107) note a shared concern in the Cotswold-Severn barrow assemblages that formed the focus of their inquiries, a point also commented upon by Thomas and Whittle (1986: 147). In the canine assemblage, only the dog, dog/fox and rabbit bones show evidence of complete epiphyseal fusion, whilst at site level, an astonishing 59% of bones that showed evidence for degree fusion were unfused, 37% pertaining to animals who died before the age of three years. These statistics are further supported by analysis of tooth wear and provide compelling evidence for the deliberate selection of young animals for incorporation into the long barrow structure. All elements that evidence fusion from the primary phase (with the by now customary exception of cattle) are unfused, with a single pig radius in the process of fusing and confirming an age at death of approximately 12 months. Unfused elements were identified in secondary deposits of all chambers except the south east, which comprised specimens producing no evidence of fusion, and the passage. One of the most diagnostically informative deposits is the near complete goat skeleton (yet another citation of the popular Neolithic Cotswold-Severn tradition), which was placed in the chalk rubble filling of the north west chamber in a fully fleshed state, and that can be assigned an age-at-death estimate of 23-36 months. This begs the question of why youth – and three years in particular – should be such a recurrent and seemingly potent age. To rehearse familiar explanations, it *could* be that the placement of young animals in a structure alongside large numbers of human dead represents expressions of human competitive consumption of animal bodies whereby valuable animals were slaughtered in a display of excess to demonstrate the power of those of whose herds they formed a part under the guise of making offerings to the dead. It may be wholly utilitarian in intent, reflecting herd management strategies that remained remarkably consistent over time. But crucially, this pattern is repeated throughout the extended periods over which deposition occurred, and it broadly crosses species (with the exception of cattle).

West Kennet long barrow also comprises the remains of a minimum of seven human children according to the most recently published figures based on reanalysis (Bayliss *et al.* 2007: 87, Figure 2), although as is pointed out "there was also considerably more adult and immature human material deposited among the secondary backfill than intimated in Piggott's original report" (Bayliss *et al.* 2007: 87). Analysis undertaken as part of the present study certainly suggests the published totals to be overly conservative. Considered thus, the presence of young animals *with* young humans emerges as another citation (cf. Butler 1993; Jones 2007; 2012), an expression of connection inviting comparison between species – an interesting point of commonality. It is important to state, however, that adult human remains comprise the bulk of osseous deposits. This need not diminish the validity of linkages identified, but does make possible further opportunities for understanding, and given the arguments posited above for socially founded human-animal relationships of proximate distance, the paired presence of human and animal young hints at the existence of an equivalent social separation between human adults and the human young. The concept of human young not occupying a fully socialised status is well attested in later historical sources (for example see Millett and Gowland 2015: 186) and it has been suggested that transformative initiatory activities making possible the passage to adulthood may explain, for example, the extreme measures individuals took to procure lithic material for the creation of polished stone axes (Edmonds 1995: 40).

The West Kennet assemblage has shown itself to be complex, shape-shifting and slippery, with ambiguous stories that emerge, become tangled and transform. The human-animal relationships it presences are multiple, providing space for various different understandings, which arguably provides an exceptionally honest account of the nature of lived experience. Key themes have emerged: the dominance of the human osseous assemblage; part to whole relationships; change and continuity through time; and an interest in the head and youth, all of which suggest a strong connection with traditions that typify practice in the Cotswold-Severn region. Reanalysis of the human material from this crucial site will enable fuller, more balanced – but undoubtedly no less complex and entangled – understandings to emerge, but that is for another time. Next, we move a short distance to our final destination: Beckhampton Road long barrow.

Beckhampton Road

Beckhampton Road long barrow is the fourth and final site in the Avebury cluster to be here examined. Situated on a low ridge rising from the open plain between Beckhampton and Devizes, Beckhampton Road long barrow has been the focus of multiple episodes of archaeological and antiquarian attention, having been described by Stukeley (2010 [1743]: 45), then investigated by Thurnham in the 19th century, before more recent excavation under the direction of Ashbee (Ashbee *et al.* 1979: 228-250). Thurnham's approach fell some considerable way short of modern excavation standards, his operations termed an 'attack' by Ashbee *et al.* (1979: 231); the only record of his activities at Beckhampton Road, which he identifies as 'Bishops Cannings 76', is an entry in Table 1 published in his discourse 'On Ancient British Barrows, especially those of Wiltshire and the adjoining counties', describing the intervention as 'unsuccessful' (Thurnham 1869: 180). An enduring consequence of his work is a context described as 'disturbance' in Ashbee's documentary records representing the unstratified backfill. No archive from Thurnham's excavation survives. The prior existence of material uncovered by ploughing in the 19th century and deposited at Wiltshire Museum, Devizes is alluded to in Ashbee's excavation report (Smith 1885: 105 cited by Ashbee *et al.* 1979: 230), but is now absent from the collections. The extant archive pertains to an eight-week programme of excavation undertaken by Ashbee in 1964 on behalf of the Ministry of Public Buildings and Works, during which, the entire mound and sections of the ditch were examined in response to the impact of plough damage (Figure 38). Ashbee's work produced an assemblage that was subsequently deposited with and remains curated by Wiltshire Museum, Devizes. In its current state of preservation it comprises 680 bone and tooth fragments, forming 678 specimens (NSP).

Like so many other assemblages here examined, post-excavation taphonomy has impacted heavily upon the archive. Cryptic alphanumeric identifiers penned on the packaging of finds allude to absent context records, placing considerable limitation upon potential for spatial analysis that amounts to an outright refusal to comply with the disciplined demands of GIS.

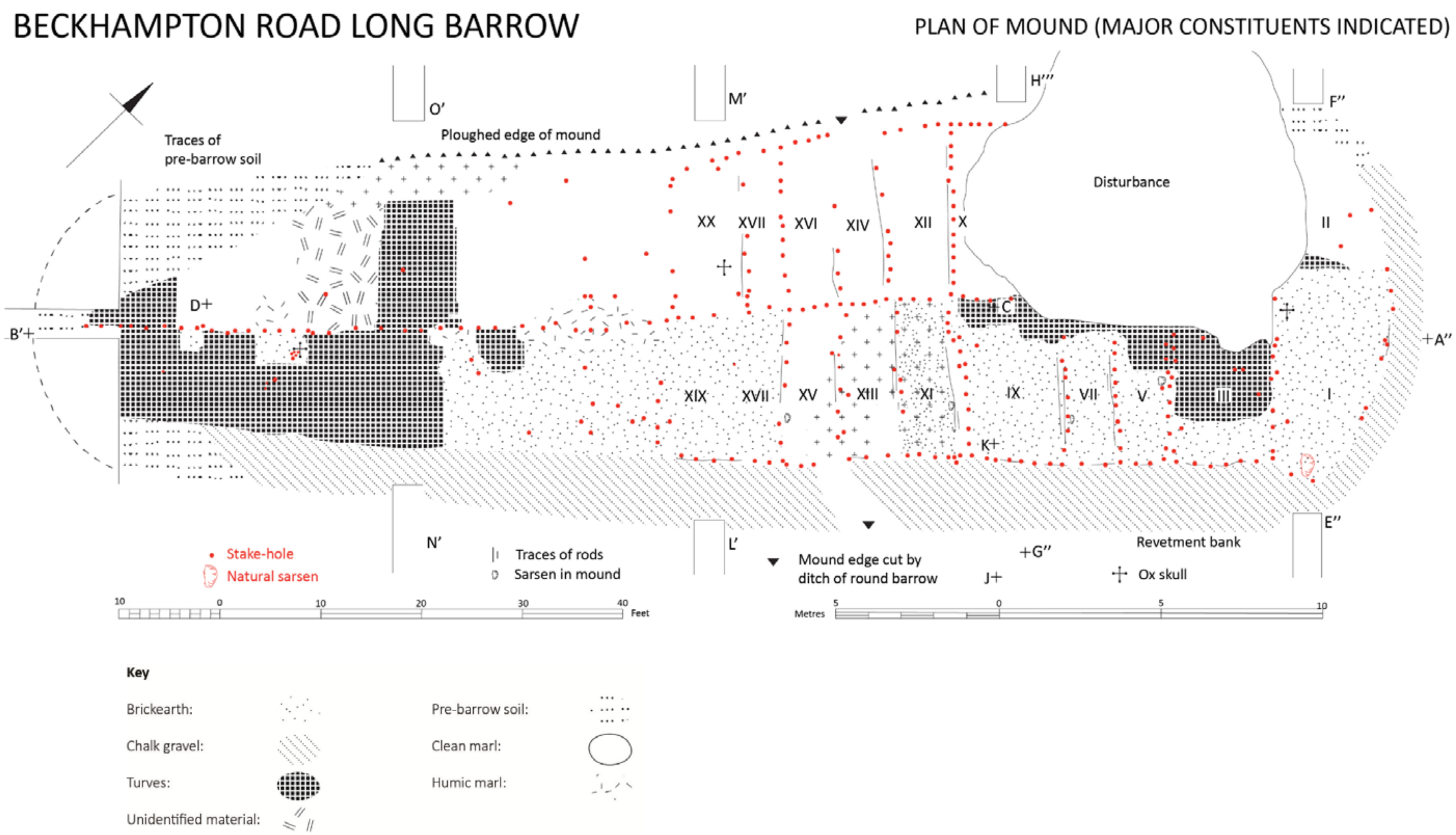


Figure 38: Plan of Beckhampton Road long barrow adapted from Ashbee *et al.* 1979: 235, Figure 14, with permission, Cambridge University Press, © The Prehistoric Society 1979

This is further exacerbated by the somewhat generalist approach to contextualisation communicated in the excavation report (Ashbee *et al*. 1979). With notable exceptions, most find locations are reported in terms of broad contexts (pre-barrow soil, mound material etc.) and more concerning, animal bone from pre-barrow contexts, the primary mound and ditch, and the base of the plough soil are conflated in the published report. Additionally, the osseous assemblage has suffered degradation, one key specimen is now missing and another lies shattered in its archive-standard cardboard lodgings. Despite this, the Beckhampton Road assemblage is a rich source of evidence with much to offer. It references and draws together many of the threads that have emerged whilst unpicking the materials comprising the other long barrow sites that form the focus of this study, and which will be discussed in turn: its structure of bays filled with soils and accompanied by carefully arranged antler deposits recalling South Street but also Woodford G2 and Cold Kitchen Hill; its apparent exclusion of human remains (in direct contrast with West Kennet) and focus on cattle cranial elements; and the evidence for ongoing engagement with place through time. And it does all of this whilst telling its own unique story of humans, animals, and bovine resurrection, no less.

Consumer relations and the complex architecture of human-deer becomings

Excavation revealed Beckhampton Road long barrow to have been constructed from a series of clearly demarcated bays running south west from the north east end of the mound, extending out by way of staked fencing from a somewhat unruly central axis, but loosing coherence around the mid-point of the structure (Figure 38). As at South Street, the fills of each bay comprised differing ratios of soils and turves, reflecting and likely garnered from the ditches and surrounding environs; brickearth, clean and humic marls, and chalk rubble assembled with human effort to form the mound’s bulk, whilst retaining their distinct material identities. Into these deposits were folded quantities of fragmented and seemingly loosely dispersed animal bone, which may or may not have formed deliberate inclusions (Ashbee *et al.* 1979: 247). Represented within this amorphous group are the domesticate rabble of long barrow habitués: cattle; pig; and sheep/goat, alongside fleeting glimpses of wild species; of aurochs, wild boar, red deer, and roe deer (Table 13). Limb bones predominate, and when considered alongside butchery evidence suggest that these deposits form the undigested produce of human-animal (unidirectional) consumer relations, the intimate, transformative nature of which has already been discussed in other contexts, at other sites here examined (cf. Bennett 2010: 39-51).

Table 13: Taxonomic representation per context (NSP), Beckhampton Road long barrow

Context	**Cattle**	**Pig**	**Sheep/ goat**	**Aurochs**	**Wild boar**	**Red deer**	**Roe deer**	**Large mml**	**Medium mml**	**Indeter minate**	**Total**
Below old land surface	1	1				1		9	2	6	20
Old land surface	34		1	1		1	2	72	2	159	272
Mound	20	3		1	1		1	175	4	6	211
North ditch	5	1	4					2		27	39
South ditch	4							2	2	1	9
Round barrow	2						2	1		1	6
Plough soil	2		1				1			3	7
Disturbance	1								1	2	4
Other	14		2					7		87	110
Total	**83**	**5**	**8**	**2**	**1**	**2**	**6**	**268**	**11**	**292**	**678**

Where it does occur, however, intentionality of depositional purpose is made quite explicit. Alongside 11 fragments, 12 antler tools (numbered 1-12) are detailed in the excavation report "distributed along the length of the mound, either incorporated into the make-up or lying beneath it. Of those which lay on the buried surface, five had been arranged in two neat piles" (Ashbee *et al.* 1979: 247). The gathering and placement of these worked antler groups as described has an architectural quality; these are quite literally structured deposits (Richards and Thomas 1984), positioned with intention and some care before being encompassed within the more massive corpus of the composite earthen-osseous element. This mode of deployment makes direct connection with patterns observed at South Street, although some distinctly different human-animal relationships are expressed. According to descriptions published in the excavation report, the presence of unshed antler from mound contexts at Beckhampton Road is matched by numbers of shed specimens, and is therefore articulate of relationships between living humans and living red deer as well as with red deer bodies. Indeed, the two stacked deposits, one formed of tool numbers 4 and 5, and the other of 9, 10, and 11 incorporate antler from one living and from one dead animal (Ashbee *et al.* 1979: 247).

The nature of human-red deer relationships engendered in the recovery of antler from then-living and from dead animals are very specific. The collection of shed antler could have represented chance discoveries made in the course of quotidian activities, but equally may have been sought out, which would thereby demand knowledge of the seasonal reproductive cycles of red deer as well as the whereabouts of herds at time of shedding. Indeed, it has been suggested that in the Mesolithic, the movement of herds may have been deliberately manipulated through the provision of fodder (Fletcher 2011: 32; Simmons and Dimbleby 1974; Worley and Serjeantson 2014); it is certainly possible that such practices could have been complicit in the emergence of human-red deer relations here manifest. The removal of antler from the bodies of dead animals involves puncturing and hacking at the cranium, which would have been physically strenuous and difficult, whether the bone was fully skeletonised prior to this undertaking or not. Whilst it could be that skeletonised crania were collected in much the same manner as shed antler, it may also be that the deer were hunted and killed before the removal of antler from the skull – possibly coincident with the division of the carcass for consumption. That the only two post-cranial elements represented in the assemblage, deriving from the pre-barrow soil and the old land surface, both evidence butchery is certainly suggestive. The separation of antler from the skull of a fleshed deer would have been messy – bloody and slippery, an enveloping sensorial experience of distinctive sights, sounds and odours – and represents a very different relationship, one of profound asymmetry and one in which human and deer bodies comingle and interpenetrate (cf. Conneller 2004; Hamilakis and Overton 2013a: 126-130; and see also McFadyen 2016 for an analogous representation of intermingling bodies and materials in long barrow architectural practices). It is possible that the remains of the red deer at Beckhampton Road were of recognised individuals with known biographies, underwritten by social relationships of some distance, of periodic encounter, or even of myth and legend, whose behaviours, attributes and biographical details became woven into the structure of the long barrow. However, as wild animals, the precise nature of past interactions of this kind must remain speculation.

***…Yes it is, It's the magic number*[15]**

And so it is that we move to encounter three domestic bovine individuals whose osseous remains were indisputably placed with just as much intent as the antler deposits, to assume a pivotal position as a critical territorialising force within the assemblage. The three individuals in question are represented by cattle cranial and (once) articulated vertebral elements placed at intervals along the axis of the mound (Figure 38); one at the proximal north-eastern end in Bay I (B1), one in the turf stack of the distal section (B5), and one assuming a central position in Bay XX (B4). Reanalysis of the extant osseous archive undertaken as part of this study has uncovered a wealth of new information revealing enduring human-cattle relationships that complicate the passage through life to death. Although the absence of deposit B5 from the archive has precluded such engagement, it remains a crucial element of the assemblage and so will be briefly described before moving on to discussion of deposits B1 and B4 through which its role and meaning will be explored.

[15] (De La Soul 1989: Track 2)

The published account of the excavation records that cattle skull deposit B5 was found in a poor state of preservation on the old ground surface, severely fragmented and "comprising eight teeth and a mandibular fragment… from an immature domesticated animal not more than four years old" (Ashbee *et al.* 1979: 249). Its depositional context overlay a small group of post holes, which in turn were sealed by a large spread of charcoal dated to 4360-3650 cal BC (Whittle *et al.* 2011: 107). This appears to pre-date the construction of the barrow by some considerable time; radiocarbon date ranges derived from an antler pick recovered from the buried surface beneath the mound before and after humic extraction returning 3100-2580 cal BC and 3500-2890 cal BC respectively (Whittle *et al.* 2011: 107). Also of possible significance, a cluster of post holes, one reaching around 0.75 cm in depth and angled at 45° towards the spot in which the cranial fragments were recovered is noted in the report (Ashbee *et al.* 1979: 245). It is tentatively suggested that this material may be the residue of a mounted cattle hide (Ashbee *et al.* 1979: 245), a suggestion that will find further support in the evidence that follows. McFadyen (2008: 311) proposes that this deposit was incorporated into the mound material whilst still fleshed and hanging from the post, but its recovery from the buried surface and its fragmented state rather suggests that it had fallen or been taken down from any mounting, if it was indeed so treated, before being covered by brickearth.

Such treatment of this young individual would certainly accord with that of deposit B1 (Figure 39). A description in the published report confirms that BI comprised a complete cranium with incomplete horn cores, left and right mandibles, an atlas, axis, and four further cervical vertebrae, an assemblage broadly consistent with the archive material, albeit the cranium is now fragmented into over 250 pieces (Ashbee *et al.* 1979: 247, 249). Although no reference to the specimens having been found in an articulated state can be found in the documentary records, the presence of these elements together suggests that they had been in a state of articulation when they were first selected for deployment. Contra McFadyen (2008: 311), this specimen does not appear to have been incorporated into the mound material whilst still in a fleshed condition; rather, it evidences weathering consistent with Behrensmeyer's stage 3, indicative of exposure for 4-15 years following death (Behrensmeyer 1978).

Such display may account for the structural irregularity of Bay I, whose boundary extends beyond the line of the barrow established and preserved with such diligence by the other bays, to incorporate a large standing sarsen boulder. The location of this boulder has no anthropogenic foundation, so its somewhat erratic position in the long barrow structure suggests prohibition against its movement. Certainly, the assertion that it can be understood

Figure 39: Cattle frontal B1 (DZSWS.1965.13.7) exhibiting evidence of weathering consistent with Behrensmeyer's stage 3 indicative of exposure for 4-15 years following death, Beckhampton Road long barrow, with permission, © Wiltshire Museum, Devizes

as a device used for marking out the footprint of the structure as Ashbee *et al.* (1979: 242) contend is unconvincing, given the misalignment it engenders, and based, as this interpretation is, upon an assumption that the structure was planned to modern architectural standards, its final form fixed from the outset (McFadyen 2008). But when considered as part of an assemblage with curated and likely mounted cattle remains, this particular location emerges as a place that required experiencing. The sarsen and the displayed cattle cranium located in proximity would have been conspicuous. Further, patches of fine chalk rubble were found to overlay the old ground surface of Bay 1 before it became covered with brickearth (Ashbee *et al.* 1979: 240). Ashbee *et al.* (1979: 228) note the resistance of this material to chemical weathering, inviting the possibility that it was deployed as a means of consolidation to permit access to the assembled elements, made all the more intriguing when considered alongside the only other evidence for such practice in Bay XVII, which is adjacent to the central cattle skull (B4).

The human-cattle relations here emergent suggest very deliberate, staged and choreographed interactions between living humans and dead cattle that extend to assemble with them the lived interactions that preceded these architectural expressions. Osteological analysis has enabled the nature of these interactions to be examined; fusion data confirm that cattle deposit B1 represents an older individual aged between seven to nine years, so one that would have required and been afforded ongoing care – feeding, watering, and if female, perhaps milking – that would have both structured and been structured by the routines of human lives (Ray and Thomas 2003). This animal therefore would have been known, an animal with a lengthy biography, a history interwoven with the humans and other animals that shared its life; a social and physical proximity made possible by domestication. And this extended biography may explain its treatment after death. As has been noted, the weathered surface of the cranial fragments suggests it was exposed to the elements for some considerable time before becoming incorporated into the mound matrix, perhaps displayed on a pole as part of a 'head and hooves' assemblage, as has been suggested for bone group B5 (Ashbee *et al.* 1979: 245, McFadyen 2008: 311). The presence of the atlas, axis, four additional cervical vertebrae and a hyoid fragment that comprise this bone group suggest that these bones would have joined the site in a fleshed state. The extent of weathering to the cranium prevents identification of surface modification such as skinning evidence, but the contrast in its condition against the associated vertebrae suggests that either the cranium was skinned whilst the bones of the neck remained protected, perhaps by a skin, or that the bones of the neck became incorporated into the mound material some time prior to the cranium, maybe through the process of gradual decomposition whilst the cranium remained on display. This individual's corporeal presence was thus felt through life and on into death; the point at which it ceased to breath did not impose finality to human-cattle interactions, but rather transformed the modes of such interaction.

Holey Cow

Also troubling ontological boundaries between life and death, cattle bone group B4 is described in the excavation report as an already fragmentary cranium found with an associated atlas at a central position within the barrow structure, in the clean marl fill of Bay XX, close to the barrow's axial divide (Ashbee *et al.* 1979: 235, Figure 14, 247, 249). Accorded scant attention in the published records, osteological analysis of this specimen has proved especially rewarding and illuminating. Lacking a complete set of mandibular dentition, tooth wear analysis can only confirm that B4 was an adult aged over three years at death, but exhibiting a degree of wear comparable with B1, seems likely to have been an old individual of a comparable age and therefore with a lengthy biography, known to the humans who made the deposit. And B4 would seem to have quite the biography. A large depression affecting an area of 30 mm X 50 mm and reaching 25 mm in depth in the left frontal bone and close to the frontal suture was observed during reanalysis, appearing consistent with the size and location of pole-axe injuries found in more recent archaeological specimens (Figure 40). Penetration to this region by pole-axe is a well attested method employed in the slaughter of cattle, although convincing evidence for equivalent practice in Neolithic specimens has been scant (Serjeantson 2011: 58). On the basis of analysis of photographic images, veterinary pathologist Dr Alexander Stoll (pers. comm.) agrees that the depression appears to represent a *healed* low-velocity blunt-force impact trauma, and suggests a degree of force correspondent with manually (as opposed to mechanically) generated impact. He asserts that the immediate consequences of such a fracture would likely be localised haemorrhage, inflammation, and possible brain injury, although on the basis of the available evidence, this seems likely to be limited to concussion. The process of osteological response to the injury would have begun around 24-48 hours following its occurrence, but the degree of remodelling observed amounting to full consolidation and smoothing of the bone around the edges of the fracture and into the concavity of the depression suggests that a number of years had passed since impact. Comparative data for osseous remodelling appear unavailable for cattle, but such processes typically resolve after around seven years in humans (Dr. A. Stoll pers. comm.).

B4 was an individual who survived traumatic injury, which may amount to an attempt to end its life, but lived on for a number of years, evidenced by remodelling of the bone affected by the fracture. Although the occurrence of any impact of the injury on this individual's subsequent behaviour cannot be known, concussion and its associated symptoms, such as loss of consciousness, would seem a strong possibility. Given the depth and extent of the injury, it may be expected that this individual suffered considerable blood loss, a visceral, sensorial and emotionally charged experience for all that bore witness. The physical struggle for life, for maintaining a hold on corporeality in defiance of the urgent, outward flow of sickly, sweet scented blood – a dramatic spectacle whether violently wrought or quietly borne and distended – would have etched memories and enacted transformations in all in attendance. Survival of such an injury would have marked this individual out as unusual, and potentially powerful, through its ability to cheat, or even return from, death. Indeed, such restorative gestures recall the folkloric accounts of the resurrection of cattle noted in the discussion of the Cold Kitchen Hill cattle ditch deposit (cf. Betolotti 1991; Hutton 2017: 197).

Figure 40: Healed depression fracture to left frontal, cattle skull deposit B4 (DZSWS.1965.13. 83a), Beckhampton Road long barrow, with permission, © Wiltshire Museum, Devizes

And the depositional treatment of B4 further marks it as individually distinct, whilst maintaining and framing its bovine identity through citation (cf. Butler 1993; Jones 2007; 2012) of the other cattle cranial deposits. Its placement at a central position within the barrow structure but on a more elevated plane than its two flanking compatriots, wrapped within the clean humic marl of the fill rather than resting on the ground surface, suggests that the process leading to its deposition followed a different course. The surface of the cranium lacks the fissures observed in B1, and together with the absence of either gnawing or post holes, suggests that this specimen was not accessible to scavengers, exposed to the weather or mounted on a post for display in the immediate locality, although the aforementioned presence of fine chalk rubble may evidence consolidation of the ground surface close to its resting position, as was observed in the area of B1. However, its axial position and structure in terms of skeletal representation make clear linkages with the other cattle cranial deposits within the barrow structure as well as those noted at Horslip, and further afield at Amesbury 42, Bowls Barrow, Heytesbury Barrow, Sherrington, and Tilshead Lodge, Wiltshire (Colt Hoare 1975a: 88; Thurnham 1869: 180, 182-183).

The possibility then arises that the life and death of individual B4 forms the critical mass at the core of this assemblage. Considered thus, the weathered cranium of B1 may have been on display, or curated elsewhere before being transported to the barrow's location for assembly with B4 and the other elements. But equally, the remains of B4 and B5 could have been brought to a place already steeped in cattle associations through the long established presence of B1 and the associated sarsen boulder. The barrow was then constructed around these elements with the addition of the soils and turves upon which human-cattle lives depended, as at South Street; the red deer antler deposits that like B4, question and complicate life and death processes and the nature of human-animal social relationships, recall practices observed at Cold Kitchen Hill and Woodford G2. Indeed, the importance of cattle presences in Neolithic long barrows has been a (near) constant, evidentially emergent theme throughout this study and arguably reaches is apogee – although importantly, not in a chronological sense – in the Beckhampton Road assemblage. The presence of the three cattle cranial bone groups placed at intervals along the axis of the long barrow marks the treatment of domestic cattle out as different in comparison to all other taxa represented; a physical attestation of their central position. And taphonomic factors cannot explain the difference in treatment; teeth are particularly resilient to degradation, meaning that the inclusion of crania of other species could be detected. The treatment of aurochs is also quite distinctly different. Significantly larger and more robust than domestic cattle, yet represented by limb bones only, the survival of cranial deposits would be expected, thereby providing further confirmation that it is specifically *domestic* cattle that are here singled out.

Given the taxonomic selectivity evidenced, the complete absence of human bone deposits must, then, be viewed as quite deliberate. Beckhampton Road long barrow is no cenotaph to an absent human element with cattle assigned a representative role (Pollard 2004: 62; Richards and Thomas 2012: 36), but rather a structure in which domestic cattle *as* domestic cattle are brought into focus. It is important to emphasise that domestic cattle are relationally emergent as such; it is in and through the human-cattle relationship that their domesticatory qualities find expression, so inherent within the act of centralising domestic cattle *is* the human-cattle relationship.

(P)raising Lazarus?[16]

Later engagement with the site is evidenced by the presence of a Bronze Age round barrow, constructed over the north east, proximal end of the Neolithic structure, which although severely impacted by ploughing, yielded flint, ceramic and unidentified bone fragments, one of which is identified as cremated (Ashbee *et al.* 1979: 232-234, 249). Given the temporal span separating primary activity evidenced in each of these phases of construction, it seems likely that any knowledge of the unusual cattle remains within the Neolithic structure had long since passed beyond memory, the nature of human-animal relations being reconfigured once again. But this is by no means a certainty; the ongoing importance of human-cattle relationships is given spectacular expression (albeit at considerable geographic remove) in two Bronze Age round barrows at Irthlingborough, Northamptonshire (Davis and Payne 1993), and Gayhurst, Buckinghamshire (Chapman 2007). At the former, a mound comprising a minimum of 185 cattle and aurochs crania, mostly pertaining to young adults, along with quantities of post-cranial remains covered the separately interred remains of two adult male humans. One had been interred in a chamber and was accompanied by an assemblage of items including Beaker pottery, a flint dagger, an unused arrowhead, an amber ring, jet buttons, stones, a boar's tusk, carved cattle ribs, and a stone 'wrist guard'. The second was found in a pit, buried with a bone needle (Towers *et al.* 2010: 508-509). The Gayhurst barrow was found to include an adult male placed in an oaken chamber, together with the osseous remains of a porcine forelimb, which in turn was capped by a mound encompassed within a ditch filled with the remains of a minimum of 300 predominantly female cattle, represented by bones of the cranium, mandible and limb (Towers *et al.* 2010: 509). The human-cattle connection presenced in these (admittedly somewhat geographically distant) Bronze Age barrows is unequivocal, but the form of the relationship expressed in both cases is one of profound asymmetry. Adult male humans occupy the central position, with what have been interpreted as entire herds of cattle slaughtered and in the case of the latter, left to rot, seemingly in response to the human presence (Deighton and Halstead 2007; Towers *et al.* 2010: 509). This relationship is far removed from that expressed in the Neolithic articulation of the Beckhampton Road long barrow, but in light of the anthropocentrism observed at Irthlingborough and Gayhurst, the Bronze Age augmentation of the proximal end of the Beckhampton Road Neolithic structure can be envisioned as a colonializing manoeuvre, whereby the monument of the by-now-ancient cattle remains become subjugated and subverted to serve the interests of a more human-centric society.

[16] With apologies to John (2009: 1129, 11: 1-14)

Beastly conclusions: part 2

Exploration of the Neolithic long barrow assemblages of the Avebury region has revealed continuity and development of some key themes that emerged through examination of the barrows in the Salisbury Plain region, but like the latter, all are individually distinct and manifest important differences that materialise at different scales of analysis. All are multi-temporal sites, with evidence indicative of repeated episodes of engagement, often suggesting marked changes in the nature of human-animal relationships presenced. This is particularly conspicuous in the West Kennet and Beckhampton Road assemblages, which both also underwent later episodes of structural augmentation that transformed the possibilities for physical engagement with the earlier iterations of the monuments. The potential ontological separation of human from animal suggested by the construction of the Bronze Age round barrow over the proximal end of the Neolithic articulation of the Beckhampton Road site accords with interpretations posited for the Middle Bronze Age deposits at Woodford G2. It arguably exemplifies the continuation of a more widespread trend that emerged in the Early Bronze Age as Beaker burial practices, a phenomenon manifest across Britain and extending across western Europe (Parker Pearson *et al.* 2016: 621), increasingly – but not exclusively (cf. Appleby 2010; Gibson 2004) – focused upon the interment of individual human skeletons with or without assemblages of non-human material. Such changes in human-animal relationships and forms of burial are also arguably bound up with broader changes in human-human social relationships, which Richards and Thomas (2012) argue are reflected in changing expressions of monumentalising practice. More recent engagement in the form of antiquarian, and latterly, archaeological excavation, followed by curation and repeated episodes of analysis, has resulted in the translation of all sites here considered, but the impact of post-excavation taphonomy has had very particular implications for the understanding of the South Street and West Kennet assemblages. The absence of the faunal assemblage from the former limits quantitative analysis and precludes the possibility of gleaning a more informative body of osteological data than was published in the excavation report, whilst the full interpretative consequences of complications arising from the dispersal of the human bone assemblage from West Kennet remain – for now – unknown. Despite these constraints, reanalysis has proved a valuable exercise; the posthumanist remit of the present study has enabled the development of new understandings of the nature of human-animal relationships expressed through each of the assemblages here explored to emerge. Primary amongst these is the centrality in the Neolithic of the human-cattle relationship.

Evidence from the Horslip, Beckhampton Road and South Street long barrow assemblages suggests engagement in the Neolithic with ideas also articulated, albeit it in different material form, through the human-cattle becomings expressed in the fantastic beasts (cf. Rowling 2009) of Fussell's lodge and Woodford G2. The material expression of the interweaving and interdependence between human and cattle lives, and the maintenance of species distinction whilst simultaneously providing space for the possibility of reimagining identities through corporeal transformative practice can be observed through the deposition of cattle cranial elements at Horslip and Beckhampton Road. However, unlike the Fussell's Lodge and Woodford G2 assemblages, the human presence is here solely manifest through the material expression of practice. Indeed, the near absence of primary human deposits in the Horslip, South Street and Beckhampton Road long barrow assemblages is remarkable given the traditional association that has been forged between long barrows and the human dead. When considered alongside the internal structural similarities identified between Beckhampton Road and South Street, with their fenced bays and composite fills, and the sequential temporality of primary activity at each site suggested by radiocarbon dates that place Horslip earliest with a range of 4350-3650 cal BC; then South Street with ranges of 3800-3120 cal BC; 3767-3030 cal BC; 3630-2900 cal BC; and 3760-3020 cal BC; and Beckhampton Road latest with dates of 3100-2580 cal BC, and 3500-2890 cal BC (Whittle *et al.* 2011: 107-108) the group emerges as a cohesive, sequentially active and possibly interactive unit. On the basis of the radiocarbon dates, deposition of cattle cranial elements in secondary ditch contexts at Horslip that recalls the iterative inter-site references observed in the long barrow assemblages of the Salisbury Plain region may have been coincident with primary activity at Beckhampton Road. It is important to note, however, that activity could also be separated by centuries; obtaining further radiocarbon dates for the cattle crania from each would prove instructive, with potential for furthering understanding of the temporalities of engagement at each site individually, as well as confirming whether any such connections between them can be considered a possibility. And this would seem a likelihood as Horslip and South Street were probably in use during the main phases of activity documented at nearby Windmill Hill causewayed enclosure, with activity at Beckhampton Road possibly coincident with the later, less intensive phases of engagement with Windmill Hill (Whittle *et al.* 2011: 61-97). Certainly, there appears to have been dialogue between the long barrow sites and the causewayed enclosure suggested by comparative patterns of deposition, and shared expressions of human-animal relationships, evidenced by the preponderance of cattle crania and horn cores (Grigson 1999: 204), and also the aforementioned human child's femur inserted into a distal cattle humerus (Whittle *et al.* 1999a: 110, 108 Figure 97; Grigson 1999: 205, Fig. 161, 206), and the fragment of a human child's cranium nested within a skinned cattle frontal (Whittle *et al.* 1999a: 89-90, 89 Figure 82).

