Death in the East: The Treatment of the Dead in the Iron Age of Eastern Britain

Thesis submitted for the degree of Doctor of Philosophy

by

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Abstract

This thesis concerns the treatment of the non-cremated dead in the Iron Age of eastern Britain, an area encompassing eight modern-day counties. The research presented here seeks to identify regional and chronological patterns in post-mortem treatment, furthering existing debates around excarnation practices, inhumation traditions and the 'invisible dead'. The material has been divided into three main categories; complete inhumations, partial remains, and disarticulated bones. To successfully approach this varied data, three methodologies were employed:

1. Macroscopic taphonomic analysis of disarticulated material provided data on the processes by which articulated individuals became fragmented.
2. Osteological analysis of inhumations allowed unpublished material to be considered together with more widely available data and inform on population demographics and health.
3. Archaeological analysis of excavated material and theoretical approaches to concepts of belief, death and burial provided the secondary data and the framework for understanding the primary material.

The findings here add weight to arguments that excarnation in the Iron Age was not conducted through subaerial exposure, but instead through complex post-mortem processes likely involving primary burial and exhumation, or protected excarnation in covered environments. Inhumation practices are widespread temporally and geographically, though the Late Iron Age material dominates, with clear chronological shifts in practice. Cemetery inhumation emerges in the MIA-LIA, but settlement burials occur throughout the period, more consistent in context, position and alignment than previously thought. Regionality may be evidenced though large numbers of individuals in Cambridgeshire and Kent, though geology and excavation histories are clearly also a factor. There are novel findings within this research, but primarily it serves as significant, regionally specific support for certain existing assumptions, backing up theories with quantitative data and shining a light on an under-researched region.

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Abbreviations

Sites

East Kent Access 2 excavation = EKA2 e.g. EKA2 Zone 6

High Speed 1 excavations = HS1

HS1 White Horse Stone = HS1 WHS

HS1 Little Stock Farm = HS1 LSF

Chronology

Late Bronze Age = LBA

Early Iron Age = EIA

Middle Iron Age = MIA

Late Iron Age = LIA

Romano-British period = RB

Osteology and archaeology

Articulated bone group = ABG

Osteoarthritis = OA

Skull = The complete head, including cranial and facial bones, with or without mandible

Cranial vault = The skullcap or calvaria – made up of the frontal, parietals, the squamous part of the temporals and the interparietal part of the occipital bone

Cranium = The frontal, parietals, complete temporals, complete occipital, sphenoids and ethmoids. Does not include the face and jaw

Blunt-force trauma = BFT

Sharp-force trauma = SFT

Acknowledgements

This thesis is the culmination of four years of extensive research. No such project can be completed alone, and so I would like to acknowledge the people that made this happen.

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I was fortunate enough to visit many museums, local authorities, and commercial archaeology companies as part of my primary research phase, and in each and every location were skilled, enthusiastic and knowledgeable people, all helpful beyond words. They did more than provide access to important collections, they made each visit truly enjoyable and educational. They, and the staff at HERs across my study region went above and beyond in responding to my queries and requests, and without them this thesis would be largely empty.

Finally, I would like to thank my friends, my family, and my partner Laura for their emotional support throughout, for their advice and guidance, for bringing me joy, and for putting up with me for all these years. Laura is also owed additional thanks for her work in helping to redraw several maps throughout the thesis as part of the corrections process.

1. Introduction

This thesis is the result of an extensive investigation into the post-mortem treatment of non-cremated human remains in the Iron Age (*c.*800BC – *c*.AD60) of what is now eastern Britain. It aims to be a holistic summary of the available data, gathered from excavation reports, existing syntheses, grey literature, and HERs, analysed using osteological and archaeological methodologies. The human skeletal material has here been divided into three broad treatments (inhumations, articulated bone groups and disarticulated remains), each representing a set of unique and complex post-mortem processes.

This project explores chronological and regional trends in post-mortem treatment in eastern Britain using a large-scale approach to the data and the study region, and multi-disciplinary methodologies to ensure a more holistic analysis of all the available material. This in turn means the project provides a better, more accurate understanding of funerary/mortuary practices in the Iron Age. The methodological approaches allowed for the osteological, archaeological and taphonomic re-analysis of human remains deposits, mitigating the impact that out-dated interpretations can have on the data. The way in which the dead became disarticulated is a key debate within the discipline (see section 2.2.3), and the material under study here, examined holistically, has furthered this debate and provided a comparative dataset for other regions of Britain.

1.1. The research landscape

The changing interpretations of the dead in Iron Age Britain are discussed in detail below (section 2.2), but briefly, there have been consistent developments in thought surrounding the disposal of the dead for this period. The predominant treatments for the period are inhumations in settlements or cemeteries, disarticulated remains, partial individuals (as above) and cremations (LIA). Inhumations in pits, now identified extensively across the country were once seen as the casual, almost lazy deposition of the dead; and the frequent finds of disarticulated and incomplete human remains were seen variably as the result of cannibalism, disturbed graves, dismemberment or excarnation (For example, Richardson, 1951:131; Pitt-Rivers, 1887:11,16; Dunning, 1976:116-7; Cunliffe 1974:316; Walker, 1984:443; also see Hill, 1995:11). Many of these views have been challenged, but there is still debate as to the meaning of pit burials, the inclusion of the dead within settlements, and what these rites tell us about Iron Age society (Sharples, 2014, Harding, 2016; Carr, 2007:449). Likewise the method and meaning of complete or partial disarticulation (Evans et al., 2016a; Madgwick

2008; Booth and Madgwick 2016) is still being sought, as are social interpretations of the fragmented and manipulated dead.

This project does not focus on cremation burials, despite their increasing prevalence towards the later Iron Age in the southeast, as they have been subject to a great deal of study already (for example Fitzpatrick, 2007; Lamb 2018; Stead, 1976). Cremations are discussed where contextually relevant throughout.

The need for large-scale study of published material and grey literature has been signalled for some time, in order to better understand the complexities and variability of Iron Age mortuary evidence (Pope and Ralston, 2011:407). The area of Wessex (broadly Hampshire, Dorset, Wiltshire and parts of Somerset) has received a great deal of attention in this regard, but such a tradition is absent from parts of the east of Britain; a point that was raised in regional research agendas (Oake et al., 2007:4; Brown and Glazerbrook, 2000). By 1979, over a quarter of all excavations on Iron Age sites had taken place in Wessex (Hill, 1995:7) Developer-led archaeology has balanced this in the last 20-30 years, but the scholarly weight has not quite caught up (*ibid*,7-8; Brück, 1995:251), and regions such as eastern Britain are lacking in research attention.

1.2. Geographical and chronological boundaries of study

The study region consists of eight modern counties – Lincolnshire, Bedfordshire, Cambridgeshire, Hertfordshire, Norfolk, Suffolk, Essex and Kent (Fig.1.1). Six of these constitute the administrative region of the 'East of England'. Lincolnshire was included as the northern border is formed by the Humber river, a natural divide, and on the northern bank of the river is Yorkshire – a region well-studied for the Arras burial tradition. Kent is included as it sits partly on the east coast, coupled with its inclusion in the Aylesford-Swarling zone of pottery and cremation burials. Its proximity to the continent also provides an opportunity for comparison with areas further north. The counties here are used for ease of understanding and are modern divisions with no impact on Iron Age society.

There is debate as to the degree of isolationism in Iron Age Britain, but the general consensus is that, in the Early and Middle Iron Age at least, Britain was very different to the societies across the channel, and there is little sign of cultural exchange – Britain withdrew 'into a state of isolated paranoia which rejected external contact' (Sharples, 2014:154). The Arras burials in Yorkshire are a convincing exception to this, but even they show evidence of insular native innovation (O'Brien, 1999:1; Harding, 2016:20), and the LIA cremation traditions have also been seen to vary from their continental forebears (Sharples, 2014:154; Crummy et al., 2007:453). Webley (2015) has recently put forth a convincing argument for more regular, sustained continental contact, but there is no clear consensus. With that in mind, while continental connections are discussed where appropriate, no great attempt has been made to place British Iron Age burial practices into any European context.

The project covers the whole of the established Iron Age period (*c*.800BC – AD43), plus the years until the Boudiccan revolt *c*.AD60. No distinction is made between the earliest Iron Age and the Early Iron Age, as unaccompanied burials and the radiocarbon plateau make more precise subdivision difficult, and there are consistencies between the LBA and EIA that prevent a clear 'period cut-off'. The conquest period years were included as the 'Romanization' of Britain would not have occurred overnight, and most people dying between AD43 and AD60 would have lived through the pre-conquest period. The effect of Roman/continental influence on Britain is visible in many facets of society in the years leading up to AD43, especially in the southeast, through the introduction of coinage, changes in material culture, and the formation of Oppida. As Booth et al. (2011:243) have pointed out, many rural settlements are occupied continuously through the conquest period, and the 'dividing line of AD 43' is 'archaeologically meaningless'. Including the conquest period years within the study has allowed for a more accurate overview of changing practices in burial customs and means that individuals with date ranges straddling the AD 43 conquest date can be included.

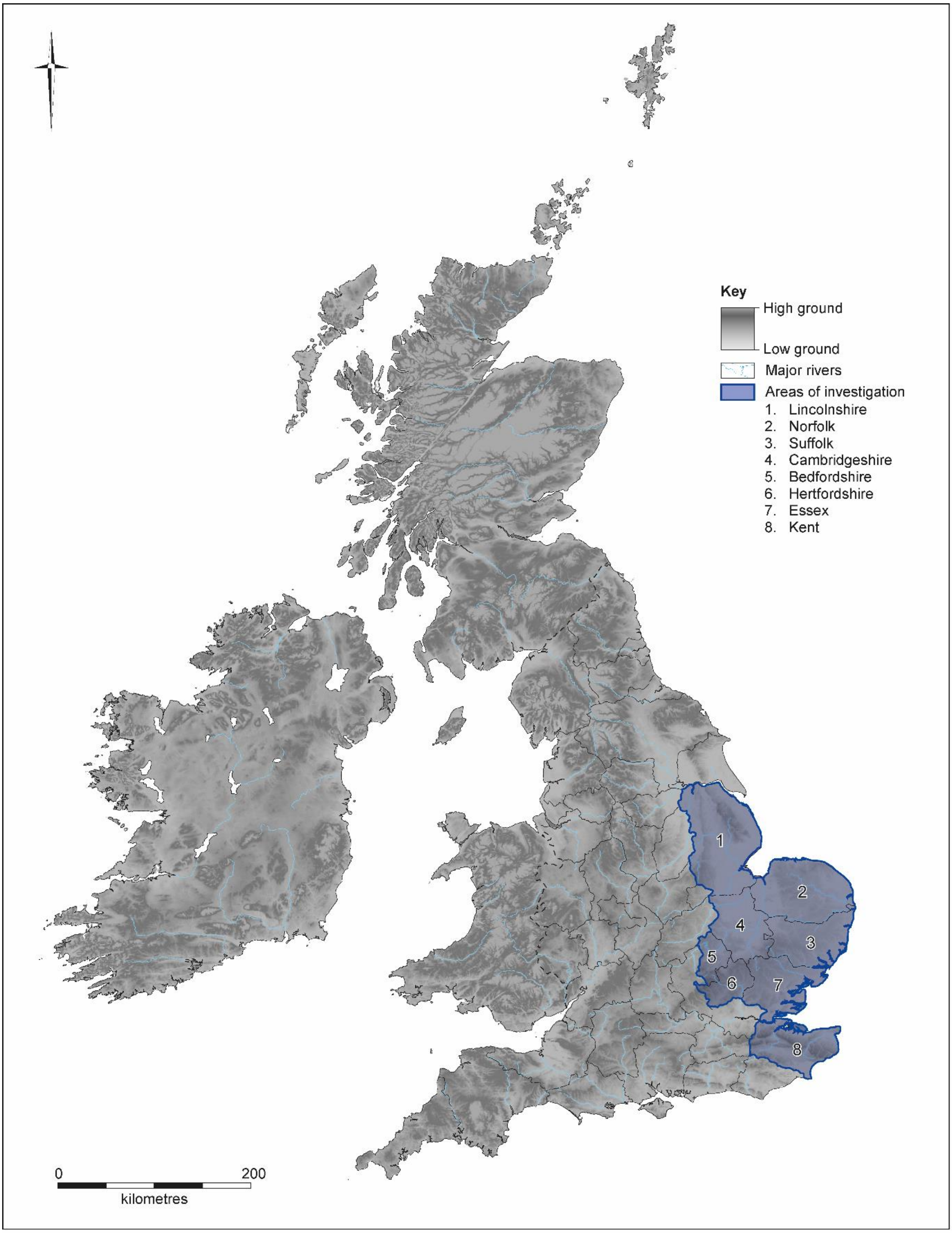


Figure 1.1: Map showing the region under study (blue). Source: Laura Hogg and Author.

1.3. The use of large-scale data and its boundaries

Evans (2012) has previously pointed out issues inherent in 'flagship-site' models; that over-reliance on singular (albeit important) sites can lead to unrepresentative interpretation of new data. The massive increase in material being uncovered due to developer-led archaeology – thousands of interventions every year (Evans, 2012:296; Yates, 2007) must be dealt with in ways beyond referring to and comparing with established type-sites. Evans points out that what we now have in British archaeology is 'a challenge of numbers' (*ibid*, 295). Large-scale investigation of these interventions may identify patterns and parallels hitherto unseen, by removing implicit comparisons to 'flagship-sites' and viewing the region as a whole. Even if no new trends are discerned, then large-scale examination of material provides more statistically valid support for existing theories and paradigms. This attitude has also been explored by Brown and Wade (2000:2) and Oake, (2007:7) in research agendas for the east – 'the analysis and synthesis of existing information is of equal or greater value than just digging new sites'. Champion (2011:239) likewise, has discussed the value of large-scale projects in interpreting Iron Age pit depositions – 'a proper understanding of…pit depositions in general, will only be possible with the analysis of a larger sample of sites from the region'.

The data here represents the vast majority of all recorded non-cremated human remains from the entire Iron Age in this region. All identifiable inhumations, articulated bone groups, disarticulated bones/fragments and any other forms of unburnt bone have been collected for analysis. The data has been gathered from existing, earlier syntheses, from excavation reports, monographs, edited volumes, articles, grey literature (the ADS) and HER data, as well as through primary contact with commercial units and local authorities. All avenues have been explored to gather as complete a dataset as possible. However, there will doubtless be material that has been missed, or sites that have been reported on after data collection was complete; datasets are static, the archaeology is not. While not every single find can be included here, it still represents the most complete picture of the non-cremated burial archaeology for this region thus far, and it should be representative of regional, and perhaps wider practices.

The value of skeletal material for understanding a population – their health, their demographic makeup, their cultural and societal choices – cannot be understated; something again expressed by the Iron Age research agenda and others (Haselgrove et al., 2001:C2.3; Redfern, 2008b:282; Hinman, 2004:54). So many Iron Age human remains deposits are fragmented, disarticulated and comingled, and the value of such material has only recently been highlighted (e.g. Craig et al., 2005; Madgwick, 2008). Re-examination of excavated human remains therefore has the capacity to greatly enhance our knowledge of Iron Age funerary practices, and beliefs about the dead (Redfern, 2008b:282). Failure to reassess and re-examine existing human remains data means an over-reliance on out-of-date cemetery reports, stalling further interpretation (*ibid*, 282). This project has sought to correct these issues, through combined archaeological and osteological methodologies.

There are human remains that have been deliberately excluded from the data, as the recorded information on them did not meet comparative standards. Skeletal remains were excluded on the following criteria:

1. Insecure dating, where there is no way to confirm an Iron Age date, even contextually
2. Insufficient recording, where the number of individuals or bones present is unknown, or no basic demographic data could be discerned
3. Empty graves, where ‘grave like’ features are found but with no secure evidence for the presence of human remains. Where ‘sand bodies’ are present, or bone in adjacent graves, then all are included

Sites and material that have been excluded from the main body of data have been recorded in Appendices 2 and 4 and are referred to in-text but are ultimately excluded from any statistical analysis.