Depositional practice identified at Windmill Hill causewayed enclosure can also be seen reflected in the faunal deposits at West Kennet long barrow, which in many ways stands apart from the other long barrow sites both in the Avebury and the Salisbury Plain groups, through the presence of animal burials alongside disarticulated material, and the range of species represented. Its construction, the modes of human engagement with the site, and human-animal relationships expressed are accordant with practices typically observed in the Cotswold-Severn region (Thomas and McFadyen 2010), with emphasis placed upon deposition of human remains, young animals and more even representation of domestic taxa. This perhaps indicates that in the Neolithic period, this locale bore witness to a meeting of different ways of being in which human-animal relations found themselves engaged in processes of negotiation and recreation. Certainly, the composition of the West Kennet long barrow primary deposits are expressive of human-animal relationships of profound asymmetry, and suggest that they may be the product of an anthropocentric ontology, which stands markedly at odds with findings from the other long barrow assemblages in the immediate locale. It is, however, necessary to restate the importance of re-evaluating the assemblage in its entirety, once the various datasets pertaining to the dispersed human assemblage have been digitised and merged; the finding that animal bone was in fact recovered from the primary layers of the chambers at the level of the human bones whilst not changing the anthropocentric flavour of the deposits, highlights the potential reanalysis holds for augmenting and furthering understandings of this critical site.

How, then, can we understand this group of long barrows, in light of these findings? How do they act in combination as complex, composite wholes? Both the Salisbury Plain and Avebury earthen barrow assemblages share a concern for tightly interwoven human-animal relationships of assembled practices. Emphasis is placed upon their physical locatedness, their commitment to the soily materiality of place. They encompass the same soils and stone that comprise their landscape environs, which sustained and were sustained by the humans and animals therein presenced. Their architectural entanglement within these earthen matrices, the erosion, degradation and reclamation of the assembled wholes by plant life display a concern with process and a view to the future, picking up again on the theme of anticipation so evident in the assemblages of the Salisbury Plain long barrows. And it is anticipation that is here key: these earthen long barrows are agricultural acts, wherein material manifestations of ways of doing and being are not buried, but are planted, as a means of perpetuation. Human and animal bodies, place, the land and materials of mundane existence and the practices through which each emerge are combined and placed within the earth to permit the continued success of human-animal interdependencies. Long barrow assemblages are acts of propagation, of generative magic that recall the potent imagery conjured by practices associated with early modern witchcraft alluded to earlier – an analogy now seeming somehow less fanciful. But where does this leave the outlier, West Kennet? The evidence suggests that it cannot be understood in the same terms, at least not in its primary phase of use. The primary osseous assemblage placed as it is within accessible sarsen chambers articulates a concern with and enables a process of memorialisation, of memory creation. This appears to be focused foremost upon and prioritises relationships between humans, a hierarchy that is suggested by the treatment of animal remains; human-animal relationships are thus a presence, but express one of greater asymmetry than those identified in the earthen long barrow structures here examined. The potential at West Kennet for access, for repetition of encounter, and for augmentation of the changing assemblage enabled the generation of a past, remembering and forgetting, and it was the human that formed the focus of this temporal processing.

Two very different ways of being intermingle in the Avebury environs. Differences in human-animal relationships underscore and are underscored by differences in the ways in which long barrow structures were composed and encountered. And as has been noted, West Kennet is not the only chambered long barrow in the locality. Together with Millbarrow, it forms part of the North Wiltshire Downs geographic grouping (Darvill 2004), but arguably overlaps (both geographically and potentially temporally) with broad practices of earthen long barrow creation that also find expression in the Salisbury Plain group. The vocabulary used to describe this encounter has been carefully chosen; intermingling and overlapping are expressive of slow encounters, of introduction, translation and creating space for creative reconfiguration.

Windmill Hill, then, emerges as a pivotal site of commonality for the Avebury group, whereby the multiplicity of human-animal relationships presenced in the three (human)-cattle-centric barrows of Horslip, Beckhampton Road and South Street that reference practices observed in the Salisbury Plain long barrows are brought together with those expressed at West Kennet, as part of the Cotswold-Severn long barrow group. Different ways of doing mingle, complicating regionally emergent identities in a grand-scale becoming: a fantastic beast (cf. Rowling 2009) comprised of different modes of human-animal becomings. Identification of evidence for such a site of translation in or close to the Salisbury Plain group is more problematic. This is in part a consequence of the number and location of long barrow sites from this region that lack the extant archive material necessary for such analysis, and due to the surprising paucity of substantial Early Neolithic faunal assemblages recovered from sites in the immediate environs. Robin Hood's Ball causewayed enclosure is located at the centre of a cluster of Neolithic long barrows, but the very limited excavation that has been undertaken has resulted in the recovery of a correspondingly small faunal assemblage. The SEP found just 73 animal bone fragments, of which 34 were identifiable to taxon, all pertaining to cattle, pig, and sheep/goat, with cattle dominating the ratio (Maltby 1990b: 65). The scope of excavation thus precludes the meaningful comparison that has been made possible through the comprehensive programmes of excavation and analysis of the Early Neolithic monuments of the Avebury group. The recent discovery of a causewayed enclosure at Larkhill, north east of Stonehenge by Wessex Archaeology (Symonds 2017) may, however, provide much needed evidence to inform future studies.

Comparison with assemblages recovered from other site types of comparable age in the Salisbury Plain locale have proved likewise challenging. The findings from excavation of the Lesser Stonehenge Cursus returned remarkably similar results to Robin Hood's Ball, although the presence of antler tools from primary contexts thought to be associated with the digging of the ditch are a mark of difference (Maltby and Thomas 1990: 83-88). Results of faunal analysis from the sample excavation of the Greater Stonehenge Cursus were accorded just two sentences in the published SEP report, being considered ambiguous and potentially representative of recent 'intrusions' (Maltby 1990d: 96); subsequent work by the SRP records the recovery of an antler pick from a primary context, but no other mention is made of animal bone from Neolithic levels (Thomas *et al.* 2009). Faunal remains from an Early Neolithic pit on Kings Barrow Ridge are likewise scant, amounting to a fragmentary cattle femur and a fragment of thoracic vertebra, also cattle (Maltby 1990c: 66).

The Coneybury Anomaly assemblage is here the exception. Situated on Coneybury Hill, adjacent to Coneybury Henge, the Coneybury Anomaly was also excavated under the SEP. Comprising 2110 fragments of animal bone recovered from a large pit, the remains of cattle, pig, red deer, roe deer, beaver and brown trout are represented, and interpreted as evidence of "a major butchery episode" (Maltby 1990a: 60). The assemblage is dominated by cattle and roe deer; quantitative representation of wild species relative to domesticates is much more balanced than proportions typically observed in the long barrow assemblages from the Salisbury Plain, Avebury and Cotswold-Severn clusters. It is, however, interesting to note Maltby's comments on cattle body part representation which, with an emphasis on the bones of the head and feet, he describes as:

> "[a] classic example of the disposal of cattle primary butchery waste. Bones with little meat value were dumped, whereas the major meat-bearing bones were taken away for further processing and consumption" (Maltby 1990a: 57).

Butchery evidence was identified on 22 specimens, and includes cut marks on cranial fragments that he notes may be indicative of skinning (Maltby 1990a: 59). The red deer assemblage closely reflects that of cattle in terms of skeletal representation, but interestingly – and despite noting this marked difference – the roe deer assemblage which includes significant quantities of limb bone specimens is interpreted in similar terms, albeit that consumption is suggested to have occurred immediately and in-situ. Given the treatment of cattle remains in the long barrow contexts explored, which certainly bear comparison with the Coneybury Anomaly material, it must be asked whether the latter could be understood in different terms; reanalysis of this assemblage from a posthuman perspective could thereby prove illuminating.

Moving beyond Wiltshire, the generally poor quality of animal bone reporting at sites excavated prior to the third quarter of the last century remains a theme, and places limitations upon potential for comparison. Re-examination of Early Neolithic site assemblages, particularly those evidencing distinctly different treatment of the human dead, such as Aldestrop and West Tump in Gloucestershire (Smith and Brickley 2009: 49-52), and Coldrum in Kent (Smith and Brickley 2009: 49-52; Wysocki *et al.* 2013), which include human bone with cut marks suggestive of defleshing and disarticulation as well as animal bone deposits would provide a useful comparative dataset, and enable further development of understanding of human-animal relations emergent at local and regional scales. In addition, exploration of the relationships between the treatment of human and animal remains in long barrow and causewayed enclosure deposits, as well as other site types, including mortuary enclosures and pit deposits would be desirable, enabling connections, similarities and differences to emerge at a broader scale. And this is important: each of the long barrow sites explored has shown itself to be enmeshed in numerous assemblages at multiple scales, whilst also maintaining distinct individual identities. The emergent human-animal relationships manifest at some scales dissipate at others, unfolding across and complicating temporal and geographic strata. And this process of unfolding is ceaseless; the human-animal relations here revealed should and will continue their metamorphoses as sites are re-engaged with, translated through other researchers, enabling the necessary circulation of references (cf. Latour 1999).

So it is that we have come to rest at the bottom of the rabbit hole to be confronted by a room full of doors, of possibilities for onward journeys. The time has come to reflect upon the value of this particular approach and where it leads next.

Chapter 9. Alice's Evidence[17]

Achievements of the study

This study has produced:

- The reanalysis of eight long barrow osseous assemblages comprising 9391 specimens (NSP) (see Appendix 11) to contemporary standards, dramatically reworking our understanding of the corpus of these sites.
- Results from the re-examination of the broader archive for each site, enabling the augmentation of the osseous assemblages in cases where osseous specimens are absent, as well as identifying absences in other sub-assemblages.
- Spatial analyses of the sites examined, using GIS with some for the first time.
- Digitised datasets of the osseous material from each of the sites studied (Appendix 11).
- Digital plans for each of the sites examined, redrawn from archive documents.
- Awareness of fundamental problems arising from the dispersal of the West Kennet archive, not least the absence of a complete dataset of human remains and potential inaccuracies in published MNI counts.
- New radiocarbon date ranges for different phases of activity at Woodford G2.
- New interpretations of the role and meaning of faunal remains from the long barrow assemblages re-examined, undertaken from within a posthumanist position.
- Eight standard zooarchaeological reports on data suitable for dissemination to a specialist audience (appendices 3-10).
- New understandings of human-animal relations in the Neolithic through this analysis and proposed new understandings of contemporary ontologies.
- A re-evaluation of the ongoing production of the past in the present through the assemblage approach advocated within.

[17] (Carroll 2009: 102-110 (Chapter 12))

Reanalysis of the eight archive long barrow assemblages here considered from within a posthumanist perspective has resulted in the generation of a wealth of additional osteological information that transforms the ways in which it is possible to think about the sites studied. The foregrounding of ontological questions as to the nature of human-animal relationships, combined with spatial analytics has permitted new modes of engagement with and understandings of the archaeological evidence. For example, arguments tendered for anticipation as a key structuring principle underlying patterns of deposition, particularly at Amesbury 42, Netheravon Bake, Cold Kitchen Hill and South Street are dependent on consideration of multiple material types and their spatial association, which extends beyond the remit of traditional zooarchaeological approaches. The posthumanist perspective has enabled the revelation of nuanced detail, informing on human-animal relationships that range in scale from the most intimate individual interactions – be they the corporeally transformative nature of consumption of one individual by another, or the extended and extraordinary biography made possible for the individual represented by cattle skull B4 from Beckhampton Road – to those occurring between species and geographic regions. The focus on human-animal relationships changes how we can think about both communities and enriches understanding of both, demonstrating how the traditional practice of separating evidence by species – and indeed by material – has imposed limitations on the possibilities for engagement.

Findings have bolstered the well-established arguments for the currency of human-cattle relations, and human-domesticated animal species more broadly in the Neolithic (Ray and Thomas 2003), and reveal important differences in the ways in which these relationships are articulated in long barrow architecture. Indeed, the particular human-animal relationships presenced at each of the sites studied are unique and utterly specific in their temporo-geographic situatedness – at one scale. But at others, they have revealed connections between practices that create linkages within and across the different sites and regions examined. These connections take the form of citation (cf. Butler 1993; Jones 2007; 2012), circulating references (cf. Latour 1999), and references to regulatory ideals (Butler 1993). The emergent concern for anticipatory deconstruction that binds the (earthen) long barrow assemblages of Salisbury Plain is reconfigured through assembly with the earthen long barrow assemblages of the Avebury region, to express anticipation more broadly in the form of propagatory acts that make continuity of lifeways possible. These contrast markedly with findings from the chambered West Kennet long barrow, whose faunal assemblage and structure shows similarities with other examples of the Cotswold-Severn 'type', of which it is an example. The prioritisation of human-human relations coupled with a marked asymmetry in human-animal relations in its primary phase of use, when compared with the entangled interspecies interconnectedness identified in its earthen counterparts, suggests that different ways of being were encountered at Avebury. These ways of being were intimately bound up within the ways in which humans and animals related with each other, a revelation made possible through a specifically posthuman mode of engagement.

Time, the multi-temporal character of the sites explored, and the complex temporal interplay that *is* archaeological practice – that choreographs engagement, whilst also making manifest and augmenting this temporal dance – have also emerged as important themes. The radiocarbon date ranges that have been newly obtained for Woodford G2 as part of this study add to a growing body of such knowledge, and situate phases of depositional activity at the site within broader regional and national frameworks. Establishing chronologies that enable development of understanding of the initial, sequential emergence of these structures is fundamental to their understanding. Long barrows are physical nodes firmly located within and creating place that have been bound up within human and animal doings since sequences of constructional activity at their various sites began and continue as phases of activity and inactivity to the present. Indeed, the findings of this study add force to an argument for archaeological sites as unending unfoldings. Action (understood to be a relative phenomenon on a scale that includes hiatus) never ends, but continues, and in so doing translates the archaeology in the form of a circulating reference (cf. Latour 1999); archaeological intervention thus augments and (re)creates the foci of its interest and becomes part of the site's ongoing becoming as archaeology-in-the-making. The past(s) of these sites (and the past more broadly) is therefore mutable. This has become especially apparent through the discrepancies that have emerged between extant archaeological archives and the excavation reports published for all but one of the sites – Netheravon Bake being the exception. Post-excavation taphonomy is here the critical factor; the absence of the osseous assemblages from the Cold Kitchen Hill and South Street long barrow archives has limited what it has been possible to say about each, and the potential impact of these losses is illustrated by the findings arising from reanalysis of the Woodford G2 assemblage and Beckhampton Road cattle skull B4. The dispersal of the West Kennet archive has had a similar bearing upon possibilities for engagement within the present study, and more worryingly, has impacted key publications that followed Piggott's initial phase of reporting. These are now shown to have been based on partial datasets, potentially introducing inaccuracies and calling into question the ways in which this crucial site has been understood to date.

It is with this pang of regret (although tempered by the study's achievements) that we next move on to consider disappointments.

***The Pool of Tears*[18]**

GIS was identified as a useful and creative approach for exploring spatial questions, and so it proved, although sadly only for a limited number of sites. The reason for its restricted involvement lies in its intersection with the form of the site archives. GIS can be an uncompromising partner, and requires disciplined data. Archive data are not, however, always keen to comply with its exacting demands. The detailed 3D spatial information collected during excavation at Amesbury 42, Woodford G2, and Cold Kitchen Hill enabled engagement with GIS; spatial questions were thereby answered, revealing further avenues for exploration and giving rise to further questions, and problems were resolved. Crucially, these interactions contributed to the posing of ontological questions that have been central to this study. These successes argue for the promise such intra-site GIS analyses hold for involvement in posthuman studies, but they are dependent upon the collection of particular forms of spatial data, and therefore dictate the ways in which (cyborg) archaeology may be practiced (cf. Haraway 1991).

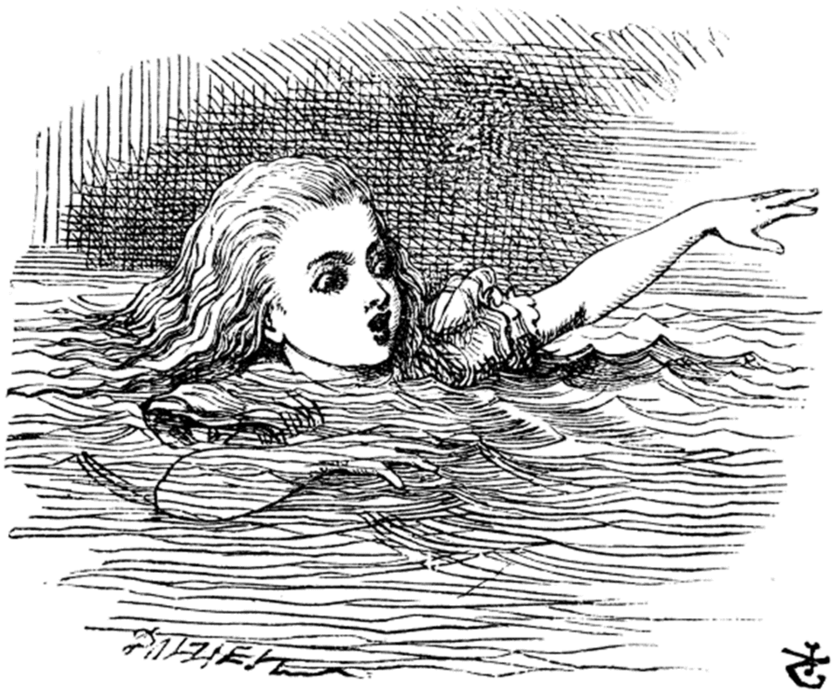


Figure 41: Alice in the pool of tears (Carroll 2009: 20, illustration by J. Tenniel)

[18] (Carroll 2009: 16-23 (Chapter 2))

For the remaining sites, relatively low numbers of finds combined with a synthesis of multiple sources of 'characterful' spatial information permitted similar querying to be performed, albeit in an analogue and somewhat piecemeal fashion. No single means of approach could be adapted for all datasets, so the gathering, synthesis, and analyses of data were specifically developed and tailored to each. GIS *could* feasibly have been invited to join the latter stages of the party at South Street, West Kennet, and Beckhampton Road, but it was considered that to do so would be to over-engineer an already complex and lengthy set of procedures. The process of domesticating the data in readiness for its introduction into GIS enabled many of the questions to be answered; continued pursuit of creating fully operational models of partial datasets was therefore unnecessary.

Advice from a caterpillar[19]: recommendations for further research

Figure 42: Advice from a caterpillar (Carroll 2009: 40, illustration by J. Tenniel)

[19] (Carroll 2009: 40-49 (Chapter 5))

The first and most pressing recommendation is the digitisation, reintegration and reanalysis of the West Kennet human osseous material with the other elements of the archive, as current understanding of this important site rests on research undertaken in recent years that was dependent on a partial dataset. Reanalysis of the entire osseous assemblage from the posthuman position here advocated will not only enable development of the findings of the present study, but will further change and challenge the ways in which this site is understood and can be engaged with more broadly.

The second recommendation is for the extension of the scope of this study into other geographic and temporal areas, the latter through focused programmes of radiocarbon dating in combination with Bayesian statistical analysis. This will permit development of a greater understanding of the nature of human-animal relations presenced in long barrow assemblages at a local and inter-regional level for the Neolithic and through to the present, enabling both patterning and difference to emerge at broader scales. For this to happen, it has become apparent during the course of this research that a review of long barrow assemblage archival holdings is necessary as the presence of faunal assemblages is not always recorded in earlier excavation reports. There is therefore a much greater resource available for exploration than appears immediately visible, which offers potential for further developing understanding of the Neolithic and subsequent periods.

Arising directly from the previous point, the third recommendation is for the urgent reanalysis of all such material in response to the devastating impact of post-excavation taphonomy. The effects of archival depletion are perhaps most evident in the Cold Kitchen Hill and South Street assemblages in this study, where entire assemblages are absent from their respective archives, but the impact of degradation of individual specimens and the uncoupling of finds from contextual information also limit the scope of research, as has been found in the Beckhampton Road and West Kennet assemblages. Paradoxically, it is ongoing engagement through practices associated with research, conservation and curation that accelerate these effects, and the passage of time is here critical. Intervention is nonetheless imperative; the importance of ongoing research for the continued maintenance of museum collections cannot be overstated, particularly given the current challenges faced by culture and heritage institutions as a consequence of austerity and funding cuts. In turn, archives form a crucial resource for research that enable new versions of our pasts to be developed from material that has already been excavated, creating space for new presents and futures to become imaginable.

To understand the impact of both archival degradation and the anthropocentric attitudes that have underwritten, and arguably limited previous engagements with the sites here considered – sites that are so foundational to our understanding of the emergence of modern lifeways in the British Isles – it would be desirable to conduct an excavation of a long barrow site from an expressly posthuman position, primacy placed upon answering ontological questions as to the nature of human-animal relations in the Neolithic. This would demand a different approach to excavation, post-excavation analysis and archive curation: materials of diverse types should be analysed and stored together in order to maintain the contextual integrity of deposits that is so often lost as a result of the separation of material into types. Analysis would be undertaken by teams representing multiple material specialisms working together with input from those who performed the excavation, maintaining dialogue throughout to enable the meanings of complex assemblages to be unpicked. This is not to deny the value of and need for specialist reporting by material type, which pertains to assemblages with ontological reality and provides important perspectives, but rather would enable a more holistic integration that is frequently absent from standard reports. *A priori* material hierarchies should be problematised to guard against the unthinking imposition of contemporary attitudes, with space allowed for hierarchies (if such structures do indeed exist) to emerge through engagement with the material remains.

But for now, the Ontological Tern concludes her tales and awaits with eagerness the next movements of the cyborg White Rabbit, collaborator that he is, for news of new engagements, new research, and doings emergent within other ontological turns that will develop and challenge her position. This is not, therefore, the end.

Appendices

Appendix 1. Radiocarbon dates for Woodford G2 long barrow obtained as part of this study

Laboratory number	Small finds no.	Taxon	Sample description	Context	Date range cal BC	
					95.4 % probability	**68.2 % probability**
SUERC-76736 (GU46030)	125	Human	Adult sized left ulna from disarticulated assemblage	In flint cairn	3364	3427 - 3370
SUERC-76737 (GU46033)	138	Human	Pelvis from adult inhumation	East ditch	1361 - 1059	1244 - 1128
OxA-35176	68	Human	Right humerus from neonate inhumation	East ditch	1397	
OxA-35177	68	Corvid	Corvid humerus	East ditch	3428 - 3120	

Appendix 2. Taxonomic representation at each of the long barrows studied (NSP)

* denotes the inclusion in this category of specimens that fall within the size range of both domestic and wild species ** denotes presence of an additional unknown number of specimens recorded as present in documentary sources

Taxon	**Amesbury 42**	**Netheravon Bake**	**Woodford G2**	**Cold Kitchen Hill (Kingston Deverill G1)**	**Horslip (Windmill Hill long barrow)**	**South Street**	**West Kennet**	**Beckhampton Road**	**Total**
Horse	1	4	5		8		8		26
Cattle	41*	52	34*	37**	133*	128	92	83	600
Pig	5	4	21		31	12	122	5	200
Sheep/goat	10	19	19		35	35**	130	8	256
Goat							9		9
Human	4		812		1	2	**		819
Dog					1	2	22		27
Dog/fox							39		39
Canid				**					
Aurochs			1		2			2	5
Red deer	2	1	7		5	2	11	2	30
Roe deer	2	2	10		1		7	6	28
Wild boar								1	1
Fox	2	10							10
Badger					9	2	3		14
Mustelid							10		10
Hare					1				1
Rabbit							9		9
Field vole							1		1
Frog/toad							28		28
Goose							1		1
Duck							1		1
Crow/rook			1						1
Oyster					13				13
Large mammal	85	28	100	8	202	1	174	268	866
Medium mammal	14	46	35	2	36	1	380	11	525
Small mammal			3				18		21
Medium bird							1		1
Small bird							2		2
Indeterminate	338	365	2417	33**	1440	305	657	292	5847
Total	**504**	**531**	**3465**	**80**	**1918**	**490**	**1725**	**678**	**9391**

Appendix 3. Amesbury 42 long barrow osteological report

Introduction and methods

This report details the reanalysis of stratified, hand-collected bone along with sieved samples recovered during excavation at Amesbury 42 Neolithic long barrow, Wiltshire as part of The Stonehenge Environs Project (SEP) in 1983, with additional documentary information from a subsequent excavation as part of the Stonehenge Riverside Project (SRP) (Richards and Thomas 2012). Amesbury 42 lies near to eastern end of the Stonehenge Cursus. It was investigated by Thurnham in the 19th century, who recovered inhumations from probable secondary contexts (Richards 1990: 96) and a cattle cranium with articulated foot bones from an estimated four or five animals (Thurnham 1869: 182). The findings of the present analysis accord closely with and extend those of Maltby who conducted analysis for the SEP (1990e: 105).

The assemblage comprises 551 bone and tooth fragments forming 504 specimens (NSP) (Table 1), and two antler fragments, dated from the Neolithic with radiocarbon date ranges of 3630-3371 cal BC and 3520-3360 cal BC derived from antler recovered from the primary deposits of the long barrow ditch (Richards and Thomas 2012: 35), and through association with pottery evidence to phases of deposition in the Bronze Age (secondary ditch fills) and the Romano-British periods (tertiary ditch fills). Bone was subject to macroscopic examination and identification determined using the skeletal reference collection at the School of Archaeology and Ancient History, University of Leicester. Identification was made to element, side and taxon; where full identification could not be made due to the absence of diagnostic morphological markers, material was assigned to broader categories on the basis of element, size and class. Distinction between sheep and goat remains was attempted using standards published by Boessneck (1969). Elements were recorded using the zoning system detailed by Mahoney (2013), zones being recorded when more than 75% of the zone was present. Age-at-death ranges were assigned according to the epiphyseal fusion criteria published by Reitz and Wing (2008: 72, Table 3.5), and by and through analysis of wear on mandibular dentition. Tooth wear in cattle was recorded using the Grant system (1982) and an age range was assigned using Halstead's age stage descriptors (1985); tooth wear in sheep/goat was documented using Grant (1982) and relative age was established using Payne's age stages (1973; 1987); tooth wear in pig specimens was detailed following the Grant method (1982) and age range determined using stages developed by Hambleton (1999: 64-65) and Halstead

(1985). Measurements of specimens were taken following standards established by von den Driesch (1976). The anatomical location (where identified) and character of burning, butchery and gnawing was described. Surface preservation was graded using the scale recommended by Harland *et al.* (2003). All fragments measuring over 10 mm were documented; joining fragments were recorded as a single specimen.

Preservation and taphonomy

This assemblage exhibits poor preservation, with high levels of surface degradation and weathering, which limits the potential for survival of evidence for other forms of surface modification. 21% of specimens showed evidence for root damage. Fragmentation levels are exceptionally high, with no elements (excluding loose teeth) surviving complete; the ratio of 46 loose teeth against two mandibles containing in-situ dentition provides further confirmation. It is therefore unsurprising that only 13% of specimens were identifiable to taxon, with 33% identifiable to taxon and broad age class.

One unidentified bone fragment, sf. 95 (90), from the upper component of the secondary fill evidences scorching to the outer surface. Two bone fragments evidence butchery; one from a large mammal, recovered from the plough soil and a second, a cattle scapula fragment showing a slice on the medial face of the blade, at the proximal end of the fragment. That no evidence of gnawing was found in this reanalysis in contrast with the six examples detailed in the report (Maltby 1990e: 105) may be due to surface degradation of the already poorly preserved assemblage since the original analysis was conducted.

Taxa and body part representation

The exceptionally high levels of fragmentation may account for the dominance of cattle amongst the identified assemblage (Figure 1), cattle bone being denser and more robust than other species represented. One cattle specimen, sf. 145, a right tibia fragment from the secondary ditch silting falls within the size range of both large domestic cattle and small aurochs (Wright 2016). Sheep/goat were the second most abundant taxon, although as Maltby (1990e: 105) points out, these predominantly derive from the upper ditch fills. Pig bones represent one percent of the total assemblage and were recovered from secondary ditch contexts with the exception of a single specimen from the tertiary fill. Horse, fox, human, red deer and roe deer specimens each account for a fraction of one percent of the entire bone assemblage, all recovered from secondary and tertiary ditch contexts (Figure 1).

Cattle specimens from all zones of the skeleton are present in contexts from the secondary and tertiary ditch fills, although the smaller carpal and tarsal bones, and more fragile bones such as ribs are notable for their absence (Table 2). This is likely a factor of taphonomic processes; the much more limited range of elements representing other species derive principally from robust elements of the skeleton, particularly teeth. As a small, poorly preserved assemblage, the evidence is limited and reveals no other convincing patterning indicative of selective deposition of particular body parts. The limited scope of the excavation further biases the sample, deposits in long barrow assemblages being typically focused upon particular locales within and around the structure, which may have been missed by the sample examined.

The fox bone from the secondary and tertiary fills may be intrusive, and the human cranium and tibia fragments from the tertiary fill may represent residual material from the erosion of the mound.

Table 1: Taxonomic representation at site level (NSP) * denotes the inclusion in this category of sf. 145 which falls within the size range of both large domestic cattle and small aurochs

Context	Horse	Cattle*	Pig	Sheep/ goat	Fox	Human	Red deer	Roe deer	Large mml	Medium mml	Indeter minate	Total
Ditch: primary silt		1									8	9
Ditch: secondary silt		23	4		1		1	1	46	2	117	195
Ditch: tertiary silt	1	12	1	8	1	4	1	1	17	7	107	160
Ditch: early phase plough soil											12	12
Ditch: plough soil									1	1	4	6
Unidentified context		5		2					21	4	90	122
Total	1	41	5	10	2	4	2	2	85	14	338	504

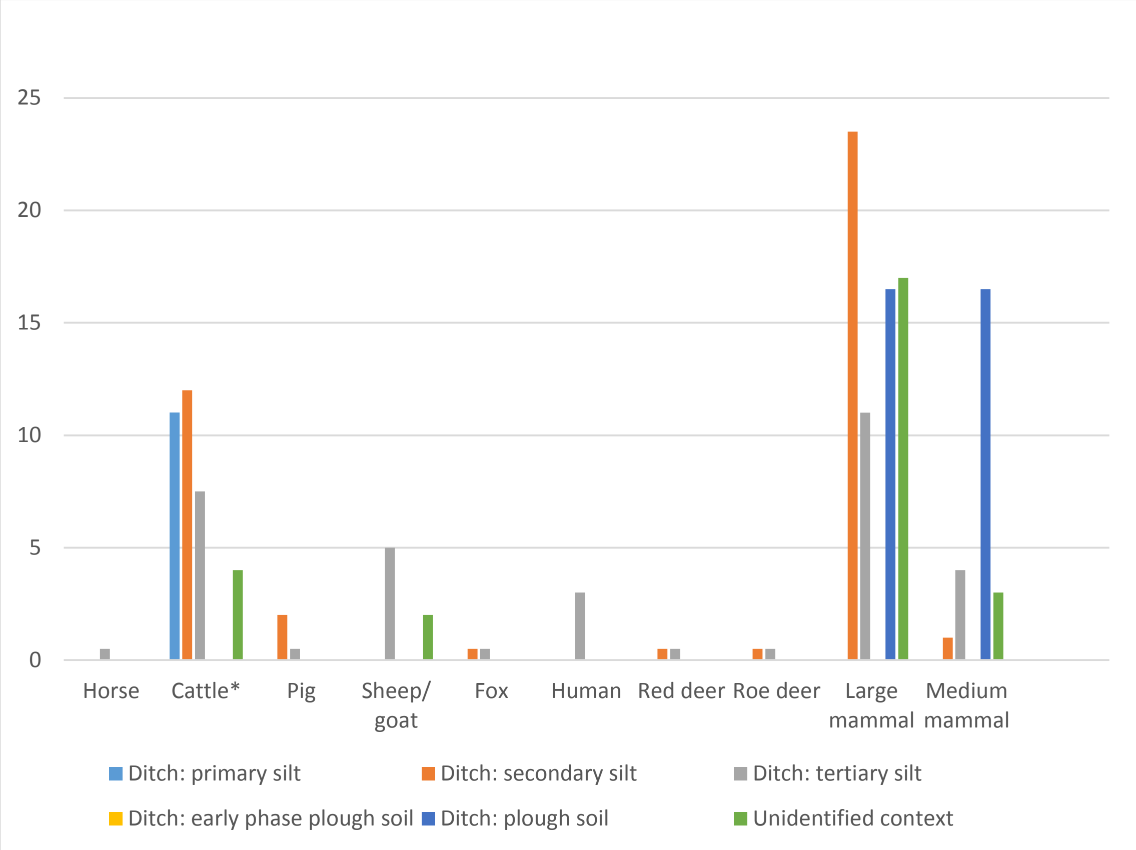


Figure 1: Percentage taxonomic representation per context (NSP) * denotes the inclusion in this category of sf. 145 which falls within the size range of both large domestic cattle and small aurochs

Table 2: Body part representation per taxon (NSP), site scale assemblage. * denotes the inclusion in this category of sf. 145 which falls within the size range of both large domestic cattle and small aurochs

Element	**Horse**	**Cattle***	**Pig**	**Sheep/goat**	**Fox**	**Human**	**Red deer**	**Roe deer**
Head								
Cranium						3		
Mandible			1		1			
Tooth	1	13	1	10				
Scapula		3						1
Pelvis		1	1					
Forelimb								
Humerus		3	1		1			
Radius		3						
Ulna		1						
Metacarpal		1						
Hindlimb								
Femur		1						
Tibia		5*	1			1	1	
Metatarsal		5						1
Hands/feet								
Calcaneum		2						
Astragalus		3					1	

MNI

Table 3: MNI per context * denotes the inclusion in this category of sf. 145 which falls within the size range of both large domestic cattle and small aurochs

Context	**Horse**	**Cattle***	**Pig**	**Sheep/ goat**	**Fox**	**Human**	**Red deer**	**Roe deer**
Neolithic								
Ditch: primary silt		1						
Bronze Age								
Ditch: secondary silt		2*	1		1		1	1
Roman								
Ditch: tertiary silt	1	2	1	1	1	1	1	1
Mixed								
Ditch: early phase plough soil								
Ditch: plough soil								
Unidentified context		1		1				
Total	**1**	**6***	**2**	**2**	**2**	**1**	**2**	**2**

Table 4: MNI site level * denotes the inclusion in this category of sf. 145 which falls within the size range of both large domestic cattle and small aurochs

Context	**Horse**	**Cattle***	**Pig**	**Sheep/ goat**	**Fox**	**Human**	**Red deer**	**Roe deer**	**Total**
Site level	1	3	1	1	1	1	1	1	10

MNI calculations are low (Tables 3 and 4). There is a minimum number of ten individuals at site level: one horse; three cattle; one pig; one sheep/goat; one human; one fox; one red deer; and one roe deer (Table 3). The discrepancy between totals derived from broad context MNI counts (Table 3) and the site level MNI (Table 4) may be a factor of sample aggregation whereby the remains of a single animal have been deposited in, or have moved between multiple contexts.