1.4. Geological factors in bone preservation

The British Geological Survey (BGS 2021) interactive map shows the bedrock and surface geology deposits across Britain. Large bands of white chalk affect much of Norfolk and parts of every other county under study, with sections of sand, silt and clay on the east coast (Fig. 1.2). Strips of clay-based geology run in a NE-SW direction through Lincolnshire, Cambridgeshire and Bedfordshire, with another band in Suffolk and Essex (Fig. 1.2). The surface geology is much more complex, but with variable unsorted till covering large areas, while silts, clays and brickearth encompass Kent, and more clay, silt and sand is present in Lincolnshire than elsewhere. Cranfield University’s (2020) Soilscapes map (Fig. 1.3) shows a much greater prevalence of acidic loamy soils in Norfolk, Suffolk and Essex (with some clayey loam deposits also). Even in the 1930’s poor soil conditions in Norfolk and Suffolk were known affect bone survival (Clarke, 1939:18-19). Both Kent and Lincolnshire have very varied soilscapes, but acidic soils are more common in Kent, which has still produced large numbers of skeletal remains (Fig. 1.3, Chapters 4-8). Much more of Cambridgeshire, Hertfordshire and

Bedfordshire is covered by clayey soils, and yet inhumations are all but absent until the LIA for Hertfordshire (Chapter 6). The effect of soil pH on bone preservation is well established (Gordon and Buikstra, 1981:569), with acidic soils directly correlated to poorer bone preservation (*ibid*, 569; Kibblewhite et al., 2015:250). Chalk soils can result in poor preservation, while clay soils vary depending on the acidity (Baxter, 2004:43; Kibblewhite et al., 2015:250) and slightly base soils (e.g. lime-rich, found in parts of Bedfordshire, Cambridgeshire, Hertfordshire and western Essex) often result in excellent preservation (Pokines and Symes, 2013:76). The extent of water flow through the soil, the temperature, the burial depth, bone size and maturity, and microenvironment of the grave can all have a discernible effect on bone preservation (*ibid*, 77; Gordon and Buikstra, 1981:569; Katzenberg and Saunders, 2008:81). With that in mind, while geological variation is an important factor in bone preservation here, especially in Norfolk and Suffolk, it is not the only explanation for the distribution of human remains seen in the following chapters. Preservation issues will nonetheless be considered throughout.

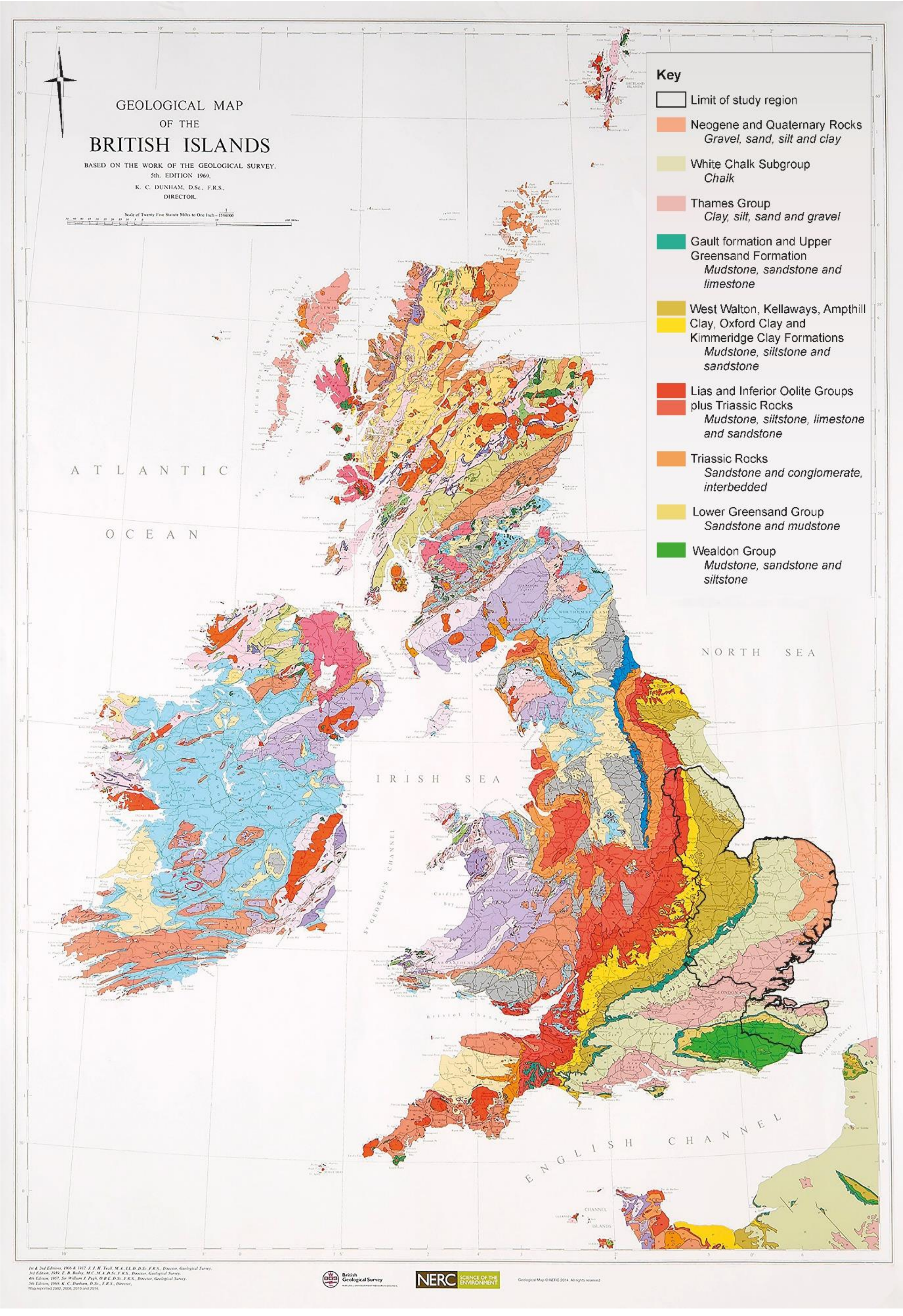


Figure 1.2: Geological map of the United Kingdom, with the study area outlined. Source: British Geological Survey, edited by Laura Hogg.

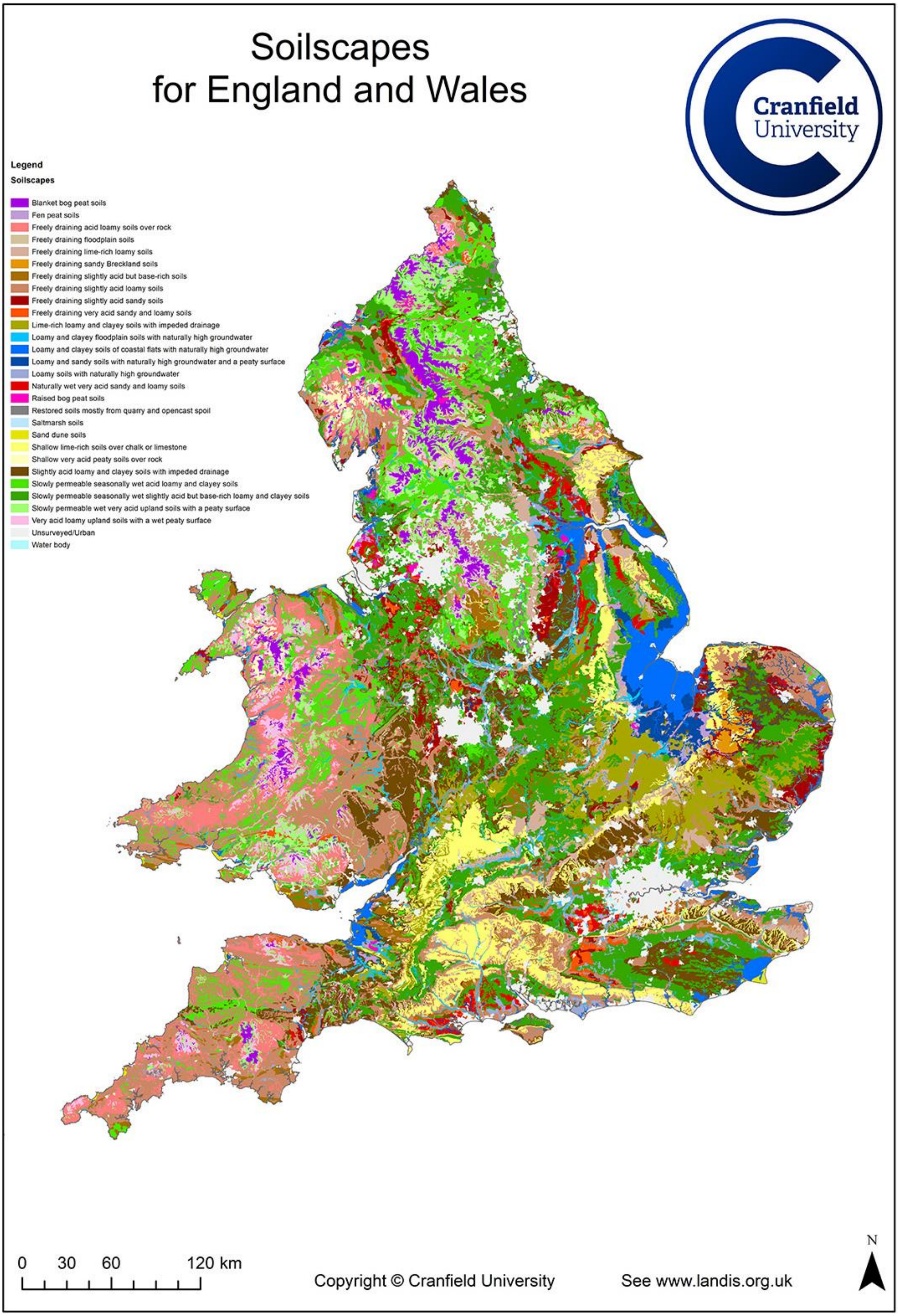


Figure 1.3: Cranfield University Soilscapes Map, showing the varied soil morphologies in the study region, with acidic loamy soils in large parts of eastern England. Source: Edited from UK Soil Observatory [Online].

1.5. Aims and objectives

The thesis has two main aims. Firstly, to create a more complete picture of funerary and mortuary practices in this part of the country, allowing for more accurate large-scale patterns in treatment to be elucidated. Secondly, to update and bring to light assemblages with unpublished, incomplete or outdated data, and make the wealth of material in the study region more accessible to future researchers. In doing so, the overall corpus of data is increased, and our understanding about the lives, deaths and post-mortem treatment of Iron Age people is improved.

More specifically, the research will identify regional traditions in inhumation practices, or a lack thereof, and discuss their meaning to Iron Age people, through extensive analysis of the contextual, archaeological and osteological data. This objective emerged from the pit-burial developments discussed below (section 2.2.2.), and the widely-held position that much of the population is archaeologically invisible (see also Section 3.2.6 and Chapter 8).

Additionally, the research will further the debate over excarnation practices and their meaning (see section 2.2.3.); the ways in which human remains came to be disarticulated are examined, and the ways in which they are manipulated and interacted with by the living are discussed. This will be met through the analysis of bone taphonomy of disarticulated remains (Chapter 8), which can identify patterns in post-mortem treatment, and through the archaeological and osteological analysis of the partial deposits, articulated remains and bone bundles (Chapter 7), to see if they are connected to the disarticulated material.

1.6. Thesis structure

Chapter two seats this project in its theoretical and interpretive framework, assessing the contributions of previous research and serving as a discussion of theoretical themes and concepts pertinent to the thesis.

Chapter three lays out the materials and methods utilised in the thesis. As this research combines osteological analysis, taphonomic analysis and funerary/mortuary archaeological theory, multiple methodological approaches are used where appropriate.

The results chapters (4-8) are divided by deposit type and chronology – Chapters 4-6 concern the inhumation burials, for the EIA, MIA and LIA respectively, Chapter 7 the partial deposits, bone groups and bone bundles, and Chapter 8 covers the disarticulated remains. Chapters 4-6 are subdivided using comparative criteria (e.g. site type, skeletal position, depositional context) and cross-referenced throughout. Chapter 7 is approached differently due to the small sample, and so each are divided into interpretive categories, with more detailed summaries in Appendix 2. Chapter 8 outlines the disarticulated remains data in detail, and taphonomic markers present on the bones are recorded and cross-referenced for patterns in treatment (e.g. exposure and excarnation).

The discussion follows (Chapter 9), bringing together connected themes throughout the preceding chapters and answering the research questions set out above, before the conclusion (Chapter 10).

Four appendices support the main body of the thesis:

1 – Raw datasheets and coding system for all data

2 – Expanded data summary for the partial deposits (see Chapter 7)

3 – Total population demographics – makeup, health and trauma

4 – Excluded inhumations

2. History of Research and Theoretical themes

2.1. Introduction

This chapter places the research in its relevant theoretical and historiographical frameworks, outlining previous work on the period and broader thematic concepts pertinent to the material. This thesis serves as an overview of period and place, as a synthesis of burial data, and as a discussion on death. In these respects it has several antecedents, which must be discussed and reviewed in defining the need for this research. Wider Iron Age society has been covered in great detail elsewhere (e.g. Sharples 2011; Collis 1994; Davis 2018) and so is not discussed here.

2.2. Previous research

2.2.1. Large-scale burial reviews

Whimster's *Burial Practices in Iron Age Britain (1981)* was the first fully comprehensive study of Iron Age burial practices gathered from sites across the UK. Whimster totals several hundred sites in his study, and using this dataset draws conclusions regarding burial types and contexts, societal structure, cases of violence and sacrifice, periods of turmoil and stress. He identifies regional burial traditions, changes in practices, and the influence of the continent. Whimster's work is invaluable, helping to change the prevailing contemporary idea that there were no formal burial rites for the Iron Age in southern Britain – Hodson's 'Negative type-fossil' (1964:205), but it seriously under-represents areas like Wales, and the inhumations of eastern Britain. It is also static, it has not been re-written into new editions as has Cunliffe's *Iron Age Communities* and others, and the rise of commercial archaeology in the last 20-30 years has meant that a plethora of new sites have been discovered which are sure to affect Whimster's findings.

From the eight counties included in my research, Whimster includes *c.*20 sites with inhumations and disarticulations. Now, this dataset, not even including cremation burials, currently sits at 161 sites, over 400 inhumations, over 500 disarticulated bone deposits and almost 50 articulated/grouped bone deposits, and there are sure to be more under excavation, yet to be reported on. If this weight of new data does not alter Whimster's conclusions, it will certainly refine them. Whimster's work also has a somewhat limited discussion of disarticulated remains, mostly mentioned in relation to cave and cist deposits. This again is a factor of time –it precedes Hill's (1995) study on pit depositions, and many others on the study of excarnation (see 2.2.3). As such, discussions regarding normative rites have automatically been led towards crouched or extended inhumations (Whimster, 1981:13).

The next major contribution to large-scale burial frameworks came from Wait's (1985) *Ritual and religion in Iron Age Britain.* Wait's focus on ritual means the research is not tethered solely to human skeletal remains, he does not attempt to be exhaustive and notes that Whimster's report had already covered much of the standard burial material available at the time (Wait, 1985:357). Wait examines 28 sites, and like many others before and after him, only really considers central southern Britain, with one site from Cambridgeshire. He does however place much more emphasis on disarticulations, skulls and other such deposits.

Bristow's (2001) expansive study of mortuary ritual covers 3500 BC to AD 43 for all of southern Britain, including 138 sites in the Iron Age, though 56 are again in the south west, and these include cremations (*ibid*, 5.5). Bristow's study is accessible and vast in scope, but in covering such a gulf of time, seeks to answer different questions than a more period-focused study would. The most recent relevant burial thesis is that of Lamb (2018), written at the same time as this project was being undertaken. Lamb's data is current and thoroughly researched, and while there is some overlap in that both his and this project examine the mortuary record from Kent, Lamb's work is centred on the Middle to Late Iron Age, as well as devoting more to the European context, to cremation practices, and regions outside the remit of this thesis.