Mortality profile

Limited fusion data are available, pertaining to just 11 specimens (Table 5). Cattle remains indicate age-at-death profiles ranging from under 12-18 months, to an age equivalent with or greater than 42-48 months. A single pig humerus returns an age of death at or above 12-18 months and a single red deer tibia evidences age of death at or above 20-23 months.

From the small sample available, it is possible to identify two deciduous cattle teeth from an animal/animals aged at or above 2-7 months and one aged 8-18 months at death (Table 6). Evidence from pig derives from a loose molar and in-situ mandibular dentition, the former suggesting age at death of or above 7-21 months, and the latter between 7-14 months. A single loose sheep/goat tooth provides the only evidence for age at death for this taxon and returns an age of 8-10 years, an old individual.

The mortality profiles evidence a broad range of age-at-death estimates for cattle, but given the sample size, the physical limits of the excavated area of the site, and the bias resulting from poor preservation, it is only possible to comment on the animals here represented as individuals. Notably, the presence of animals that can be described as old infers familiarity, animals that were known with long biographies of interspecies interaction, and whose deaths may have had significant impact upon the communities of which they formed a part.

Table 5: Age-at-death profiles as indicated by degree of epiphyseal fusion * denotes the inclusion in this category of sf. 145 which falls within the size range of both large domestic cattle and small aurochs

NSP	Taxon	Bone	Proximal	Distal	Age
Early fusing					
1	Cattle	Scapula		Fused	≥ 7-10 months
1	Cattle	Humerus		Fused	≥ 12-18 months
1	Cattle	Humerus		Unfused	< 12-18 months
1	Cattle	Radius	Fused		≥ 12-18 months
1	Pig	Humerus		Fused	≥ 12-18 months
Middle fusing					
2	Cattle	Tibia		Unfused	< 24-30 months
1	Cattle*	Tibia		Fused	≥ 24-30 months
1	Red deer	Tibia		Fused	≥ 20-23 months
Late fusing					
1	Cattle	Ulna	Unfused		< 42-48 months
1	Cattle	Radius		Fused	≥ 42-48 months

Table 6: Age-at-death profiles as indicated by tooth wear

Small finds no.	Context	Taxon	Mandibular/ loose	Side	dP4	P4	M1	M1/2	M2	M3	Age
124	Upper component of secondary fill	Cattle	Loose	Right				b			8-18 months
103	Upper component of secondary fill	Cattle	Loose	Right	f						≥ 2-7 months
183	1 m² unit of (114-120) third spit	Cattle	Loose	Indeterminate	g						≥ 2-7 months
134	Upper component of secondary fill	Pig	Loose	Right				e			≥ 7-21 months
120	Fine silty secondary fill of ditch	Pig	Mandibular	Right			c		erupting		7-14 months
	Tertiary fill. Loose stony horizon comprising stabilized soil developed in ditch tertiary fill	Sheep/ goat	Loose	Left						k	8-10 years

Sex

Two red deer antler fragments, one recovered by the SEP team from the primary ditch silt (Richards and Thomas 2012), and sf. 171 (175) from the tertiary fill of the ditch are the only indicators of sex, deriving from male animals.

Butchery

Two bone fragments evidenced butchery; one from a large mammal, recovered from the plough soil and a second, sf. 116 from the fine silty secondary fill of the ditch is a cattle scapula fragment showing a slice on the medial face of the blade, at the proximal end of the fragment.

Pathologies

No evidence of pathology was found.

Antler

Two red deer antler fragments were recovered during excavation: one from the primary ditch silt by the SEP (Richards and Thomas 2012), and one (sf. 171 (175)) from the tertiary fill of the ditch. It is not possible to determine whether the antler was shed or was collected from a dead animal.

Conclusions

This multi-phase assemblage comprises material ranging in date from the Early-Middle Neolithic through to the Romano-British periods. It is characterised by poor surface preservation resulting in part from abrasion, weathering and root damage, and exceptionally high levels of fragmentation, which has undoubtedly impacted upon potential for identification of surface modification. Evidence for butchery is limited to two specimens and there is no evidence of pathology. The remains of a minimum of ten individuals are represented at site level, with the majority of material deriving from the Bronze Age and Romano-British contexts. Cattle are the most frequently encountered species, and are represented in the Neolithic, Bronze Age and Romano-British layers, but as Maltby (1990e:

105) notes, it is interesting that whereas the Bronze Age assemblage is dominated by cattle and pig remains, with a notable absence of sheep/goat specimens, the Romano-British assemblage predominantly comprises cattle and sheep/goat, with just a single pig specimen identified. Specimen sf. 145 from the secondary ditch silting may represent aurochs, but also falls within the size range of large domestic cattle, preventing definitive attribution.

Evidence for age-at-death estimates is very limited, but confirms the presence of the remains of individual animals from all different phases of life, from cattle aged under 12 months, and a pig aged 7-10 months, through to a sheep/goat aged between 8-10 years. Despite the small sample, these data provide vital information that can begin to elucidate the nature of individual human-animal relationships presenced at this site.

That evidence for deposition of animal remains can be identified to at least three distinct phases of site usage confirms both the significance of the site as a significant locale, even a locus of memory over a (likely discontinuous) period of circa. 4000 years. It also confirms that the nature of human-animal relationships was such that the deposition of bodies/body parts was considered appropriate in this place, although the dynamics of these relationships was undoubtedly fluid and in a constant process of renegotiation.

* See Appendix 11 for full zooarchaeological dataset

Appendix 4. Netheravon Bake long barrow zooarchaeological report

Introduction and methods

This report details the analysis of stratified, hand-collected bone along with sieved samples recovered during the 1984 and 1986 excavations at Netheravon Bake Neolithic long barrow, Wiltshire by Julian Richards as part of The Stonehenge Environs Project (SEP). Netheravon Bake is located close to Robin Hood's Ball causewayed enclosure and five kilometres from Durrington Walls henge. The 1984 excavation targeted the ditches, confirming the existence of encircling ditches which typically accord with long barrow structures of more compact dimensions – as indeed this is. The construction sequence of the ditch was explored further in the 1986 excavations, which focused on a section through the terminal of the south ditch. Further trenches were placed over the area where the ploughed-out mound would once have stood (Richards, unpublished notes). A radiocarbon date range of 3646-3378 cal BC was determined from antler recovered from the base of the earliest phase of the ditch placing this phase of activity well within the typical range for analogous structures in the region. Later phases of Middle Bronze Age activity saw the site transformed into the form of a round barrow. The outcomes of the excavation have yet to be published, but full records were deposited and remain curated by the Salisbury and South Wiltshire Museum.

The osseous assemblage comprises 551 bone and tooth fragments forming 532 specimens (NSP), including antler. Bone was subject to macroscopic examination and identification determined using the skeletal reference collection at the School of Archaeology and Ancient History, University of Leicester. Identification was made to element, side and taxon; where full identification could not be made due to the absence of diagnostic morphological markers, material was assigned to broader categories on the basis of element, size and class. Distinction between sheep and goat remains was attempted using standards published by Boessneck (1969). Elements were recorded using the zoning system detailed by Mahoney (2013), zones being recorded when more than 75% of the zone was present. Age-at-death ranges were assigned according to the epiphyseal fusion criteria published by Reitz and Wing (2008: 72, Table 3.5), and by and through analysis of wear on mandibular dentition. Tooth wear in cattle was recorded using the Grant system (1982) and an age range was assigned using Halstead's age stage descriptors (1985); tooth wear in sheep/goat was documented using Grant (1982) and relative age was established using Payne's age stages (1973; 1987); and age range determined using stages developed by Hambleton (1999: 64-65) and Halstead (1985).

Measurements of specimens were taken following standards established by von den Driesch (1976). The anatomical location (where identified) and character of burning, butchery and gnawing was described. Surface preservation was graded using the scale recommended by Harland *et al.* (2003). All fragments measuring over 10 mm were documented; joining fragments were recorded as a single specimen.

Preservation and taphonomy

This assemblage exhibits exceptionally high fragmentation with just 17% of specimens identifiable to taxon and 31% to taxon and broad size group. Just four elements, all tarsal bones, survive complete (excluding loose teeth). Four fox mandible/maxilla fragments with in-situ dentition, which may be intrusive and of relatively recent date, compare with 62 loose teeth (six of which are fox), further demonstrating the impact and degree of fragmentation. Specimens are poorly preserved with high levels of surface degradation, which limits the potential for survival of evidence for other forms of surface modification. Surface condition in all but three specimens was categorised as 'poor' the "surface flaky or powdery over 50% of specimen" (Harland *et al.* 2003); root damage affects ten percent of the assemblage. Indeed, no evidence for butchery or gnawing was found and evidence for burning is limited to two unidentified bone fragments, sf. 382, from context 327, the tertiary fill of the main ditch, which show singe and scorch marks.

Taxa and body part representation

Cattle and sheep/goat specimens are the most frequently represented of the identified species forming ten and four percent of the assemblage respectively (Figure 1). Horse, pig, red deer, roe deer and fox are also present in much lower proportions, each forming under one percent of the assemblage with the exception of fox, with a contribution of two percent. It is important to recognise that nearly 70% of specimens were unidentified to taxon or broad size class, a result of fragmentation, which has undoubtedly introduced bias by favouring survival of the more robust and dense bones of large mammals such as cattle, and has potentially masked evidence for greater taxonomic diversity. That just five post-cranial bone fragments from the assemblage were identified to other taxa attests to this (Table 1).

Cattle are represented in all but one of the contexts containing animal bone (Table 1) and are represented by all zones of the body (Table 2), with a particular concentration in what appears to be a discrete area in the secondary fill of the main ditch, the deposit recorded in the Special Find Register (unpublished site archive) as “A number of animal bones in this context cluttered at bottom and associated with a dog skull”, which analysis suggests is in fact fox. The deposit comprises loose teeth, mandible, vertebral and limb bone fragments alongside unidentified fragments and the fox assemblage, which may be intrusive. The ‘cluttering’ of this deposit may reflect the deposition of disarticulated material, but has likely been advanced, if not caused by, the attentions of vulpine visitors. A further deposit of a left scapula fragment and two astragali in the secondary silts of a ditch terminal certainly hints at clustered deposits of cattle elements. By contrast, sheep/goat derive predominantly from the tertiary ditch fills and the fill of the Bronze Age recut. The composition of the assemblage, which amounts to 16 loose teeth, three tibia fragments and one metatarsal fragment likely illustrates the effects of taphonomy that favour survival of more robust bones. The latter hypothesis is reinforced by the horse, pig and red deer assemblages that comprise loose teeth only.

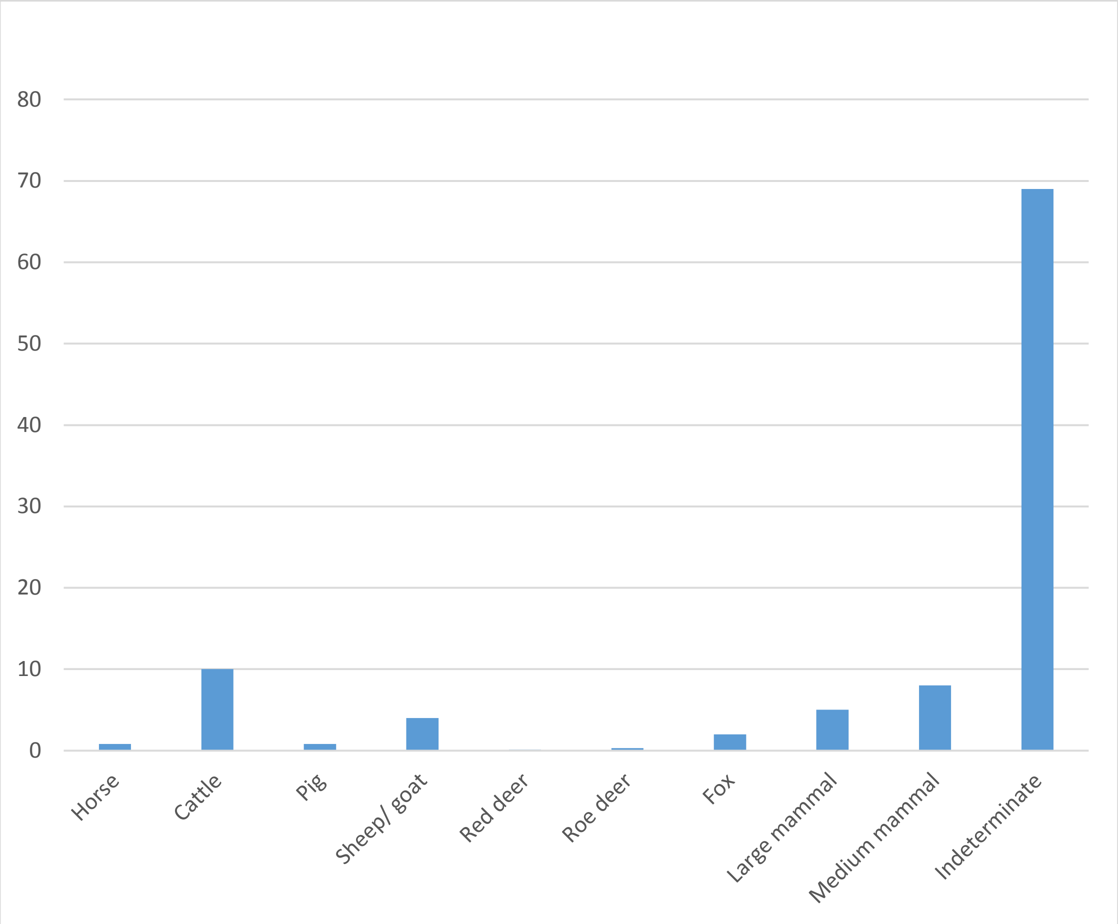


Figure 1: Percentage representation of taxa at site level (NSP)

Table 1: Taxonomic representation per context (NSP)

Context	Horse	Cattle	Pig	Sheep/ goat	Red deer	Roe deer	Fox	Large mammal	Medium mammal	Indeterminate	Total
Primary fill of main ditch					1						1
Secondary fill of main ditch		25	1	1		1	10	13	42	210	303
Tertiary fill of main ditch	1	16	1	7		1		10	3	58	97
Mixed soil below plough soil		4			1			4		36	45
Contemporary soil profile		1								2	3
Plough soil	3	1	1	3					1	27	36
Secondary fill of recut BA ditch		1	1							2	4
Tertiary fill of recut BA ditch		1						1		2	4
Fill of recut BA ditch		3		8						11	22
406										17	17
Total	4	52	4	19	1	2	10	28	46	365	532

Table 2: Body part representation per taxon (NSP), site scale assemblage

Element	Horse	Cattle	Pig	Sheep/goat	Red deer	Roe deer	Fox
Head							
Antler					1		
Cranium							2
Mandible		4					2
Tooth	4	25	4	16	1	1	6
Spine							
Lumbar vertebra		1					
Scapula		8					
Pelvis		2					
Forelimb							
Humerus		2					
Ulna		1					
Metacarpal		1					
Hindlimb							
Tibia		1		3			
Metatarsal				1		1	
Feet							
Calcaneum		4					
Astragalus		3					

MNI

MNI calculations are characteristically low for a long barrow site (Tables 3 and 4). There was a minimum of ten individuals at site level: one horse; three cattle; one pig; one sheep/goat; two red deer; one roe deer; and one fox (Table 3). The discrepancy between totals derived from broad context MNI counts (Table 4) and the site level MNI (Table 3) may be a result of sample aggregation whereby the remains of a single animal was deposited in, or has moved between multiple contexts.

Table 3: MNI site level

Context	Horse	Cattle	Pig	Sheep/ goat	Red deer	Roe deer	Fox	Total
Site level	1	3	1	1	2	1	1	9

Table 4: MNI per context

Context	Horse	Cattle	Pig	Sheep/ goat	Red deer	Roe deer	Fox
Primary fill of main ditch					1		
Secondary fill of main ditch		1	1	1			1
Tertiary fill of main ditch	1	1	1	1		1	
Mixed soil below plough soil		1			1		
Contemporary soil profile		1					
Plough soil	1	1	1	1			
Primary fill of recut BA ditch							
Secondary fill of recut BA ditch		1	1				
Tertiary fill of recut BA ditch		1					
Fill of recut BA ditch		1		1			
Total	**2**	**8**	**4**	**4**	**2**	**1**	**1**

Mortality profile

Fusion data are only available for cattle, and indicate age-at-death estimates ranging from 7-10 months (one of which pertains to the deposit in the secondary fill of the ditch terminal), to an age equivalent with or greater than 36-42 months (Table 5), most specimens deriving from young adult animals with an age at death between early and middle fusing elements (Figure 2). Fusion data for cattle are supported by the results of tooth wear analysis (Table 6), three out of five of which return dates equivalent with, or greater than, 8-30 months, one equivalent with, or greater than, 18-30 months, and one between 30 and 36 months. Wear observed on two loose sheep/goat teeth evidences the presence of older animals, one of 3-4 years and a second equivalent with, or greater than, 6-8 years at death.

Table 5: Age-at-death profiles as indicated by degree of epiphyseal fusion

NSP	Taxon	Bone	Prox	Dist	Age
Early fusing					
1	Cattle	Scapula		Fused	≥ 7-10 months
4	Cattle	Scapula		Fusing	7-10 months
1	Cattle	Humerus		Fused	≥ 12-18 months
Middle fusing					
1	Cattle	Tibia		Unfused	< 24-30 months
1	Cattle	Metapodial		Unfused	< 24-36 months
2	Cattle	Calcaneum	Fused		≥ 36-42 months
Late fusing					
1	Cattle	Vertebra		Unfused	< 84-108 months

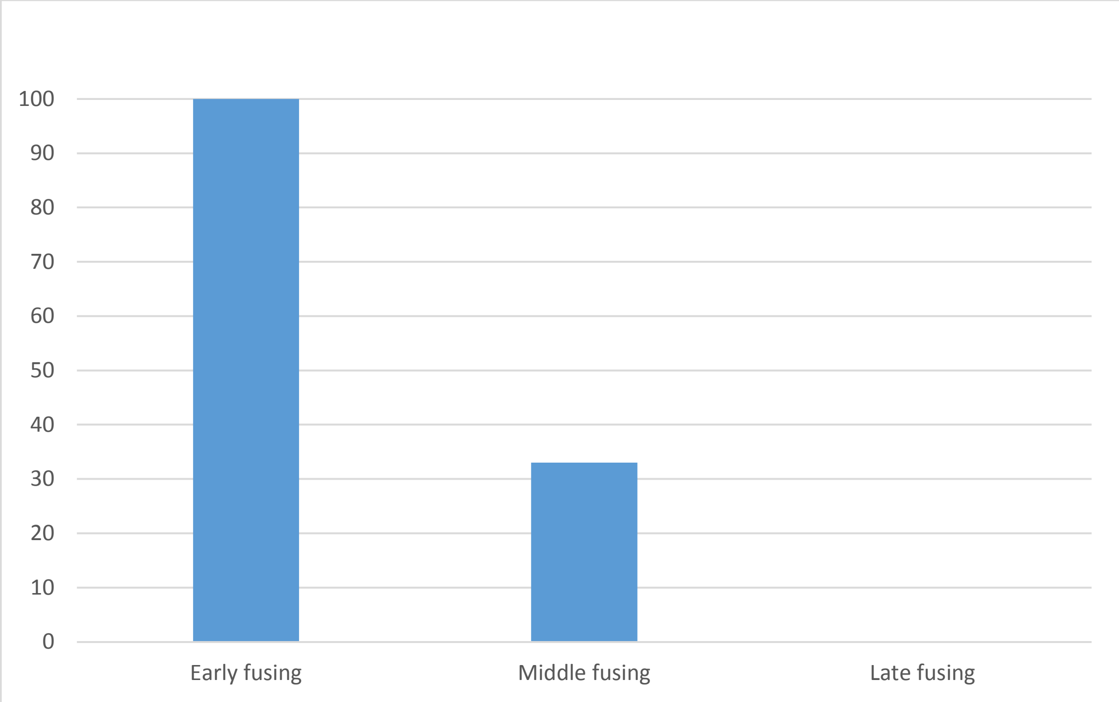


Figure 2: Age-at-death profiles for cattle as indicated by specimens exhibiting full epiphyseal fusion

Table 6: Age-at-death profiles as indicated by tooth wear on loose teeth

Small finds no.	Context	Taxon	Mandibular / loose	Side	dP4	P4	M1	M1/2	M2	M3	Age
8	32	Cattle	Loose	Left					c		≥ 18-30 months
	34	Cattle	Loose	Left				g			≥ 8-30 months
	14	Cattle	Loose	Left				f			≥ 8-30 months
	25	Cattle	Loose	Left				g			≥ 8-30 months
	316	Cattle	Loose	Right						c	30-36 months
	25	Sheep/goat	Loose	Left						f	3-4 years
	277	Sheep/goat	Loose	Left					h		≥ 6-8 years

Sex

The single red deer antler specimen is the only indicator of sex, deriving from a male animal.

Butchery

No evidence of butchery was found; this may be due to high levels of fragmentation and poor surface preservation.

Pathologies

No evidence of pathology was found; this is likely a factor of high levels of fragmentation.

Antler

A single red deer antler tip, sf. 7, was recovered during excavation from weathered material from the ditch sides of the early ditch terminal [40], above the primary fill; it is this specimen that provides the radiocarbon date range for the earliest phase of construction of the barrow structures.

Conclusions

The Netheravon Bake long barrow osseous assemblage represents multiple phases of deposition ranging from the Early Neolithic through to the Middle Bronze Age. The assemblage is poorly preserved, highly fragmented and disturbed, limiting its diagnostic potential. It compares to that of nearby Amesbury 42; its taxonomic range of horse, cattle, pig, sheep/goat, red deer, roe deer and fox, percentage taxonomic distribution and MNI totals are almost identical, the only difference being the absence of human remains at Netheravon Bake. Age-at-death ranges derived from this extremely small sample set suggest the deposition of predominantly young, but adult cattle.

Clustered deposits of mixed cattle bone in secondary ditch contexts, one at a ditch terminus, recalls deposits at other long barrow sites such as Horslip and Fussell's Lodge. However, extreme levels of fragmentation coupled with poor surface preservation, the absence of butchery data, and the subterranean activities of burrowing foxes, mean it is not possible to assert whether these deposits represent butchered bodies – although the fragmentation could result, at least in part, from butchery – whether they were burials of whole or part bodies, or a combination of the two. Osseous deposits from the tertiary fill of the ditch are also dominated by cattle and may represent material eroded from the mound. The limited range and low numbers of specimens from other taxa across all contexts seems likely a factor of taphonomic processes but may also reflect preferential selection for cattle, a pattern observed in long barrow bone assemblages across the region.

* See Appendix 11 for full zooarchaeological dataset

Appendix 5. Woodford G2 long barrow osteological report

Introduction and methods

This report details the analysis of stratified, hand-collected animal bone recovered during excavation at Woodford G2 Neolithic long barrow, Wiltshire. Woodford G2 is situated on the southern slope of a spur of higher ground on Salisbury Plain, five kilometres south of Stonehenge. In 1963, it was subject to total excavation by Major and Mrs Vatcher, in response to plough damage and impending, destructive agricultural activity. Excavation encompassed the entirety if the surviving structure. Unpublished by the excavators, analysis of archive material was undertaken and published by Gingell (1986). Discussion of faunal remains was limited to two sentences, which describe the assemblage as too small to warrant reporting. The inhumation from the ditch was assigned a Late Bronze Age date (Gingell 1986:16), and was analysed by I. W. Cornwall (Gingell 1986: 21). Although recorded as present, the cremations were not analysed.

The assemblage comprises 3464 bone and tooth fragments (NSP). Animal bone was subject to macroscopic examination and identification determined using the skeletal reference collection at the School of Archaeology and Ancient History, University of Leicester. Identification was made to element, side and taxon; where full identification could not be made due to the absence of diagnostic morphological markers, material was assigned to broader categories based on element, size and class. Distinction between sheep and goat remains was attempted using standards published by Boessneck (1969). Elements were recorded using the zoning system detailed by Mahoney (2013); zones were recorded when more than 75% of the zone was present. Age-at-death ranges were assigned according to the epiphyseal fusion criteria published by Reitz and Wing (2008: 72, Table 3.5) for non-human animals. Tooth wear in cattle was recorded using the Grant system (1982) and an age range was assigned using Halstead's age stage descriptors (1985); tooth wear in sheep/goat was documented using Grant (1982) and relative age was established using Payne's age stages (1973; 1987); tooth wear in pig specimens was detailed following the Grant method (1982) and age range determined using stages developed by Hambleton (1999: 64-65) and Halstead (1985). Measurements of specimens were taken following standards established by von den Driesch (1976). Identification of aurochs was facilitated using data published by Wright (2016). The anatomical location and character of burnt remains were recorded following Brickley and McKinley (2004), butchery and gnawing was described. Surface preservation was graded using the scale recommended by Harland *et al.* (2003). All fragments were documented; joining fragments were recorded as a single specimen.

Preservation and taphonomy

The bone assemblage can be characterised as poorly preserved; all specimens were assigned a 'poor' rating "surface flaky or powdery over 50% of specimen", following Harland *et al.* (2003). Significant root damage is evident in many specimens. Typically for Neolithic material recovered from long barrow contexts in the Wessex chalklands, preservation is poor across all periods represented. From the total of 3538 fragments recorded, the NSP totals 3464. Only two percent of elements (excluding loose teeth) were complete, and just 26 per cent could be identified to taxon. The high degree of fragmentation is further demonstrated by the presence of 42 loose teeth, in comparison with just two mandibles – one complete and forming part of an inhumation and the second, a fragmented sheep/goat specimen – containing dentition.

There are marked differences between the human and non-human bone assemblages, which may be the result of differential deposition and preservation. Unlike most of the animal remains, the human bone is deposited in discrete, clearly defined locations within the barrow: disarticulated remains were covered by a flint cairn; two inhumations were identified from the ditch; and two pits each contained the cremated remains of at least one individual. This assemblage includes 2315 specimens that evidence burning, the majority deriving from two pits containing cremated human and animal bone. In Pit 1, the heat appears unevenly distributed; the bones of the head and upper spine are calcined, whereas the bones of the mid-lower spine appear largely unburned, with localised patches of charring; the sacrum is charred. There is variation in the degree of burning to ribs, some fragments are calcined, cracked and warped whilst others are charred. Burning evidenced on fragments of pelvis are likewise varied, which given the robusticity and form of the bone is unsurprising, a factor of the direction of the heat generated by the pyre. The limb bone fragments display a mixture of charring and calcination. All burnt remains from Pit 2 were human apart from a right sheep/goat metatarsal fragment and a right pig tibia fragment. All remains from this pit were burned at a high temperature that caused calcination, warping and cracking to exterior surfaces, with some charred compacta present in the more robust limb bones and in the vertebral bodies. A further eight burnt, unidentified bone fragments, one of which is scorched, were recovered from the mound material.

Table 1: Carnivore gnawing evidence. *denotes the presence of a specimen which may fall within the size range for aurochs; taphonomic factors preclude its measurement

Small finds no.	Context	NSP	Taxon	Element	Side	Zones	Proximal	Distal	Location
107	Baulk B3/C3 mound material approx. 8'11'' E of B3	1	Cattle*	Naviculo-cuboid					Articular surface
44	D3 base of flint layer	1	Large mammal	Unidentified long bone	Indeterminate				Shaft
120	B3/C3 in Turf line over depression	1	Cattle	Metatarsal	Right	1,2,3,4,5,6	Fused		Shaft

Evidence of gnawing is limited to three specimens which show marks suggestive of carnivore gnawing: a cattle/aurochs naviculo-cuboid from the mound material; a long bone fragment from a large mammal from the flint layer of the ditch; and a cattle metatarsal from the turf line (Table 1). The absence of further such evidence may be a factor of exceptionally poor surface preservation of the specimens from all contexts, along with high fragmentation.

Taxa and body part representation

Human remains dominate the assemblage, accounting for 23% (NSP), due to the presence of highly fragmented, cremated remains in pits 1 and 2, and the inhumations of an adult and Middle Bronze Age neonate in the recut ditch, as well as disarticulated remains beneath the flint cairn of the barrow mound. Non-human animals are notable for their comparative scarcity, although this is likely exacerbated by high fragmentation. Domestic taxa account for over four times as many specimens as wild taxa: cattle (1% NSP); horse (0.1% NSP); pig (0.6% NSP); and sheep/goat (0.6% NSP); compared with aurochs (0.03% NSP); red deer (0.2% NSP); roe deer (0.3% NSP) and crow (0.03% NSP) (Table 2). Although the pit assemblages are the largest, the mound and ditch deposits exhibit most diversity. Elements from all zones of the body are represented in the human deposits, but the non-human taxa present a more limited range (Table 3). High meat-yield limb bones are well represented suggesting consumption. This is supported by butchery evidence (see Table 8). Such selective body part representation may also be a consequence of taphonomic factors favouring the preferential survival of the more robust bones of cattle; fragmentation of elements identified to medium mammal but not to taxon account for 22 specimens representing a broader range of body zones.

Table 2: Taxonomic representation by context (NSP). *denotes the presence of a specimen which may fall within the size range for aurochs; taphonomic factors preclude its measurement

Context	**Horse**	**Cattle**	**Pig**	**Sheep/ goat**	**Human**	**Aurochs**	**Red deer**	**Roe deer**	**Crow/ rook**	**Large mml**	**Med mml**	**Small mml**	**Indeterminate**	**Total**
Below old land surface										1				1
Old land surface				3	15								24	42
Mound		11*	1	1	71	1	1			29	10		160	285
Pit							3						3	6
Pit 1				1	222						3		633	859
Pit 2			1	1	357								1089	1448
Ditch: base		2			1					1				4
Ditch: primary silt			2							2			6	10
Ditch: secondary silt		3	7							4			35	49
Ditch: flint layer	5	8	6	5				2		17	9	2	50	104
Ditch: recut		2	2	6	88			5		1	7		378	489
Ditch		5	2	2	57		2	1	1	23	6		11	110
Turf line		2								15			24	41
Plough soil							1							1
No context					1			2		7		1	4	15
Total	**5**	**34**	**21**	**19**	**812**		**7**	**10**	**1**	**100**	**35**	**3**	**2417**	**3464**

The presence of aurochs and cattle/aurochs foot bones in addition to the recovery of cattle teeth, eight of which derive from the mound material is a point of interest. The disarticulated human remains are sealed by a flint cairn. Whilst this may represent a later phase of barrow construction following and overlaying postholes some of which are tentatively interpreted by as a small mortuary building, it recalls the structure of the nearby Fussell's Lodge long barrow (Ashbee 1966). Associated with the flint cairn at Fussell's Lodge, also overlying disarticulated human remains, were the remains of a cattle cranium and articulated pedal bones, interpreted as representing a hide. But whereas the Fussell's Lodge cattle bones were located as discrete deposits, with the skull in-situ, the Woodford specimens are fragmented and lay alongside the south-westernmost extent of the flint cairn. An argument in support of citational practice ((cf. Butler 1993; Jones 2007; 2012) – reference to other practices, groups and locations – is certainly tenable, given the broader structural similarities and the geographic proximity of the two sites, and the presence of aurochs crania in long barrow deposits has precedence, for example, at Knook Barrow (Colt Hoare 1975a [1810]: 83)

MNI

MNI calculations were low (Tables 4 and 5) and are of limited value given the complex, multi-phase nature of both the site and individual contexts. There is a minimum count of 15 individuals at site level: one horse; two cattle; two pigs; one sheep/goat; four humans; one red deer; two roe deer and one corvid (Table 5), but this is likely overly conservative given that it fails to account for different phases of engagement, which span at least four millennia. However, the discrepancy between the site level MNI and counts for each context (Table 4) may be a factor of sample aggregation whereby the remains of a single animal have been deposited in, or have moved between, multiple contexts. At best, it can be asserted that the numbers of animals forming the assemblage can be thought of as low. These findings certainly indicate discrete episodes of deposition in the case of the human remains, if not the remains of the other species present, or for the latter, multiple deposits of body parts representing different episodes of engagement over time.