Finally, Harding's 2016 monograph, *Death and Burial in Iron Age Britain*. Harding's book includes more recently excavated sites and newer theoretical discussions than the earlier material, presenting grand overviews of the period with regard to burial theory, instead of focusing on single regions or distinct practices. In covering such a scope though, Harding neglects the same areas as most – the east, Wales, regions largely dismissed in favour of type-sites and more established material. By discussing everything, each topic can lack the quantitative support of a more focused, in-depth regional study.

2.2.2. Previous research on pit burials

Large storage pits are ubiquitous in the British Iron Age, found on the majority of sites in much of the country, but especially prevalent in southern Britain (Cunliffe, 1991a:375). Pits also represent a common depositional context for both articulated and disarticulated human remains. Pitt-Rivers (1888:6) was one of the first to discuss Iron Age pit burials, seeing them as careless depositions, not the result of deliberate practices. Pit inhumations were thought to be those of people who no longer mattered in death, tossed into the nearest rubbish pit to be disposed of (Pitt-Rivers, 1887:11). This view pervaded through the twentieth century (see

Richardson, 1951:131; Cunliffe 1974:316; Fasham 1987:15), and disarticulated bone in pits was variously seen as either the result of disturbance (Pitt-Rivers, 1887:16) or rubbish (Alcock, 1972:105; Cunliffe, 1991a:505). The idea of a 'pit burial tradition' was first posited by Whimster (1981). This was furthered by Wilson's (1981) study of settlement burials, which explored the idea of burial in what would previously have been considered unusual/abnormal contexts, like pits, ditches and houses. Pits have since been the focus of much research, including Cunliffe (1992), Evans (1989), Hill (1995) and Tracey (2012). Hill's (1995) study examined these pits methodically, and he proposed that the remains found within (including whole and partial human skeletons) were not the product of casual dumping, disturbance, or careless burial, but in fact deliberate, considered action by Iron Age people. Hill (1995:54) identified what he saw as significant 'rules' regarding the deposition of human remains in pits, in Wessex at least. The position and sequence of placement of the remains, as well as associated finds, were deposited according to these rules – for example articulated animal bones and human remains, when in the same pit, were rarely in the same layer/fill (Hill, 1995:55). Harding (2016:4-5) continued this line of thinking, countering earlier ideas of 'casual' burial and positing that the seemingly irregular patterns found with pit burials and disarticulations, are in fact evidence of 'practices which accorded with regular social norms', albeit simply practices unexpected to us. Many of the human remains in the study region were deposited in pits (Chapters 4-8), and so the interpretation of these features is of great importance when considering the material within them.

2.2.3.The excarnation debate

Excarnation is the deliberate removal of the flesh from a corpse. This may be achieved naturally, via the action of scavengers, the weather, and decay, or may be assisted by butchery and defleshing. The excarnation debate is of vital importance in considering the ever-growing number of disarticulated remains found across Britain, which are most frequently interpreted as the result of excarnation practices, and the subject of Chapter 8.

Ellison and Drewett (1971:183) interpreted four-post structures common on many Iron Age sites as excarnation platforms, an idea that has persisted alongside the more common interpretation as granaries (e.g. Hinman, 2004:71-2). Dunning (1976:116-7) considered disarticulated remains to be either the result of disturbed burials, of bones deliberately removed from graves to make amulets, or of the result of cannibalism. Whimster (1981) and Wilson (1981) became two of the first to investigate *some* disarticulated human bone, but superficially. The now common designation of 'special deposits' given to many such features was as a result of Cunliffe's and other work at Danebury (2003:147). This in turn led to Hill

(1995:106), who posited that a good proportion of the disarticulated bone found in pit features could be the result of human sacrifices due to its fragmented nature and association with animal bone, though he was clear in pointing out that this would never be a satisfying explanation for all deposits. Carr (2007:450) countered the sacrifice explanation by showing that the butchery seen on the animal material was absent from the human.

Carr and Knüsel (1997:167) examined the idea of excarnation by exposure scientifically, combining ethnographic parallels, taphonomic data, and skeletal records to create the first study that sought to identify what the remains of an excarnated corpse should look like in the archaeological record. They determined excarnation by exposure was certainly the main cause of Iron Age disarticulated remains but could not determine whether or not this took place on site, in a covered environment, or elsewhere, without further re-examination of the bone taphonomy.

Craig et al. (2005:165, 171, 175-6) suggested that for some remains from Danebury, signs of fragmentation, dismemberment and perimortem trauma could represent denigration of the deceased, and in some cases, the ritualised killing of defeated enemies. Redfern's (2008:281) taphonomic analysis of material from Maiden Castle and Gussage All Saints supported this interpretation; she identified evidence of trauma, dry fractures and gnawing, suggesting to her that these people had received weapon injuries or other cranial trauma at the time of death, before being excarnated, and eventually receiving secondary burial.

Also in 2008 Madgwick examined remains from Danebury and Winnall Down, this time utilising taphonomic analysis of the disarticulated bones of both humans and animals. He identified far fewer taphonomic markers in the human assemblage (e.g. weathering, gnawing) suggesting excarnation on platforms was unlikely to have been the majority rite, and instead either the individuals decayed in a protective environment (e.g. a mortuary house) or they were buried and exhumed before being separated and reburied or scattered (Madgwick, 2008:99). This would account for the disarticulated nature of the assemblages and would result in little taphonomic modification.

Most recently, Booth and Madgwick (2016) carried out microscopic histological analysis of 22 human bones, once again from Danebury, as well as Suddern Farm. They demonstrated how easily the histological evidence for excarnation could result from a variety of processes, including sheltered exposure in pits, or exhumation and reburial, in support of Madgwick's earlier (2008) conclusions. Though opinion is gradually changing, very often with excarnated remains sensational explanations are sought for why this treatment occurred. Instances of cannibalism or warrior dead are not sufficient explanations for the wholly widespread use of the rite throughout the entire period though. The taphonomic analysis of disarticulated material in Chapter 8 will further develop the excarnation debate, and either reinforce or refute the existing arguments, the material under study forming a large comparative dataset to that already examined by others.

2.3. Mortuary theory – key concepts

The most basic, functional purpose of disposing of the dead is one of hygiene. For many peoples though, disposal of the dead has become so much more. The manner of disposal can be hugely varied, from inhumations to sky burial, mummification to cremation. The chosen method of disposal also forms an invaluable resource for revealing a particular group's attitude towards not only the individual, but also death as a whole, its role in a community, and even belief in an afterlife (Harding, 2016:1). The material under study here takes three main forms – complete skeletons, partial individuals and disarticulated remains – as such there several key concepts surrounding the dead that are of relevance here. The nature of burial itself, the extend of 'ritual' activity, ideas of identity, the role of death in Iron Age society, and ideas of change, transformation and objectification which are especially pertinent to the disarticulated remains.

2.3.1. Defining burial

The Oxford English Dictionary defines burial as 'the action or practice of burying a dead body; a grave or the remains found in it'. By this definition many Iron Age funerary rites would not be burials, though they are commonly discussed as such. Robben (2004:2) describes burial as 'the outcome of an intentional act of depositing a partial or complete human body, embedded within a mortuary ritual, which serves to separate the dead from the living'. This is much more encompassing, but use of 'a partial' body still opens up more questions – how much of a body is needed? Separation of the dead from the living is also much more complex in the Iron Age, where the dead are integrated into settlements (See Chapter 4-5 particularly). Popa (2014:109) cites Robben's definition in discounting disarticulated remains, as he points out they may be the result of practices not related to mortuary rituals, such as disturbance or other taphonomic processes, but that is not a satisfactory explanation for them here. Harding (2016:6) argues that context is more important in defining burial than the quantity of the recovered remains. He points out that in cremations, often the percentage of included bone is just a fraction of the expected total, a 'token burial', but because of the deliberate action of cremation and deposition of the token remains, these of course constitute burials. Given that in the British Iron Age, and across European Prehistory, fragmentation and dispersal of human remains was a common and 'integral part of mortuary practice' (Larsson, 2009:11), disarticulated and isolated remains should be included under the remit of burial, if it is probable that their deposition was purposeful, and not the result of accident or disturbance.

2.3.2. Defining ritual

'Ritual' has been too often used as a catch-all term by archaeologists seeking an explanation for processes we do not yet understand. Ritual with regard to burial has been defined by Brandt (2015:IX) as:

> 'a strategy which incorporated all the actions performed and thoughts expressed in connection with a dying and dead person, from the preparatory pre-death stages to the final deposition of the corpse and the post-mortem stages of grief and commemoration'.

This is also a catch-all. Ritual here is an umbrella term for the entire funerary process from pre-death to mourning, including all the thoughts and feelings of the living. This is accurate and perfectly acceptable as a definition; ritual is pervasive - almost every action people undertake can be considered ritual or ritualised in one way or another. This again is perfectly correct, but it does not justify every atypical or unknown practice, object or even structure to be labelled as ritual. However, one would be fair in assuming that the burial process, of all aspects of life and death, would be one of the areas where 'ritual' would pervade everything, and based on the repeated practices involved in burial temporospatially this seems unequivocal. Even if the 'individual' had no meaning in death, as could be for disarticulated remains, there is still meaning, and thought, and action, and so ritual. Building on Bourdieu's (1977:120) practice theory framework, Bell (1992:92) suggests that instead of expressing an existing meaning, or reflecting society, rituals serve to *create* meaning and relationships. She views ritual as a strategic way to act, distinguishable from other action through 'ritualization' – It is the action of taking part in the ritual that creates structures, and gives meaning, and in doing so rituals create a world, with separate rituals intertwining with others through complex chains of association, until none are separate and ritual is indeed pervasive (Bell, 1992:7). Meaning cannot exist outside of action, and so, argues Nilsson Stutz (2015:6), is secondary to the action and the ritual; the ritual does not need to create a certain meaning for all participants of it, instead it shares embodied knowledge. The ritual (for example the process of burying a body) shows all participants the way things are done (the embodied knowledge), and the meaning is kept for each participant, perhaps personal, and changeable, and secondary to the action and ritual (Nilsson Stutz, 2015:6). This practice theory based model provides a framework for understanding ritual change; because meaning follows the practice, every repetition of the ritual/practice is an opportunity for change, either deliberate and intentional, or slow, long term change that goes by largely unnoticed by the participants of each repetition (Nilsson Stutz, 2015:6). If this thinking is followed, then the term ‘ritual’ can be applied heavily across much Iron Age burial evidence, but it should not be seen as an explanation in and of itself, and instead be seen as a vehicle through which deeper interpretations are found.

2.3.3. Identity

Identity is defined by Campbell (2014:212) as a ‘social construct’, its agents possessing ‘a number of roles which they variously adopt and adapt according to different social issues, including class, gender, age, ethnicity or sexual orientation’. When studying identity in archaeology, the concept tends to be broken down into those categories, as well as others including wealth/status, burial treatment, regionality, settlement connections, and group membership, many of which will be discussed in this thesis also. According to Foulds (2014:223), and Kelley (2014:254) however, this is dangerous, as it risks ignoring the whole – the elements of identity should not be studied in isolation, but holistically. Foulds (2014:223) also points out that for the Iron Age, due to the scarcity of burial evidence to begin with, this is less of an issue, likely as the ‘whole’ is perceived as too far out of our reach anyway. Dolfini (2015:20) argues that identity is an ever changeable, context-driven entity composed of many facets. People embody several of these facets at any one time, each of them able to interact and recombine infinitely; identity is never static, but our interpretations can easily be. A similar point has been made before, by Davidovic (2006:44), describing identity as ‘the *current* state of self-identification of an individual…permanently in a state of flux’. These facets of identity may also change depending on physical or social context, on the people around you, and even on personal goals. Dolfini (2015:20) highlights that we may also be examining identity through our own social context; other cultures and societies may see a person as the result of their encounters and relationships through life – the sum of their experiences, or perhaps they may see a person as ‘made from a combination of distinct substances’ or not as an individual at all, but part of a larger entity (e.g., the group, the settlement, the landscape). This is all also true of group identity, particularly with concepts like ethnicity and ethnic identity. We often label and define past individuals as one group or another, without considering the dynamic, fluid and changeable nature of such a concept.

Archaeologists must work with what little is available, and so any picture of a person’s or groups’ identity is going to be fractured. This is especially true in the case of burials who gain an epithet, like the Mill Hill Warrior or the Amesbury Archer. There is a danger that these burials are then only viewed through this lens, instead of considering other aspects of who they might have been. This is not to suggest that we should not try to ascribe an identity to human remains, but that we should try to consider all aspects of available evidence and be constantly aware of the limitations while trying to avoid privileging one aspect over the others.

Sex and gender is one of the longest-debated issues of identity in archaeology. Redfern's (2008) analysis of violence in Iron Age females revealed convincing evidence for their activity in interpersonal conflict. Taking a bioarchaeological approach and examining trauma to their skeletons, she found wounds suggesting an active role in violence and warfare, not just defensive. There are only a few cases of weapons being deposited with biological females in the British Iron Age (like Rudston burial 163 – see Stead, S. 1991:127), but regardless, Redfern points out that palaeotrauma is the only truly direct, independent evidence of violence, albeit only revealing wounds which affect the underlying skeleton (Redfern, 2008a:139; Robb, 1997:139; Roberts and Manchester, 2005:84-5). Pope and Ralston (2011:376-8) discuss the history of Iron Age gender research, and highlight an entrenched position by some scholars of explaining away the role of Iron Age women. They point out that discussions of women have too often centred on personal grooming, jewellery and 'fashion' (e.g. James, 1993:65). Along with Arnold (1991:366), they also show that in cases of females buried with weapons or torcs (in Europe), scholars have been more comfortable with reinterpreting these women as transvestite males, than to entertain ideas of female power. Others have even suggested that instances of high-status/wealthy female burials are the result of men depositing their own riches with their deceased wife, so as to display their own status or power (e.g. Hinton, 1986; Pope and Ralston, 2011:377-8). Not long ago, the idea of Iron Age women (beyond perhaps Boudica) taking part in warfare or interpersonal violence would have been considered far-fetched, scholars relying heavily on burial assemblages and ingrained ideas about masculinity and war, and still too often women are considered only in outdated ideas of 'femininity', or in relation to males.

2.3.4. Death and society

As much as a burial can tell us about a person's individual identity, it is also a reflection of the group identity and wider community. Fowler (2004:97) noted that, because of the often-traumatic experience of the death of a community member, funerary rituals may serve as a setting to reaffirm group cohesion that could have been temporarily shattered. The funeral process emphasises the sameness-otherness principle: the living and the dead, the community and the individual; and through this the relationships of the community with each other, and the deceased, are brought to the fore, to be created and maintained (Popa, 2014:110). For the Iron Age, this does not necessarily assume that people saw death as a tragic loss, but that there was an effect of some kind on the community as a whole – be it grief of the loss, acceptance of a transformation, or perhaps celebration of the life.

Saxe (1970:234) suggested that the establishing of organised cemeteries was a deliberate action by certain groups to legitimise resource claims to land and wealth. The presence of the dead, especially visibly, as with barrow cemeteries, formed a physical stake on the land via the connection of their 'ancestors'. This is less of an issue for discussion with Early and Middle Iron Age material, but becomes increasingly relevant into the LIA and Conquest period. Binford (1971:23) viewed burial as a direct reflection of the structure of society, different burial rites, treatments and assemblages being direct reflections of social hierarchies and demonstrations of power. So rich, elaborate burials were kings, rulers, elites, and simple, unaccompanied burials were poor, everyday people. Tainter (1978:125) elaborated on this with the idea of energy expenditure – basically the bigger, more elaborate and lavish the funeral and grave was, the more important the deceased was in a community; the Arras chariot burials within barrow mounds are solid examples of this.