Table 3: Body part representation per taxon by element (NSP). *denotes the presence of a specimen which may fall within the size range for aurochs; taphonomic factors preclude its measurement

Element	**Horse**	**Cattle**	**Pig**	**Sheep/ goat**	**Human**	**Aurochs**	**Red deer**	**Roe deer**	**Crow/ rook**
Head									
Cranium					187				
Mandible				2	8				
Tooth	5	17	9	12	35		2		
Spine									
Atlas					3				
Axis					1				
Cervical vertebra				1	10				
Thoracic vertebra					7				
Lumbar vertebra			1		17				
Vertebra					26				
Sacrum					4				
Clavicle					3				
Scapula			1		4				
Sternum					1				
Rib					99				
Pelvis					24				
Forelimb									
Humerus		4	2		36			2	1
Radius			1		15			2	
Ulna		1	1		27				
Metacarpal		2		1	10				
Hindlimb									
Femur			2	2	49				
Patella					4				
Tibia			3		32			1	
Fibula					19				
Metatarsal		4	3	1	12		1	2	
Metapodial					9				
Hands/feet									
Carpals					4				
Calcaneum					3		3		
Astragalus					3	1			
Tarsal		2*			3			1	
Phalanx 1		2			19		1	2	
Phalanx 2					7				
Phalanx 3		1			9				
Phalanx					5				

Table 4: MNI per context

Context	**Horse**	**Cattle**	**Pig**	**Sheep/ goat**	**Human**	**Aurochs**	**Red deer**	**Roe deer**	**Crow/ rook**	**Total**
Old land surface				1	1					2
Mound		1	1	1	2	1	1			7
Pit							1			1
Pit 1					1					1
Pit 2					1					1
Ditch: base		1			1					2
Ditch: primary silt			1							1
Ditch: secondary silt		1	1							2
Ditch: flint layer	1	1	1	1				1		5
Ditch: recut		1	1	1	1		1	1		6
Ditch		1	1	1	1		1	1	1	7
Turf line		1								1
Plough soil							1			1
No context					1			1		2
Total	**1**	**7**	**6**	**5**	**9**		**5**	**4**	**1**	**39**

Table 5: MNI site level

Horse	**Cattle**	**Pig**	**Sheep/ goat**	**Human**	**Aurochs**	**Red deer**	**Roe deer**	**Crow/ rook**	**Total**
1	2	2	1	4	1	1	2	1	15

Mortality profile

77 specimens representing cattle, pig and sheep/goat, human, red deer and roe deer evidenced epiphyseal fusion (Table 6); results are inevitably biased because of the small sample size. Apart from a pig femur and three human vertebrae, all late fusing elements were either unfused or not fully fused. The evidence appears to show an emphasis on the deposition of sub-adults (Figure 1), most of which pertain to secondary deposits and the Bronze Age phase in particular. In this respect, the presence of two pig specimens aged below 12 months and 12-18 months, a roe deer radius from an animal aged under 5-8 months (Reitz and Wing 2008: 72, Table 3.5), and the near complete skeleton of a human baby (Figure 2) aged 40 weeks from conception (Scheuer *et al.* 2010) is notable, as are their contexts of recovery. Both the human and roe deer bones were recovered from contexts described by the excavators as 'rabbit holes'. This seems highly unlikely for the human deposit, which has been assigned a radiocarbon date of 1379 cal BC OxA-35176 (95.4% probability) so predates the current estimated date for the introduction of rabbits to British Isles by approximately 2500 years (Sykes and Curl 2010). Further, given the near completeness of the skeleton and the fragility of neonate bones, such a survival in a rabbit warren would be remarkable. This thereby also calls into question the reliability of the contextual description assigned to the roe deer deposit and raises the question of whether the nature of the deposits, their depositional contexts, and practices of deposition were linked, and were particular to the ages of those there interred.

Table 6: Age-at-death profiles as indicated by degree of epiphyseal fusion

NSP	Taxon	Bone	Prox	Dist	Age (f) female (m) male
Early fusing					
1	Cattle	Humerus		Fusing	12-18 months
2	Cattle	Phalanx 1	Fused		≥ 18-24 months
1	Pig	Humerus		Unfused	< 12-18 months
1	Pig	Radius	Unfused		< 12 months
1	Red deer	Phalanx 1	Fused		≥ 17-20 months
1	Roe deer	Humerus		Fused	≥ 12-20 months
2	Roe deer	Phalanx 1	Fused		≥ 17-20 months
1	Roe deer	Radius	Unfused		< 5-8 months
1	Human	Atlas	Unfused	Unfused	≥ 7 f weeks Age estimation of 38-40 weeks
1	Human	Humerus	Unfused	Unfused	≥ 7 f weeks Age estimation of 38-40 weeks
1	Human	Humerus		Unfused	≥ 7 f weeks Age estimation of 38-40 weeks
1	Human	Radius	Unfused	Unfused	≥ 7 f weeks Age estimation of 38-40 weeks
1	Human	Ulna	Unfused	Unfused	≥ 7 f weeks Age estimation of 38-40 weeks
1	Human	Ulna	Unfused	Unfused	≥ 7 f weeks Age estimation of 38-40 weeks
1	Human	Femur	Unfused	Unfused	≥ 7 f weeks Age estimation of 38-40 weeks
1	Human	Femur	Unfused	Unfused	≥ 7 f weeks Age estimation of 38-40 weeks
1	Human	Tibia	Unfused	Unfused	≥ 7 f weeks Age estimation of 38-40 weeks
1	Human	Fibula			≥ 8 f weeks Age estimation of 38-40 weeks
1	Human	Fibula			≥ 8 f weeks Age estimation of 38-40 weeks
1	Human	Metapodial	Unfused	Unfused	Age estimation of 38-40 weeks
1	Human	Metapodial	Unfused	Unfused	Age estimation of 38-40 weeks
1	Human	Phalange	Unfused	Unfused	Age estimation of 38-40 weeks
1	Human	Rib	Unfused	Unfused	≥ 8 f weeks Age estimation of 38-40 weeks
1	Human	Vertebra	Unfused	Unfused	≥ 7 f weeks Age estimation of 38-40 weeks
1	Human	Vertebra	Unfused	Unfused	≥ 7 f weeks Age estimation of 38-40 weeks
Middle fusing					
1	Cattle	Metapodial		Fused	≥ 24-36 months
2	Pig	Metapodial		Fused	≥ 24-27 months
1	Red deer	Calcaneum	Fused		≥ 26-29 months
1	Roe deer	Metapodial		Fused	≥ 26-29 months
2	Human	Humerus		Fused	≥ 12 years (f) ≥ 15 years (m)
1	Human	Humerus	Fused		≥ 16 years (f)
1	Human	Humerus		Fused	≥ 12 years (f)
1	Human	Humerus	Fused	Fused	≥ 16 years (f)
1	Human	Radius	Fused		≥ 13 years (f) ≥ 16 years (m)
1	Human	Radius	Fused		≥ 13 years (f)
1	Human	Ulna	Fused		≥ 12 years (f)
1	Human	Femur	Fused	Fused	≥ 17 years
1	Human	Femur	Unfused		≤ 15 years (f) ≤ 18 years (m)
1	Human	Femur	Unfused		≤ 16 years (f) ≤ 19 years (m)
1	Human	Femur	Fused		≥ 14 years (f)
1	Human	Femur	Fused	Fused	≥ 17 years
1	Human	Tibia	Unfused		≤ 17 years (f) ≤ 18 years (m)
1	Human	Tibia	Unfused		≤ 17 years (f) ≤ 18 years (m)
1	Human	Tibia	Fused	Fused	≥ 17 years (f)
1	Human	Fibula	Fused		≥ 15 years (f)
1	Human	Fibula		Fused	≥ 15 years (f)
1	Human	Proximal phalanx	Fused		14 - 15 years (f) 16-16 years (m)
4	Human	Distal phalanx	Fused		13-14 years (f) 15-16 years (m)
2	Human	Pelvis	Unfused		≤ 11-16 years (f) ≤ 14-18 years (m)
1	Human	Radius		Unfused	≤ 18 years (f) ≤ 19 years (m)
1	Human	Metacarpal 2		Fused	≥ 14 - 15 years (f)
1	Human	Metacarpal 5		Fused	≥ 14 - 15 years (f)
1	Human	Metatarsal 1		Fused	≥ 11-13 years (f)
1	Human	Metatarsal 3		Fused	≥ 11-13 years (f)
1	Human	Metatarsal 5		Fused	≥ 11-13 years (f)
Late fusing					
1	Pig	Femur	Fused		≥ 42 months
1	Pig	Vertebral centrum	Fusing	Unfused	≤ 48-84 months
1	Pig	Tibia	Unfused	Fused	24-42 months
1	Pig	Ulna	Fusing	Unfused	36-42 months
1	Sheep/goat	Vertebral centrum	Unfused	Unfused	< 48-60 months

1	Sheep/goat	Femur		Unfused	< 36-42 months
3	Human	Vertebral centrum	Fused	Fused	≥ 18 years
1	Human	Vertebral centrum	Unfused	Unfused	≤ 21 years
1	Human	Clavicle	Unfused	Fused	≤ 23 years
1	Human	Rib	Unfused		≤ 21 years
2	Human	Sacrum	Unfused		≤ 27 years

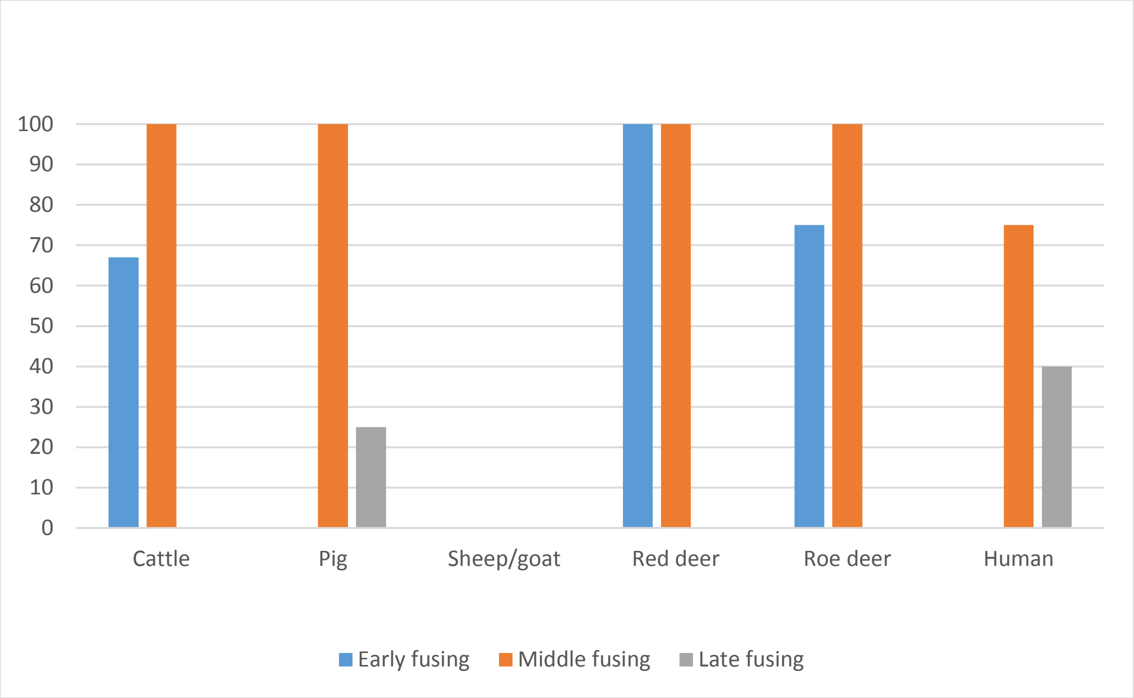


Figure 1: Age-at-death profiles as indicated by specimens exhibiting full epiphyseal fusion

Figure 2: Human baby burial from 'rabbit hole' context in east ditch, sf. 68, courtesy of The Salisbury Museum

Bones comprising the human burial from the recut ditch evidence full fusion, except for the proximal left clavicle, which confirm the presence of a young adult individual aged 17-23 years. Pit 1 contains a human individual aged under 15 years (if female) or 18 years (if male) and Pit II includes a human individual aged 13-15 years (if female) or 15-18 years (if male).

Tooth wear evidence is limited, but supports and develops these profiles further (Table 7). It attests to the inclusion of old cattle in a primary mound context, which may indicate dairying (cf. Copley *et al.* 2005), on-site breeding or natural mortality and is suggestive of an animal that would have had a long biography, potentially well known to those who deposited its remains in the barrow mound. It also confirms the presence of a sheep aged over 8-10 years from a secondary ditch deposit – possibly Romano-British/post-Roman period by association with ceramic evidence) – which too suggests dairying, on-site breeding, natural mortality or exploitation for fibre. The human mandible from inhumation in the recut ditch contains (left side): I1 (joining, broken off at root); I2; C; PM3; PM4; M1; there are no sockets present for M2 and M3 and x-rays show that no tooth is present within the jaw; right side: I1 (joining but broken off at the root); I2 (joining but broken off at the root); C; PM3; PM4; M1; M2; there is no socket present for M3. X-rays show that there is no evidence for the presence of the tooth within the jaw. The incisors and canines exhibit light wear with spots of dentine exposure along occlusal surfaces. The occlusal surfaces of the molars on both sides are flattened.

Table 7: Age-at-death profiles as indicated by tooth wear

Small finds no.	**Peg no.**	**Context**	**Taxon**	**Mandibular/ loose**	**Side**	**P2**	**P3**	**P4**	**M1/2**	**M3**	**Age**
113	B3	Mound material	Cattle	Loose	Right				k		≥ 8-30 months
113	B3	Mound material	Cattle	Loose	Right					h	Old adult
59	C3	On OLS under flints	Sheep/goat	Loose	Left				d		≥ 6 months-2 years
29	D3	□29 Peg D3 Ditch. 1'10'' & just above, in flints	Sheep/goat	Loose	Left					j	≥ 8-10 years
110	D3	RB layers over recut LBA? Ditch	Sheep/goat	Mandibular	Left	u	u	a			≤ 0-2 months
110	D3	RB layers over recut LBA? Ditch	Sheep/goat	Loose	Left				f		≥ 6 months-2 years
110	D3	RB layers over recut LBA? Ditch	Sheep/goat	Loose	Left				d		≥ 6 months-2 years
110	D3	RB layers over recut LBA? Ditch	Sheep/goat	Loose	Right				d		≥ 6 months-2 years

Sex

A male pig is represented by a loose canine and male red deer are represented by the presence of antler. Evidence derived from a fragment of human pelvis and the human mandible suggests that the sex of the inhumation in the ditch recut is female, but given the degree of fusion observed in post-cranial elements (with the exception of the proximal left clavicle), which confirm the presence of a young adult individual, it could be a young male. Findings from the original analysis support the latter assignment; Dr I. W. Cornwall writes that the skeleton is “A young adult male, probably in his early twenties, at most” (Cornwall, cited by Gingell 1986: 21).

Butchery

All butchery evidence derives from the ditch. Most butchered elements identified to species are cattle, with a single pig femur present. The remaining bone evidencing butchery derives from large and medium mammals (Table 8). All elements displaying butchery marks are meat bearing limb bones. The location and nature of marks suggests the division of animal carcasses.

Pathologies

One left cattle metatarsal from the base of the flint layer in the ditch (sf. 39) shows evidence for an ossified haematoma on the proximal shaft (Figure 3). Such lesions are caused by sub-periosteal bruising resulting from a blunt impact trauma (Thomas 2001: 290). Two fragments of human lumbar vertebrae and a fragment of human sacrum from the mound (sf. 121 found alongside Windmill Hill pottery sherds) evidence osteophytes. One lumbar vertebra fragment from the inhumation (sf. 138) has osteophytes at the ventral edge of the inferior articular facets, encroaching on the vertebral foramen. Osteophytes are also present around the edges of faces of the vertebral body. There is asymmetry in the left anterior articular facet, a possible response to destabilisation of the spine. Pitting observed to the faces of vertebral bodies is indicative of degeneration of the intervertebral disk. The second lumbar vertebra evidences osteophytes around the edges of the vertebral body and the anterior face of the vertebral body. The sacral fragment also shows osteophytes around the margins of the face of the vertebral body. The caudal face of the vertebral body of a cervical vertebra and its spinous process show asymmetry, and there is perceptible curvature when articulated with the atlas

Table 8: Butchery evidence

Small finds no.	Other ref. no.	Context	NSP	Taxon	Element	Side	Proximal	Distal	Butchery	Location
9		Chalk silt, ditch	1	Cattle	Humerus	Right		Fusing	Slice	At breakage of shaft, forming the proximal end of the specimen
39	D3	Ditch: base of flint layer	1	Cattle	Radius	Left			Cut	Across proximal shaft, posterior aspect on pathological bone
44	D3	Base of flint layer	1	Cattle	Metatarsal	Right			Chop	Forming distal end of fragment and across shaft
90	D2	Base of dark layer over recut ditch	1	Cattle	Metacarpal	Right	Fused		Chop	Across shaft, forming distal end of specimen
45	D3	Ditch silt	1	Cattle	Humerus	Right			Chop	Across distal shaft, posterior aspect
45	D3	Ditch silt	1	Cattle	Humerus	Left			Chops	Across distal shaft
12	A3	Top chalk silt	1	Pig	Femur	Left			Slice	At anterior aspect of fracture forming proximal end of specimen
19	D4	Flint layer above chalk silt. Below stone-free zone	1	Large mammal	Unidentified	Indeterminate			Chops	Across exterior surfaces
19	D4	Flint layer above chalk silt. Below stone-free zone	1	Large mammal	Unidentified	Indeterminate			Cut	At one edge of fragment
19	D4	Flint layer above chalk silt. Below stone-free zone	1	Large mammal	Unidentified	Indeterminate			Chops	At edges of fragment
44	D3	Base of flint layer	1	Large mammal	Unidentified long bone	Indeterminate			Chops	Across and forming proximal and distal edges of fragment.
44	D3	Base of flint layer	1	Large mammal	Metapodial	Indeterminate			Cuts and chops	Chop across mid-shaft, cuts at distal end and in between distal and mid-shaft
2	D4	Ditch flint layer 1' to2' below modern surface	1	Medium mammal	Unidentified long bone	Right			Chop	Across shaft
2	D4	Ditch flint layer 1' to2' below modern surface	1	Medium mammal	Unidentified long bone	Indeterminate			Chops	Across shaft, forming edges of fragment
44	D3	Base of flint layer	1	Medium mammal	Unidentified long bone	Indeterminate			Chop	Forming one edge of fragment

and axis. Asymmetry was also noted in a thoracic vertebra. The mandible evidences dental enamel hypoplasia in both canines, indicative of physiological stress between the ages of 4 months and 6 years (White and Folkens 2005: 367) when the enamel of the teeth was forming. A thoracic/lumbar vertebra fragment from the cremation deposit in Pit II (sf. 136) shows Schmorl's nodes on the superior face of the vertebral body. Finally, a right human femur fragment (sf. 126) from a context described as 'In section Drain? 4' evidences a depression puncture in the lateral aspect, towards the distal end of the shaft fragment.

Figure 3: Ossified haematoma on the proximal shaft of left cattle metatarsal, sf. 39, courtesy of The Salisbury Museum

Cremation data

Cremation deposits were weighed (Table 9). The weight of material from Pit 1 is less than might be expected for the complete cremated remains for a fully adult female (1615.7 g (McKinley 1993)). When considered alongside the age data, it lends support to an argument for the presence of a sub-adult individual, or may be indicative of a particularly gracile individual, or indeed of material having been removed or missed during excavation. The weight of material from Pit II fits well within the expected range for an adult male, but the age data suggest the presence of an individual of comparable age to Pit I. This may therefore indicate the presence of remains from more than one individual. Indeed, bones from sheep/goat are present in the cremated material of both pits, and pig bone is identified in Pit 2.

Table 9: Sieved cremation weights

Small finds no.	Other ref. no.	Museum description	Context	Total weight	10 mm sieve	5mm sieve	2mm sieve
137	D4	Cremation	Pit I	938g	530g	200g	50g
136	D4	Human bone	Pit II	2375g	1332g	294g	124g

Radiocarbon dates

Two radiocarbon dates have been obtained from the human neonate deposit sf. 68: 1379 cal BC OxA-35176 (95.4% probability) for the human bone and 3428-3120 cal BC OxA-35177 (95.4% probability) for a corvid humerus recovered from the same context. The latter is presumably residual.

Antler

The total number of antler fragments comes to 81, forming 55 (NSP), 18% of which derives from the mound and is largely fragmentary. It has not been possible to determine whether the antler included in the deposits derives from then-living or dead animals.

Conclusions

This assemblage comprises material ranging in date from the Early-Middle Neolithic to the Romano-British/post-Roman periods – the radiocarbon date from the human neonate burial confirming human-animal engagement with the site in the Middle Bronze Age, two millennia after the barrow was constructed – although this may of course include periods of inactivity. Surface preservation of the bone is poor with high rates of fragmentation, abrasion and root damage (see Figure 3), all of which hold potential to limit diagnostic potential. Despite this, there is evidence for butchery in the non-human bone assemblage, which, when coupled with element representation, certainly lends support to an argument for the inclusion of non-human fauna that were butchered for consumption.

The assemblage is dominated by human remains with a significantly lower percentage of bone from non-human animals. The main domestic taxa are present. Cattle are represented by elements deriving from the full range of body zones, with emphasis on the limb bones. Sheep/goat and pig are represented by fewer numbers. Aurochs, red deer and roe deer bones are also present. The Neolithic deposits comprise predominantly disarticulated, fragmentary adult sized human remains, cattle teeth and two pedal bones, one of which has been identified as aurochs, recalling the material composition of the Fussell's Lodge bone assemblage, in which it is possible to argue for the expression of close, meaningful relationships between the humans and cattle. The evidence from Woodford G2 is more ambiguous; the presence of aurochs is intriguing, raising questions as to the existence and nature of perceived differences and similarities between domestic cattle and aurochs to those who participated in the mound's construction, but nonetheless links humans with bovids in particular. The presence of ten cattle teeth, most of which are mandibular and seven of which derive from the same context, infers the deposition of at least one complete mandible in an area of the barrow structure from which human remains were also recovered. This contrasts with sheep/goat and pig, which are each represented by a single bone in this context, neither deriving from the skull.

There is a strong focus on the deposition of young animals – human and non-human – in secondary contexts, alongside a few old, and potentially known non-human individuals. The data indicate that few individuals comprise the assemblage, although this is based on MNI calculations that are problematic and should be treated with a degree of caution. Whilst remaining mindful of this caveat, the evidence suggests that the site would at times have been an intensely emotionally charged locale; the processes involved and that led to the deposition of these individuals in the barrow structures would have articulated and given material expression to the emotions bound up in their passing, created memories and thereby, a sense of the past. Indeed, the Middle Bronze Age inhumation, along with the inhumation in the recut ditch and the cremations in the two pits suggest that the Neolithic barrow was understood as a pre-existing and suitable site for the deposition of the dead. Whether knowledge of the barrow's Neolithic composition was known or suspected is a point of conjecture, but based on the evidence, it seems feasible that there would have been a funerary association.

There is a definite focus on the deposition of the human dead at Woodford G2, both in terms of the quantity of material forming the assemblages as well as the modes of their treatment and deposition, which differ markedly from the treatment of the non-human animals across all periods represented. It is only in the human assemblage that evidence for full inhumation and cremation of whole bodies can be identified, and only the non-human assemblage that evidences butchery. The relationships presenced could therefore be read as exploitative, indicative of anthropocentric world views in which the human dead, and human interest more broadly, are accorded centrality. However, the presence and nature of the cattle remains in the Neolithic deposits and the young in the Bronze Age layers linger as an insistent, nagging doubt, hinting that this story is more complex and serving as a reminder that engagement with standard analytical approaches that actively seek out evidence for exploitation are likely a self-fulfilling prophecy.

* See Appendix 11 for full zooarchaeological dataset

Appendix 6. Cold Kitchen Hill long barrow (Kingston Deverill G1) zooarchaeological report

Introduction and methods

This report details the reanalysis of the surviving and documented hand-collected osteological material recovered during the 1964 excavation at Cold Kitchen Hill Neolithic long barrow, Wiltshire by Major and Mrs Vatcher. Excavation encompassed the entirety if the surviving structure, which had been severely plough damaged (Harding 1986: 7). Unpublished by the excavators, analysis of archive material was undertaken and published by Harding (1986); discussion of faunal remains was limited to the antler specimens.

The assemblage comprises 90 bone and tooth fragments, forming 80 specimens (NSP) (although see below), and a further 69 antler fragments forming 57 specimens (NSP). Its earliest phase is identified as falling within a broadly Neolithic date (Pollard 1993: 133; 2008: 45), with pottery evidence suggesting later phases of activity in the Bronze Age, Romano-British and post-Medieval periods. Surviving bone was subject to macroscopic examination and identification determined using the skeletal reference collection at the School of Archaeology and Ancient History, University of Leicester. Identification was made to element, side and taxon; where full identification could not be made due to the absence of diagnostic morphological markers, material was assigned to broader categories on the basis of element, size and class. Elements were recorded using the zoning system detailed by Mahoney (2013), zones being recorded when more than 75% of the zone was present. Age-at-death ranges were assigned according to the epiphyseal fusion criteria published by Reitz and Wing (2008: 72, Table 3.5). Surface preservation was graded using the scale recommended by Harland *et al.* (2003). All fragments measuring over 10 mm were documented; joining fragments were recorded as a single specimen. The limited quantity and incompleteness of evidence precluded further analysis and measurement of specimens.

Preservation and taphonomy

Post-excavation taphonomic processes have had a profound influence on this assemblage. Antler, pelvis fragments, two loose teeth and a small number of fragmentary scapulae are the only surviving elements of the animal bone assemblage; as a consequence, absent data have been derived from documentary sources and synthesised with the results of the reanalysis. The documentary data provide limited information, which inevitably influences and restricts analytical and diagnostic potential. Only material where the quantities observed are clearly identifiable have been included in quantitative analyses. In many cases, the presence of bones is logged in the site records book, but quantities and identifications are absent. The skeletons of what are listed as a wolf or dog sf. 178, and a (highly dubious) jackal[20] sf. 131 – which in fact appear to refer to the same deposit on the basis of coordinates – are recorded but the number of bones and identity of elements are missing, meaning that these have not been included in quantitative analysis. Bearing this in mind, cattle are the only species positively represented in the bone assemblage, with the presence of the axial elements of a partially articulated cattle skeleton at the base of the north ditch, bones identified using photographic evidence from the archive (Figure 1). The high proportion of unidentified remains is a consequence of working from records that document the presence but not the identities of osseous specimens.

With the exception of one of the loose teeth, the surviving assemblage of 17 bone specimens exhibits poor preservation, with high levels of surface degradation further limiting the potential for identification of other forms of surface modification. Root damage was also

Figure 1: Archive image of cattle bone and antler deposit at the base of the north ditch, with permission © Wiltshire Museum, Devizes

[20] The range of modern species of Jackal extend across southern and sub-Saharan Africa, south-eastern Europe and south western Asia.

observed on six specimens. All surviving elements were fragmentary, excepting the aforementioned tooth, a cattle canine. No evidence of butchery, burning or gnawing was observed.

Taxa and body part representation

Cattle are the only species represented in quantifiable terms, resulting in a skewed portrayal of taxonomic diversity in what is an already problematic and biased sample (Figure 2). The presence of skeleton(s) of a wolf/dog/suspect jackal are recorded and represented (as canid), but cannot be quantified. Pollard (1993) notes an association between the canid, antlers and cattle bones, which he describes as 'encircling the skeleton' (Pollard 1993: 132), but further detail as to the numbers and body parts represented were absent from the archive.

All zones of the body are represented in the cattle ditch deposit, with the exception of the high meat-yield bones of the limb, the only other identified cattle elements being two halves of a cattle mandible associated with the canid deposit (sf. 131/178), a rib fragment from the secondary silting of the north ditch and a scapula fragment from an unidentified context (Figure 3). Whilst the absent limb bones may have been deposited in other locales within the barrow structure but not identified by the excavators, their absence within the context of this deposit is significant and suggestive of deliberate, meaningful removal and possible consumption. It is notable that this and the other deposit(s) recorded as complete or near complete skeletons all derive from the base of the north ditch. This stands in stark contrast with the apparently low numbers of specimens, most of which were unidentified, from the other contexts (Table 1).

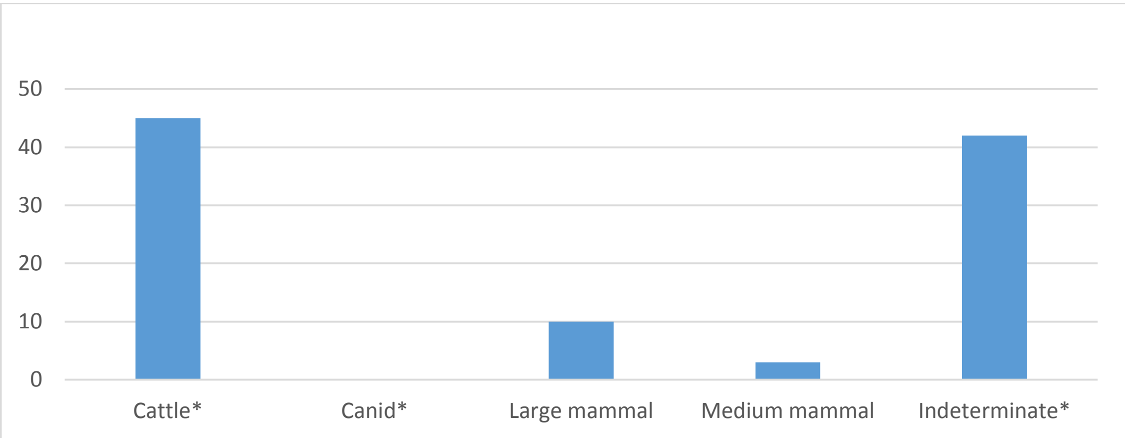


Figure 2: Percentage representation of taxa at site level (NSP) * denotes presence of an additional unknown number of specimens noted in documentary sources as present

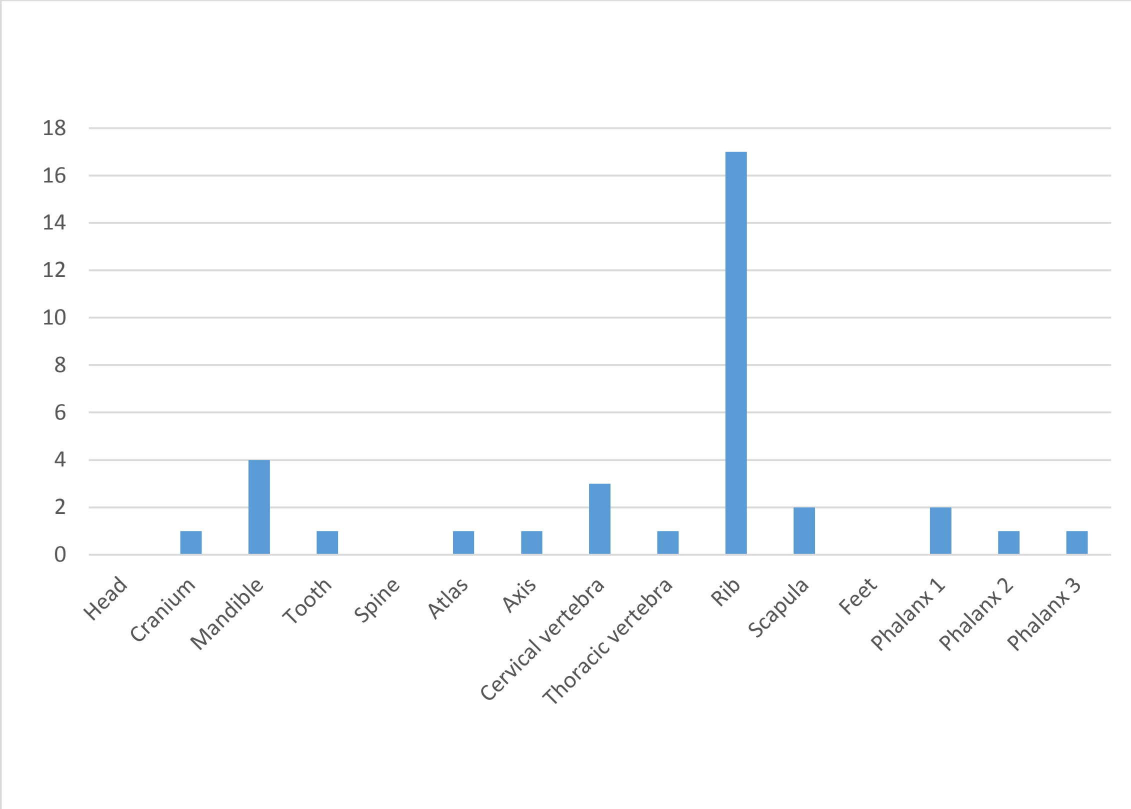


Figure 3: Body part representation for cattle (NSP), site scale assemblage

Table 1: Taxonomic representation per context (NSP). * denotes presence of an additional unknown number of specimens recorded as present in documentary sources

Context	**Cattle**	**Canid**	**Large mammal**	**Medium mammal**	**Indeterminate**	**Total**
North ditch base	30*	*			4	34
Primary fill of north ditch	2					2
Secondary fill of north ditch	1				1	2
Secondary fill of north ditch, flint/soil layer					2	2
North ditch, flint layer					1	1
North ditch, turf layer			2	2	5	9
North ditch	1					1
South ditch base					1	1
Secondary fill of south ditch					5*	5
Secondary fill of south ditch, flint/soil layer					7*	7
South ditch, rainwashed silt					1	1
Post hole	1*				4	5
Hole in chalk					1	1
No context	2		6		1*	9
Total	**34**			**8**	**2**	**80**

MNI

MNI calculations are low; there is a minimum number of three individuals at site level: two cattle; and one canid. The evidence for two cattle is provided by two right scapulae fragments, one deriving from the ditch base deposit, but the other from an unidentified context.

Mortality profile

A single cattle scapula provides the only evidence for age at death, returning a range of above 7-10 months.

Sex

The red deer antler specimens (see below) are the only indicator of sex, and must derive from a male animal/animals.

Butchery

No evidence of butchery was found in the bone assemblage; this is likely due to the absence of artefactual/ documentary evidence, and poor surface preservation of extant specimens.

Pathologies

No evidence of pathology was found.

Antler

In contrast to the bone assemblage, the antler assemblage largely survives with a total of 57 specimens. This material derives from seven identifiable contexts within the barrow structure, with sections described by the excavators as tools from both primary and secondary ditch contexts, and red deer being the only species positively identified (Table 2). There is ample evidence for antler working including DZSWS.1985.183.27 showing 'groove and splinter' working (Figure 4); and DZSWS.1985.183.1 with a perforation to the distal end of a tine (Figure 5).

Table 2: Species representation by antler per context (NSP). * denotes presence of an additional unknown number of specimens noted in documentary sources as present.

Context	**Red deer**	**Indeterminate**	**Total**
North ditch base	4	1*	5
Primary fill of north ditch		5	5
North ditch	8		8
South ditch base	2		2
Primary fill of south ditch	1		1
Secondary fill of south ditch	4	19	23
Secondary fill of south ditch, flint/soil layer	8		8
No context	2	3*	5
Total	**30**	**28**	**57**

Figure 4: Archive image showing 'groove and splinter' working (DZSWS.1985.183.27), with permission © Wiltshire Museum, Devizes

Figure 5: Antler specimen DZSWS.1985.183.1 showing perforation at the distal end of a tine, with permission © Wiltshire Museum, Devizes

Conclusions

Post-excavation taphonomic processes have shaped, and arguably define this assemblage, limiting both the quality and quantity of usable zooarchaeological data. It is, however, important to recognise and reflect upon the reality of archaeological practice – and archives in particular – and the degree to which any archaeological intervention can (or rather, and perhaps more accurately, cannot) capture a complete, unbiased sample, and rather than bemoaning the inherent problems, make the most of what survives. In this spirit, what emerges from the analysis of this assemblage is a focus on discrete loci of depositional activity, and especially the deliberate deposition of associated bone groups (Morris 2011) of the cattle with antlers, and canid with antlers and cattle mandible. The arrangement of the cranium, mandibles and partial articulation of the cattle remains suggest that elements of the body had been separated and removed, but that it must have been deposited in a partially fleshed state, which Pollard asserts is suggestive of feasting (Pollard 1993: 132). Whilst this remains a robust interpretation, the presence of the antlers adds another dimension to this assemblage, referencing and drawing parallels with the canid deposit and thereby troubling a straightforward explanation based on feasting/consumption activity. Indeed, the apparently selective deposition of shed antler collected from living animals at this site would seem to be significant, marking out the practices presenced as distinct.

Antler certainly materialises multiple temporal rhythms, drawing associations between the times of year that antler is grown, utilised and shed and the timing of the cattle deposit. The combative role that antler plays for male deer in the assertion of sexual dominance and reproductive success could be important, identifying or conversely reassigning the sex or identity of the cattle and canid remains, or maybe the behavioural traits in the once living animals. What can be asserted with some confidence is that at the time the deposits were placed at the base of the ditch, the dry, bony materiality of the antler would have appeared in sharp contrast against the bloodied cattle remains. Although the state of articulation of the canid goes undocumented, the suggestion of completeness hints at the presence of soft tissues at the time of deposition, again heightening the contrast between fleshed and skeletonised bodies. The capacity for growth and shedding of bony substance that materialises in other species only through death and decomposition sets male deer apart. As animals whose bodies are manifest of such a transformative cycle that transcends the normative processes of life, death and decay their slaughter may have been proscribed, at least at a local scale and could account for the presence of only shed antler and the possible absence of butchered deer bones (although the latter is inevitably contingent upon the partial dataset).

* See Appendix 11 for full zooarchaeological dataset

Appendix 7. Horslip (Windmill Hill long barrow) osteological report

Introduction and methods

This report details the analysis of stratified, hand-collected animal bone recovered during excavation at Horslip, or Windmill Hill Neolithic long barrow, Wiltshire in 1959 by Ashbee and Smith (Ashbee *et al.* 1979: 207-228) and subsequently deposited with and curated by The Alexander Keiller Museum, Avebury. The bone is stored in its original packing, replete with contextual information recorded by the excavators. The extant assemblage is significantly larger than the excavation report or finds book records suggest.

The assemblage comprises 2125 bone and tooth fragments, which form 2107 specimens (NSP). Macroscopic examination was conducted and identifications made through consultation of the skeletal reference collection at the School of Archaeology and Ancient History, University of Leicester. Identification was made to element, side and taxon; where full identification could not be made due to the absence of diagnostic morphological markers, material was assigned to broader categories on the basis of element, size and class. Distinction between sheep and goat remains was attempted using standards published by Boessneck (1969). Elements were recorded using the zoning system detailed by Mahoney (2013), zones being recorded when more than 75% of the zone was present. Age-at-death ranges were assigned according to the degree of epiphyseal fusion using criteria published by Reitz and Wing (2008: 72, Table 3.5), and by and through analysis of wear on mandibular dentition. Tooth wear in cattle was recorded using the Grant system (1982) and an age range was assigned using Halstead's age stage descriptors (1985) and stages developed by Hambleton (1999: 64-65). Measurements of specimens were taken following standards established by von den Driesch (1976). The anatomical location and character of burning, butchery and gnawing were recorded and described. Surface preservation was graded using the scale recommended by Harland *et al.* (2003). All fragments measuring over 10 mm were documented; joining fragments were recorded as a single specimen.

Preservation and taphonomy

The extant assemblage is significantly larger than the excavation report and finds book records suggest and the osseous assemblage does not correlate well with data presented in the published report. Higham and Higgs (1979: 225) note the presence of a partial cranium and maxilla of an aurochs from the primary ditch context, which appears absent from the archive and is not mentioned in Ashbee *et al.*'s general discussion of the site. The surviving assemblage exhibits exceptionally high levels of fragmentation, with under one percent of elements complete (excluding loose teeth) and only one mandible surviving with in-situ dentition, in comparison with 65 loose teeth. This inhibits diagnostic potential; it has been possible to identify just 11% of specimens to taxon and 23% to taxon and size, and is further compounded by high levels of surface abrasion with 92% of specimens judged to fall within the 'poor' category descriptor, the 'surface flaky or powdery over 50% of specimen' (Harland *et al.*2003). Weathering affects 20% of the assemblage. Taphonomic factors have undoubtedly restricted identification of all but the coarsest grain surface modifications, so although butchery marks are observable in 23 specimens, it seems probable that more subtle evidence will have been obscured.

Burning is evidenced in 35 specimens all of which derive from the secondary ditch fill, with the exception of one for which the context is uncertain. All fragments that derive from the top six inches of the layer are charred black, with more variation (singeing and calcination) from other contexts (Table 1). With the exception of small finds nos. 114 and 115, these specimens would seem to be isolated, the result of secondary deposition or chance inclusions. Gnawing is limited to two large mammal specimens unidentifiable to taxon or element deriving from the plough soil (Table 2).

Table 1: Burning evidence

Record no.	Small finds no.	Layer no.	Context	NSP	Taxon	Element	Burning	Location
79			Buried soil 2	1	Unidentified	Unidentified	Charred	Entire surface
123	45	4	Buried soil 2	1	Unidentified	Unidentified	Calcined; charred	Calcined at one end of fragment, surface of other end unburned; inner centrum charred
261	121	4	Top 6'' of layer	1	Unidentified	Unidentified	Charred	Entirety of fragment
	112	4	B. East. Buried soil	1	Unidentified	Unidentified	Charred	Burnt. Grey with line of charring across centre
	114	4	B. East. Buried soil	5	Unidentified	Unidentified	Charred; calcined	Internal surfaces charred. One fragment calcined on exterior surface
	115	4	B. East. Buried soil	8	Unidentified	Unidentified	Charred; calcined	Internal surfaces charred. Calcined and cracked on exterior surfaces
	125	4	B. West. Ditch end. Buried soil 2	1	Unidentified	Unidentified	Singed	Band running across fragment
	172	4	B. East. Buried soil	1	Unidentified	Unidentified	Singed	Half of fragment
Unmarked no.2		4	B. East. Buried soil 1. Top 6 inches of layer	1	Unidentified	Unidentified	Burnt	Entirety of fragment
		4	B. East. Top 6 inches	14	Unidentified	Unidentified	Burnt	Entirety of fragments
	41		Cutting C west	1	Unidentified	Indeterminate	Scorch	Over one surface of fragment

Table 2: Gnawing evidence

Small finds no.	Layer no.	Context	NSP	Taxon	Element	Side	Gnawing	Location
	1	Plough soil	1	Large mammal	Unidentified	Indeterminate	Carnivore	Edge of fragment
	1	Plough soil	1	Large mammal	Unidentified		Carnivore	Edge of fragment

Taxa and body part representation

Despite preservation issues, 11 taxa were identified in the extant assemblage: horse; cattle; pig; sheep/ goat; dog; human; red deer; roe deer; badger; hare; and oyster, to which aurochs is added on the basis of a note in the excavation report although the relevant specimens are absent from the archive (Higham and Higgs 1979: 225). Cattle remains dominate, forming 27% of the assemblage (Figure 1), the majority deriving from primary and secondary ditch contexts (layers 5 and 4 respectively) as well as the plough soil (Table 3), which likely includes ploughed out mound material[21] One cattle specimen, sf. 130, an unfused left distal radius fragment from the secondary ditch fill falls within the size range of both large domestic cattle and small aurochs (Wright 2016). Sheep/goat is the only other domestic species identified from primary contexts, the others being an isolated and seemingly residual hare bone, and nine badger specimens which may well be intrusive. Secondary ditch contexts provide the most diverse assemblage, with the standard suite of domesticates represented, alongside a single human specimen – the only one from this site – in the form of a detached femur head, five red deer bones and one roe deer metatarsal fragment. These contexts are also dominated by cattle and to a lesser extent by pig. Horse and oyster are represented in the plough soil along with cattle, pig and sheep/goat; horse remains are also present in tertiary contexts of the ditch fill. The near absence of human bone in this long barrow osseous assemblage draws comparison with the Beckhampton Road and South Street long barrow assemblages, both within four kilometres of the site.

Poor surface preservation coupled with high levels of fragmentation favours the survival of robust cattle bones over the more fragile bones of the smaller species, introducing potential for bias that may exaggerate ratios. Indeed, body part representation confirms that teeth, the denser cubic elements and limb bones account for the majority of the smaller mammal elements represented (Table 4), although the latter two could also reflect selection for high meat-yield limb bones. However, it remains that cattle are represented by elements from all

[21] Original layer numbers recorded with the artefactual evidence in the archive do not accord with the simplified and reversed layering system published in the excavation report and cannot be unproblematically transcribed. The archive layering system is therefore used in this report, layer 5 representing primary fill, layer 4 secondary fill, layers 3 and 2 tertiary fill, and layer 1 plough soil.

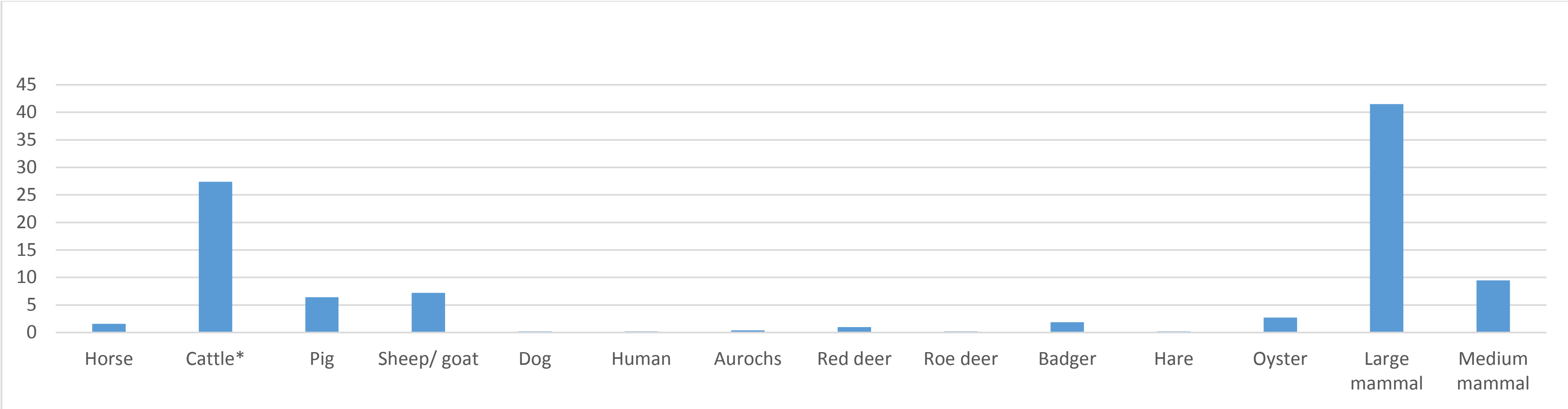


Figure 1: Percentage taxonomic representation at site level (NSP). * denotes the inclusion in this category of sf. 130 which falls within the size range of both large domestic cattle and small aurochs

Table 3: Taxonomic representation per context (NSP). * denotes the inclusion in this category of sf. 130 which falls within the size range of both large domestic cattle and small aurochs

Context	**Horse**	**Cattle***	**Pig**	**Sheep/ goat**	**Dog**	**Human**	**Aurochs**	**Red deer**	**Roe deer**	**Badger**	**Hare**	**Oyster**	**Large mammal**	**Medium mammal**	**Indeterminate**	**Total**
Plough soil	2	25	1	25								13	68	7	40	181
Mound		1													1	2
Pit			1												1	2
Stone hole		1		1											5	7
Z feature															8	8
Ditch (total)	6	106	29	9	1	1		5	1	9	1		134	39	1385	1726
Ditch: layer 2	3	5											5	4	22	39
Ditch: layer 3	3												20		32	55
Ditch: layer 4		80*	28	7	1	1		5	1				105	18	1138	1384
Ditch: layer 5		21		2			2			9	1		1	1	121	156
No layer			1										3	16	72	92
Total	**8**	**133***	**31**	**35**	**1**	**1**	**2**	**5**	**1**	**9**	**1**	**13**	**202**	**46**	**1440**	**1928**

zones of the body in both secondary ditch and plough soil deposits, and a cattle second phalanx is the only identifiable osseous material surviving from stratified mound contexts.

Poor surface preservation coupled with high levels of fragmentation favours the survival of robust cattle bones over the more fragile bones of the smaller species, introducing potential for bias that may exaggerate ratios. Indeed, body part representation confirms that teeth, the denser cubic elements and limb bones account for the majority of the smaller mammal elements represented (Table 4), although the latter two could also reflect selection for high meat-yield limb bones. However, it remains that cattle are represented by elements from all zones of the body in both secondary ditch and plough soil deposits, and a cattle second phalanx is the only identifiable osseous material surviving from stratified mound contexts. This evidence may mark out relationships between humans and cattle that differ from the relationships between humans and the other species whose remains comprise the assemblage, thereby according with findings from other long barrow sites, particularly Beckhampton Road and Fussell's Lodge. Certainly, the nature of the cattle primary ditch deposits formed by cranial and front limb bone fragments, the former evidencing butchery marks suggestive of skinning, supports this assertion as an important point of difference and will be discussed further below. The deposition of cattle cranial material (sf. 95) comprising a large portion of frontal with the horns attached (Figure 2) along with loose dentation and maxilla fragments in the secondary ditch fill would seem to suggest that the significance of cattle persisted through time.

MNI

MNI counts for primary and secondary contexts are low, which accords with other long barrow assemblages (Tables 5 and 6), with a minimum of one horse; five cattle; two pig; four sheep/goat; one dog; one human; one aurochs; one red deer; one roe deer; one badger; and one hare at site level (Table 6). There is discrepancy between the site level MNI and counts for each context (Table 5), which may be a consequence of sample aggregation whereby the remains of a single animal have been deposited in, or have moved between multiple contexts. The material from the plough soil and tertiary ditch fills, which at least partially derives from the ploughed-out mound material, has a bearing on the horse and sheep/goat counts but has minimal impact upon numbers for other species, the majority of which derive from the primary and secondary ditch fills.

Table 4: Body part representation per taxon by zone, site scale assemblage. * denotes the inclusion of sf. 130 which falls within the size range of both large domestic cattle and small aurochs

Element	Horse	Cattle*	Pig	Sheep/ goat	Dog	Human	Aurochs	Red deer	Roe deer	Badger
Head										
Cranium		38					1			
Horn core		3		4						
Mandible		4		1			1			1
Tooth	8	28	23		1			1		
Spine										
Axis		3								
Cervical vertebra		2								
Thoracic vertebra		4								
Lumbar vertebra		5								
Scapula		3	3							
Pelvis		2	2	1						
Forelimb										
Humerus		6						1		
Radius		3*	2	3						
Ulna		3	2							
Metacarpal		5		2						
Hindlimb										
Femur		2				1				
Tibia		1	1	5				2		
Metatarsal		9		5					1	
Metapodial		2						1		
Feet										
Astragalus		6		1						
Calcaneum		1		1						
Carpal		2								
Phalanx 1		5	1	4						
Phalanx 2		3								

Table 5: MNI per context. * denotes the inclusion in this category of sf. 130 which falls within the size range of both large domestic cattle and small aurochs

Context	Horse	Cattle*	Pig	Sheep/ goat	Dog	Human	Aurochs	Red deer	Roe deer	Badger	Hare	Oyster
Plough soil	1	1	1	4								3
Mound		1										
Pit			1									
Stone hole		1		1								
Ditch (total)	2	6	2	2	1	1		1	1	1	1	
Ditch: layer 2	1	1										
Ditch: layer 3	1											
Ditch: layer 4		4*	2	1	1	1		1	1			
Ditch: layer 5		1		1			1			1	1	
Total	**3**	**9**	**4**	**7**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**3**

Table 6: MNI site level. * denotes the inclusion in this category of sf. 130 which falls within the size range of both large domestic cattle and small aurochs

Horse	Cattle*	Pig	Sheep/ goat	Dog	Human	Aurochs	Red deer	Roe deer	Badger	Hare	Oyster
1	5	2	4	1	1	1	1	1	1	1	3

Figure 2: Cattle frontal sf. 95 from secondary ditch deposits, with permission, Alexander Keiller Museum

Mortality profile

Fusion data are available for just two percent of the assemblage and evidences a broad range of age-at-death estimates in all species (Table 7). For cattle, this range encompasses the remains of an individual aged under 12-18 months from a specimen deriving from plough soil deposits, through to an individual or individuals aged between seven and nine years from secondary ditch and unidentified context deposits. An age at death of between 12-18 months has been assigned to cattle humerus sf. 104, recovered in association with cattle skull sf. 111 that evidences skinning. Pig fusion data reveal a more discrete range, with a single exception, ages fall between 12 and 42 months; most specimens derive from secondary ditch deposits. All fusion data for sheep/goat were recovered from plough soil contexts, with the exception of three specimens; two from ditch contexts evidenced fusion, whilst the remaining specimen from the stone hole context was unfused indicating an age at death of below 6-16 months. With the exception of this specimen, all early and middle fusing elements showed full fusion (Figure 3), suggesting that most of the animals here deposited lived to maturity, with one animal returning an age-at-death range equal to or over 33-84 months. Both red deer specimens evidencing fusion derive from stratified ditch contexts and indicate age-at-death ranges of between, and at or above 20-23 months.

Tooth wear evidence supports the age-at-death estimates for cattle and pig provided by the fusion data (Table 8). A sheep/goat mandible from a foetal animal adds to the range of ages suggested by the fusion evidence and was likewise recovered from the plough soils deposits. The broad range of ages evidenced by the cattle remains suggests that cattle were bred and provided meat as well as secondary products such as dairy, hides, and dung in both primary and secondary phases of deposition. Pigs, by contrast, would appear to have been kept and slaughtered for meat, given the much more limited age-at-death ranges suggested by the evidence. Ages for sheep/goat hold much more limited potential for developing meaningful statements regarding the nature of their relationships with humans, due to their depositional contexts. The unfused metapodial fragment from the primary ditch context is suggestive of breeding but remains an isolated find; the remaining specimens derive from unstratified plough soil deposits and may therefore represent relationships that occurred at any point from the construction of the mound until the time of excavation.

Table 7: Age-at-death profiles as indicated by degree of epiphyseal fusion. * denotes the inclusion in this category of sf. 130 which falls within the size range of both large domestic cattle and small aurochs

NSP	Taxon	Bone	Prox	Dist	Age
Early fusing					
2	Cattle	Scapula		Fused	≥ 7-10 months
1	Cattle	Humerus		Unfused	< 12-18 months
3	Cattle	Humerus		Fusing	12-18 months
4	Cattle	Phalanx 1	Fused	Fused	≥ 18-24 months
1	Cattle	Phalanx 1	Fused	Fused	≥ 18-24 months
2	Cattle	Phalanx 2	Fused	Fused	≥ 18-24 months
2	Pig	Scapula		Unfused	< 12 months
1	Pig	Pelvis	Fused		≥ 12 months
1	Pig	Phalanx 1	Fused		≥ 24 months
2	Sheep	Phalanx 1	Fused	Fused	≥ 6-16 months
2	Sheep/goat	Metapodial		Fused	≥ 6-16 months
1	Sheep/goat	Metapodial		Unfused	< 6-16 months
4	Sheep/goat	Phalanx 1	Fused	Fused	≥ 6-16 months
1	Sheep/goat	Humerus		Fused	≥ 3-13 months
Middle fusing					
1	Cattle	Metapodial		Fused	≥ 24-36 months
2	Cattle	Metapodial		Unfused	< 24-36 months
1	Sheep/goat	Tibia		Fused	≥ 15-24 months
1	Red deer	Tibia		Fusing	20-23 months
1	Red deer	Tibia		Fused	≥ 20-23 months
Late fusing					
1	Cattle	Vertebra	Fused		≥ 84-108 months
1	Cattle	Vertebra	Fused	Fused	≥ 84-108 months
4	Cattle	Vertebra		Unfused	< 84-108 months
2	Cattle	Radius		Fused	≥ 42-48 months
1	Cattle	Radius*		Unfused	≤ 42-48 months
1	Cattle	Ulna	Unfused		< 42-48 months
1	Pig	Radius	Fused	Unfused	≥ 12 < 42 months
1	Pig	Radius		Unfused	< 42 months
2	Pig	Ulna		Unfused	< 36-42 months
1	Pig	Tibia	Unfused		<42 months
2	Sheep	Femur		Fusing	36-42 months
1	Sheep/goat	Radius	Fused	Fused	≥ 33-84 months

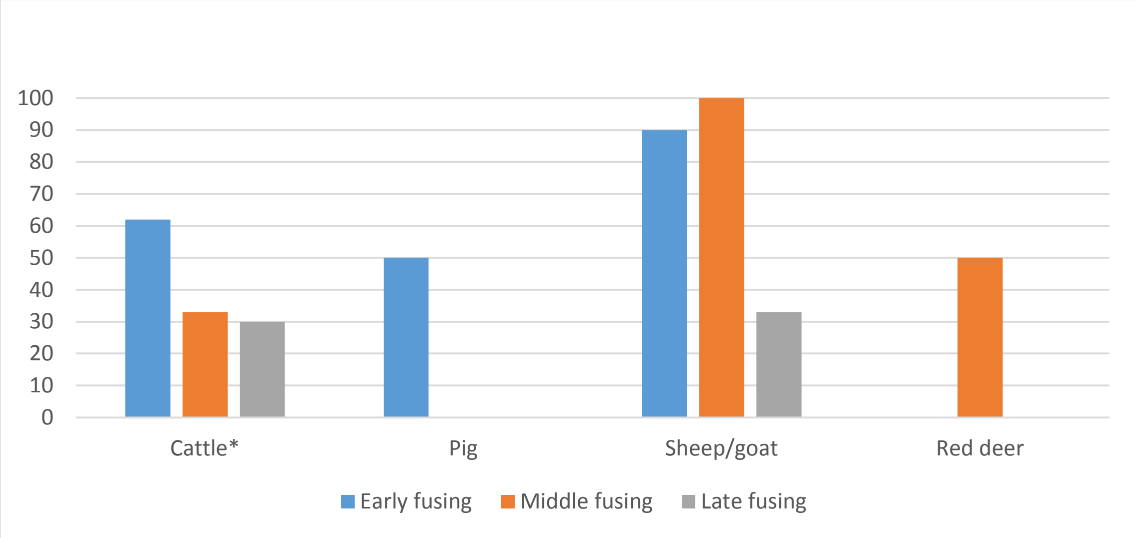


Figure 3: Age-at-death profiles as indicated by specimens exhibiting full epiphyseal fusion. * denotes the inclusion in this category of sf. 130 which falls within the size range of both large domestic cattle and small aurochs

Table 8: Age-at-death profiles as indicated by tooth wear

Small finds no.	**Context**	**Taxon**	**Mandibular/ loose**	**Side**	**dP4**	**P4**	**M1/2**	**M3**	**Age**
12	2. Trench C. E.	Cattle	Loose	Left			g		≥ 8-18 months
128	B. East. Layer 4. Buried soil	Cattle	Loose	Right				e	Young adult; > 36 months
30	B. West. Layer 4. Buried soil 2	Pig	Loose	Indeterminate				c	21-27 months
135	WH B. East. Layer 4. Buried soil	Pig	Loose	Right			a		≥ 7-21 months
147	B. East. Layer 4. Buried soil 1	Pig	Loose	Left		g			≥ 2-7 months
	Layer 1 (plough soil)	Sheep/ goat	Mandibular	Right	< a				< 0-2 months

Sex

Red deer antler is the only found in male animals and is the only indicator of sex in this assemblage. Fragmentation limits the potential of material for further determination of sex.

Butchery

Just 1% (NSP) of bone specimens evidence butchery; of these, 9% derive from primary ditch contexts; 50% from secondary ditch contexts; and 41% from the plough soil (Table 9). Cattle skull sf. 111 from the primary chalk rubble of the ditch end shows multiple fine marks to the frontal indicative of skinning (Figure 4). This is the only specimen from the assemblage that shows such treatment, although the adverse effects of poor preservation may obscure further evidence. A cattle femur from the secondary ditch fill shows cuts and chops across the distal shaft typical of butchery focused on division of the carcass, a sheep/goat pelvis fragment from the primary ditch fill and a pig scapula from the top six inches of the secondary fill display cuts indicative of filleting. Sheep/goat is the only identified taxon evidencing butchery in the plough soil; the remaining fragments showing evidence for butchery are not identifiable to taxon, although some fragmentation observed may be a consequence of butchery practices. One sample was “[f]ound with charcoal, at central point of scatter with a radius of approx. 6 inches” (unpublished site archive), which suggests consumption of butchered meat at a hearth site.

Table 9: Butchery evidence

Small finds no.	**Layer no.**	**Context**	**NSP**	**Taxon**	**Element**	**Side**	**Butchery**	**Location**
	4	Buried soil 2. (Top of layer)	1	Cattle	Femur	Left	Chops and cuts	Chops forming end of fragment. 5 parallel cuts across shaft
111	5	B. West. Ditch end. Chalky rubble	1	Cattle	Skull		Cuts	Running parallel across surface of frontal
	4	B. East. Buried soil 1. Top 6 inches of layer	1	Pig	Scapula	Left	Cuts	3 parallel cuts across neck
99	5	B. West. Ditch end. Rain wash & small rubble	1	Sheep/goat	Pelvis	Left	Cuts	Multiple parallel cuts across surfaces and edges
	1	Plough soil	1	Sheep/goat	Horn		Chop	Across body of horn
	1	Plough soil	1	Sheep/goat	Metatarsal	Left	Chop	Across shaft
	1	Plough soil	1	Sheep/goat	Radius	Right	Cuts	Across distal and mid-shaft
	1	Plough soil	1	Sheep/goat	Radius	Right	Cut	Across shaft
	1	Plough soil	1	Sheep/goat	Astragalus	Right	Chops	2 chops across lateral aspect of condyle and medial aspect
	1	Plough soil	1	Large mammal	Rib	Left	Cut	Distal end of fragment
	1	Plough soil	1	Large mammal	Unidentified	Indeterminate	Cut	At proximal end of condyle
	4	Buried soil 2	1	Large mammal	Tibia	Left	Chop	Diagonal chop, through shaft, forming distal end
86	4	B. west. Ditch end. Buried soil 2	1	Large mammal	Radius	Indeterminate	Chop	Forming part of distal end of fragment
142	4	B. West. Buried soil 2	1	Large mammal	Tibia	Indeterminate	Slice	Forming edge of fragment
166	4	B. East. Buried soil 1	1	Large mammal	Unidentified	Indeterminate	Slice	Edge of fragment
180	4	B. East. Buried soil	1	Large mammal	Radius	Right	Chop	Proximal end of shaft
82		Trench B. East	1	Large mammal	Unidentified	Indeterminate	Chop	Across one edge of fragment
99	5	B. West. Ditch end. Rainwash & small rubble	1	Medium mammal	Pelvis	Indeterminate	Cuts	
167	4	B. East. Buried soil 1	1	Medium mammal	Long bone	Indeterminate	Chop	Edge of fragment
202	4	B. East. Buried soil. Found with charcoal, at central point of scatter with a radius of approx. 6 inches	1	Medium mammal	Long bone	Indeterminate	Chop	Forms edge of fragment
	1	Plough soil	1	Unidentified	Unidentified	Indeterminate	Cuts	
	1	Plough soil	1	Unidentified	Rib		Cut	Across shaft
147	4	B. West. Buried soil 2	1	Unidentified	Unidentified	Indeterminate	Cut	Across body

Figure 4: Cattle frontal sf. 111 showing fine cut marks indicative of skinning, with permission, Alexander Keiller Museum

Bone working

Evidence for bone working is provided by specimen sf. 46, B20 (Figure 5), recovered from the secondary ditch fill. Described in the excavation report as a “bone pendant” (Ashbee *et al.* 1979: 218), it is fashioned from a large mammal metapodial and takes the form of a large needle. Given its size, it seems highly unlikely that this could have been a chance inclusion. Extensive root damage and surface abrasion prevents use wear analysis. A further two antler fragments bear marks sustained in the process of removal of tines.

Pathologies

No evidence for pathology was identified in the assemblage, but this may be a consequence of taphonomic factors.

Figure 5: Worked large mammal metapodial sf. 46, B20, with permission, Alexander Keiller Museum

Antler

112 antler fragments comprise the Horslip assemblage, red deer having been the only species identified. Fragmentation is a significant feature; 55% (62 fragments) derives from primary contexts at the ditch base (Figure 6), although this material appears to pertain to two antler picks, sf. 3, B7 and sf. 5, B8, based on finds book notes. A further 37% was recovered from the southern post hole and may too represent a single fragmented specimen. The only evidence indicative of the mode of acquisition comes from sf. 5, B8, which is a shed antler and therefore was collected and must derive from a then-living animal.

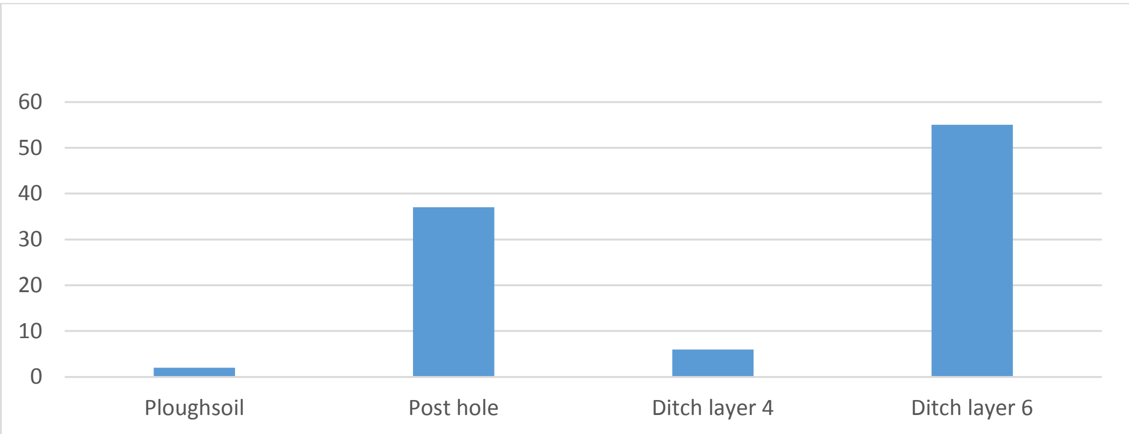


Figure 6: Percentage antler representation per context (NSP)

Conclusions

The Horslip long barrow osseous assemblage is highly fragmented and exhibits extremely poor surface preservation. 11 taxa were identified: horse; cattle; pig; sheep/goat; dog; human; aurochs; red deer; roe deer; badger; hare; and oyster, with domestic taxa and cattle remains in particular dominating stratified contexts. Specimen sf. 130 from the secondary ditch fill may represent aurochs, but also falls within the size range of large domestic cattle (Wright 2016) preventing definitive attribution. Percentage representation is inevitably influenced by the effects of taphonomy, which may have resulted in an overemphasis on large mammals due to bone density and excavation bias; the presence of smaller t may be thereby obscured. This long barrow assemblage appears to have much in common with Beckhampton Road and South Street insofar as human remains are near absent. Whilst this may be a consequence of plough damage to the mound, the presence of human remains in the plough soil and tertiary ditch contexts would be expected, but no such evidence has been found. It may be that human remains were never a feature of this assemblage and like Beckhampton Road and South Street, troubles interpretations that argue for a primarily human mortuary function. There is a discernible focus on cattle: all zones of the body are represented and specific forms of treatment of the dead body are evidenced. The presence of crania in both primary and secondary contexts and evidence of skinning in the former marks a point of difference from the treatment other species. Although taphonomy may here be a factor, comparable treatment of cattle in other long barrow assemblages – and especially those in the immediate locality – would seem to confirm the veracity of the evidence: the importance of cattle in long barrow contexts is a phenomenon with a substantive material reality. The range of interdependent relationships between humans and cattle may here be key and certainly the mortality profile suggests that the cattle deposited in Horslip long barrow could have provided their human communities with a broad spectrum of support (cf. Harris 2014).

In contrast, bone deposits from other species, largely confined to secondary and unstratified plough soil deposits and with a focus on teeth and limb bones, hint at potentially more utilitarian relationships. The restricted mortality profile of pigs indicates that they were kept and slaughtered for meat, and whilst inherently problematic due to their occurrence in predominantly unstratified contexts, butchery evidence combined with body part representation in sheep/goat specimens suggests parity of treatment. The relationship between humans and red deer is different again. Evidence for deposition of bone is extremely sparse, whereas antler specimens form a significant assemblage. Deposited in primary contexts in the form of portions shaped to form tools, the very limited evidence indicates that this material was collected, having been shed by live animals.

An important theme emerges; the multiple temporalities of different practices with different forms of relationships that make demands on the routines of human and non-human lives. These include the mundane rhythms of the daily, seasonal and annual, but also the generational. The multi-phase activities evidenced by the stratified ditch deposits confirm practice through time. This practice is knowledgeable and quite deliberate, attested to by the deposition in secondary contexts of the worked large mammal metapodial. Perhaps most significant is the deposition of cattle crania in primary and secondary contexts that reference each other and draw together practices at other long barrow sites in the locale. Radiocarbon evidence suggests that primary activity at Horslip occurred between the 43rd and the 37th centuries cal BC (Field 2006: 174), which would mark it as among the earliest of such structures in the British Isles. It is important to note that questions have been raised as to the reliability of this date (Whittle *et al.* 2011: 105), which would seem to fall outside ranges published for the start of analogous activity in this region (see Table 8 in Chapter 8 of main text for comparatives). South Street and Beckhampton Road, both located within four kilometres of the site, have been assigned later date ranges of 37th – 29th and 33rd – 25th centuries cal BC (Field 2006: 174) respectively and it is tempting to speculate that secondary activity at Horslip may have coincided with that taking place at the other two barrows. A more extensive program of radiocarbon dating, isotope, and DNA analysis of cattle remains would certainly prove illuminating, and seems both necessary and timely given the poor preservation of all three assemblages and the impact of post-excavation taphonomy upon Beckhampton Road and South Street.