These approaches to burial and society have severe limitations, however. They assume that burials, and changes in burial rite are the direct result of political change, and though Tainter was less direct than Binford, they both assume that elaborate equals power/status/wealth. This has often been the case (e.g. Pyramids, Roman Emperors, Sutton Hoo), but it does not hold true everywhere, and ignores several other parts of life – social communication, group health/wellbeing, views about the dead, views about the body, or identity and personhood, and religious belief (Dolfini, 2015:20). Richly-accompanied individuals may actually be one element of a wider votive offering, there may be symbolic depositions (e.g. children with weapons), the associated goods may reflect more on the giver of the object than the deceased themselves. Conversely a 'disrespectful' burial need not imply an unimportant or low-status person, but perhaps someone who died inauspiciously or caused issues to group cohesion. These are just some of the other factors not entertained in a simplistic 'elaborate equals status' approach. Such interpretations also imply a top-down, elite-based hierarchy for the relevant society, which may not be the case, especially for parts of Iron Age Britain. Many scholars have countered these processual viewpoints, Parker Pearson (1982:100) for example, pointed out that their attempts to define people by their roles, as attributed by burial rites (a 'social persona'), was fundamentally flawed because, as he saw it, social systems are constituted of social practices, not set roles. Roles are not static, life-defining traits, but changeable constantly throughout life – again as discussed by Bourdieu (1977) and Bell (1992). Social theory therefore argues that 'no direct relationship can be postulated between burial and the political structure of society. Rather, both burial and politics are to be conceptualised as strategic engagements that contribute, subtly or openly, to the making and breaking of the fabric of society' (Dolfini, 2015:20).

2.3.5. Change and transformation

Change and transformation are ideas central to the study of death and burial. From the point of death, bodies undergo dramatic, irreversible change as they decay and skeletonise, while most, if not all body disposal methods either create further change or seek to mask it. Cremation is a sudden, destructive alteration of the physical form, reducing a complete recognisable person to a small pile of bone and ash (around 2-3kg) in a few hours (McKinley, 1994:75). It also represents a greatly transformative spectacle, especially when it would be undertaken on large wooden pyres, visible for some distances, unlike the sanitised, industrialised crematoria of today. Excarnation/exposure/sky burials also, both speed up the transformative nature of decay (in the correct conditions), and greatly enhance its visibility for the living. An exposed corpse can become skeletonised in a matter of weeks, or less, but, in some cases it can take several years (Carr, 2007:448). The time taken is greatly affected by environmental factors such as temperature, humidity, and animal scavenging. A corpse left in a warm area, where birds and mammals can access it, will skeletonise far quicker than one left in a cold, or controlled environment (*Ibid*, 448). Inhumation burial is the antithesis to these practices. It serves not only the hygienic purpose of masking decay, but also masks the visible change. When buried, the body still resembles the living person, and if inhumed soon after death, most evidence of physical change is hidden. It may be that in some cases, the elements of the body that survive after decay (namely the skeleton) become something not of the person. As with the veneration of relics attributed to saints and martyrs, the bones of the dead may have been seen as possessing spiritual power, especially those examples which appear to indicate curation of certain skeletal elements, most commonly skulls (Brandt, 2015:xiv). Hill (1995:106) argues that in the deposition of fragmented remains, the concealing or transformation of the identity/personhood of the individual was not the purpose, but an unintended coincidence of ritual behaviour meant to mediate between the world of the living, and the other world/afterlife.

2.3.6. Liminality, and the body as object

Liminality can also be considered an element of change/transformation when applied to death and burial. In this context liminality concerns objects/individuals/bodies which are viewed in some way as 'other'. They are seen as no longer being integrated into the community and become something separate. Nilsson Stutz (2015:3-4) highlights this, combining Turner's (1969:96) concept of liminality and anti-structure and Kristeva's (1980) abject theory in a discussion of the ritual context of the cadaver. At the point of death, the body and the mind break down, they are no longer engaged in the processes that produce and reproduce social order, they no longer take part in the dialogue of the community, they are unable to directly affect the world around them (Bourdieu, 1977:124; 1980:117). The remaining body/cadaver, while still resembling the living person, is no longer them, emphasised by the disfiguring process of decay that now begins (Nilsson Stutz, 2015:3). It is at this point that Nilsson Stutz (2015:3) defines the body as liminal; it has not yet acquired status as an object (see below) but is not a person (subject) anymore – it is an abject, a term defined by Kristeva (1980:11) as a pseudo-object, fitting between subject and object. The cadaver is tailor-made for this definition, as it treads the line between sacred and profane, between desirous and perverse – it is at once a recognisable, likely loved individual, and at the same time a decaying husk, something inherently other (Nilsson Stutz, 2015:3). This does not mean that a dead body may have been considered repulsive by Iron Age people, but it highlights that they, as all people do, will have had to deal with it (*ibid*, 4). The cadaver may be seen as a problem that threatens the order of life, stopping the community from continuing as normal, and so comes the need for transformative ritual, changing the body from its former identity as a living person, to its state as an object (*ibid*, 4). Ritualisation theory posits that mortuary processes are linked to the basic attitudes held by a community regarding life and death, and by extension, self and group identity, order and disorder, nature, and human impact (*ibid*, 4). This means that the funerary rituals act as both rites of passage for the dead, transforming them from abject to object, while also providing a perhaps cathartic outlet for the living, ending the threat to order and allowing structure to continue (*ibid*, 4).

Ritualization theory may be used to explain the reasoning behind Iron Age excarnation and primary burial practices. The body/corpse/cadaver, however it is seen, is a decaying entity, and this process is uncontrollable, and unstoppable – except perhaps for mummification. Burial methods as a way to either show, hide, or alter the process have been discussed, but the result is always the same – skeletonization. Through ritualization theory, the cadaver, or parts of it, can become redefined as objects, with their own agency, separate from that of the whole, living person (*Ibid*, 7). The cadaver can, through excarnation, or primary burial, be transformed from the visage of a known member of the community, to a set of distanced objects (bones), and therefore part of the material culture.

According to ritualization theory, the mortuary ritual and the whole funerary process serve as a setting for the redefinition of the cadaver, creating a final image of the deceased person to which mourners can attach the person's identity, before enacting the transformative process and enabling the subsequent remains to be redefined, through this ritual, as controllable objects (*ibid*, 7). This again ties into Bourdieu's structure-practice theory, as the transformative ritual is seen as an arena for the cementing and mending of social structures (*ibid*, 2015:7). Lally (2008) examines the idea of Iron Age body objectification, focusing on southern England, and suggests that the recovery of human bones from *typically* non-funerary features such as pits, is more evidence of the body perceived as an object (Lally, 2008:19). Further to the redefinition of bones as objects through ritualised funerary treatment, Lally proposes that ritual violence, intentional manipulation, and structured deposition also served to objectify human remains in this way, with certain bones sometimes selected, and other times whole bodies chosen, and that their inclusion in settlement features places them in the same categories as animals, materials and manufactured objects (*Ibid*, 19).

2.4. Conclusions

In examining previous burial syntheses, discussions of pit burials and excarnations, it becomes clearer where the state of research lies, and where this project sits within. It has been shown that excarnation is seen increasingly in less 'extreme' terms, and more as a normative burial rite, alongside cremation and inhumation. The method chosen for excarnation also, is still discussed, and again may be attested for the east, through further taphonomic study (Chapter 8). The why is just as important as the how, and concepts of identity, personhood, sex and gender, liminality, change and transformation are all central to examinations of death, burial and funerary ritual. In attempting to find patterns in burial data, and elucidate regional traditions, burial theories provide the framework of understanding that gives such patterns meaning.

3. Materials and Methodologies

3.1. Introduction

This chapter serves to briefly outline the material under study, and the methodologies employed. Three methodologies are utilised together holistically, due to the varied nature of the data. Both primary and secondary material is under discussion, as well as complete and fragmented human remains, both of which help to answer different research aims. The archaeological research methods concern the data gathering process, the inclusion and exclusion criteria and the data presentation and analysis for all human remains categories. All raw datasheets are included in Appendix 1.

The osteological analysis was macroscopic and non-destructive. In examining the inhumations, data concerning age, sex and stature were collected, as well as instances of trauma, and common skeletal and dental pathologies such as signs of osteoarthritis (OA), dental caries and cribra orbitalia. These pathologies/markers were chosen as they are the most prevalent (or perhaps more accurately, the most obvious in terms of leaving visible traces on bone). Where other pathologies do occur they have been recorded, but they have not been subject to statistical analysis as their prevalence rates are too low to be meaningful on a larger scale. The taphonomic analysis was also macroscopic and non-destructive, and followed established practices.

3.2. Material

Classification categories for human skeletal remains in the Iron Age have no single agreed-upon divisions. They must by necessity be based on the data patterns themselves and are therefore somewhat variable depending on the data under study. Previous category systems for Iron Age human remains can be seen in Table 3.1 (see also O'Brien, 2014:26), highlighting the variety of divisions, and therefore interpretation. There are however always commonalities:

- Complete inhumations
- Partial inhumations/burials/skeletons
- Articulated limbs
- Skulls
- Single bones

It is based on these, and the data at hand, that the three human remains category divisions were decided upon for this project. These are both interpretive and logistical categories;

Classification categories for human skeletal remains deposits					
Wilson (1981:128)	Walker (1984:442)	Wait (1985:88)	Hinman (2004:71)	Sharples (2010:260)	Tabor (2019:24)
Complete burials	**Whole bodies**	**Complete inhumations**	**Complete inhumations**	**Complete bodies**	**Complete grave inhumations**
Partial burials	**Incomplete skeletons**	**Partial inhumations**	**Partial articulated burials**	**Articulated remains**	Complete pit inhumations
			Partial disarticulated burials		
	Multiple incomplete skeletons	Multiple partial inhumations	Multiple partial articulated		
			Multiple partial disarticulated		
Articulated limbs / objects		**Articulated limbs**	**Articulated limbs**		**Articulated limbs AND single bones**
	Skulls / skull bones	**Skulls**	**Skulls**	**Heads or parts of heads**	
	Pelvic girdles				
Disarticulated bone	**Individual bones / fragments**	**Individual bones**	**Individual bones**	**Isolated bones**	
Bone fragments					
Worked bone					

Table 3.1. Table showing various categorisations of human remains. Adapted and expanded from Table 11, Hinman, 2004.

containing all the disarticulated bone in one datasheet allows cross-comparison with elements to assess if there are notable differences in treatment between skulls and other bones. While the processes leading to the deposition of an articulated limb may be very different to that of a more complete partial burial, and different again to a bone bundle, all are grouped together in a single datasheet (Appendix 1), again for cross-comparative analysis, and because they better fit one another than the other two major groupings.

The use of, and meaning of, certain terms can differ extensively from one discipline to another, and the study of taphonomy crosses boundaries between forensics, anthropology, and archaeology, so for clarity:

‘Articulated’ in the context of this thesis may refer to complete skeletons, incomplete/partial skeletons, or limbs. ‘Articulated’ here follows the taphonomic definition set out by Haglund and Sorg (2003:16) whereby any articulating elements placed together, If in broadly anatomical position, are thought of as an entity, a ‘transport unit’, brought to the depositional context as one, deposited as one. It is a definition that hinges on the relationship between the bones and the now-decayed soft tissues that held them together; it relies on those tissues having been present at the point of deposition. An articulated limb, deposited alone, is considered ‘disarticulated’ from the wider skeleton, but it is not, in and of itself, a disarticulated limb. This is in contrast to forensic and medical definitions which require the presence of the soft tissues, otherwise the remains would be termed ‘disarticulated and in anatomical relationship’ (*ibid*,15).

‘Disarticulated’ remains here concern any skeletal elements deposited out of articulation, and out of anatomical position, either alone or as a ‘bundle’ of several bones. ‘Bone bundles’ and single disarticulated bones are considered separately here from an interpretive perspective, owing to the proposed different sequences leading to their deposition.

3.2.1. Total data

The material subject to detailed analysis totalled 997 individuals/deposits, from 161 sites (see 3.3.2.). Of these 425 individuals were inhumed, there were 44 deposits of partial individuals/bone bundles/bone groups, and 528 deposits of disarticulated bone. Further individuals/deposits were identified but excluded for all categories (see below). Of the 161 sites, settlements were by far the most common (101 sites), but there were also 20 cemeteries, 14 ‘ritual’/mortuary sites, 14 isolated deposits and seven hillforts/ringworks. These divisions are somewhat complicated by the development of, and shifts in, site focus; for example the A505 Baldock Bypass site contained a settlement and a cemetery, as did Addenbrooke’s Hutchinson and Tothill Street. Seventeen sites contained all three human remains categories, and a further 25 contained two (most commonly inhumations and disarticulated remains). The county-based site numbers can be seen in Figure 3.1.

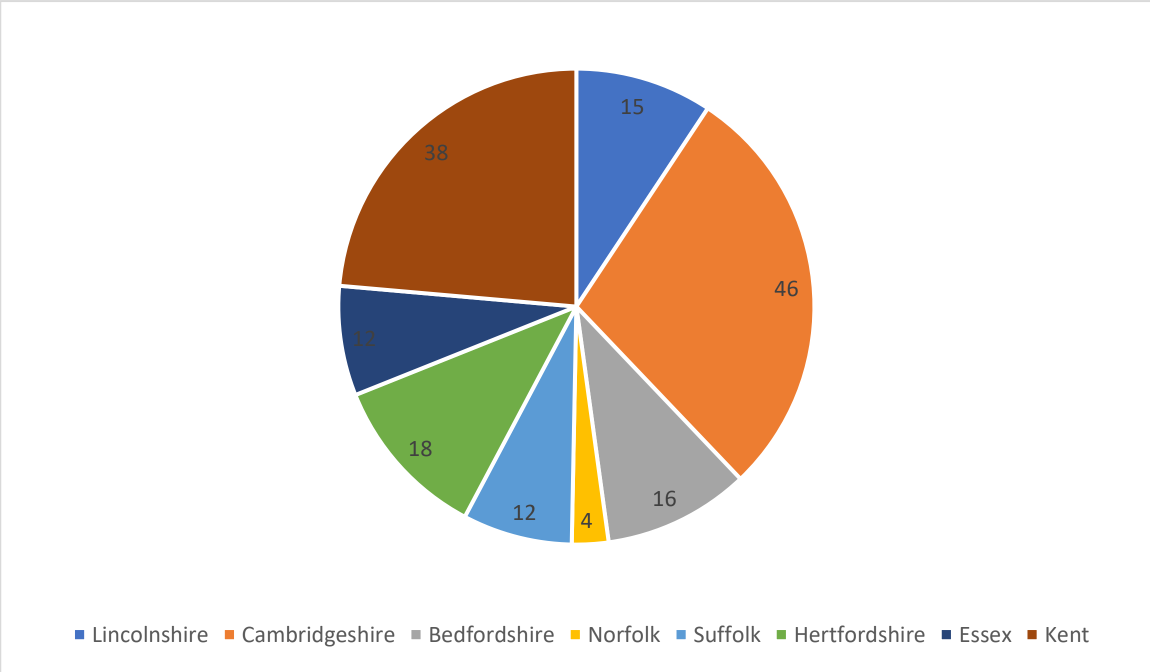


Figure 3.1: Chart showing the division of sites within the region, according to modern counties. Source: Author.

3.2.2. Inhumations

The sample consisted of 425 inhumed individuals, from 105 sites in eight counties. Additionally, a further 75 inhumations were deemed unsuitable for inclusion, due to issues of dating or available data (Appendix 4). Thirty-five individuals were subject to primary osteological analysis. All human remains were in varying states of preservation, and some were originally recorded before the development of modern recording standards and are therefore of limited osteological value. These individuals are still perhaps the most representative sample of the demographic profile of the Iron Age peoples of eastern Britain. They are an amalgamation of all sources of data – primary analysis, recent excavations and older discoveries, and as such cannot be submitted for statistical testing beyond crude prevalence rates (CPR), but this is less of an issue as the study focuses on wider trends than in-depth osteological detail (see Appendix 3).