* See Appendix 11 for full zooarchaeological dataset

Appendix 8. South Street long barrow osteological report

Introduction and methods

This report describes the reanalysis of the surviving and documented hand-collected osteological material recovered between 1964 and 1967 during the total excavation of South Street Neolithic long barrow, Wiltshire by Smith and Ashbee (Ashbee *et al.* 1979: 251-252). South Street long barrow sits between the modern villages of between Avebury Trusloe and Beckhampton. Beckhampton Avenue, part of the Avebury megalithic complex passes close by as it nears its terminus at Longstones Cove, but respects the barrow structure. Noted by Stukeley (2010 [1743]: 45-46), the site of the barrow now lies under pasture with the southern ditch subsumed beneath the road with which it shares its name.

The assemblage comprises 493 bone and tooth fragments, forming 490 specimens (NSP) although just 148 specimens (NSP) were available for physical examination (see below), in addition to a further 20 antler fragments forming 19 specimens (NSP). The extant bone and antler was subject to macroscopic examination and identification determined using the skeletal reference collection at the School of Archaeology and Ancient History, University of Leicester. Identification was made to element, side and taxon; where full identification could not be made due to the absence of diagnostic morphological markers, material was assigned to broader categories on the basis of element, size and class. Elements were recorded using the zoning system developed by Mahoney (2013), zones recorded when more than 75% of the zone was judged to be present. Surface preservation was graded using the scale recommended by Harland *et al.* (2003). All fragments measuring over 10 mm were documented; joining fragments were recorded as a single specimen. The very limited quantity and incompleteness of artefactual evidence precluded further analysis.

Preservation and taphonomy

Post-excavation taphonomy has shaped this assemblage. The surviving bone pertains to the old land surface and mound deposits only and is limited to cattle, red deer and large mammal scapula specimens, and unidentified fragments. Documentary sources confirm the former presence of a much more diverse assemblage but the analytical information reported is extremely restricted. It has been possible to entice a synthetic dataset from the artefactual and documentary sources, which forms the substance of analysis. Inevitably, the limited documentary data have had a marked influence upon the analytical and diagnostic potential of the assemblage. Only material where the quantities observed are clearly identifiable have been included in quantitative analyses.

Of the material available for physical examination, 99% of specimens were judged to fall within the 'poor' category descriptor, the "surface flaky or powdery over 50% of specimen" (Harland *et al.*2003), the remaining one percent described as 'fair'. Six percent showed evidence for root damage. All surviving specimens exhibit a degree of fragmentation, and 370 of a total of 402 specimens from the synthetic assemblage for which completeness is recorded are fragmentary. Two mandibles with in-situ dentition are noted in the excavation report compared with 26 loose teeth (Ashbee *et al.* 1979: 267-268), a ratio that is low in comparison with other long barrow assemblages from the area. Indeed, 37% of the assemblage was identified to taxon, and 38% to taxon and size, percentages that also seem high, and may be a factor of Ashbee's approach to quantification and recording of unidentified fragments, which is not detailed in documentary sources. Evidence for burning evidence is noted in the excavation report, amounting to "fifteen charred rib fragments and three calcined pieces" (Ashbee *et al.* 1979: 267) from the unidentified material recovered from contexts described as the buried soil beneath the mound and the turf stack of the mound (Ashbee *et al.* 1979: 267).

Taxa and body part representation

Seven taxa were identified: cattle; pig; sheep/goat; dog; human; red deer; and badger (Figure 1). Cattle remains account for 69% of the total, focused particularly in the buried soil and turf stack of the mound, and secondary ditch contexts (Table 1); also notable is the presence of four articulated vertebrae in the primary ditch fill. Cattle is the only identified species represented in the matrix of the individual bays that make up the body of the mound. Pig and sheep/goat are also well represented in the buried soil and turf stack of the mound contexts, forming seven and 20% respectively, although the accuracy of these totals is affected by the level of detail to which osseous material is recorded in the documentary sources: Ashbee's reference to a sheep/goat deposit as "part of a young animal" (Ashbee *et al.* 1979: 268) cannot be quantified but is nonetheless recorded and represented, acknowledging the bias this inevitably introduces. Two red deer specimens derive from the buried soil and turf stack of mound, and human, dog and badger bones pertain to secondary ditch deposits, each represented by two specimens.

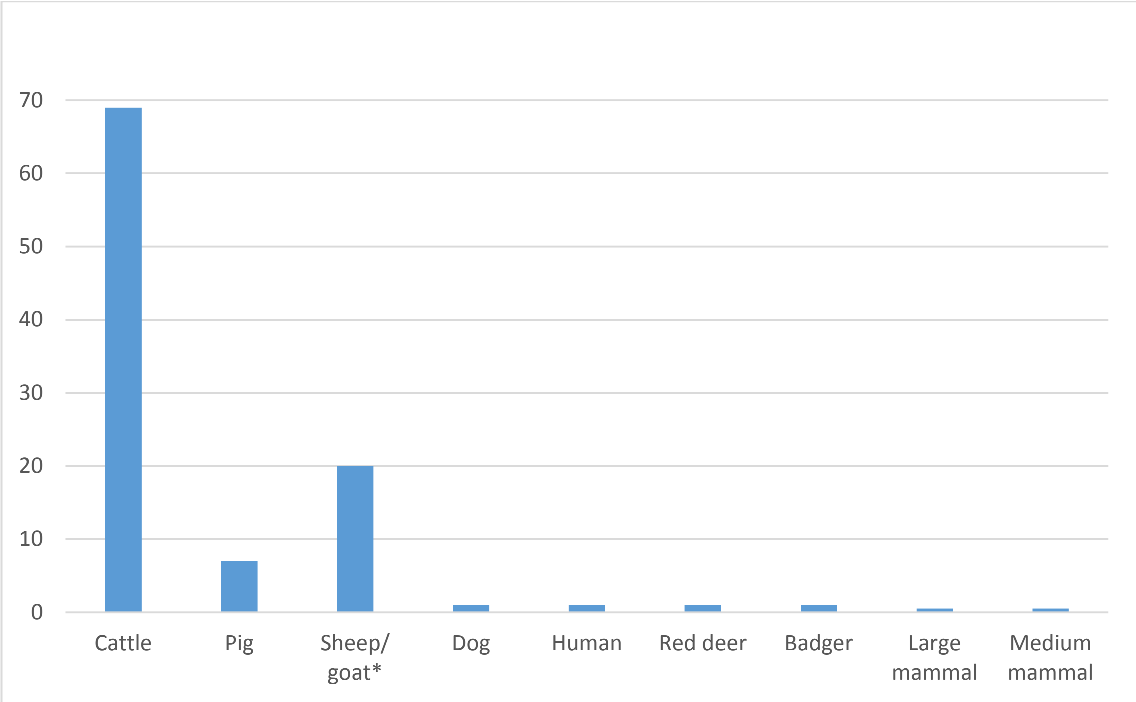


Figure 1: Percentage representation of taxa at site level (NSP)

Table 1: Taxonomic representation per context (NSP). * denotes presence of an additional unknown number of specimens recorded as present in documentary sources

Context	**Cattle**	**Pig**	**Sheep/ goat***	**Dog**	**Human**	**Red deer**	**Badger**	**Large mml**	**Med mml**	**Indeter minate**	**Total**
Buried soil and turf stack of mound	27	12	35			2			1	170	247
Bay VII north, coombe rock	1									31	32
Bay XIII south, chalk rubble	3									57	60
Chalk capping. Frontal chalk rubble	1									22	23
Bottom of east end of north ditch below chalk rubble of primary fill	2							1			3
Primary fill of ditches	7									25	32
Secondary fill of ditches	87		*	2	2		2				93
Total	128	12	35	2	2	2	2	1	1	305	490

Cattle are represented by all zones of the body (Table 2), a pattern that is replicated in deposits from the buried soil and turf stack of the mound, and from secondary ditch contexts. It is regrettable that Ashbee merged the buried soil and turf stack of the mound contexts for his report as it precludes more refined contextual analysis. Scapulae are a significant feature of the assemblage and are discussed alongside the antler in the excavation report, under the assumption that they were tools, although no evidence is found for their use as such, in direct contrast with the antler (Ashbee *et al.* 1979: 268-269). The scapulae do, however, appear deliberately placed in primary mound and ditch contexts, bearing close correspondence with the treatment of the antler. It is interesting to note that five out of the six scapulae that were identified in the excavation report and have been matched with surviving remains come from the left side of the body. The aforementioned deposit of four articulated cattle vertebrae in the primary ditch fill recalls the partially articulated cattle bone group in the ditch at Fussell's Lodge, although as a reduced version forming a discrete deposit, it serves as a shorthand reference. Poor surface preservation in combination with high levels of fragmentation favours the survival of the more robust bones of large mammals such as cattle over the more fragile bones of the smaller species, introducing potential for bias that may exaggerate the apparent significance of the former. However, sheep/goat are also represented by all zones of the body, and like cattle, these remains pertain to the buried soil and turf stack of the mound, and from secondary ditch contexts, thereby undermining an argument for preservation bias. Further similarity between the two species is hinted at through the deposition of apparently articulated bones of 'part' of a young sheep/goat (Ashbee *et al.* 1979: 268).

Table 2: Body part representation (NSP), site scale assemblage. * denotes presence of an additional unknown number of specimens noted in documentary sources as present

Element	**Cattle**	**Horse**	**Pig**	**Sheep/goat**	**Dog**	**Human**	**Red deer**	**Badger**
Head								
Cranium			1	2		2		
Horn core	3			1				
Mandible	4		2					
Tooth	15		6	1	2			2
Spine								
Atlas	1							
Axis	1							
Thoracic vertebra				1				
Lumbar vertebra								
Vertebra	26							
Sacrum				1				
Rib	2			18				
Scapula	10			1				
Pelvis	5						1	
Forelimb								
Humerus	1		1	3				
Radius				1				
Metacarpal	1							
Hindlimb								
Femur	2			2				
Tibia				2				
Metatarsal				1				
Metapodial	6		1					
Long bone	48							
Feet								
Phalanx 1	2						1	
Phalanx	1		1					

Pig are represented by a much more limited suite of body parts with low numbers of bones of the head and limbs deriving from the buried soil and turf stack of the mound. The red deer assemblage comprises just two bones, a pelvis fragment and a phalanx 2 from the buried soil and turf stack of mound. Dog and badger are each represented by two loose teeth from secondary ditch deposits, and the only human remains from the site are two fragments of cranial vault, from the same context. Given the otherwise carefully structured nature of deposits that seem characteristic of this site, all may be considered residual inclusions.

MNI

Due to the lack of clarity regarding the completeness of elements recorded in the documentary sources, MNI estimates are likely to be conservative. Mindful of – and despite – this caveat, the totals estimated appear consistent with MNIs at other long barrow sites, for example, Beckhampton Road. At site level, the South Street bone assemblage comprises a minimum of: six cattle; one pig; two sheep/goat; one dog; one human; one red deer; and one badger (Table 3). The relatively high numbers of cattle reflect the selective deposition of left scapulae in mound and primary ditch contexts (Tables 3 & 4). The discrepancy between the site level MNI (Table 3) and counts for each context (Table 4) may be a consequence of sample aggregation whereby the remains of a single animal have been deposited in, or have moved between multiple contexts.

Table 3: MNI site level. * denotes presence of an additional unknown number of specimens recorded as present in documentary sources

Context	**Cattle**	**Pig**	**Sheep/ goat***	**Dog**	**Human**	**Red deer**	**Badger**	**Total**
Site level	6	1	2*	1	1	1	1	13*

Table 4: MNI per context. * denotes presence of an additional unknown number of specimens recorded as present in documentary sources

Context	**Cattle**	**Pig**	**Sheep/ goat***	**Dog**	**Human**	**Red deer**	**Badger**
Buried soil and turf stack of mound	2	1	1			1	
Bay VII north, coombe rock	1						
Bay XIII south, chalk rubble	1						
Chalk capping. Frontal chalk rubble	1						
Bottom of east end of north ditch below chalk rubble of primary fill	2						
Primary fill of ditches	4						
Secondary fill of ditches	1		1*	1	1		1
Total	**12**	**1**	**2***	**1**	**1**	**1**	**1**

Mortality profile

Age-at-death estimates are limited by the availability of material for physical examination and the information included in documentary records. Some descriptions of fusion stage were noted in the documentary sources, but this has only been included in analysis where it has been explicitly detailed (Table 5). Full fusion is only evidenced in early fusing bones, indicating either selection for younger adult sized animals to be included in this assemblage; exploitation for meat, although evidence for this hypothesis is constrained by the absence of butchery data; natural mortality; a combination of the above; or inconsistent recording of fusion data.

Records of tooth wear are certainly patchy, and are based on broad value judgements (Table 6). The evidence such as it is, suggests the presence of predominantly young cattle, sheep/goat and pig, with possible evidence of a more mature pig provided by the left mandible fragment. Although it appears to accord with the fusion evidence, the quality and scarcity of information provided by analysis of tooth wear precludes meaningful comment.

Table 5: Age-at-death profiles as indicated by degree of epiphyseal fusion

NSP	**Taxon**	**Bone**	**Prox**	**Dist**	**Age**
Early fusing					
2	Cattle	Phalanx 1	Fused	Fused	≥ 18-24 months
2	Cattle	Scapula		Fusing	7-10 months
3	Cattle	Scapula		Fused	≥ 7-10 months
Middle fusing					
1	Sheep/goat	Tibia		Unfused	< 15-24 months
Late fusing					
1	Sheep/goat	Radius		Unfused	< 33-84 months
1	Sheep/goat	Femur		Unfused	< 23-60 months
1	Sheep/goat	Tibia	Unfused		< 23-60 months

Table 6: Tooth wear data extracted from excavation report. All specimens from the buried soil beneath mound and turf stack of mound (Ashbee *et al.* 1979: 267-268)

NSP	**Taxon**	**Element**	**Side**	**Comments**
1	Cattle	Mandible	Right	Right mandible of young animal; cusps of teeth barely worn
1	Cattle	Tooth		Loose maxillary M, not extensively worn
1	Cattle	Tooth		Loose maxillary M, not extensively worn
1	Cattle	Tooth		Loose maxillary M, not extensively worn
1	Cattle	Tooth		Loose maxillary M, not extensively worn
1	Cattle	Tooth		M fragments, none extensively worn
1	Pig	Mandible	Left	Left mandible fragment containing left M1 and M2; all cusps lost through wear
1	Pig	Tooth	Right	Right lower C. Slight wear on lingual surface, but the specimen is not from an old animal
1	Pig	Tooth		Loose M3, not worn
1	Sheep/goat	Tooth	Left	Loose left M3, barely worn

Sex

Red deer antler specimens (see below) are the only indicator of sex, and derive from a male animal/animals.

Butchery

No evidence of butchery was found in the extant bone assemblage, although poor surface preservation has a significant impact upon the survival of such evidence. No butchery data were recorded in the original report.

Bone working

Bone working was identified in two specimens: worked sheep/goat metapodial sf. 87 (Figure 2), identified by Smith as an awl (Smith 1979: 269) recovered from the buried soil beneath the mound; and a perforation in the glenoid cavity of cattle scapula sf. 126 from the frontal chalk rubble of the mound (Figure 3). In neither instance is any attempt made to conceal the osseous nature of the material, it is, rather, emphasised. The incorporation of the curving condyle of the sheep/goat into the form of the awl may be an artistic choice or have a utilitarian function, forming a grip or a guard to prevent complete penetration of the point, but presencing the animal from which it derived (cf. Jones 2012) – either as an individual or as a member of a group – may also be an important factor. The perforation of the glenoid cavity of the cattle scapula is unusual, but draws comparison with antler specimen DZSWS.1985.183.1 from Cold Kitchen Hill, which shows a similar perforation at the distal end of a tine.

Pathologies

No evidence of pathology was found; potential for such evidence is constrained by the absence of artefactual evidence. No pathology data were recorded in the documentary evidence.

Figure 2: Awl formed from worked sheep/goat metapodial sf. 87, with permission, Alexander Keiller Museum

Figure 3: Hole in the glenoid cavity of cattle scapula sf. 126, with permission, Alexander Keiller Museum

Antler

As at Cold Kitchen Hill, the antler assemblage is largely preserved, totalling 21 fragments and forming 19 red deer specimens (NSP), pertaining to ten discrete deposits identified by the small finds numbers recorded in the documentary sources (Table 7). All derive from primary contexts, with the exception of two specimens, and appear to have been deliberately placed within the mound matrix and ditch base. Three specimens show evidence for shedding, indicating that they were collected from living animals; there is no evidence for the use of unshed antler. It is noted in the excavation report that all antler specimens appear used (Ashbee *et al.* 1979: 268), although it is debatable as to whether this can all be wholly attributed to an anthropogenic source.

Seven specimens evidence working consistent with division of the antler into smaller segments and two show more specialised forms of modification. The tip of antler segment sf. 88 from the old land surface below the body of the mound has a perforated tip that compares directly with the aforementioned antler specimen DZSWS.1985.183.1 from Cold Kitchen Hill (Figure 4), and specimen sf. 119 exhibits a perforation through junction of proximal end of trez-tine and beam (Figure 5).

Table 7: Red deer antler occurrence per context (NSP)

Context	**NSP**	**Small finds no.**
Old land surface	2	88
Coombe Rock of mound, bay I	3	119
Coombe Rock of mound, bay II	1	121
Coombe Rock of mound, bay VII	7	117,118
Coombe Rock of mound, bay XII	3	120
Chalk of barrow mound. Bay XIV	1	68
Base of north ditch	1	182
Secondary fill of ditches	1	
Ditch cutting V. Beaker clearance	1	50
Total	**19**	

Figure 4: Antler specimen sf. 88 showing perforation at the distal end of a tine, with permission, Alexander Keiller Museum

Figure 5: Antler specimen sf. 119 perforated through junction of proximal end of trez-tine and beam, with permission, Alexander Keiller Museum

Conclusions

The impact of both pre- and post-excavation taphonomy on the South Street long barrow assemblage has been profound, restricting its potential for osteological reanalysis. This has been further compounded by the nature of the documentary records, which comprise information that is ambiguous and extremely limited by contemporary standards. Frustrating though this is, it remains that all archaeological assemblages are inherently partial, and working with the surviving evidence is both necessary and illuminating. Through a process of synthesis, an assemblage has been drawn from the surviving osseous material and documentary records.

The South Street long barrow bone assemblage comprises the typical suite of taxa: cattle; pig; sheep/goat; dog; human; red deer; and badger, with the expected emphasis on domesticates and cattle, in particular. However, the absence of human material in primary contexts and its limited presence in the secondary ditch fill (two cranial fragments) is atypical, and places it within a small group of barrows including Horslip and Beckhampton Road, all within four kilometres of each other, that appear to all but exclude the human dead, thereby querying the assignation of the label 'mortuary structure' as is commonly understood. Foci on particular body parts, on antler and scapulae with their association with tools and construction, on their discrete deposition, and also on articulated remains emerge, citing practices at Beckhampton Road in particular, but also Horslip and Cold Kitchen Hill. Radiocarbon evidence confirms that primary activity at South Street occurred between the 37th and the 29th centuries, following earlier primary activity at Horslip with date ranges of 43rd – 37th centuries cal BC, but preceding Beckhampton Road, which has been assigned a date range of 33rd – 25th centuries cal BC (Field 2006: 174). This would potentially allow for some overlap and permit knowledgeable citational practice (cf. Butler 1993; Jones 2007; 2012). The deposition of the worked bone in the secondary ditch fill provides a further parallel with Horslip.

Despite the near absence of human remains, a human presence is very much in evidence through the residues of practice (cf. Lucas 2012): the interdependence of humans, deer and cattle in construction projects; the deliberate deposition of articulated animal remains alongside and in contrast with the possible exclusion of the human dead; and the deposition of anthropogenically altered bone that pierces through and brings together different aspects of human and animal lives and deaths. The story that emerges is one of interwoven lives lived with reference to past practices, within and through a known landscape.

* See Appendix 11 for full zooarchaeological dataset

Appendix 9. West Kennet long barrow zooarchaeological report

Introduction and methods

This report presents the analysis of stratified, hand-collected animal bone recovered during excavation at West Kennet Neolithic chambered long barrow, Wiltshire between 1955 and 1956 by Piggott and subsequently deposited with and curated by National Museums Scotland, Edinburgh, Wiltshire Museum, Devizes, and the Duckworth Laboratory Collection, Leverhulme Centre for Human Evolutionary Studies, University of Cambridge.

West Kennet chambered long barrow is located on a spur of high ground in the Marlborough Downs, North Wiltshire, a landscape rich in Early Neolithic archaeology. Its structure incorporates five chambers constructed from massive sarsen slabs and dry-stone walling that open from a central passage, a forecourt area fronted by a later façade, a turf and rubble mound constructed over a sarsen boulder core that exceeds 100 m in length, and two flanking ditches (Piggott 1962). West Kennet has long been a focus of interest having undergone repeated excavations since at least the 17th century, purportedly attracting the attentions of the infamous Dr Toope (Piggott 1962: 4) whose interventions at the nearby Sanctuary saw him requisition “many bushels” of human bone “of which I made a noble medicine that relieved many of my distressed neighbours” (Toope 1678, cited by Piggott 1962: 4). Presumably the looming menace of its imminent dispensation effected a speedy recovery. In 1859, John Thurnham oversaw the excavation of the west chamber and passage, identifying the remains of six burials. Despite significant limitations in his approach, which is left wanting by modern standards and restricts the spatial resolution of the current analyses, results were recorded and published (Thurnham 1860; 1869) and some of his excavated material survives in the Duckworth Laboratory Collection. It was, however, the findings of an ambitious programme of carefully planned and scientifically motivated excavation undertaken by Professor Stuart Piggott, Professor Richard Atkinson, and a team of archaeology students from the University of Edinburgh to modern standards that provided the basis for current understandings of the site. Piggott and Atkinson excavated the chamber and forecourt structures to ground level alongside a sample section of the mound and ditch. They enlisted the assistance of a specialist team to analyse the excavated material and published the results shortly afterwards (Piggott 1962). Piggott’s West Kennet excavation arguably set the standard for subsequent British excavations, but his findings have benefitted from ongoing engagement by Whittle and Thomas (1986), and more recently by Bayliss *et al.* (2007) whose Bayesian analytical approach to radiocarbon dating has transformed our understanding of the temporal resolutions involved in the various episodes of deposition.

Despite the project's broader achievements, the animal bone report from Piggott's publication amounts to just five short paragraphs and provides scant information, not all of which accords with the large extant assemblage, which the present programme of reanalysis finds to comprise 1749 bone and tooth fragments, forming 1733 specimens (NSP). Macroscopic examination of this material was conducted and identifications made through consultation of the skeletal reference collection at the School of Archaeology and Ancient History, University of Leicester. Identification was made to element, side and taxon; where full identification could not be made due to the absence of diagnostic morphological markers, material was assigned to broader categories on the basis of element, size and class. Distinction between sheep and goat remains was attempted using standards published by Boessneck (1969). Elements were recorded using the zoning system detailed by Mahoney (2013), zones being recorded when more than 75% of the zone was present. Age-at-death ranges were assigned according to the degree of epiphyseal fusion using criteria published by Reitz and Wing (2008: 72, Table 3.5), and by and through analysis of wear on mandibular dentition. Tooth wear in cattle was recorded using the Grant system (1982) and an age range was assigned using Halstead's age stage descriptors (1985) and stages developed by Hambleton (1999: 64-65). Measurements of specimens were taken following standards established by von den Driesch (1976). The anatomical location and character of burning, butchery and gnawing were recorded and described. Surface preservation was graded using the scale recommended by Harland *et al.* (2003). All fragments measuring over 10 mm were documented; joining fragments were recorded as a single specimen.

Preservation and taphonomy

Preservation of the West Kennet animal bone assemblage can be characterised as poor with 92% of specimens falling within this descriptor, following Harland *et al.* (2003), primarily the result of surface abrasion. Three percent of the assemblage is affected by root damage. However, ten percent of elements excluding loose dentition are complete, which is a relatively high proportion when compared with other long barrow sites – compare with the Horslip assemblage, for example, in which under one percent of elements are complete. The proportion of 90 loose to 48 in-situ dentition reflects this.

Post-excavation taphonomy has had a significant impact upon this assemblage and its understanding to date. Reanalysis of the full human assemblage is necessary as the original analysis, though thorough, does not include the creation of records of individual specimens. Instead, emphasis is placed upon the identification of individual skeletons and numbers of individuals represented. Whilst undoubtedly useful, this precludes meaningful quantitative analysis, and has arguably diminished interest in the disarticulated 'odd' specimens, which despite holding less diagnostic potential than more complete skeletons, pertain to individuals nonetheless and represent depositional activity. Further, understanding of the assemblage can be developed in new directions, through integration with the broader osseous and other material based datasets. Unfortunately, reanalysis of the human assemblage has been impeded as a result of the peculiarities of archiving undertaken following the original excavation, which has seen the assemblage dispersed between The Duckworth Collection, Cambridge; Wiltshire Museum, Devizes; and the National Museums of Scotland archives. The full whereabouts of the human material had not been documented by Piggott, and compounded by the frequent misidentification and/or mislabelling on the original packaging, the extent of the complete archive human bone assemblage has only come to light as a result of the present study. The sheer volume of material that therefore now needs synthesising and urgent reanalysis, and the potential impact this will have upon understanding of this critical site demands a focused research programme. As a consequence, it is solely the non-human animal bone that is here re-analysed. Reanalysis of the human bone and of the full osseous assemblage will be undertaken upon the conclusion of the current study, with the kind support of the researchers who recently conducted the reanalysis of the Duckworth material to contemporary standards.

There is a wealth of evidence for burning (Table 1), which affects seven percent of the animal bone assemblage, and predominantly derives from secondary contexts within the chambers described by Piggott as 'dirty' lenses rich in charcoal and ash (Piggott 1962: 27). Piggott goes on to note an absence of evidence for burning having occurred in-situ, inferring that this material derives from episodes of activity that have occured elsewhere. It has only been possible to identify a small number of burnt specimens to taxon, but seems likely that human remains are also represented within this group, on the basis of notes in the West Kennet archive. The localised scorching evident on some specimens suggests that they represent the by-products of cooking, whereas calcination, which occurs at temperatures in excess of 600°C (McKinley 2004: 11) is indicative of cremation whereby the aim is the removal of organic components.

Table 1: Burning evidence

Small finds no.	Context	NSP	Taxon	Element	Burning	Description
4		1	Cattle	Tooth	Charred	Entire fragment black, some reddening to enamel
4		1	Cattle	Tooth	Charred	Entire fragment black, some reddening to enamel
19	N. E. Chamber. Layer in between black layers 3 & 4	1	Cattle	Phalanx 1	Scorched	Beige with localised areas of black and grey
	Left over on table. 26/6/56	1	Large mammal	Cranium	Charred	Entire fragment black/beige
4	N. E. Chamber in between black layers 1 & 2	1	Large mammal	Pelvis	Charred	Black with localised patch of white/red/brown
143	Cutting IV forecourt blocking	1	Large mammal	Indeterminate	Charred	Exterior surface black, interior light grey/beige
4	N. E. Chamber in between black layers 1 & 2	1	Large mammal	Pelvis	Charred and calcined	Grey with localised patch of white with cracking
4	N. E. Chamber in between black layers 1 & 2	1	Large mammal	Indeterminate	Scorch and charring	Localised black patches at ends of fragment
4	N. E. Chamber in between black layers 1 & 2	1	Large mammal	Rib	Scorch at distal end	
59	Top of filling	1	Large mammal	Rib	Scorched	Cranial aspect
116	N. E. chamber between layers 3 & 4	6	Large mammal	Long bone	Scorching and charring	Black with localised patches of pink/beige
148	Cutting V. Layer humus	1	Medium mammal	Indeterminate	Calcined	Whitening to entire fragment
148	Cutting V. Layer humus	1	Medium mammal	Indeterminate	Charred	Entire fragment black
19	N. E. Chamber. Layer in between black layers 3 & 4	1	Medium mammal	Long bone	Charred	Entire fragment grey
1	N. E. Chamber. Topmost chalky fill	1	Medium mammal	Humerus	Charred	Entire fragment red/brown/grey
4		1	Small mammal	Vertebra	Charred	Entire fragment grey
116		1	Indeterminate	Indeterminate	Calcined	Entire fragments white with cracking
19		4	Indeterminate	Indeterminate	Calcined	Entirety of fragments white with cracking
12		1	Indeterminate	Long bone	Calcined	Entire fragment white
4		2	Indeterminate	Indeterminate	Calcined	Entirety of fragments white
4		9	Indeterminate	Indeterminate	Calcined	Exterior of fragments grey, some black to interior surfaces
19	N. E. Chamber. Layer in between black layers 3 & 4	2	Indeterminate	Indeterminate	Calcined	Entirety of fragments white/grey
264		1	Indeterminate	Indeterminate	Calcined	Entire fragment
	4 feet 5 inches below paving in northwest chamber	27	Indeterminate	Indeterminate	Calcined, partial oxidisation, charring	
73	Passage and chamber. Thurnham's fill	1	Indeterminate	Indeterminate	Charred	Light charring to surfaces of fragment
121	N. E. chamber. Below black layer 4	5	Indeterminate	Indeterminate	Charred	Entirety of fragments black
4		18	Indeterminate	Indeterminate	Charred	Entire fragment black
19	N. E. Chamber. Layer in between black layers 3 & 4	4	Indeterminate	Indeterminate	Charred	Entirety of fragments black/grey

20	N. E. Chamber. Layer in between black layers 3 & 4	1	Indeterminate	Indeterminate	Charred	Entire fragment black
121	N. E. chamber. Below black layer 4	1	Indeterminate	Indeterminate	Charred and calcined	Exterior grey/brown; interior black
19	N. E. Chamber. Layer in between black layers 3 & 4	2	Indeterminate	Long bone	Charring and calcination	Interior black; exterior grey/brown/red
4		7	Indeterminate	Indeterminate	Scorched	Dark brown with localised black patches
20	N. E. Chamber. Layer in between black layers 3 & 4	1	Indeterminate	Indeterminate	Scorched	Localised patch of black charring
4		1	Indeterminate	Indeterminate	Scorched and calcined	White with localised black patches
4		2	Indeterminate	Indeterminate	Scorched and calcined	White and grey with localised black patches
19	N. E. Chamber. Layer in between black layers 3 & 4	8	Indeterminate	Indeterminate	Scorched with patches of calcination	Beige with localised black and white patches

Despite the impact of high levels of surface abrasion, both carnivore and rodent gnawing evidence is preserved (Table 2). The stone chambers are here key: the nature of the gnawing evidence as well as the degree of surface abrasion supports the assertion that the chambers were accessible for a period – the presence of the isolated duck coracoid sf. 264 (Figure 1) is certainly suggestive of in-situ carnivore activity – and they have also served to preserve bone from the worst effects of weather and chemical damage. The carnivore gnawing further suggests that at least some bone was deposited either whilst fleshed or shortly after defleshing had occurred, before the nutrient-rich fatty deposits had been degraded.

Table 2: Gnawing evidence

Small finds no.	Other ref. no.	Context	NSP	Taxon	Element	Gnawing	Location
121	3	N. E. chamber. Below black layer 4	1	Cattle	Radius	Carnivore	Proximal end
73	7	Passage and chamber. Thurnham's fill	1	Cattle	Radius	Carnivore	Distal end of fragment
86		Chalk rubble between portal stones	1	Pig	Radius	Canid	Shaft
46		From chalk rubble layer	1	Pig	Scapula	Rodent	Edge of blade
264			1	Duck	Coracoid	Carnivore	Blade
75		West chamber. Triangular interstice under corbel, north side	1	Large mammal	Rib	Carnivore; rodent	Surfaces and edges of fragment
		Found between black layers 3 and 4 of the north east chamber	1	Medium mammal	Humerus	Carnivore	Condyles
1		N. E. Chamber. Topmost chalky fill	1	Medium mammal	Humerus	Rodent	Shaft
104		S. E. chamber. Grey brown layer 4' below datum	1	Medium mammal	Tibia	Canid	Exterior surfaces
73	7	Passage and chamber. Thurnham's fill	1	Medium mammal	Long bone	Rodent	Edges of fragment

Figure 1: Duck (*Anas* sp.) coracoid sf. 264 showing evidence of carnivore gnawing, with permission © National Museums Scotland

Taxa and body part representation

The West Kennet animal bone assemblage is formed of 16 taxa: horse; cattle; pig; sheep/goat; goat; dog; fox; dog/fox; red deer; roe deer; wild boar; badger; mustelid; rabbit; and field vole (Table 3). The beaver incisor, blackbird, jackdaw, mouse and bat remains noted in the excavation report (Piggott 1962: 54) were not identified during the process of reanalysis. The assemblage comprises a broader range of species than is characteristically found in long barrows, with a range of small wild mammals in addition to the expected suite of domesticates and large wild mammals. Dog is also present and more unusual, although also identified in deposits at Horslip, South Street, and Cold Kitchen Hill (see Chapters 7 and 8; Appendices 6, 7 and 8) as well as at West Tump chambered long barrow, Gloucestershire, accompanied by a human burial (Thomas and McFadyen 2010). Articulated burials of dogs were also found in the ditches at the nearby Windmill Hill causewayed enclosure (Grigson 1965: 147; Grigson 1999: 230-231). The presence of small wild mammals may reflect either a more comprehensive recovery programme than at many of the other earlier long barrow excavations – certainly West Kennet was a flagship excavation – or may be a consequence the barrow structure, which permitted these animals to enter more easily and/or provided preferential preservation conditions, or a combination of the two.