3.2.3. Disarticulated remains

Disarticulated human bone was recorded on 91 sites and totalled some 528 elements/deposits (Chapter 8, Appendix 1). The actual number of fragments is much greater, but for clarity, all fragments of a single element have been counted as one, as some bones (e.g. crania) are more prone to fragmentation than others. All major skeletal elements are represented, and material has been gathered from multiple contexts and site types. The data represents a combination of elements subject to primary analysis by myself, elements previously analysed by their excavators, and elements for which taphonomic analysis was not possible (Appendix 1). Two-hundred-and-twelve bones/deposits were subject to primary analysis, and are discussed both separately, and combined with the remaining material to assess the comparative reliability of the secondary data. A further 17 deposits were excluded due to questionable dating or limited data (Appendix 1).

3.2.4. Articulated and semi-articulated bones

A further sub-group of the data concerns the 'semi-articulated' burials, 'articulated bone groups' and 'bone bundles'. These constitute the material that can be described neither as largely complete articulated skeletons nor as disarticulated bone. The divisions here are based on perceived *intent*, burial practices and physical processes. Where it is clear the elements present were deposited as an incomplete skeleton or bone bundle, or where there is no indication of poor survival/disturbance, then they are considered as such. These are categorised distinctly because of the equally distinct processes that lead to their deposition – the inhumation of a complete, fleshed individual represents different practices/processes to the deposition of a limb, or of a torso for example. This is different again to the deposition of single disarticulated bones. It is more complex to illustrate the differing meaning or intent that led to these burial practices, but the physical processes that led to the depositions are clear and distinct. Forty-five deposits were identified, from 23 sites in five counties, ranging from single limbs, to placed bundles, to near complete individuals with elements purposefully removed. Additionally a further six deposits were excluded from wider analysis but are discussed in Appendix 2.

3.2.5. Data limitations

In working with a combination of primary data and secondary sources there are issues with ensuring a comparable standard. If data gathered from human skeletal remains is to be taken and compared on an equal basis, it must be ensured that comparable standards of recording were reached. With recent publications, largely from commercial units, this is much less of an issue. Osteologists such as Dr. Jacqui McKinley both set standards for recording (e.g. Brickley and McKinley 2004), and work within commercial archaeology. The recording methodologies chosen were used as they appear most frequently in the literature, and so should generate the most directly comparable data. Where assemblages have been analysed before the most modern standards of recording (*c*.1970-1990 onward), then primary analysis has checked/superseded the original results where possible. Where this has not been possible, then the recording sources have been checked for validity, to ensure their summations are not based on spurious reasoning, for example applying sex to juveniles, or discussing ‘primitive’ features (as in Matthews, 1976:136). Even so, there may be material that has been interpreted incorrectly, but all reasonable steps have been taken to ensure this is as minimal as possible. Where original conclusions were deemed to be unreliable, they have been removed, but are mentioned in the ‘notes’ section of the relevant datasheet.

An additional limitation of utilising secondary sources is the variable availability of data itself. Recording, not just of skeletal remains but of whole sites, can sometimes be sub-par. For each site mentioned in the dataset, all accessible sources have been found, and all available information recorded. Where the information is scarce, the material has either been excluded, or included with an awareness that not everything originally known of the site is now available. This means that the data is inadvertently skewed towards larger, more recent, better published material, but it is this that has the greatest accuracy and the most interpretive potential. Sites with less available data are simply excluded from certain categories of statistical analysis, and in each instance this is noted (e.g. unsexed adults, unknown burial positions) and these individuals removed from overall statistical totals.

3.2.6. The ‘invisible dead’ – other considerations

Aside from geological preservation issues (see Section 1.4), there are archaeological and non-archaelogical factors that may affect the surviving record, and impact discussions of the ‘invisible dead’ in the Iron Age. These must be considered before finding other explanations for an apparent lack of human skeletal remains in the period.

The re-use of older sites has been put forth as an explanation for the invisible dead. This could certainly mask some Iron Age deposits, but not enough to account for much of the population. Re-use of sites is attested in this region and elsewhere – Harding (2016:45-8) lists examples from across Britain, but for such re-use to go unnoticed, so often, would rely on limited stratigraphy (e.g. flat graves, not secondary internments in barrows), no inter-cutting features, no associated dateable material (admittedly likely with IA burials), and fairly consistent positioning and orientation. That many examples of re-used sites can be identified arguably shows that such treatment IS often noticed.

The mis-dating of Iron Age material could reasonably be a factor, especially for isolated burials, or unaccompanied extended inhumation cemeteries – a rite present in many periods (*ibid*, 4). Disarticulated bones face such issues too. Most disarticulated remains are never subject to C14 dating so it is possible that more date from preceding periods (see 9.9.1) and likewise that such remains found on Romano British sites (especially those with IA-RB continuity) may actually be Iron Age. While LIA cremations are often easy to date (Aylesford-Swarling types especially), the same is not always true of inhumations; Bryant (1999:302) points out that the association of the inhumed with the cremated in the LIA at sites like King Harry Lane (Herts.) (Chapter 6) is a major reason for their assignation to the period, going as far as to suggest that inhumation cannot be considered a minority rite in the LIA when the true number of individuals is very difficult to ascertain without extensive absolute dating programs. Similarly Parfitt (1995:29) noted that it has been common practice to date unaccompanied crouched inhumations to the EBA period, and this may have happened at Mill Hill (Kent) if not for C14 dating placing one (ID 340) in the EIA. Those not misdated to the Bronze Age are often left un-dated completely; there are multiple such individuals in Appendix 4 (category 2, excluded inhumations), plus others like burials 78183 and 77119 from Billingborough (Lincs.), both undated but assigned to the Bronze Age on the basis of E-W orientation (Chowne et al., 2001:7), or SK.12750 from A2 Pepperhill (Kent), a neonate left undated as ‘such burials are common in the Iron Age and Romano-British period’ (Allen et al., 2012:460).

Population decline has previously been suggested for Essex, from the MIA-LIA (Sealey, 2016). By surveying roundhouses from sites across Essex, Sealey (2016:39,44,47) noted a significant drop in total occupation during the LIA, estimating a related population drop of at least 50% during the LIA. There is no evidence of climatic shift at this time, and the impact of the slave trade, warfare and plagues is difficult to measure with limited skeletal data (*ibid*, 47-8), but political turmoil or famine are likely causes. It is unknown if this is a situation that was somewhat county-specific, or affected much of the region, but if Sealey’s findings are correct a population reduction in the LIA across the study area would appear to be in opposition to the greatly increased quantity of human remains at this time (see Chapter 6).

It is also probable that the population is more archaeologically visible than is traditionally thought. Wait (1985:90) estimated that settlement burials represent 6% of the population of those settlements, Carr (2007:448) suggested this figure is too high. Wait’s 6% pre-dates many modern finds, does not account for inhumations outside of settlements, the cremated, or the disarticulated, so arguably is too low for a total population presence estimate. Additionally, Evans et al. (2016a:289) have estimated that for Trumpington at least, the excavated dead could represent 10-20% of the population, arguing that Wait’s calculations assume too many occupants per household. Pearce (1999:Table 2.1) estimated the represented Romano-British population at *c.*0.028% for both cremations AND inhumations, considerably less than even Wait’s Iron Age estimation, and yet Romano-British burial customs are seen as being much more secure, there is no search for an invisible majority rite as there is for the Iron Age.

We may be seeing an ‘excavator bias’ in some areas also – greater development and levels of investigation leading to false patterns of archaeological activity. Cambridge for example, is an urban centre with commuter links to London, two universities and a long history of academic, antiquarian and amateur excavations (e.g. The Cambridge Antiquarian Society). Several archaeological units (CAU, PCA, OA East) have offices within the city, as well as multinational companies like AstraZeneca. Others have previously noted the ‘development boom’ around Cambridge (Tabor, 2019:1). It stands to reason that this area will have seen greater levels of investigation than more rural parts of the study region. While the massive increase in excavation in recent years is clearly beneficial for the quantity of available data, common excavation strategies of 10-20% sampling will undoubtedly miss material, and when human skeletal remains were deposited in myriad features, it is reasonable that some are never excavated (Evans, 2012:300). The comparative density of sites around Cambridge may be real though – Evans (2012:302), combining site mapping from Fox (1923), Kirby and Oosthuizen (2000) and his own work, estimated that there should be around 1285 Iron Age settlements in the *c.*460 sq. km area around Cambridge – of which only *c.*5-9% have been identified thus far. Each new Iron Age inhumation shifts the ratio of ‘invisible’ to ‘visible’ dead, but excavations take time and can rarely be undertaken according to the desire of the researcher – location, scale, completeness – these are at the mercy of development schedules (Evans, 2012:302). Even where research excavations can be undertaken, regional excavation biases still exist – the quantity of material excavated in Wessex compared to surrounding regions has been mentioned elsewhere in this thesis, and noted previously by others (Brück, 1995:246).

Assessing the extent of archaeological investigations into an area is difficult, if not impossible. HERs keep records, but rely on adequate staffing and funding, as well as accurate and timely reporting by excavators – all of which will vary by county and company; not to mention inherent issues when commercial units shut down or clients fail to pay for post-excavation analysis or publication of a site. Searching for a key phrase like ‘Iron Age’ will also give varying results per HER, depending on how the data is managed; one site subject to a desk-based assessment, geophysical survey, evaluation and excavation, may appear four times in the list. An extreme example of this is Chronicle Hills, Cambridgeshire, which as of 2007 had 22 separate records and numbers and was still incomplete in its data (Taylor and Arbon, 2007:31).

Looking at factors like overall population, GDP, and population density could give a better idea of where developments (and therefore archaeological excavations) are likely to occur, but this too is flawed. Cambridge has a relatively small population, less than half that of Norwich, and less than Luton, Peterborough, Milton Keynes and others within the study area (Centre for Cities / ONS, 2018)[1], and Norwich, Peterborough, Luton and Milton Keynes also had higher GDPs in 2018 (*ibid*). Commercial output in these locations is at least comparable, often greater than Cambridge. To ascertain how this equated to a need for further archaeological investigations – in advance of new housing or business for example – would be all but impossible.

Clusters of material were highlighted in the Cambridgeshire region in every period, for inhumations and disarticulated material. Several major metropolitan areas lie within the cluster, but many in the region do not, including much of London's commuter belt – so either the development in areas outside this (and the Kent) cluster is not as extensive, or it is but the sites are not turning up Iron Age human remains in the same numbers.

Population density is equally complex. Around 53% of Norfolk is classed as rural land, rather than urban (Norfolk County Council, 2013:12), and it is the second largest county area in the study region (Table 3.2). Small rural settlements and farmland are much less likely to see archaeological investigations than urban areas. Norfolk, Suffolk and Lincolnshire, three under-represented regions in the data, also have comparatively low population densities (Table 3.2). However, the same is not true for Kent and Essex, which have the largest populations, and twice the population density of Cambridgeshire (But less than Beds. and Herts.), and yet Essex has turned up very limited quantities of Iron Age burials. This all suggests that, while important, an 'excavator bias' cannot completely account for the relative abundance of material in some parts of the country, compared to others.

County	Size (sq. miles)	Population	Population Density (sq. miles)
Norfolk	2074	903,680	440
Cambridgeshire	1309	852,523	650
Lincolnshire	2687	1,087,659	400
Bedfordshire	477	669,338	1,400
Hertfordshire	634	1,184,365	1,870
Suffolk	1466	758, 556	520
Essex	1,420	1,832,752	1,290
Kent	1,442	1,846,478	1,280

Table 3.2: Population statistics for each county in the study region. All data from the Office of National Statistics and respective councils. Correct as of 2019.

[1] As of 2018 the population of Norwich was 270.6k, Cambridge was 125.76k, Peterborough was 201.04k.

3.3 Archaeological data methods

The archaeological data categories recorded for analysis are largely contextual. Data categories were chosen based on three criteria:

1) Their value in answering the research aims
2) Following the examples set by preceding works (e.g. Whimster 1981, Wait 1985) and established traditions, to ensure compatibility with other works
3) By the data recorded by original excavators; this out of necessity controlled the analysis as what was not available could not be considered

There are accepted categories of contextual information that almost all excavators will record, and most analysists deem important – site type, burial context, skeletal position, associated goods, demographics, and all were noted here for analysis in the results chapters.

A contextual approach was applied in the analysis and interpretation of the material also – nothing exists in isolation, and while archaeological data will never be a complete picture, a contextual approach is far more useful than discussing each data category in isolation. Data categories were cross-compared for patterns (e.g. between sex and burial position), which were highlighted and analysed thematically in the discussion.

As a rule, determinations of position, grave type etc. followed the original author. In cases where this was changed these are recorded in Appendix 1. There will be some variability, but it has been taken into account in the data – for example ‘crouched’ and ‘flexed’ inhumations are considered to be the same in many cases (see Chapters 4-6), and ‘ovoid’ and sub-rectangular’ grave shapes have little distinction in most instances (see Chapters 4-6). An ‘ovoid’ grave is separated from a ‘grave pit’ as the former is elongated and they occur much more frequently in cemetery contexts.

3.3.1 Coding

With so many data categories present for the inhumation data, a numerical coding system was designed for the raw datasheet (Appendix 1). The variables were created organically based on the data itself, with new categories implemented as new data types were identified.

In addition, each inhumation burial and disarticulated bone was given a unique ID number. These were used throughout the thesis to allow for simple cross-referencing with the raw data. Relying on the original context numbers or burial numbers was not possible as multiple excavations used the same information (e.g. Burial 12), and in some cases more than one deposit came from the same context. ID numbers run from 1, both for inhumations and disarticulated remains, but for the latter they are styled as D.1, D.2, etc. Inhumation IDs 281-90 are absent from the inhumation datasheet, as they had to be excluded on the basis of new (January 2021) AMS dating placing them within the RB period.

3.3.2 Site conglomerations

Several sites were excavated in multiple phases, or by more than one company, or for entirely unrelated projects. When this occurs there are issues with site identification, they are given different names, separate site codes, and not always coalesced. Where relevant in-text, these sites have been merged together under a collective name. In each case this is specified, otherwise they should be considered separately.

3.3.3 Data presentation

Three Microsoft Excel datasheets were compiled using the data gathered from primary and sources (Appendix 1). The inhumation data was further subdivided with tabs for each chronological period. Each datasheet also contained a tab with the 'excluded' data.

Aside from the raw data, data was presented in the results chapters in tables, charts and graphs where appropriate. Proportional analysis was presented for all results comparing two or three variables (e.g. sided bones, sex), and in population demographics (e.g. % of young adults). For results comparing four variables, Chi-Squared tests of statistical significance were also conducted, and the results included throughout the text.

Maps were created using open-source map-making software, each data point on each map was created using the latitude and longitude figures for the centre of each site where possible, and failing that by converting the published NGR for the site into latitude and longitude.

All figures were taken from published academic sources or were created by the author. Credit is given in all cases.

For the orientation of skeletal remains, the majority of sources recorded only to the nearest of eight major compass points, while others used three degrees of precision (e.g. NNE-SSW). In these instances the data was merged to better fit all determinations, meaning less precise but more widely applicable patterns could be identified. This was done by dividing all individuals recorded to three degrees of precision into their nearest adjacent orientations. For example: A single NNW-SSE burial would add 0.5 to the total number of N-S burials and 0.5 to NW-SE. Each directional division therefore represents a 45-degree range instead of 22.5. While this is less precise, it would not be possible to assign three degrees of precision to all inhumations, and even if it were, it would likely be of little value. The data shows broad trends, and without compasses it would be surprising if Iron Age peoples were burying their dead on alignments more precise than the eight major directional points. The raw datasheet contains all alignments as recorded by their original authors, either textually or through grave plans.

3.3.4 Disarticulated remains – data recording

The disarticulated bone datasheet contains one entry per element, or fragment thereof. If multiple elements, reasonably from one individual, are placed together, then they are discussed in the 'bone bundles' section. The exception to this is instances of 1-3 small elements that could have been deposited together but as a largely disarticulated deposit (see Appendix 1; Chapter 8) – for example two adjoining vertebrae, or a proximal and medial phalange. The same is true of complete skulls with mandibles, or any combination of skull bones from a single individual. If bones from at least two crania are present in a fill, they are each given their own entry (ID) in the datasheet. This is seldom an issue as the majority of elements/fragments were deposited in isolation. Where this is not the case (e.g. Station Road) their depositional contexts are discussed in-text.

3.4 Osteological methodology and recording standards

In selecting methods to use for conducting primary analysis, considerations had to be made to ensure validity and limit problems of comparability between primary and secondary data sources (see 3.2.5). Recording guidelines outlined by White and Folkens (2005), Buikstra and Ubelaker (1994), Brickley and McKinley (2004) and Mitchell and Brickley (2018) are used extensively elsewhere and so formed the basis of the osteological analysis here. Other reports which also make use of these handbooks (or the material the handbooks recommend), are considered to be comparable in data analysis.

All primary recording was undertaken in accordance with the standards outlined by CIfA and BABAO (Brickley and McKinley 2004 and Mitchell and Brickley, 2018) where possible.

The overall demographics and health of the sample population are discussed in detail in Appendix 3. This appendix conglomerates available data from all human remains categories.

3.4.1 Preservation

For primary analysis, erosion of the cortical bone was assessed according to the scale outlined by BABAO and CIfA (McKinley, 2004:16). Any material published before *c.*2004 and not re-analysed will not adhere to this, with the preference being towards more descriptive terms like ‘excellent’ and ‘poor’ preservation (Brickley, 2004:7). For secondary sources, where material is described as ‘poor’ in the original publications, it has been assumed that this implies a loss of identifiable pathologies and skeletal traits, which has been taken into account in any analysis.

3.4.2 Age estimation

Estimations of age have relied on morphological characteristics, combining as many methods as are relevant and possible, and selecting an age range consistent with the employed methods where they overlap. Adult age assessments were based on epiphyseal fusion, dental wear and the presence, and progression of degenerative pathologies. Ageing based on the pubic symphysis was not widely employed as the pubic symphysis rarely survived well in the remains subjected to primary analysis. Where it did, it follows descriptions by Todd (1921a+b) and Brooks and Suchey (1990:232-3,237), with illustrations from Buikstra and Ubelaker (1994:22-3). Likewise auricular surface ageing was employed where possible, though poor survival was again often a factor.

Epiphyseal fusion recording follows Buikstra and Ubelaker (1994:43). Dental wear assessments follow Lovejoy (1985) and Brothwell (1981) and are only applicable for assigning age up to *c.*50-55 years. Where preservation is such that a precise adult age cannot be given, then the general term ‘adult’ is used. This was also the case for much of the disarticulated material.

Age categories are adapted from Buikstra and Ubelaker (1994:9), and are broken down in Table 3.3:

Foetal– Before birth (*c.*<39 weeks gestation)	Young adult – 20-35 years
Neonate/Perinate – At the time of birth, to *c.*1 month old	Middle Adult – 35-50 years
Infant – 0 – 3 years	Older Adult – 50+ years
Child – 3-12 years	Adult – 20+ or all available bones fused and adult size
Adolescent – 12-20 years	

Table 3.3: Age categories for human skeletal remains. Adapted from Buikstra and Ubelaker (1994:9).

The category of ‘neonate/perinate’ was added as some authors use the term to distinguish between stillbirths/miscarried foetuses, infants that died at/during/just after birth (neonates/perinates), and those that survived beyond birth (infants) – see for example, Timby et al. (2007), Lyons (2011) and O’Brien (2016). For assessments of subadult age, epiphyseal fusion is used for ages 8-20, combined with dental eruption (deciduous and permanent teeth) from around nine months (±3 months) to around 11 years (±2.5 years) (Ubelaker, 1989).

3.4.3 Sex estimation

Primary estimations of biological sex follow Buikstra and Ubelaker (1994) for the sciatic notch, Phenice (1969) and Klales et al. (2012) for the innominate (ventral arc, subpubic concavity and medial aspect of the ischio-pubic ramus), Brickley (2004b:fig.9a) for the mandible, and Buikstra and Ubelaker (1994) for all other cranial morphology. Where possible, a combination of pelvic and cranial traits have been used to assign a sex to an individual, as many as are available in each instance.

Where preservation is 'poor', or where only some of the criteria were present (as was frequently the case), then a tentative estimation of sex has been given (see below). This is also relevant for the disarticulated material. In very few cases was the full pubis preserved, so this assessment criterion has not been frequently used. In cases of consistently large and robust bones, with no other definitive sex identifiers available, a *very tentative* assignment of male sex has been given. Sex categories have been recorded in Table 3.4:

Unsexed = preservation or representation too poor to make an assessment, or pre-pubescent	
F = female	M = male
?F = probable female	?M = probable male
??F = possible female (very tentative)	??M = possible male (very tentative)

Table 3.4: Sex estimation categories and degrees of security.

These categories are adapted from Buikstra and Ubelaker (1994:9), with the 'possible' (??) categories added due to their widespread usage in other literature, and to better distinguish between those individuals that are almost certainly of a particular sex, and those that are much less secure, as is most often the case with disarticulated material. 'Possible' is used where very limited criteria are available e.g. one or two cranial indicators, or consistently large robust bones. In the analysis, male/female sex division statistics are given both with and without the 'possibles', so as not to skew the results with the least reliable data.

3.4.4 Stature estimation

Assessments of adult stature follow Trotter (1970), based on their data for 'white' males and females. Though it has been argued that the 'white/black' divisions in stature estimation are indicators of body type rather than outdated notions of 'race' (Brothwell and Zakrzewski, 2004:33), Mays (2016:652) found the 'black' calculations to perform poorly when compared to a British archaeological sample. In addition to this, the Trotter and Gleser (1952, 1958)/Trotter (1970) calculations for ‘white’ males/females have been used extensively in British archaeology since the 1960’s and are now ‘almost universal’ (Mays, 2016: 647). In most cases, the femur has been used to measure stature, as it has the smallest standard deviation. For accurate measurements, sex has been assigned prior to stature estimation, as the calculations differ.

3.5 Common palaeopathologies – skeletal

The overall pathological data for the population is discussed in Appendix 3.

3.5.1 Cribra orbitalia / Porotic hyperostosis

Cribra orbitalia presents as a porosity of one or both of the orbits, caused by an enlargement of spongy bone (diploë), destroying the compact bone of the outer table (Ortner, 2003:55). Porotic hyperostosis is a similar lesion, found on the skull vault and other bones. Classification of both cribra and porotic hyperostosis follows Stuart-Macadam (1991) and they are recorded as in ‘present’ for both primary and secondary material, in each element where they occur. Distinctions are not made between active and healed lesions, as this is not always recorded in secondary literature. Long thought to be related to iron-deficiency anaemia, these pathologies are now argued to have a more complex aetiology, though gastrointestinal infections causing nutrient loss, as well as vitamin C and B_{12} deficiency, especially during weaning, are key contributors (Walker et al., 2009:119).

3.5.2 Osteoarthritis

Osteoarthritis is characterised by the destruction of joint cartilage and the resultant new bone formation on the adjacent bone, visible as eburnation (polishing) and lipping (osteophytes/bony spurs) (Ortner, 2003:546), often through mechanical activity, though genetic and dietary factors are also important (Glyn-Jones et al., 2015:376).

An identification of osteoarthritis is given when eburnation occurs, or when osteophytes and increased bone porosity occur together. Osteophytes on their own can be indicative of the standard ageing process, as opposed to the progression of osteoarthritis, and as such are unreliable as indicators of its progression/severity (Roberts, 2018:45; Weiss and Jurmain, 2007:445). Again, many secondary sources only publish presence/absence data for each element (or individual), with others using a ‘slight, moderate, severe’ or similar system. Recording of primary material therefore follows the scheme laid out by Buikstra and Ubelaker

(1994:122-3), though not using their coding system, as it would have complicated the existing coding already in place (Appendix 1). Instead, written descriptions are given.

3.5.3 Infection / Periosteal new bone

Periosteal new bone formation (sometimes called periostitis) is the creation of woven bone in response to numerous pathological stimuli (Weston, 2016:493). There are several schemes for recording degrees or types of infection, though none are consistently used by palaeopathologists (*ibid*, 502). Infections have therefore been recorded as either present or absent, active at death or healing, and with specific detail recorded in each case (for primary material).

3.5.4 Schmorl's nodes

Schmorl's nodes are caused by herniations of the intervertebral disk, resulting in pressure defects in the adjacent bone surface (Waldron, 2009:45). They are a common pathology, appearing most often in the lower thoracic or lumbar vertebrae, and are considered a musculoskeletal stress marker (or entheseal change) (*ibid*, 45; Jurmain et al., 2016:532). They have been graded as present or absent in each vertebra.

3.5.5 Trauma

Trauma has been subdivided into three categories, according to the nature of the trauma event itself:

Blunt force trauma – a direct injury from a blunt object e.g. a rock or tool with a blunt surface

Sharp force trauma – a direct injury from a sharp object e.g. a sword or axe

Indirect/accidental trauma – trauma with no deliberate occurrence e.g. falling

Each of these trauma types leaves distinct pathological indicators on bone, though there is overlap – e.g. a heavy bladed weapon can create both sharp and blunt force trauma indicators. All are recorded as present/absent for each bone, with size, angle, depth and possible cause also recorded in primary data, as well as whether the lesion is perimortem or antemortem.

Blunt force trauma usually presents with radiating fractures from the point of impact, in addition to circular concentric fractures (Kroman and Symes, 2013:227). Plastic deformation is also common, the permanent deformation of the bone prior to failure (fracturing), providing the impact is slow enough (Berryman et al., 2012:273).

Sharp force trauma can also result in radiating and concentric fractures, but it differs from blunt force trauma in the area of impact – the force is channelled through a much smaller area, generating greater stress on the impact point (Berryman et al., 2012:273). The size and weight of the blade has an effect, with large, heavy blades (axes, cleavers, swords) causing ‘chop’ injuries - highly destructive V-shaped defects, sometimes with crushing around the margins (Christensen et al., 2014:280).

Indirect trauma is identified by fractures with no clear trauma indicators/point of impact, especially those with characteristics common in accidents/falls. Multiple fracture types can occur (transverse, oblique, butterfly, spiral, depressed, comminuted), but the defining characteristic is that no cut/puncture/impact point is present.

3.6 Common palaeopathologies - Dental

3.6.1 Calculus

Dental calculus is mineralised plaque which forms on a tooth surface and in the gaps between teeth (Lukacs, 2016:560). Post-mortem loss is a serious issue with regard to the prevalence of calculus deposits, as it is fragile and often subject to ‘overexuberant cleaning’ during post-excavation processing (Buikstra and Ubelaker, 1994:56). Recording calculus follows Brothwell’s (1981) three-stage system for primary data but is often recorded as ‘present’ or ‘absent’ in secondary sources.

3.6.2 Caries

Caries are tooth cavities, ranging from small dark spots on the tooth crown to the destruction of most or all of the tooth itself (Lukacs, 2016:560). Caries are recorded for primary data using Buikstra and Ubelaker’s (1994:55) system adapted from Moore and Corbett (1971). For secondary data they are recorded according to the level of detail each report offers; while some are thorough many simply record the number of caries per individual, or state that caries were present.

3.6.3 Periodontal disease

Caused by infections in the alveolar bone due to bacteria in dental plaque, periodontal disease presents with inflammation of the tissues around the tooth, and causes recession of the alveolar bone, either irregularly or horizontally (Lukacs, 2016:560; Waldron, 2009:239). Periodontal disease can be recognised by reduced bone in areas with antemortem loss, compared with the surviving teeth, as well as porotic surfaces between teeth which become concave and ragged, before eventual bone loss (Hillson, 2008:322). Periodontal disease is recorded as either ‘present’ or ‘absent’, as more complex methods can be problematic and variable (Nelson, 2016:472).

3.6.4 Periapical cavities

There are three main types of periapical cavities – granulomas, cysts and abscesses (Dias and Tayles, 1997:549). All result from infection and present with a cavity in the tooth root and/or surrounding bone, and though there is variation in the size and characteristic of the cavity, they are all considered together. Periapical cavities are often simply labelled as abscesses (Dias and Tayles, 1997:548), and with secondary data there is no way to confirm or disprove the accuracy of these diagnoses. Because of this, they are recorded with as much detail as is available. For primary data, identification follows Dias and Tayles (1997), and recording is based on Buikstra and Ubelaker (1994) – with presence/absence of the pathology recorded and the location of the cavity.

3.6.5 Antemortem tooth loss

Antemortem tooth loss can occur for multiple reasons, including caries, trauma and deliberate extraction, but the most common cause is periodontal disease (Lukacs, 2016:560; Waldron, 2009:238). Age is also a factor, as with other dental pathologies (Waldron, 2009:239). Identifying antemortem loss relies on remodelling and eventual regrowth of bone over the empty socket– the more remodelling, the more time has passed between tooth loss and death (*ibid*, 239).

3.6.6 Linear Enamel Hypoplasia (LEH)

Linear enamel hypoplasia (LEH) is visible in the form of transverse lines across the enamel surface of the teeth, and sometimes appearing as grooves or pits (Lukacs, 2016:560; Hillson, 2008:304). They are indicative of defects in enamel development caused by stress at the time of formation, for example, malnourishment or infectious disease (Hillson, 2008:304). To generate detailed data regarding periods of stress, the teeth must be examined microscopically – which has not been possible for this study (Hillson, 2008:304). Macroscopic methodologies involving measuring the lines (furrows) with callipers have been put forward (e.g. Buikstra and Ubelaker, 1994), but there are questions over their accuracy (Hillson, 2008:304). As such LEH is recorded as present or absent, with the affected teeth and number of lines also recorded where possible.

3.7 Macroscopic taphonomy methodology

To directly assess the evidence for excarnation practices and other post-mortem processes, primary analysis of disarticulated bone was undertaken. An established suite of taphonomic variables was recorded, using a ×10 or ×20 hand lens as required. Time and effort was taken to ensure each bone fragment was studied systematically, on every surface. The relatively small assemblage size allowed for thorough examination of every fragment. Recording was undertaken at the storage location and always under adequate lighting (at least a 60-W lamp).

All modifications were recorded as either present or absent, with location and extent of the modification noted where applicable. Taphonomic overprinting (*ibid*, 335; Shipman, 1989) will undoubtedly have a negative effect on the identification of modifications – the greatest obstacle being soils/root etching. An unfortunately common characteristic of the study area is soil/geology conditions unsuitable for bone preservation (see Section 1.4), which combined with prevalent root etching on material from many sites, has caused chemical corrosion damage to a large percentage of the sample. This is noted in the Appendix 1 where it occurs, as it may have destroyed taphonomic modifications, and such elements are excluded from all statistical analysis of bone taphonomy.

3.7.1 Weathering

Weathering is here defined as the process whereby physical and chemical agents (sun, rain, wind etc.) cause the separation and eventual destruction of microscopic organic and inorganic bone components, resulting in cracking and flaking of the bone surface, and eventually exfoliation, deep cracking/splitting, and disintegration (Behrensmeyer, 1978:153; Fisher 1995:31; Fernández-Jalvo and Andrews, 2016:202). Weathering was recorded following Behrensmeyer's (1978) six-stage scheme, and the illustrative figures from Fernández-Jalvo and Andrews' (2016) *Atlas of Taphonomic Identifications*. No attempts have been made to suggest the duration that each weathered element spent in a sub-aerial environment.

In identifying weathering on human remains, the implication is that the bone must have been exposed in a sub aerial environment, as multiple studies have suggested that the effects of chemical weathering on bones in subterranean environments is negligible (Madgwick and Mulville, 2012:510). With weathering, survival bias is also an issue. Certain elements resist weathering effects better than others, and so it may be that some recovered elements with seemingly no modification were actually subjected to a degree of sub-aerial exposure, and conversely other elements may not be recovered at all, due to the more severe effects of weathering (*ibid*, 510).