The barrow structure and the nature of depositional practice are factors likely influencing the proportional representation of species (Figure 2), which show a marked difference when compared with other long barrow sites, such as Horslip and Beckhampton Road (Chapter 8; Appendices 7 and 10). Whereas cattle characteristically dominate non-human animal bone assemblages, at West Kennet, they account for just five percent, in comparison with pig and sheep/goat, which comprise seven and eight percent of the assemblage respectively. The episodic deposition of additional material through time before the filling and sealing of chambers at West Kennet differs from practices at earthen long barrows which seal deposits at a seemingly earlier stage within the mound structure (Field 2006). Some parity can, however, be identified between the percentage species representation of West Kennet faunal assemblage and the composition of the Woodford G2 ditch deposits, which perform analogous foci for ongoing interaction (see Chapter 7; Appendix 5). In this respect, it is interesting to note the absence of bone and sparse artefactual material recovered from the West Kennet ditch section excavated by Piggott (Piggott 1962: 12). Although not dominant in percentage NSP counts, cattle are represented in all but the mound and pit contexts, outnumbering both pig and sheep/goat, which are also absent from the mound and pit, in addition to Cutting III (pig) and the façade (sheep/goat). Frog/toad represent two percent of the assemblage, a conservative proportion resulting from records detailing the presence of specimens identified to taxon but not to element. Horse, dog, dog/fox, red deer, roe deer, mustelid and rabbit each account for one percent, with fox, wild boar, badger, field vole, duck and goose each contributing under one percent of the total.

At site level, cattle, pig, sheep/goat and dog are represented by all zones of the body (Table 4). This also holds true for the north west, north east and south east chambers, although NSP counts for the latter are notably lower. In the south east chamber, cattle is represented by two limb bones only, whereas pig and sheep/goat specimens of both the head and limbs are present. Records of a partially articulated goat skeleton recovered from the chalk rubble filling of the north west Chamber suggest that it is likely underrepresented, having been incorporated into the broader sheep/goat category where clear diagnostic markers differentiating between the species were not found. Horse is represented by teeth only, field vole by a mandible and goose by a femur. All other species are represented by a combination of low numbers of axial and appendicular element fragments. Four percent of specimens including elements of both the cranium and limb from cattle, pig and sheep/goat derive from primary chamber contexts, and are therefore associated with the human bone deposits, based on excavators' records accompanying the bones. The animal bone report in Piggott's 1962 publication makes no mention of this material.

MNI

The West Kennet MNI totals are high for a long barrow site, likely influenced by the (initially open) structure, repeated episodes of deposition, and thorough recovery practices during excavation. They are also highly problematic. The period during which the structure was open permitted mobility of deposits between contexts, which has been suggested for human bone (Wells 1962), whilst Thurnham's excavations (and presumably also the efforts of the infamous Dr Toope) caused material to become mixed, exaggerating the impact of sample aggregation. The marked discrepancies between the site level MNI of 43 individuals (Table 5), the broad context MNI of 90 individuals (Table 6), and the MNI of 104 individuals derived by totalling numbers from stratigraphic contexts within each broad context (Table 7) is undoubtedly a consequence.

Mortality profile

Fusion data were available for 332 specimens (Table 8): 62% of these were unfused; 9% were in the process of fusing; 29% were fused. There is not a strong spatial element to the distribution. Cattle of all ages are represented – a common feature of many long barrow assemblages, (for example see Amesbury 42, Chapter 7; Appendix 3, and Horslip, Chapter 8, Appendix 7) whereas pig, sheep/goat and wild boar are represented by predominantly young animals (Figure 3). Goat is represented by the partially articulated deposit from the north west chamber; fusion evidence confirms that this was a young adult sized animal. Red deer and roe deer remains derive from fully adult and adult sized animals. The preponderance of young pig and sheep/goat is interesting and is certainly not the result of preservation issues, as the bones of young animals are more fragile and friable, and therefore less likely to survive than those of adults. This pattern may represent selective deposition of young animals slaughtered for the purpose, selection for consumption, or natural mortality. Tooth wear data support these profiles with no evidence for pig over 21 months or sheep/goat over three years at time of death (Table 9). Further, wear on a dog molar suggests an estimated age of 15-36 months (Horard-Herbin 2000), so also a young individual, and a wild boar specimen indicates an age of over 7-12 months.

Table 3: Taxonomic representation per context (NSP)

Context	Horse	Cattle	Pig	Sheep / goat	Goat	Dog	Fox	Dog/ fox	Red deer	Roe deer	Boar	Badger	Mustelid	Rabbit	Field vole	Frog/ toad	Duck	Goose	Large mml	Med mml	Small mml	Med bird	Small bird	Indeterminate	Total
West chamber. Walling						11															2			5	18
West chamber. Behind walling		2	3	2				2											4	2				8	23
North west chamber. Primary deposit																								27	27
North west chamber. Paving			8					1		1										7				1	18
North west chamber. Secondary fill	3	16	17	81	7	2		12	3		1	1		5					14	121	3			61	347
North west chamber. No defined context		1	2																1	3				5	12
North east chamber. Hearth		2																							2
North east chamber. Secondary fill	1	28	13	8	1	1	1	5	4	2	1	1		1		5			43	40	2			113	270
North east chamber. Stone hole 32																								8	8
North east chamber. No defined context		3	13	8		5	2	11	1				1	1	1				13	50	2			88	199
South west chamber. Primary deposit		2	4	5								1							2	2				4	20
South west chamber. Secondary fill		10	8	2		1			1				2			1		1	39	35				16	116
South east chamber. Primary deposit		2	4	3															1	3				3	16
South east chamber. Secondary fill								1						1					3	5				6	16

Context	Horse	Cattle	Pig	Sheep / goat	Goat	Dog	Fox	Dog/ fox	Red deer	Roe deer	Boar	Badger	Mustelid	Rabbit	Field vole	Frog/ toad	Duck	Goose	Large mml	Med mml	Small mml	Med bird	Small bird	Indeterminate	Total
South east chamber. Walling																								9	9
South east chamber. No defined context			1																					15	16
South east chamber?																								1	1
Passage																									13
Floor of entrance between portals			2					1																	3
Floor of passage between S. E. and N. E. chambers		1	1																	1					3
Chalk rubble between portal stones		1	4																						5
Secondary fill		1	1																						2
West chamber/ passage																									149
Thurnham's fill	1	10	23	11		1			1	2				1		16			3	35				45	149
Forecourt																									3
Blocking		1	1																					1	3
Façade																									16
Old surface near base of stone 39	1	1	1	1				1								1			6	4					16
Mound																									12
Chalk rubble of mound behind stone 39																						1		11	12
Cutting III between stones 39 & 50, layer 1.																									21
Refill of modern disturbance		3		1												1			9	3	1			3	21
Pit between stone 43/44																									6

Context	**Horse**	**Cattle**	**Pig**	**Sheep / goat**	**Goat**	**Dog**	**Fox**	**Dog/ fox**	**Red deer**	**Roe deer**	**Boar**	**Badger**	**Mustelid**	**Rabbit**	**Field vole**	**Frog/ toad**	**Duck**	**Goose**	**Large mml**	**Med mml**	**Small mml**	**Med bird**	**Small bird**	**Indeterminate**	**Total**
Top of pit																								6	6
Secondary fill: location unknown																									76
Peterborough levels		1																						1	2
Chalk rubble layer			2	1					1										7	2				1	14
Top of filling	2	1	5	5	1		3	3		2			3			1			9	12	2			11	60
Context uncertain		6	9	2		1		2					4			3	1		20	55	6		2	208	319
Total	**8**	**92**	**122**	**130**	**9**	**22**	**6**	**39**	**11**	**7**	**2**	**3**	**10**	**9**	**1**	**28**	**1**	**1**	**174**	**380**	**18**	**1**	**2**	**657**	**1733**

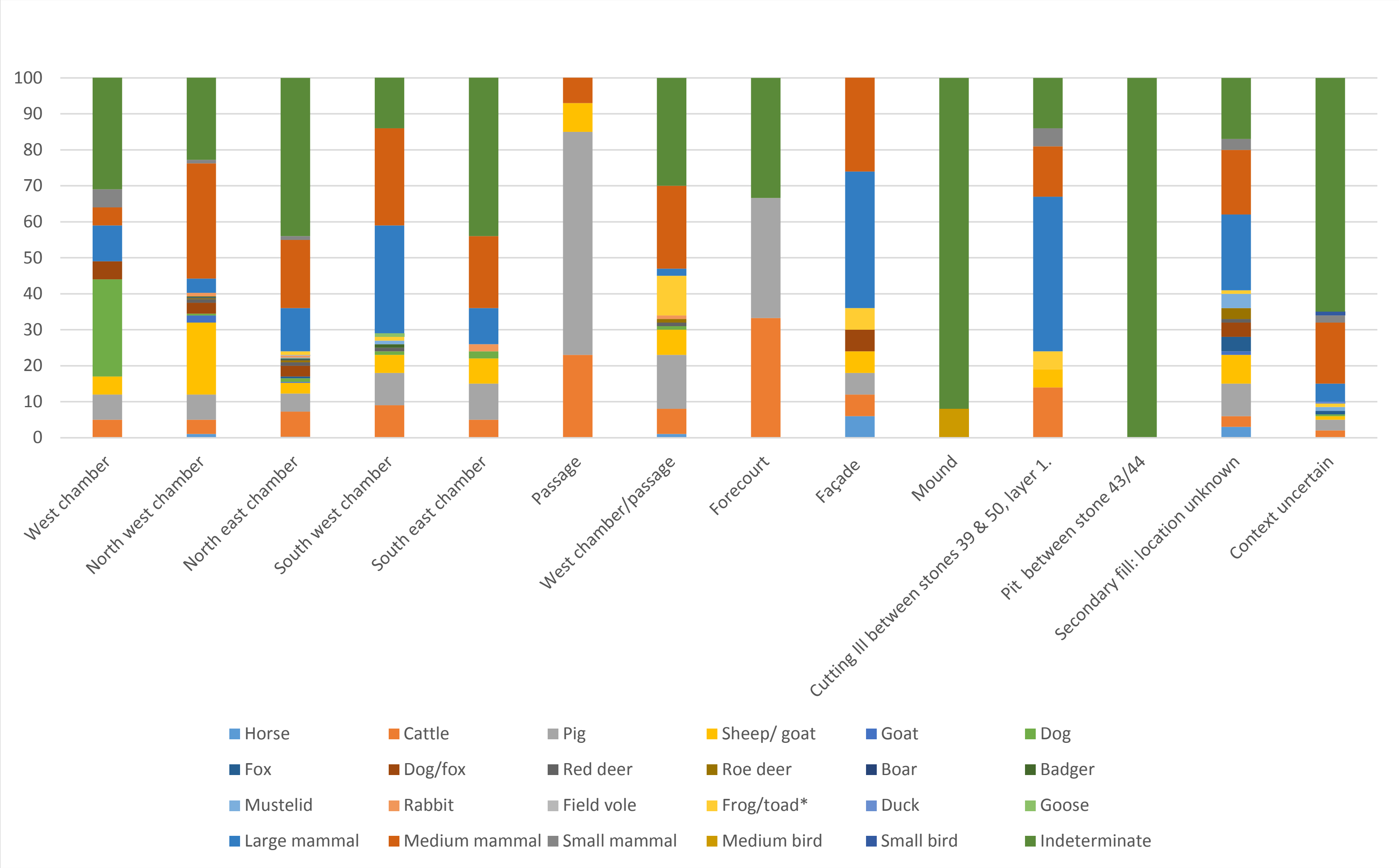


Figure 2: Percentage representation of cattle per context (NSP)

Table 4: Body part representation per taxon by zone (NSP), site scale assemblage

Element	**Horse**	**Cattle**	**Pig**	**Sheep/ goat**	**Goat**	**Dog**	**Fox**	**Dog/ fox**	**Red deer**	**Roe deer**	**Boar**	**Badger**	**Musteli d**	**Rabbit**	**Field vole**	**Duck**	**Goose**	**Large mml**	**Med mml**	**Small mml**	**Small bird**
Head																					
Horn core		1																			
Cranium		6	10	10	1			1					5					29	47	4	
Mandible		4	15	10		1	3	1				2	3		1			5	6	1	
Tooth	8	23	27	12				6	4		1							3	2	1	
Hyoid		2																	2		
Spine																					
Atlas				1				1													
Axis				1	1		1														
Cervical vertebra		1		4				1											5		
Thoracic vertebra				13						1								1	9		
Lumbar vertebra		4		7		2		1		1				2					14	1	
Caudal vertebra																			2	1	
Vertebra																		3	11	1	
Sacrum														1							
Scapula		1	11	9				7										1	4	1	
Rib			2															29	127	1	
Pelvis		1	2	5			2	1						1				3	13		
Forelimb																					
Humerus		7	12	3	2			4				1	2					1	8		1
Radius		10	6	4				2											4		
Ulna		3	7	4	1	2		6		1									1		
Metacarpal		5	4	8	1	2		1		1											
Hindlimb																					
Femur			6	3	3	1			2					1			1	2	6	3	
Tibia		4	9	3				4	2					4				2	7	2	
Fibula			1					1											4		
Metatarsal		5		4		4			1	2	1										
Metapodial		6		1						1								1		1	
Feet																					
Carpals		1	1	4															1		
Calcaneum			1	2		1			1										1		
Astragalus		1	2	3																	
Phalanx 1		5	3	11		4			1										1		
Phalanx 2		2		7		4													1		

Element	Horse	Cattle	Pig	Sheep/ goat	Goat	Dog	Fox	Dog/ fox	Red deer	Roe deer	Boar	Badger	Musteli d	Rabbit	Field vole	Duck	Goose	Large mml	Med mml	Small mml	Small bird
Phalanx 3				1		1													1		
Coracoid																1					

Table 5: Site level MNI

Horse	Cattle	Pig	Sheep/ goat	Goat	Dog	Fox	Dog/fox	Red deer	Roe deer	Boar	Badger	Mustelid	Rabbit	Field vole	Frog/ toad*	Duck	Goose	Total
1	5	7	6	1	1	2	6	2	1	1	2	2	2	1	1*	1	1	43

Table 6: MNI based upon broad context

Context	Horse	Cattle	Pig	Sheep/ goat	Goat	Dog	Fox	Dog/fox	Red deer	Roe deer	Boar	Badger	Mustelid	Rabbit	Field vole	Frog/ toad*	Duck	Goose
West chamber		1	1	1		1		1										
North west chamber	1	2	2	2	1	1		2	1	1	1	1		1				
North east chamber	1	2	3	2	1	1	2	3	2	1	1	1	1	1	1	1		
South west chamber		2	2	1		1			1			1	1			1		1
South east chamber		1	1	1				1						1				
Passage		2	2					1										
West chamber/ passage	1	2	2	2		1			1	1				1		1*		
Forecourt	1	1	1	1				1								1		
Façade		1	1															
Cutting III between stones 39 & 50, layer 1.		1		1												1		
Context uncertain																	1	
Total	**4**	**15**	**15**	**11**	**2**	**5**	**2**	**9**	**5**	**3**	**2**	**3**	**2**	**4**	**1**	**5***	**1**	**1**

Table 7: MNI based upon stratified levels by broad context

Context	Horse	Cattle	Pig	Sheep/ goat	Goat	Dog	Fox	Dog/fox	Red deer	Roe deer	Boar	Badger	Mustelid	Rabbit	Field vole	Frog/ toad	Duck	Goose
West chamber. Walling						1												
West chamber. Behind walling		1	1	1				1										
North west chamber. Paving			2					1		1								
North west chamber. Secondary fill	1	2	2	2	1	1		2	1		1	1		1				
North east chamber. Hearth		2																
North east chamber. Secondary fill	1	1	2	1	1	1	1	1	1	1	1	1		1		1		
North east chamber. No defined context		1	2	1		1	1	2	1				1	1	1			
South west chamber. Primary deposit		1	2	1								1						
South west chamber. Secondary fill		1	2	1		1			1				1			1		1
South east chamber. Primary deposit		1	1	1														
South east chamber. Secondary fill								1						1				
Passage																		
Floor of entrance between portals			1					1										

Context	Horse	Cattle	Pig	Sheep/ goat	Goat	Dog	Fox	Dog/fox	Red deer	Roe deer	Boar	Badger	Mustelid	Rabbit	Field vole	Frog/ toad	Duck	Goose
Floor of passage between S. E. and N. E. chambers		1	1															
Chalk rubble between portal stones		1	1															
Secondary fill		1	1															
West chamber/ passage																		
Thurnham's fill	1	2	2	2		1			1	1				1		1*		
Forecourt																		
Old surface near base of stone 39	1	1	1	1				1								1		
Cutting III between stones 39 & 50, layer 1.																		
Refill of modern disturbance		1		1												1		
Context uncertain																	1	
Total	**4**	**18**	**22**	**12**	**2**	**6**	**2**	**10**	**5**	**3**	**2**	**3**	**2**	**5**	**1**	**5***	**1**	**1**

Table 8: Age-at-death profiles as indicated by degree of epiphyseal fusion. *denotes age range for sheep only; data unavailable for goat. **age range based on data for pigs. Bull and Payne (1982: 70) suggest that fusion may occur later in wild boar than pig

NSP	Taxon	Bone	Prox	Dist	Age
Early fusing					
1	Cattle	Humerus		Fusing	42-48 months
4	Cattle	Radius	Fused		≥ 12-18 months
1	Cattle	Radius	Unfused		≤ 12-18 months
1	Cattle	Metapodial	Unfused	Unfused	Foetal
4	Cattle	Phalanx 1	Fused		≥ 18-24 months
1	Cattle	Phalanx 2	Fused		≥ 18-24 months
8	Pig	Scapula		Unfused	≤ 12 months
2	Pig	Scapula		Fused	≥ 12 months
1	Pig	Humerus	Unfused	Fusing	12-18 months
7	Pig	Humerus		Unfused	≤ 12-18 months
1	Pig	Radius	Fused		≥ 12 months
1	Pig	Radius	Fusing	Unfused	12 months
3	Pig	Radius	Unfused		≤ 12 months
1	Pig	Phalanx 1	Fused	Fused	≥ 24 months
1	Pig	Phalanx 1	Unfused		≤ 24 months
2	Pig	Acetabulum	Fused	Fused	≥ 12 months
2	Sheep/goat	Scapula		Fused	≥ 6-13 months
1	Sheep/goat	Scapula		Unfused	≤ 6-13 months
2	Sheep/goat	Humerus	Unfused	Fused	3-84 months
1	Sheep/goat	Humerus		Unfused	≤ 3-13 months
1	Sheep/goat	Radius	Fused	Unfused	3-84 months
2	Sheep/goat	Radius	Unfused		≤ 3-10 months
2	Sheep/goat	Metapodial	Unfused	Unfused	Foetal
4	Sheep/goat	Phalanx 1	Fused		≥ 6-16 months
1	Sheep/goat	Phalanx 1	Unfused		≤ 6-16 months
6	Sheep/goat	Phalanx 1	Fusing		6-16 months
7	Sheep/goat	Phalanx 2	Fused		≥ 6-16 months
2	Sheep/goat	Acetabulum	Fused	Fused	≥ 6-10 months*
2	Goat	Humerus	Unfused	Fused	11-84 months
1	Red deer	Phalanx 1	Fused	Fused	≥ 17-20 months
Middle fusing					
3	Cattle	Metapodial		Fused	≥ 24-36 months
1	Cattle	Metapodial		Unfused	≤ 24-36 months
2	Cattle	Tibia		Fused	≥ 24-30 months
4	Pig	Tibia	Unfused	Unfused	≤ 24-30 months
1	Pig	Tibia	Unfused	Fusing	24-30 months
1	Wild boar	Calcaneum	Unfused		≤ 24-30 months**
4	Sheep/goat	Metapodial		Unfused	≤ 18-36 months
4	Sheep/goat	Metapodial	Fused	Unfused	≤ 18-36 months
1	Sheep/goat	Tibia		Fused	≥ 15-24 months
2	Sheep/goat	Calcaneum	Unfused		≤ 23-60 months
1	Goat	Tibia	Unfused	Unfused	≤ 19-24 months
1	Goat	Metapodial		Fusing	23-36 months
1	Red deer	Tibia	Unfused	Unfused	≤ 20-23 months
1	Red deer	Tibia		Fused	≥ 20-23 months
1	Red deer	Calcaneum	Fused		≥ 26-29 months
1	Roe deer	Metapodial	Fused	Fused	≥ 26-29 months
1	Roe deer	Metapodial		Unfused	≤ 26-29 months
Late fusing					
2	Cattle	Vertebra	Fused	Fused	≥ 84-108 months
2	Cattle	Vertebra	Unfused	Unfused	≤ 84-108 months
1	Cattle	Vertebra	Unfused	Fusing	84-108 months
1	Cattle	Humerus	Unfused		≤ 42-48 months
2	Cattle	Radius		Fusing	42-48 months
1	Cattle	Radius		Unfused	≤ 42-48 months
2	Cattle	Ulna	Unfused		≤ 42-48 months
1	Cattle	Tibia	Unfused		≤ 42-48 months
2	Pig	Humerus	Unfused		≤ 42 months
1	Pig	Radius		Unfused	≤ 42 months
4	Pig	Ulna	Unfused		≤ 36-42 months

1	Pig	Ulna	Unfused	Unfused	≤ 36-42 months
4	Pig	Femur	Unfused	Unfused	≤ 42 months
2	Pig	Femur		Unfused	≤ 42 months
2	Pig	Tibia	Unfused		≤ 42 months
3	Sheep/goat	Ulna	Unfused		≤ 24-48 months
1	Sheep/goat	Femur	Unfused	Unfused	≤ 23-60 months
2	Sheep/goat	Femur	Unfused		≤ 23-84 months
1	Sheep/goat	Tibia	Unfused		≤ 23-60 months
1	Goat	Ulna	Unfused		≤ 24-84 months
1	Goat	Femur	Unfused	Unfused	≤ 23-60 months
1	Red deer	Femur	Unfused	Unfused	≤ 26-42 months
1	Red deer	Ulna	Unfused		≤ 26-42 months

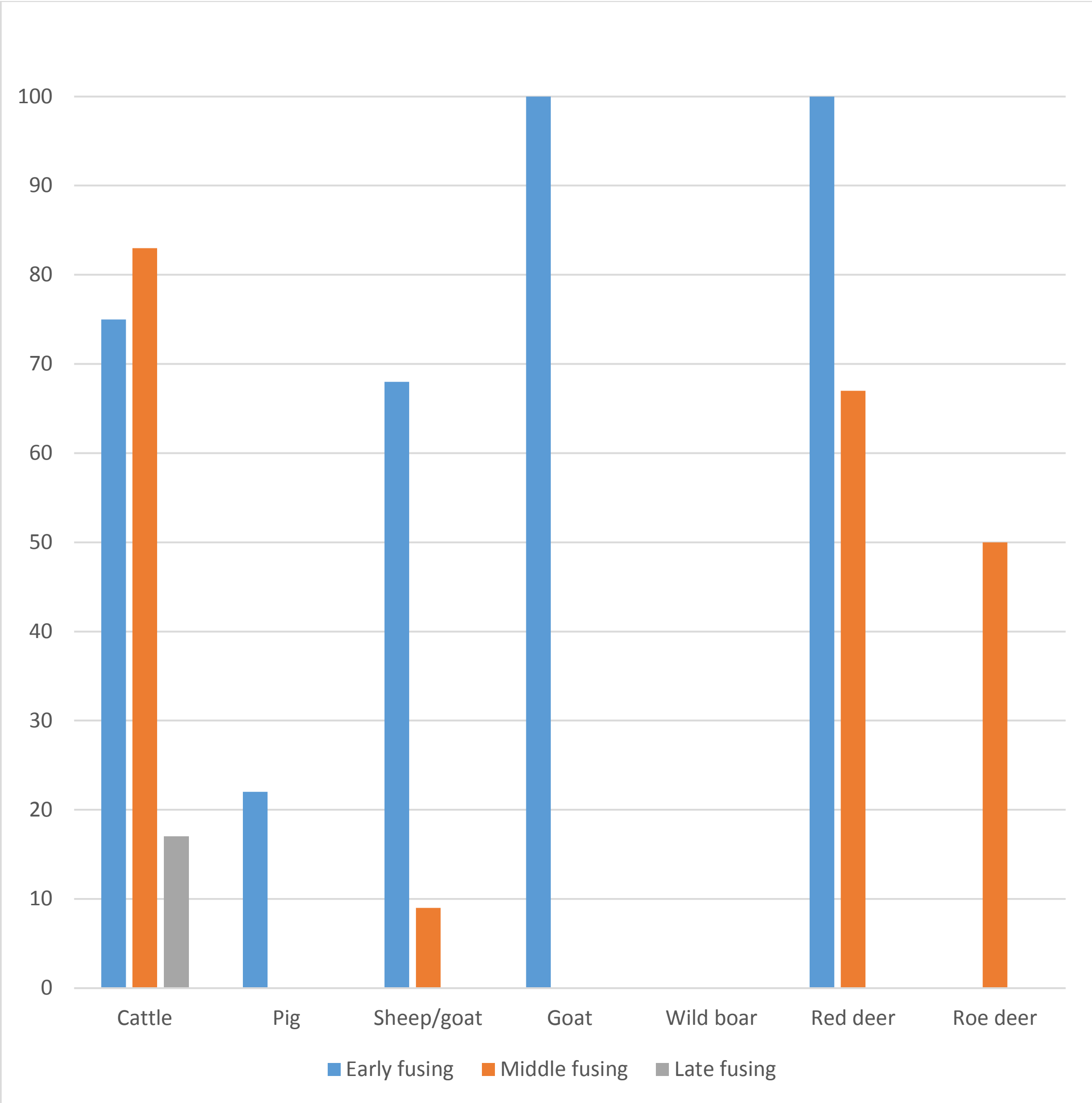


Figure 3: Age-at-death profiles as indicated by specimens exhibiting epiphyseal fusion

Table 9: Age-at-death profiles as indicated by tooth wear

Small finds no.	Context	Taxon	Mandibular/ loose	Side	C	dP2	dP3	dP4	P2	P3	P4	M1	M2	M3	Age
8	N. E. Chamber. Topmost chalky fill	Cattle	Mandibular	Right		Present	Present	Present							≥ 0-3 years
	Thurnham's chamber, S. E. corner. Behind drystone walling	Cattle	Mandibular	Right				Present				d	b		18-30 months
73	Passage and chamber. Thurnham's fill	Pig	Mandibular	Left					Present		a	c	b		14-21 months
73	Passage and chamber. Thurnham's fill	Pig	Mandibular	Right							a	c	b		14-21 months
93	N. W. Chamber. East ½ section. Black layer 1	Pig	Mandibular	Left			Starting to erupt	Erupting							≤ 0-2 months
68	S. W. chamber. Chalk rubble under black layer	Pig	Mandibular	Left				Present				Present	u		≤ 7-14 months
90	N. W. chamber chalk rubble filling 2 ft below datum	Pig	Mandibular							Present	b	f	d	a (erupting)	14-21 months
121	N. E. chamber. Below black layer 4	Sheep/goat	Mandibular	Left								e	c		2-3 years
1	N. E. Chamber. Topmost chalky fill	Sheep/goat	Mandibular	Right		Present	Present	Present					Present	Erupting	≤ 1-2 years
167	S. E. chamber floor	Sheep/goat	Mandibular	Left		Present	Present	Present				d	a (erupting)		6-12 months
90	N. W. chamber chalk rubble filling 2 ft below datum	Sheep/goat	Mandibular	Left					u	Present	Present	Present	e		≤ 1-2 years
90	N. W. chamber chalk rubble filling 2 ft below datum	Sheep/goat	Mandibular	Right					u	Present	Present	e	d		≤ 1-2 years
73	Passage and chamber. Thurnham's fill	Sheep/goat	Loose	Left										a	≤ 1-2 years
1	N. E. Chamber. Topmost chalky fill	Dog	Mandibular	Left								d	present		15-36 months
116	N. E. chamber between layers 3 & 4	Wild boar	Loose		Present										≥ 7-12 months

Sex

Two of three pig canines recovered from Thurnham's backfill of the passage and west chamber come from a boar, the third coming from a sow, and a wild boar canine from the north east chamber between layers 3 and 4 comes from a male animal. Two sections of roe deer antler, not included in the published animal bone report, but shown in plan in Figure 8 and in photograph Plate XIV of the excavation report (Piggott 1962) must derive from a male animal. Fragmentation limits further secure determinations of sex.

Butchery

Butchery evidence is preserved in 28 specimens, most deriving from secondary deposits in the chambers and characteristic of defleshing (Table 10). Of note is dog mandible sf. 1 (Figure 4), which shows fine parallel cuts indicative of skinning.

Bone working

Evidence for bone working is found in 33 specimens exceeding numbers suggested in the published report (Piggott 1962: 49-53), with forms including 14 points, ten beads and two 'scoops'. Most were recovered from secondary or unrecorded contexts, although one specimen described as a fragment of a pin is recorded as having been found on the floor of the south east chamber, a primary context. This contradicts Piggott's statement that artefacts recovered from this context were limited to a leaf-shaped arrow head and pottery sherds.

Pathologies

Evidence for pathology was identified in seven specimens (Table 11), most notably a case of chronic osteomyelitis found in an unfused sheep/goat scapula (Figures 5 and 6). This is an advanced infection that has caused both the proliferation and destruction of bone along the blade and would have caused this young individual excruciating pain, impacting its movement.

Table 10: Butchery evidence.

Small finds no.	Context	NSP	Taxon	Element	Butchery	Location
125	N. E. chamber. Hearth in corner of lowest black layer	1	Cattle	Radius	Cuts	At proximal end of shaft
121	N. E. chamber. Below black layer 4	1	Cattle	Radius	Cuts	At distal end of shaft
20	N. E. Chamber. Layer in between black layers 3 & 4	1	Cattle	Ulna	Cuts	At proximal end, close to articular surface
264		1	Cattle	Humerus	Cuts	At distal end of shaft
264		1	Cattle	Pelvis	Cuts	At edge of acetabulum
78	Undisturbed passage filling below 2' 6'' below datum	1	Cattle	Radius	Cuts	Across shaft, proximal end of fragment
	On the old surface in the region of the base of stone 39 which had been removed	1	Cattle	Phalanx 1	Fractured	Hole (15.2 mm) at distal shaft
121	N. E. chamber. Below black layer 4	1	Pig	Humerus	Cuts	At distal end of shaft
86	Chalk rubble between portal stones	1	Pig	Femur	Cuts	Shaft
	North west chamber in the rubble at the north east corner, Peterborough levels in chamber fill	2	Pig	Calcaneum	Cuts	Many, parallel, along shaft
59	Top of filling	1	Sheep/goat	Metacarpal	Cuts	Across shaft
1	N. E. Chamber. Topmost chalky fill	1	Dog	Mandible	Cuts	Labial surface at articulation
104	S. E. chamber. Grey brown layer 4' below datum	1	Rabbit	Tibia	Cuts	Mid-shaft
121	N. E. chamber. Below black layer 4	1	Large mammal	Indeterminate long bone	Cuts	Across shaft
4	N. E. Chamber in between black layers 1 & 2	1	Large mammal	Femur	Cuts	Across shaft
		1	Large mammal	Rib	Saw	Across proximal end
64	S. W. chamber. Black layer & black layer continuous over dry stone walling in N.W. corner	1	Medium mammal	Rib	Cuts	Ventral aspect
60	S. W. chamber. Chalk rubble filling	1	Medium mammal	Rib	Cuts	Across blade
4	N. E. Chamber in between black layers 1 & 2	1	Medium mammal	Rib	Cuts	Across shaft
46	From chalk rubble layer	1	Medium mammal	Femur	Cuts	Along cranial aspect of proximal shaft
90	N. W. chamber chalk rubble filling 2 ft below datum	1	Medium mammal	Rib	Cuts	At cranial aspect of shaft, close to proximal end
90	N. W. chamber chalk rubble filling 2 ft below datum	1	Medium mammal	Rib	Cuts	At cranial aspect of shaft, close to proximal end
1	N. E. Chamber. Topmost chalky fill	2	Medium mammal	Rib	Cuts	Across shaft
		1	Medium mammal	Phalanx 1	Fractured	Hole (5.3 mm) on internal shaft
	Found between black layers 3 and 4 of the north east chamber	1	Medium mammal	Humerus	Fractured	Hole (8.9 mm) on distal shaft.
287	Cutting V. E-W section. Loose chalk rubble. Base of primary mound at back of stone 43	1	Indeterminate	Femur	Cut	Across anterior aspect mid-shaft

Figure 4: Dog mandible sf. 1 showing fine cut marks indicative of skinning, with permission © National Museums Scotland

Table 11: Pathology

Small finds no.	Context	NSP	Taxon	Element	Side	Pathologies
59	Top of filling	1	Sheep	Scapula	Left	Chronic osteomyelitis
46	From chalk rubble layer	1	Pig	Scapula	Right	Depression in glenoid cavity
64	S. W. chamber. Black layer & black layer continuous over dry stone walling in N.W. corner	1	Medium mammal	Femur	Left	Distinct bulging of bone at distal end of shaft
78	Undisturbed passage filling below 2' 6'' below datum	1	Pig	Ulna	Right	Fold in articular surface
90	N. W. chamber chalk rubble filling 2 ft below datum	1	Sheep/goat	Thoracic vertebra		Fusion point of distal spine facing cranially
90	N. W. chamber chalk rubble filling 2 ft below datum	1	Medium mammal	Rib	Indeterminate	Healed fracture
	Thurnham's chamber, S. E. corner. Behind drystone walling	1	Cattle	Radius	Right	Osteomyelitis

Antler

Two sections of roe deer antler, recorded in plan in Figure 8 and in photograph Plate XIV of the excavation report (Piggott 1962a) appear to be the only evidence of antler in the barrow. It is recorded as having been shed (Piggott 1962a: 25).