3.7.2 Gnawing

Instances of rodent gnawing were recorded with reference to examples illustrated by Fernández-Jalvo and Andrews (2016:66-79). Rodent gnawing is commonly seen on the broken edges of bones, transversely on long bone diaphyses, and on mandibles, but also less commonly on long bone epiphyses (*ibid*, 31-2). Generally, more than one set of incisor marks would be found on a bone, as rodents tend to use it to hone or wear their teeth, as well as accessing minerals within the bone, and so tend to gnaw an area repeatedly, resulting in large numbers of consistently similar marks (Brain, 1981; Fernández-Jalvo and Andrews, 2016:32; Kibii 2009:21). No attempts were made to identify the rodent species by tooth size. In cases of carnivore linear tooth marks, a U-shaped cross section is visible, with no internal striations, and of greatly varying length (Fernández-Jalvo and Andrews, 2016:32). Directionality of these marks is in part determined by the bone shape, and as such long bone shafts tend to exhibit transverse marks, while the epiphyses of bones may exhibit striations at all angles (*ibid*, 32).

3.7.3 Trampling

Trampling by humans or animals causes sub-parallel linear striations on a bone surface, as well as occasional fractures and notches (Fernández-Jalvo and Andrews, 2016:27; Madgwick, 2014:163). The striations are caused by the action of standing on/walking over the bone and pressing it into a stony substrate; the resulting linear striations can be easily confused with cut marks (Fernández-Jalvo and Andrews, 2016:27). They are distinguishable, however, as they occur often in multiple places, and with no clear proximity to muscle or tendon attachments, generally appearing across the whole bone surface (Andrews, 1995:148; Fernández-Jalvo and Andrews, 2016:27; Madgwick, 2014:164).

3.7.4 Polish / Abrasion

Abrasion is defined by Madgwick (2014:164), citing Bromage (1984) as the ‘erosion of a bone's surface by any agent, through physical force’, presenting as smoothness of the outer surface, through to a polished finish on the compact bone, and eventually to the removal of lamellar bone (Behrensmeyer, 1982:213; Madgwick, 2014:164). Broken edges of bones become smoothed and rounded, the bone itself becomes thinner, and surface detail is progressively lost (Madgwick, 2014:164). In many cases from this assemblage, the polish appears to be the result of direct human action (Chapter 8) but other causes include carnivore licking and digestion, pathology, moving water action, bioturbation and trampling (Fernández-Jalvo and Andrews, 2016:169). Identifying the cause of abrasion is difficult, as similar modifications are seen on bones regardless of how they occurred (Bromage, 1984:161; Madgwick, 2014:164).

Even at a microscopic level, the abrasions are generic, and the characteristic removal of superficial mineral, cortical bone and surface lamellar bone only exacerbates this issue (Bromage, 1984:164,166).

Abrasion/polish was examined on a case-by-case basis, to determine whether the modification was more likely to be the result of trampling (or other natural action), or direct human agency (e.g. handling). This was done with consideration of other taphonomic factors (is the bone also cut, or perforated for example), as well as the context, and the element (a polished cranium, for example, is very unlikely to have been trampled). Following Madgwick (2014:165), abrasion was recorded as present when at least a 1cm^2 area of the bone surface presented with a loss of surface texture, and visible polish/smoothening. Examples were again compared with photographed cases from Fernández-Jalvo and Andrews (2016:171-3).

3.7.5 Cut and chop marks

Cut marks are distinguishable as linear marks with asymmetrical V-shaped cross sections, made by stone or metal tools (Figure 8.19, Appendix 3). Chop marks are in essence broader, deeper cut marks, with less directionality. A cut mark is the result of a slicing motion across a bone, while a chop mark will tend to be shorter, caused by abrupt, forceful contact (White and Folkens, 2005:60). Scrape marks are the result of the tool scraping across the bone surface rather than slicing or chopping into it, and are characterised by shallower, much wider marks (*ibid*, 2005:61). Identification follows the same procedures as sharp-force trauma (See above).

3.7.6 Peri-mortem fractures

Identifying a recent (during/post-excavation) post-mortem break is relatively simple, as the bone at the point of fracture will be much lighter than the surrounding area (Moraitis and Spiliopoulou, 2006:224). Separating fresh (peri-mortem) fractures from dry (post-mortem) fractures, follows Outram's (2001, 2002) Fracture Freshness Index (FFI). Unfortunately, identifying an ancient dry bone fracture more precisely than 'ancient, post-mortem/dry' is much more difficult (Fernández-Jalvo and Andrews, 2016:284), and while ancient dry bone fractures may be part of prolonged post-mortem processes, they could just as easily be the result of disturbance or accidental damage. Truncation is common in all sites, and so some of these fractures may be the result of such processes. Identifying and recording fracture types is the same as for the inhumation data.

3.8 Conclusion

This chapter outlines the three inter-related methodologies employed in this research, in examining primary osteological data, in identifying perthotaxic taphonomy, and in interpretive analysis of all the data. The primary osteological and taphonomic methods are not meant to be novel, and the osteological analysis is not highly complex, as the aim is of discerning broad, large-scale data patterns through the archaeological analysis methods. The methodologies employed here are meant to be replicable, they are based on widespread practices and sources within the discipline to ensure the validity of comparative analysis. Working with a combination of primary and secondary data necessitates some simplicity to ensure compatibility, and though instances of unusual pathologies or unique burials may not be given a great deal of study, it is argued here that the everyday, the representative, is of far more value than the ‘special’.

4. Results 1 – Early Iron Age Inhumations

4.1. Introduction

The following three chapters outline the available burial data for inhumations across the entire study region. Due to the large quantity of data and broader societal changes throughout the Iron Age, the results chapters have been divided chronologically. This chapter concerns the Early Iron Age (*c.*800 – 400 BC), chapters 5 and 6 concern the Middle Iron Age (400 – 100 BC) and Late Iron Age - Conquest periods (100 BC – *c.*60 AD) respectively. The results chapters concern the wider chronological, geographical and contextual data for inhumed individuals, as well as skeletal position, orientation, grave accompaniments, and how these relate to basic demographic data (age and sex). Of the 425 inhumed individuals subjected to analysis, 68 have been dated to the Early Iron Age.

4.2. Geographic Distribution

The majority of these individuals are from Kent and Cambridgeshire (30 and 27 respectively), a pattern consistent with the rest of the period also (Chapters 5-6). There are no inhumations from Lincolnshire and Hertfordshire, though both the single burial from Puddlehill (Beds.) (ID 20) and the two from Fairfield Park (Beds.) (ID 13-14) are close to the modern Hertfordshire boundary.

	Lincs.	Beds.	Cambs.	Herts.	Norfolk	Suffolk	Essex	Kent	Total
Sites	0	3	11	0	1	2	2	12 (7)	31 (26)
Individuals	0	4	27	0	2	2	3	30	68

Table 4.1: Sites with inhumations attributable to the EIA, and the total EIA individuals per county.

Table 4.1 shows the number of sites and individuals in each county. Some of the Kent sites can be combined, lowering the overall total to seven - South Dumpton Down, St. Stephen's College, and North Foreland Avenue are all part of one extensive EIA occupation area, with others that had no EIA human remains (Boast et al., 2006:10-11, Figure 4.1 inset B – the three most easterly sites). The four 'Fort Hill' sites in Margate may also be considered together (Fig. 4.1 inset B[2]), making a total of seven sites in Kent, rather than 12. Trumpington Meadows,

[2] Only three pins are visible for the Margate sites as 'Fort Hill – Capitol House' and 'Fort Hill – Margate Caves' have near identical NGR numbers

Clay Farm and Glebe Farm are all part of the Addenbrooke's area/environs (Fig.4.1 inset A), but have different, settlement foci and are not technically one site (Evans 2016:17).

Area A in Figure 4.1 contains 19 individuals from five sites, and area B contains 20 individuals from seven sites. Together these represent the only two discernable clusters of burials, containing more than half the Early Iron Age inhumations (39/68, 57.4%). A NE-SW line of sites appears to run from Thetford Forest, through Ely/Soham and Cambridge, to Dunstable, but the number of individuals and sites here is too low to discern if this is a real pattern. The most obvious trend among the sites in Fig 4.1. is that they are cited largely on or near major rivers, notably the Nene, Ouse and Cam. This is unsurprising, especially as the majority of sites are settlements (see Section 4.4).

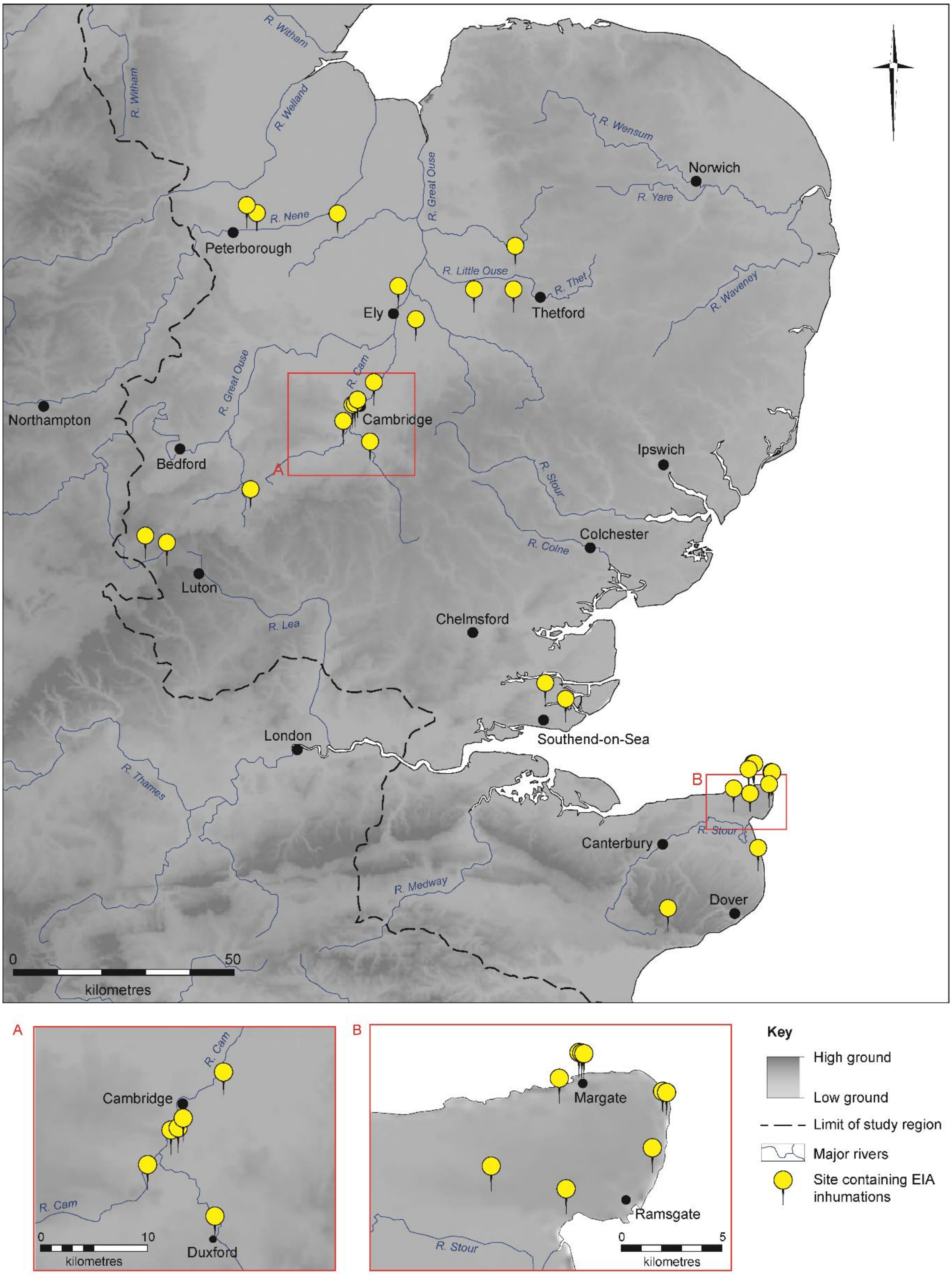


Figure 4.1: Maps showing the location of all EIA inhumations. Source: Laura Hogg and Author.

4.3. Chronology

ID no.	Original context number	Site	County	C14 result
103	F.3052 SK3097	Harston Mill	Cambridgeshire	700-450 cal BC (Beta-243506, 2410±40BP)
129	Burial 1 (F.200)	Trumpington Meadows	Cambridgeshire	734-398 cal BC (SUERC-49484)
88	Burial 21	Duxford	Cambridgeshire	830-540 cal BC (GU-5930,2570±50BP)
99	SK.475 F.90	Glebe Farm, Addenbrooke's	Cambridgeshire	753-404 cal BC (Beta-256287, 2430±40BP)
420	SK2 (115)	Gunton's Close, Soham	Cambridgeshire	756-413 cal BC (SUERC-68385, 2455±34 BP)
403	Skeleton 2	Grimes Graves	Norfolk	515 ± 230 cal BC (BM-780, 2465±230BP)
413		RAF Lakenheath	Suffolk	770-440 cal BC (GU-10504, 2450±50BP)
340	Grave 5	Mill Hill	Kent	765-385 cal BC (HAR-8444, 2390±60BP)

Table 4.2: The EIA individuals subject to C14 dating by their original excavators. Source: Author.

Seven individuals from seven sites were subject to C14 dating by their excavators (Table 4.2), returning dates consistent with the Early Iron Age. However, some of these dates were acquired when measurement was less precise (e.g. ID 403 (Grimes Graves, Norfolk), analysed before 1982) than is now possible, which coupled with the effect of the 'Hallstatt plateau' means that the dates largely cover the majority of the EIA[3]. Only ID 103 (Harston Mill, Cambs.) and ID 88 (Duxford, Cambs.) have date ranges under 300 years (O'Brien, 2016:38; Lyons, 2011:10,12). ID 420 (Gunton's Close, Soham, Cambs.) was one of three individuals in a triple grave inhumation, so it can be assumed that all three are contemporary, though again the C14 date range covers much of the EIA period.

One burial (ID 360) from Tothill Street, Minster (Kent), has been dated no more precisely than LBA-EIA. It is included here as it cannot be known which of these periods it falls into, and the LBA-EIA transition is long and complex (see, for example, Harding, 1972:74; 1974:129; Sharples, 2010:320; Waddington et al., 2019:87). It is a crouched pit burial, which is consistent with other EIA and MIA inhumations (see below).

Five individuals (110, 115, 164-5, and 347) are dated to between the Early and Middle Iron Age. They are included here as in each instance it is more likely that they belong to the former period than the latter. Both the inhumations from North Shoebury, Essex (IDs 164-5) have been dated 600-300 BC, covering more of the Early Iron Age than the Middle (Wymer and

[3] While site-based Bayesian chronologies and advances in AMS dating are reducing the impact of the 'Hallstatt plateau' and allowing for more precise EIA dates (see Hamilton et al., 2015), such methods are beyond the scope of this project.

Brown, 1995:22). The St. Stephen's College burial (ID 347, Kent) is included here as the larger settlement has been dated to 550-350 BC, and it is a storage pit inhumation, which make up over 1/3 of EIA inhumations (see below). The Harston Mill burial (ID 110, Cambs.) was found in a storage pit with EIA pottery (though this may be residual) (O'Brien, 2016:17). ID 115 (March Northern Offices, Cambs.) is included here as it crouched and the contemporary site was dated by LBA-MIA pottery, no more precision was possible (Stone, 2010:116).

4.4. Site type

Settlements were the most common site-type for EIA inhumation burials, containing 42 of the total 68 (61.8%), and four more from the periphery of the settlement at Trumpington Meadows (IDs 129-132) (Fig.4.2). IDs 419-21 (Gunton's Close, Soham, Cambridgeshire) were found on a site with several pits, and a large water hole containing domestic waste deposits (Barton, 2016:3) (Fig.4.3). Though no settlement features were uncovered in the excavation area, it is thought that a contemporary settlement is nearby, owing to the fills of the water hole (*ibid*, 60). ID 115 (March Northern Offices, Cambs.) was placed in an agricultural landscape, so may also be buried near to an as-yet undiscovered settlement (Stone, 2010:116). Settlement or settlement adjacent burials therefore make up almost three quarters of all Early Iron Age inhumations (50/68, 73.5%). These individuals come from a total of 16 sites in five counties, so are representative of wider regional traditions.