Figure 5: Sheep/goat scapula sf. 59 exhibiting evidence of chronic osteomyelitis, with permission © National Museums Scotland

Figure 6: Sheep/goat scapula sf. 59 exhibiting evidence of chronic osteomyelitis, with permission © National Museums Scotland

Conclusions

The West Kennet long barrow animal bone assemblage exhibited high levels of surface abrasion *and* low fragmentation, both consequences of its chambered structure that permitted repeated episodes of entry and deposition through time. This has also resulted in the preservation of a broad range of species, some introduced through anthropogenic action and others likely through their own agency, as well as the actions of scavengers. As at other Neolithic long barrow sites, domestic species dominate. Cattle remains are ubiquitous; cattle are represented in almost all contexts, including the primary deposits – the same stratified layers as the human burials. All body zones are typically represented, and the mortality profile spans the full spectrum from foetal to over 7-9 years. The structural distribution and skeletal zone representation in pig and sheep/goat are similar to those of cattle. However, there is a strong contrast in mortality profiles, pig and sheep/goat almost exclusively comprising young animals, with all evidence pertaining to animals with an age at death at or below three years. Three years emerges as a significant age; the partially articulated goat skeleton and the dog tooth from which an age-at-death estimate could be ascertained indicate ranges of 23-36 months and 15-36 months respectively. Red and roe deer mortality profiles are different again, the evidence suggesting that remains largely derive from adult animals. There does not appear to be any taxonomic or age related spatial patterning to the distribution of deposits between the different chambers as has been suggested for human remains (Fowler and Harris 2015: 138; Thomas and Whittle 1986: 133).

The presence of partially articulated and disarticulated animal remains reference the treatment of the human dead, and some degree of parity can be found through the fact of their processing. Some animal and human remains were burnt prior to incorporation into the barrow structure and placed in discrete deposits, and engagement with bodies and body parts continued after death. Human and animal deposits were manipulated – intentionally and unintentionally. They accreted within the chambers. Whilst the removal of and subsequent interaction with human remains has been suggested (Piggott 1962: 68), ongoing dialogue with animal body parts is beyond question, evidenced through the presence not only of butchered bodies, but of worked bone objects, and the skinned dog.

Not only riddled with interesting similarities, contradictions and differences, the West Kennet long barrow faunal assemblage is characterised by extremes (and the odd coincidence). Even the most conservative site level MNI total of 43 individuals is exceptionally high for a long barrow (compare with Beckhampton Road, Chapter 8; Appendix 10; Horslip, Chapter 8;

Appendix 7; and Woodford G2, Chapter 7; Appendix 5) – and interestingly matches Piggott's estimate for the human MNI exactly. The MNIs of 104 and 108 individuals for the stratified contexts are more likely representative given the temporal scales involved in the different phases of deposition: radiocarbon date ranges suggest that primary deposition occurred over 10-30 years and following a pause in activity of approximately a century, secondary deposition occurred over approximately a millennium (Bayliss *et al.* 2007).

The findings of this programme of faunal reanalysis expand upon the information tendered in the published report, which amounts to five paragraphs and a table, and in some cases undermines Piggott's assertions – not least his omission of animal remains from primary contexts and therefore their association with human remains. It would be fair to assert, therefore, that the excavation report not only undermines the significance of animals and human-animal relationships, but also the place of secondary deposition, which can certainly be framed in terms of iterative practices (cf. Butler 1993; Jones 2007; 2012) concerned with the development of social memory, identity and the creation of temporalities. The reanalysis of the complete human bone assemblage and its synthesis into the broader dataset is an urgent priority. This will enable new understandings of the extant excavated assemblage and its sub-assemblages, and the nature of human-animal relationships presenced to emerge and develop. It will change the assemblage as West Kennet expands, reaching out, connecting and giving rise to new and different phenomena (Fowler and Harris 2015).

* See Appendix 11 for full zooarchaeological dataset

Appendix 10. Beckhampton Road long barrow zooarchaeological report

Introduction and methods

This report presents the analysis of stratified, hand-collected animal bone recovered during excavation at Beckhampton Road Neolithic long barrow, Wiltshire in 1964 by Ashbee and subsequently deposited with and curated by Wiltshire Museum, Devizes. Situated on a low ridge rising from the open plain between Beckhampton and Devizes, Beckhampton Road long barrow was investigated on at least one previous occasion by Thurnham in the 19th century. Thurnham's approach falls some considerable way short of modern excavation standards, the only record of his activities being entry 20 in Table 1 published in his discourse 'On Ancient British Barrows, especially those of Wiltshire and the adjoining counties', describing the intervention as 'unsuccessful' (Thurnham 1869: 180). A consequence of this work is a context described as 'disturbance' in the documentary records and adopted in the following report, and represents the unstratified backfill. No finds from Thurnham's excavation survive. The prior existence of material uncovered by ploughing in the 19th century and deposited at Wiltshire Museum, Devizes is alluded to in Ashbee's excavation report (Smith 1885: 105 cited by Ashbee *et al.* 1979: 230), but is now absent from the collections.

The extant assemblage comprises 680 bone and tooth fragments, forming 678 specimens (NSP). Macroscopic examination was conducted and identifications made through consultation of the skeletal reference collection at the School of Archaeology and Ancient History, University of Leicester. Identification was made to element, side and taxon; where full identification could not be made due to the absence of diagnostic morphological markers, material was assigned to broader categories on the basis of element, size and class. Distinction between sheep and goat remains was attempted using standards published by Boessneck (1969). Elements were recorded using the zoning system detailed by Mahoney (2013), zones being recorded when more than 75% of the zone was present. Age-at-death ranges were assigned according to the degree of epiphyseal fusion using criteria published by Reitz and Wing (2008: 72, Table 3.5), and by and through analysis of wear on mandibular dentition. Tooth wear in cattle was recorded using the Grant system (1982) and an age range was assigned using Halstead's age stage descriptors (1985) and stages developed by Hambleton (1999: 64-65). Measurements of specimens were taken following standards established by von den Driesch (1976). The anatomical location and character of burning, butchery and gnawing were recorded and described. Surface preservation was graded using the scale recommended by Harland *et al.* (2003). All fragments measuring over 10 mm were documented; joining fragments were recorded as a single specimen.

Preservation and taphonomy

This assemblage is highly fragmented; just one percent of elements were complete, excluding teeth. However, the ratio of 31 loose teeth against nine maxillary and mandibular fragments with intact dentition is low in comparison to other long barrow assemblages such as Amesbury 42 and Woodford G2 (Appendices 3 and 5). This can, in part, be attributed to post-excavation taphonomic processes that have resulted in cattle skull B1, which was recorded in the excavation report as complete, to be broken into over 250 fragments, not all of which can now be definitively identified as cattle beyond the description on the packaging. Surface preservation is generally poor, with 62% of the assemblage falling within the assigned a 'poor' rating, 37% 'fair', and just one percent falling within the 'good' category, following Harland *et al.* (2003). Evidence of exposure through weathering is evident in 16% of the assemblage, notably cattle frontal B1 (Figure 1) which evidences weathering consistent with Behrensmeyer's stage 3, indicative of exposure for 4-15 following death (Behrensmeyer 1978), and root damage affects four percent of the bone.

A singe at the distal end of a red deer antler specimen provides the only example of burning/heat modification in the Beckhampton Road assemblage, identifying it as antler specimen number 11 in the excavation report. It is described as a rake, recovered from the old land surface and forming one of two stacked deposits of antler tools (Ashbee *et al.* 1979: 247). Six bone fragments evidence carnivore gnawing, five of which form part of cattle bone deposit B1 (which incorporated a complete cranium, left and right mandibles, an atlas, axis and four cervical vertebrae) indicating that the remains were accessible to scavengers for a period before deposition (Table 1). However, the completeness of the remains, which include a hyoid fragment, suggest that this period was very brief. Rodent gnawing is also present on three specimens from this context. A left humerus fragment of an unidentified medium sized mammal from the pre-barrow soil provides the only other example of carnivore gnawing in the assemblage, and a left cattle humerus from disturbed deposits the only other evidence of rodent gnawing. Poor surface preservation likely prevents identification of signs of animal scavenging in other specimens.

Figure 1: Cattle frontal B1 (DZSWS.1965.13.7) exhibiting evidence of weathering consistent with Behrensmeyer's stage 3 indicative of exposure for 4-15 following death, with permission © Wiltshire Museum, Devizes

Table 1: Gnawing evidence

Small finds no.	Context	NSP	Taxon	Element	Side	Gnawing	Location
B1	Buried surface, Bay 1 facing proximal end of mound	1	Cattle	Axis		Rodent, carnivore	Edges of vertebral body
B1	Buried surface, Bay 1 facing proximal end of mound	1	Large mammal	Cranium	Indeterminate	carnivore	Edges of fragment
B1	Buried surface, Bay 1 facing proximal end of mound	1	Cattle	Hyoid	Indeterminate	carnivore	Edge
B1	Buried surface, Bay 1 facing proximal end of mound	1	Cattle	Mandible	Left	Rodent	Condyle and coronoid process
B1	Buried surface, Bay 1 facing proximal end of mound	1	Cattle	Cervical vertebra		carnivore	Caudal aspect of spinous process and anterior articular processes
B1	Buried surface, Bay 1 facing proximal end of mound	1	Cattle	Cervical vertebra		carnivore	Anterior and posterior articular processes (left and right), ventral branches of transverse processes (left and right)
B1	Buried surface, Bay 1 facing proximal end of mound	1	Cattle	Axis		Rodent	Ventral arch, left and right edges of wings, dorsal tubercle
B3	Cutting: C North. Near bottom of disturbance.	1	Cattle	Metatarsal	Right	Rodent	Proximal end of shaft
B6	B South. Beneath top of buried land surface	1	Medium mammal	Humerus	Left	carnivore	All surfaces

Taxa and body part representation

Cattle specimens dominate the assemblage (Table 2) comprising 13% of the site level bone assemblage, and are present in all contexts (Figure 2), but this is a result of the aforementioned fragmentation of skull B1, which has inflated specimen numbers. Pig, sheep/goat, aurochs, wild boar, red deer and roe deer are present in much lower numbers, each contributing to one percent or less of the NSP. The impact of poor preservation and high fragmentation may be a factor favouring the survival of the robust bones of cattle over the fragile and more friable bones of the smaller taxa. That cattle are represented by bones from all zones of the skeleton, whereas the other taxa are represented by limb bones along with two pig and three sheep/goat teeth is certainly suggestive if not of selection for high meat-yield body parts, then a taphonomic influence (Table 3). The presence of cattle bone in all broad contexts would seem to lend further support for this argument (Figure 2), but is important to here consider the nature of the osseous deposits, many of which are quite clearly deliberate and spatially discrete. The presence of three cattle skulls placed at intervals along the axis of the barrow marks the treatment of domestic cattle out as different in comparison to other species, and should not be downplayed. Taphonomic factors cannot explain the difference in treatment between cattle and other taxa present; teeth are particularly resilient to degradation, meaning that the inclusion of crania of other species could be detected. The treatment of aurochs is also quite distinctly different. Significantly larger and more robust than domestic cattle, yet represented by limb bones only, the survival of cranial deposits would be expected, thereby providing further confirmation that it is specifically *domestic* cattle that are being singled out. The treatment of red deer antler is likewise particular and will be discussed in further detail below.

The presence of low numbers of aurochs specimens, identifications confirmed through assessment against comparative metric data (Wright 2016), in addition to domesticated cattle is interesting, raising questions of how, and indeed whether, the two species were differentiated. The same questions arise in relation to the inclusion of both pig and wild boar, although differences in treatment are not as marked. The complete absence of human bone in this long barrow osseous assemblage is remarkable, although not completely unprecedented, drawing comparison with Horslip and South Street long barrows (Chapter 8; Appendices 7 and 8), both within four kilometres of the site and both of which are almost devoid of human bone. The treatment of the cattle skulls is here seen to be key to unpicking the particular nature of this structure and the form of human-animal relationships presenced.

Table 2: Taxonomic representation per context (NSP)

Context	Cattle	Pig	Sheep/ goat	Aurochs	Wild boar	Red deer	Roe deer	Large mammal	Medium mammal	Indeterminate	Total
Below old land surface	1	1				1		9	2	6	20
Old land surface	34		1	1		1	2	72	2	159	272
Mound	20	3		1	1		1	175	4	6	211
North ditch	5	1	4					2		27	39
South ditch	4							2	2	1	9
Round barrow	2						2	1		1	6
Plough soil	2		1				1			3	7
Disturbance	1								1	2	4
Other	14		2					7		87	110
Total	**83**	**5**	**8**	**2**	**1**	**2**	**6**	**268**	**11**	**292**	**678**

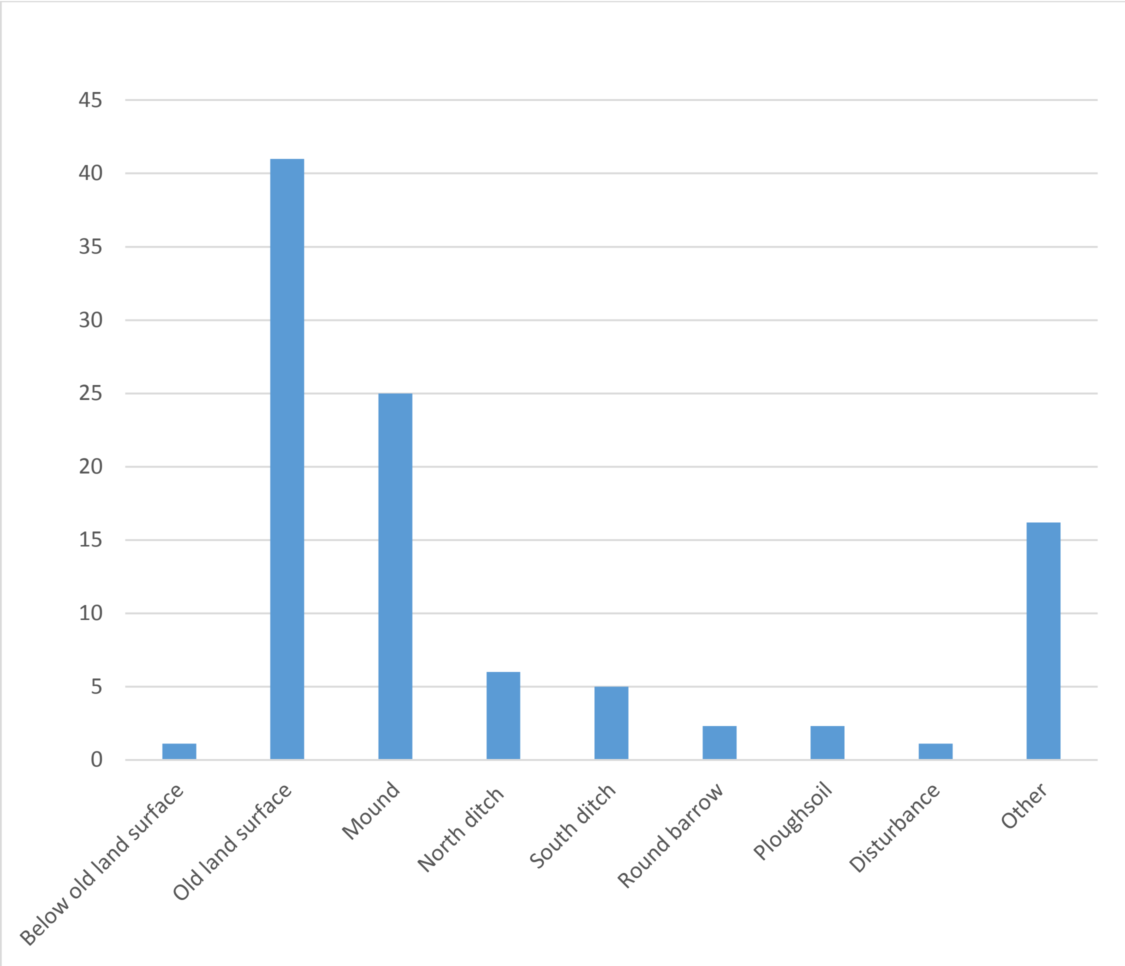


Figure 2: Percentage representation of cattle per context (NSP)

Table 3: Body part representation per taxon by zone, site scale assemblage

Element	Cattle	Pig	Sheep/goat	Aurochs	Wild boar	Red deer	Roe deer
Head							
Cranium	27						
Horn core	4						
Mandible	5						
Tooth	24	2	3				
Hyoid	1						
Spine							
Atlas	2						
Axis	1						
Cervical vertebra	4						
Scapula	2	2		2			
Pelvis	1						
Forelimb							
Humerus	2	1					3
Radius	1						
Metacarpal				1			2
Hindlimb							
Femur	1						
Tibia	1						
Metatarsal	2		2			1	1
Feet							
Calcaneum	1				1		
Phalanx 1	1		1			1	

MNI

MNI calculations are typically low for a long barrow site (Tables 4 and 5), with a minimum of 12 individuals at site level: three cattle; two pigs; one sheep/goat; two aurochs; one wild boar; one red deer; and two roe deer (Table 5). Given the preservation issues highlighted, this count conservative. There is discrepancy between the site level MNI and counts for each context (Table 4), which may be a factor of sample aggregation whereby the remains of a single animal have been deposited in, or have moved between, multiple contexts.

Table 4: MNI per context

Context	Cattle	Pig	Sheep/ goat	Aurochs	Wild boar	Red deer	Roe deer
Below old land surface	1	1				1	
Old land surface	1			1		1	1
Mound	1	3		1	1		1
North ditch	1	1	1				
South ditch	1						
Round barrow	2						1
Plough soil	1		1				1
Disturbance	2						
Other	1	1	1	1			
Total	**11**	**6**	**3**	**3**		**2**	**4**

Table 5: MNI site level

Cattle	Pig	Sheep/ goat	Aurochs	Wild boar	Red deer	Roe deer	Total
3	2	1	2	1	1	2	12

Mortality profile

Both fusion and tooth wear data are extremely limited, but indicate the presence of predominantly adult animals within the sample. Of the 19 specimens that evidence degree of fusion, just two were unfused and five fusing, all of which fall within the late fusing bone category (Table 6; Figure 3). Only cattle dentition proved suitable for analysis of wear stages, the results of which agree with the findings of the fusion data (Table 7). The small sample size limits the potential of these data to work at the scale of the individual, but given the nature of the deposits at this site, this seems entirely appropriate. Those cattle (in particular) selected for inclusion in the structure would have been well known, with biographies spanning years. Their needs and care would have impacted upon the rhythms and routines of human lives, and the lives of other animals living within their community or communities. Further, compelling evidence for the biographical details of one individual are developed, through osteological analysis, below.

Table 6: Age-at-death profiles as indicated by degree of epiphyseal fusion

NSP	Taxon	Bone	Prox	Dist	Age
Early fusing					
1	Cattle	Scapula		Fused	≥ 7-10 months
1	Cattle	Humerus		Fused	≥ 12-18 months
1	Cattle	Phalanx 1	Fused	Fused	≥ 18-24 months
2	Pig	Scapula		Fused	≥ 12 months
1	Pig	Humerus		Fused	≥ 12-18 months
1	Sheep/goat	Phalanx 1	Fused	Fused	≥ 6-16 months
1	Red deer	Phalanx 1	Fused	Fused	≥ 17-20 months
2	Roe deer	Humerus		Fused	≥ 12-20 months
Middle fusing					
1	Red deer	Metapodial		Fused	≥ 26-29 months
Late fusing					
1	Cattle	Tibia	Unfused	Fused	24-48 months
1	Cattle	Vertebra		Fusing	84-108 months
4	Cattle	Vertebra	Fusing	Fusing	84-108 months
1	Cattle	Humerus	Unfused		< 42-48 months
1	Cattle	Radius		Fused	≥ 42-48 months

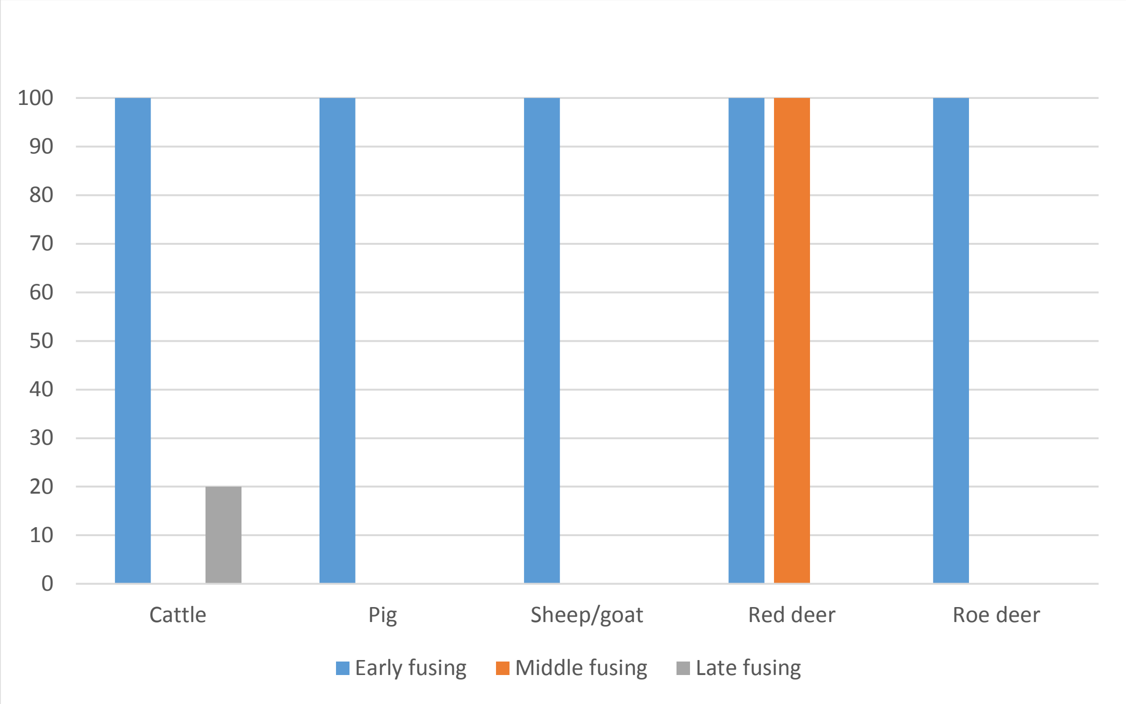


Figure 3: Age-at-death profiles as indicated by specimens exhibiting full epiphyseal fusion

Table 7: Age-at-death profiles as indicated by tooth wear

Small finds no.	Context	Taxon	Mandibular/ loose	Side	M1	M1/2	M2	M3	Age
B4	From marl make-up of Bay XX close to an offset fence	Cattle	Loose			k			≥ 8-30 months
B4	From marl make-up of Bay XX close to an offset fence	Cattle	Loose			k			≥ 8-30 months
B1	Buried surface, Bay 1 facing proximal end of mound	Cattle	Mandible	Left	k		k	g	Adult; > 36 months
B1	Buried surface, Bay 1 facing proximal end of mound	Cattle	Mandible	Right	k		k	g	Adult; > 36 months

Sex

Pig canine sf. B14 (DZSWS. 1965. 13. 25) recovered from the pre-barrow soil comes from a male individual, and the red deer antler forming the stacked deposits of tools (Ashbee *et al.* 1979: 247) on the old ground surface and recovered from the mound, ditch, plough soil and indeterminate contexts must also come from males. Fragmentation limits further secure determinations of sex.

Butchery

Just 4% (NSP) of bone specimens evidence butchery: 73% of these derive from the old land surface; 8% from the mound; 8% from the north ditch; and 11% from indeterminate contexts. The majority of this material (77%) is cattle bone, which shows a combination of cuts, chops and slices (Table 8). Evidence from the cattle cranial and vertebral elements is suggestive of division of the carcass and skinning. Butchery marks on the two aurochs specimens indicate practices focused on the division of the carcass and defleshing; the red deer and wild boar specimens, totalling two and one respectively, display marks indicative of defleshing. Of particular interest is cattle frontal sf. B4, which shows healed depression fracture to left frontal (Figure 4). This evidence suggests that this individual survived for several years following injury (Dr. A. Stoll pers. comm.), which may feasibly amount to an earlier attempt at slaughter, and could account for its inclusion at the proximal end of the mound's central axis. Such a recovery may, therefore, have marked this animal out as special, with exceptional strength, resilience, or the ability to cheat – or even return from – death.

Bone working

Seven red deer antler specimens show chop marks, which form the divisions between antler segments. Two pieces of shaped bone recovered from the loam layer of the north ditch are suggestive of bone working. Indeed, these are noted in the excavation report, one specimen is described as residual material resulting from the production of bone discs (Ashbee *et al.* 1979: 250).

Table 8: Butchery evidence

Small finds no.	Context	NSP	Taxon	Element	Side	Butchery	Location
B1	Buried surface, Bay 1 facing proximal end of mound	1	Cattle	Cranium	Left	Chop	Premaxilla
B1	Buried surface, Bay 1 facing proximal end of mound	1	Cattle	Cranium	Right	Chop	Premaxilla
B1	Buried surface, Bay 1 facing proximal end of mound	1	Cattle	Cranium	Right	Chop	Below malar bone
B4	From marl make-up of Bay XX close to an offset fence	1	Cattle	Cranium		Slice	Left frontal
B1	Buried surface, Bay 1 facing proximal end of mound	1	Cattle	Maxilla	Left	Cut	Superior to the infra-orbital foramen, vertical
B1	Buried surface, Bay 1 facing proximal end of mound	1	Cattle	Maxilla	Left		
B1	Buried surface, Bay 1 facing proximal end of mound	1	Cattle	Maxilla	Right		
B1	Buried surface, Bay 1 facing proximal end of mound	1	Cattle	Mandible	Left	Cuts	Lingual and labial aspects
B1	Buried surface, Bay 1 facing proximal end of mound	1	Cattle	Mandible	Right	Cut	Lingual and labial aspect
B1	Buried surface, Bay 1 facing proximal end of mound	1	Cattle	Atlas		Cut	Cranial, aspect of left wing
B1	Buried surface, Bay 1 facing proximal end of mound	1	Cattle	Cervical vertebra		Cut	Superior aspect of left anterior articular process.
B1	Buried surface, Bay 1 facing proximal end of mound	1	Cattle	Cervical vertebra		Cut	Superior aspect of right anterior articular process and right ventral branch of transverse process.
B1	Buried surface, Bay 1 facing proximal end of mound	1	Cattle	Cervical vertebra		Cut	Superior aspect of right anterior articular process
B1	Buried surface, Bay 1 facing proximal end of mound	1	Cattle	Cervical vertebra		Cut	Superior aspect of right anterior articular process, right body and right ventral branch of transverse process.
B53	D south. No context. Associated with accession number 13.1.1965.15	1	Cattle	Scapula	Left	Chop	Across distal end
B60	Cutting - North ditch, east end. Grey fill, (primary silt). Co/ords - In west baulk. Depth below surface - 3'7'; 51'9'' North	1	Cattle	Humerus	Right	Chop	Across centre of shaft
B57	C North, extension cut. North ditch, grey fill (primary fill) layer 4	1	Cattle	Radius	Right	Chop, slices	Forming proximal end of fragment and across proximal shaft
B22	Transverse baulk C/D South. Old land surface	1	Cattle	Pelvis	Left	Cut	Medial aspect
B39	Cutting - D North. Mound material	1	Wild boar	Scapula	Left	Cut	5 small cuts at edge of neck
B53	D south. No context. Associated with accession number 13.1.1965.15	1	Aurochs	Scapula	Right	Cuts	Multiple fine cuts across ventral surface
B20	Transverse baulk C/D South. Old land surface	1	Aurochs	Metacarpal	Left	Chop	Anterior surface
B8	C South. Below O.L.S.	1	Red deer	Metatarsal	Right	Cuts	7 cuts to medial edge of condyle
B21	Transverse baulk C/D South. O.L.S.	1	Red deer	Phalanx 1		Cut	Anterior surface
B1	Buried surface, Bay 1 facing proximal end of mound	1	Large mammal	Cranium	Indeterminate	Chop	Edge
B2	Cutting C (axial baulk) in disturbance 3'' w. of B1 (ox skull and vertebrae in-situ)	1	Medium mammal	Pelvis		Chop; cut	Across ischium; ventral aspect of acetabulum
B11	D South. Under O.L.S.	1	Medium mammal	Humerus	Right	Cut	Posterior, diagonal, parallel across distal end of shaft

Figure 4: Healed depression fracture to left frontal, sf. B4 (DZSWS. 1965. 13. 83a), with permission © Wiltshire Museum, Devizes

Pathologies

Five specimens showed evidence of pathology (Table 9). Interestingly, three specimens, one cattle, one pig, and one aurochs evidence articular defects of the glenoid cavity of the scapula (for example, see Figure 5). The cavity noted in the roe deer specimen evidences osteomyelitis, which would have impacted upon this individual's mobility.

Table 9: Pathology

Small finds no.	Context	NSP	Taxon	Element	Side	Pathologies
B39	Cutting - D North. Mound material	1	Cattle	Scapula	Indeterminate	Articular defect
B39	Cutting - D North. Mound material	1	Pig	Scapula	Left	Articular defect
B53	D south. No context. Associated with accession number 13.1.1965.15	1	Aurochs	Scapula	Right	Articular defect
B38	D South. Mound	1	Roe deer	Humerus	Right	Small cavity in condyle
B48	C North. Layer: Base of plough soil	1	Roe deer	Metacarpal	Right	Osteomyelitis: large hole through proximal articulation joining with marrow cavity

Figure 5. Articular defect of the glenoid cavity, aurochs scapula sf. B53, with permission © Wiltshire Museum, Devizes

Antler

151 fragments form the Beckhampton Road antler assemblage: 11% derive from the old land surface; one percent from the mound; nine percent from the plough soil; and 79% from indeterminate contexts. The presence of cranial fragments attached to the base of the antler confirm that a minimum of two specimens from the old land surface and the body of the mound were taken from dead animals. One specimen from the plough soil and a further four from indeterminate contexts were shed and one specimen from an indeterminate context was removed from a dead animal.

Conclusions

The Beckhampton Road long barrow osseous assemblage is characterised by high fragmentation and poor surface preservation. A limited range of the expected taxa are represented: cattle; pig; sheep/goat; red deer and roe deer, although the presence of smaller species may be obscured as a result of adverse preservation conditions. In addition, aurochs and wild boar are also represented, which is more unusual, but not exceptional for a long barrow assemblage. However, the character of the Beckhampton Road osseous assemblage is extraordinary. That no human bone deposits were recovered from the site has been widely commented upon in documentary sources (Chapter 2) and problematises the traditional interpretation of barrow sites as mortuary structures for the deposition of the specifically human dead.

The data here presented enable the development and furthering of this argument. The deposits of domestic cattle cranial and axial elements, and antler tools piled on the old land surface and enveloped within the matrix of the mound material are unquestionably deliberate and spatially discrete. There are marked differences in the treatment of different species, notably cattle, and especially in comparison with aurochs, for which an explanation rooted in the nature of social relationships is here posited, supported by the butchery/pathology data in combination with age-at-death estimates and taphonomic indicators. Fusion data confirm that cattle deposit B1 represents an older individual aged between seven to nine years, so one that would have required care – feeding, watering, and if female, perhaps milking – that would have both structured and been structured by the routines of human lives. This animal therefore would have been known, an animal with its own biography, a history interwoven with the humans and other animals that shared its life, and a social – and physical – proximity made possible by domestication. This biography may explain its treatment after death. The weathered surface of the cranial fragments suggests it was exposed to the elements for 4-15 years before becoming incorporated into the mound matrix, perhaps displayed on a pole as part of a 'head and hooves' assemblage, as has been suggested for (the now missing) bone group B5 in the excavation report (Ashbee *et al.* 1979: 245). The presence of the atlas, axis, four additional cervical vertebrae and a hyoid fragment that comprise this bone group indicate that these bones would have joined the site in a fleshed state. The extent of weathering to the cranium prevents identification of surface modification such as skinning evidence, but the contrast in its condition against the associated vertebrae suggests that either the cranium was skinned whilst the bones of the neck remained protected, perhaps by a skin, or that the bones of the neck became incorporated into the mound material some time prior to the cranium, maybe through the process of gradual decomposition whilst the cranium remained on display. This individual's corporeal presence was felt both in life and death.

Cattle skull B4 sited close to the axial divide in Bay XX, the central of the three cattle crania, is from an adult aged over three years. It too transcends life and death, but in a very different and dramatic way. The healed impact trauma on its frontal bone shows that this individual survived an earlier injury, perhaps an attempt to end its life, and that it lived long enough for the bone to respond to the injury and remodel. Surviving such an injury would have marked this individual out as unusual – powerful even – through its ability to cheat, or even return from, death.

This theme continues. It has not proved possible to identify all ten of the red deer antler deposits recovered from the old land surface and the body of the mound that are detailed in the excavation report, but it is interesting to note the care with which some are recorded as having been placed (Ashbee *et al.* 1979: 247). These antler fragments are identified in the excavation report as tools and derive from both living and dead animals. Indeed, the two stacked deposits, one formed of tool numbers 4 and 5, and the other of 9, 10, and 11 from the excavation report each incorporate antler from one living and from one dead animal. The nature of human-animal relationships engendered in the recovery of antler from each are very specific. The collection of shed antler could have represented chance discoveries made in the course of quotidian activities, but equally may have been sought out, thereby demanding a knowledge of the seasonal reproductive cycles of red deer as well as the whereabouts of herds at time of shedding, and it has been suggested that in the Mesolithic, the movement of herds may have been deliberately manipulated through the provision of fodder (Fletcher 2011: 32; Simmons, I. G. and Dimbleby, G. W. 1974; Worley and Serjeantson 2014). The removal of antler from the bodies of dead animals involves puncturing and hacking at the cranium, which would have been difficult, whether the bone was fully skeletonised prior to this undertaking or not. Whilst it could be that skeletonised crania were collected in much the same manner as shed antler, it may also be that the deer are hunted and killed before the removal of antler from the skull – possibly coincident with the division of the carcass for consumption – and the only two post-cranial elements represented in the assemblage, deriving from the pre-barrow soil and the old land surface, both evidence butchery. The separation of antler from the skull of a fleshed deer would have been messy, an enveloping sensorial experience of distinctive sights, sounds and odours, and represents a very different relationship, one of profound asymmetry and one in which human and deer bodies comingle and interpenetrate (cf. Conneller 2004; Hamilakis and Overton 2013: 126-130; and see also McFadyen 2016 for an analogous representation of intermingling bodies and materials in long barrow architectural practices). It is much more dangerous to speculate as to the nature of individual relationships between humans and wild fauna than between humans and domesticates, and it is impossible to know whether the remains of the deer at Beckhampton Road were recognised individuals with known biographies – but it remains a possibility, nonetheless.

* See Appendix 11 for full zooarchaeological dataset

Appendix 11: Zooarchaeological datasets for each site reanalysed

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