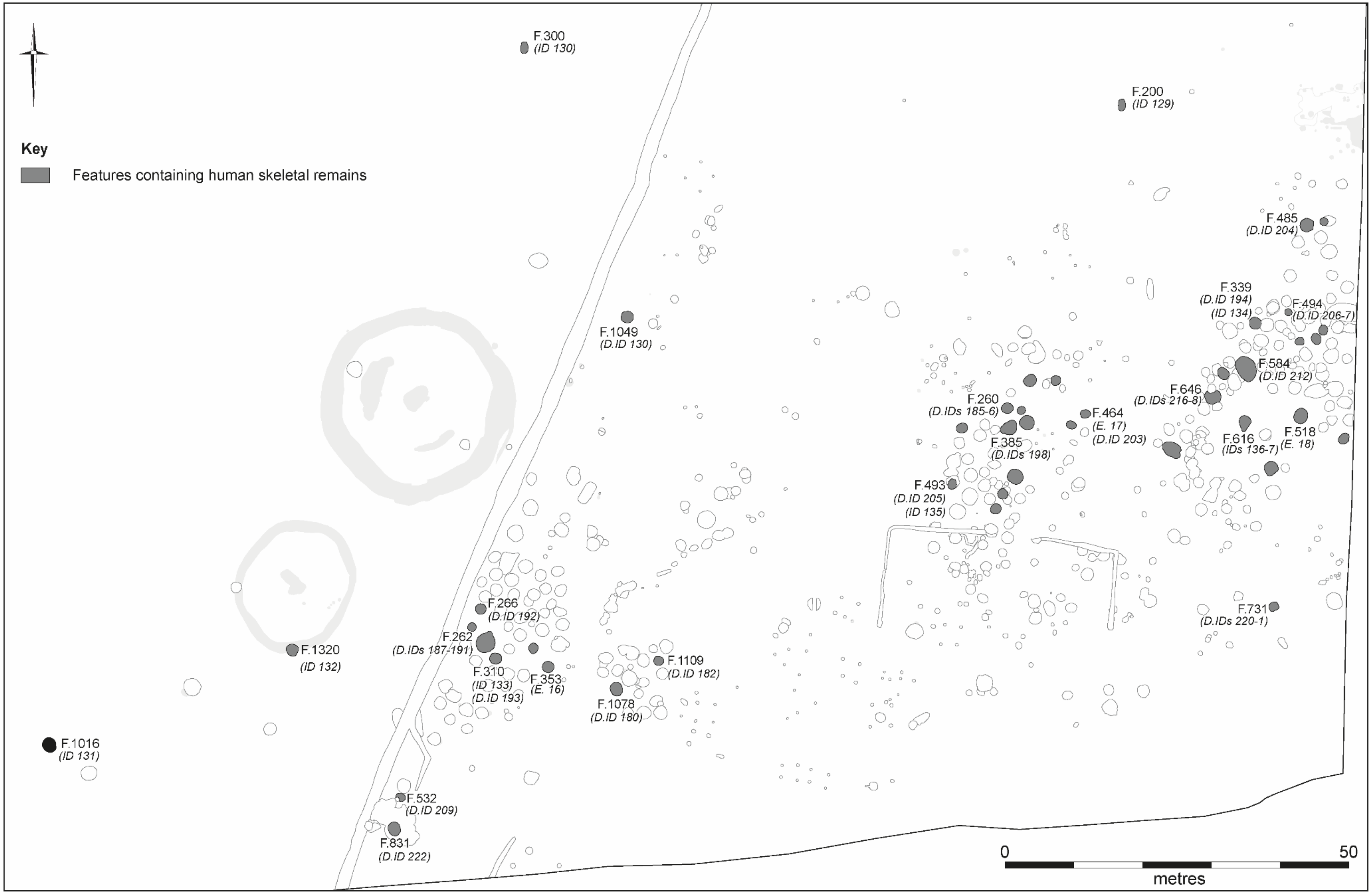


Figure 4.2: Trumpington Meadows site plan (Area C) showing the locations of human remains, including some peripheral deposits. D.IDs 178, 181, 195-7, 199-202, 208, 210-1, 213-5, and 219 are not labelled, as their exact locations could not be identified. D.IDs 183-4 were in other areas of the site. Source: Evans et al. 2016: Fig.4.25, edited by Author and Laura Hogg.

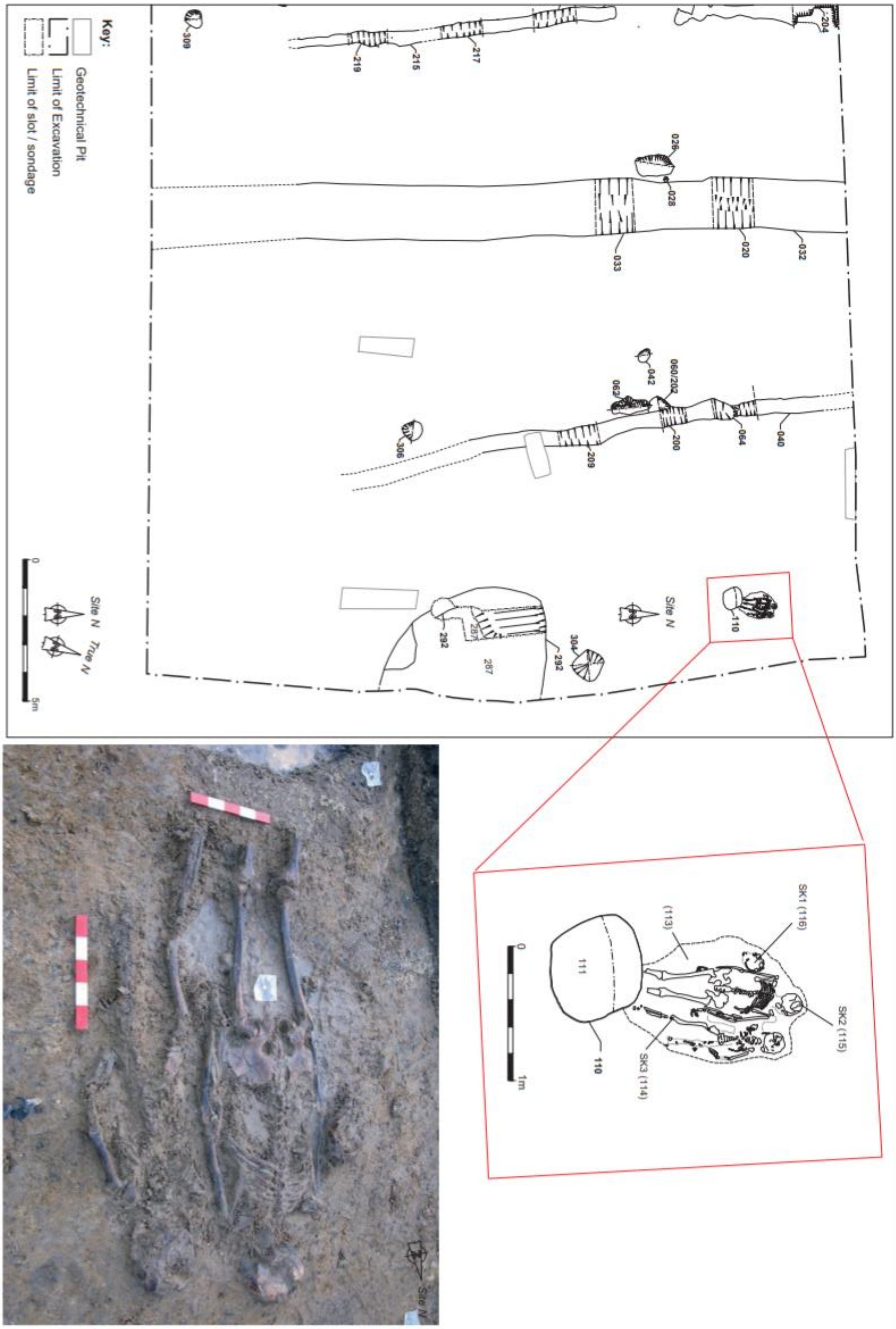


Figure 4.3: Plan of Gunton's Close, Soham (Cambs.) showing IDs 419-21 (inset and photo). The watering hole (292) is also of EIA date, but the N-S aligned ditches are Medieval. Source: Adapted from Barton, 2016:Figs.2 and 10.

The Iron Age re-use of a previously utilised landscape is seen through the burials at the Bronze Age mortuary centre of Cliffs End, Kent (IDs 238, 241) (McKinley et al., 2014:1) (Fig.4.4), as well as the two inhumations in a disused mineshaft at Grime's Graves, Norfolk (IDs 402-3) (Mercer, 1981). ID 88 (Duxford, Cambs.) was also placed within a 'ritual landscape', similar to that identified at Cliffs End – here this burial seems to form the foundation for later, MIA and LIA activity (Lyons, 2011:IX). Mill Hill ID 340 (Kent) may be a foundation burial too, for what was to become an extensive MIA-LIA cemetery. It was covered by a barrow, with several later burials (cremation and inhumation) placed on and around it (Parfitt, 1995:30). The same site also contained a Bronze Age barrow (still visible in the 6th century AD) – here again Bronze Age landscapes were re-used for Iron Age burial (ibid, 17).

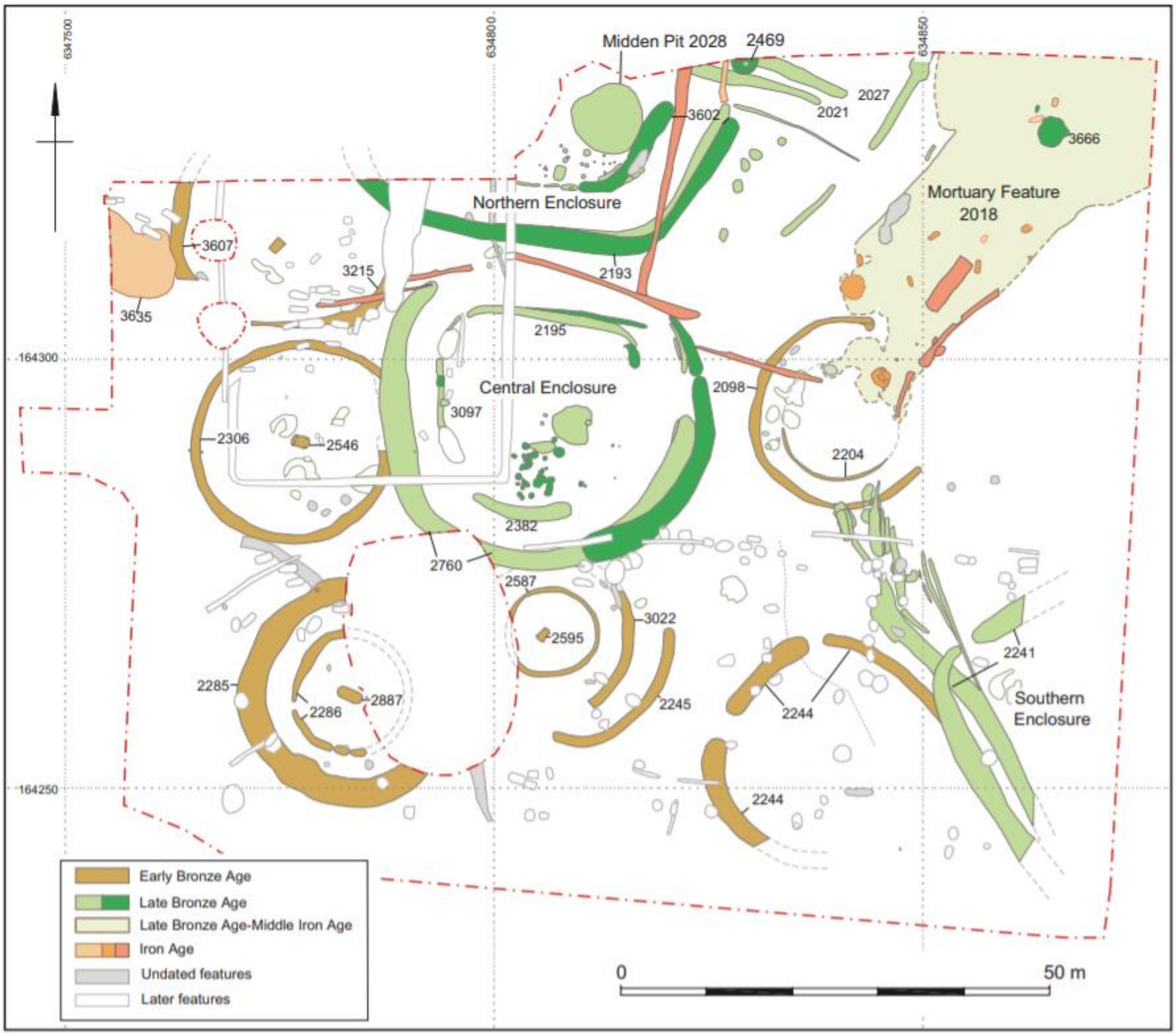


Figure 4.4: Multi-phase plan of activity at Cliffs End, Thanet, Kent, showing the large mortuary feature in the NE corner of the site, which contained phases of use in the Bronze Age and Iron Age. Source: McKinley et al., 2015:Fig.2.1.

The HS1 Saltwood burials (IDs 293-300) (Fig.4.5) constitute the only EIA cemetery in the dataset, though from the MIA onwards, cemeteries become increasingly common in the Kent area (including Mill Hill), and elsewhere.

Burial ID 20 from Puddlehill, Beds. is the only identifiably EIA hillfort burial. This is not surprising, as hillforts themselves are rare in the study region when compared to other parts of Britain (Harding, 2012:10). The topographical limitations of the area will doubtless be a factor here, though enclosures like Stonea Camp (Cambs.) do still occur in flat fenlands (*ibid*, 10). Only seven hillforts/ringwork enclosures with recorded human remains have been identified in the study region, compared to 101 settlements (see 3.2.1). Four other inhumations from Puddlehill were removed from analysis due to a lack of solid dating evidence, though at least one of these may date to the MIA-LIA (Appendix 4).

ID 418 (Broadlands, Cambs.) was relatively isolated, but close to a contemporary agricultural area / stockyard, as well as the Fengate sites, and only 100m from Bronze Age barrow (Nicholson, 2012:61). As such it is simultaneously an isolated inhumation, one on the periphery of settlement/agricultural activity, and one probably placed in relation to an existing monument. It is also on the fen edge, compounding its liminal, peripheral state.

The majority of sites only contain 1-3 inhumations, but the three largest settlement complexes (Trumpington Meadows, Fort Hill and Dumpton/Broadstairs) have produced between 7-10 individuals each, and the cemetery at Saltwood Tunnel contained eight. The Saltwood inhumations stand out here both in site type and in number of inhumations – the three settlement sites cover much larger areas, and in the case of Trumpington at least, were in use much longer than Saltwood. The existence of a dedicated inhumation cemetery in the Early Iron Age in this part of the country is unusual if not unique. A possible square barrow or mortuary enclosure was close to the eight graves, the fills of which were dated broadly to the entire EIA period (790-390 cal BC) (Riddler and Trevarthen, 2006:15). Two graves *may* cut this enclosure (relationship could not be established), meaning the cemetery may be somewhat later, and two grave fills contained sherds of 5th-4th century BC carinated bowls, the time of the EIA-MIA transition (*ibid*, 15). An isolated burial (ID 292, HS1-Saltwood, Kent) was also identified on the edge of the excavation area and C14 dated to the Middle Iron Age. All inhumations from the site are in rectangular or ovoid graves, very unusual for the EIA (section 4.5), but increasingly common in in the Middle and Late Iron Age. Saltwood then (Fig.4.5), may either be one of the earliest Iron Age cemeteries in the region – an originator of later cemetery traditions, or, it may actually be a very late EIA or MIA cemetery, a victim of the common dating issues of the earlier Iron Age.

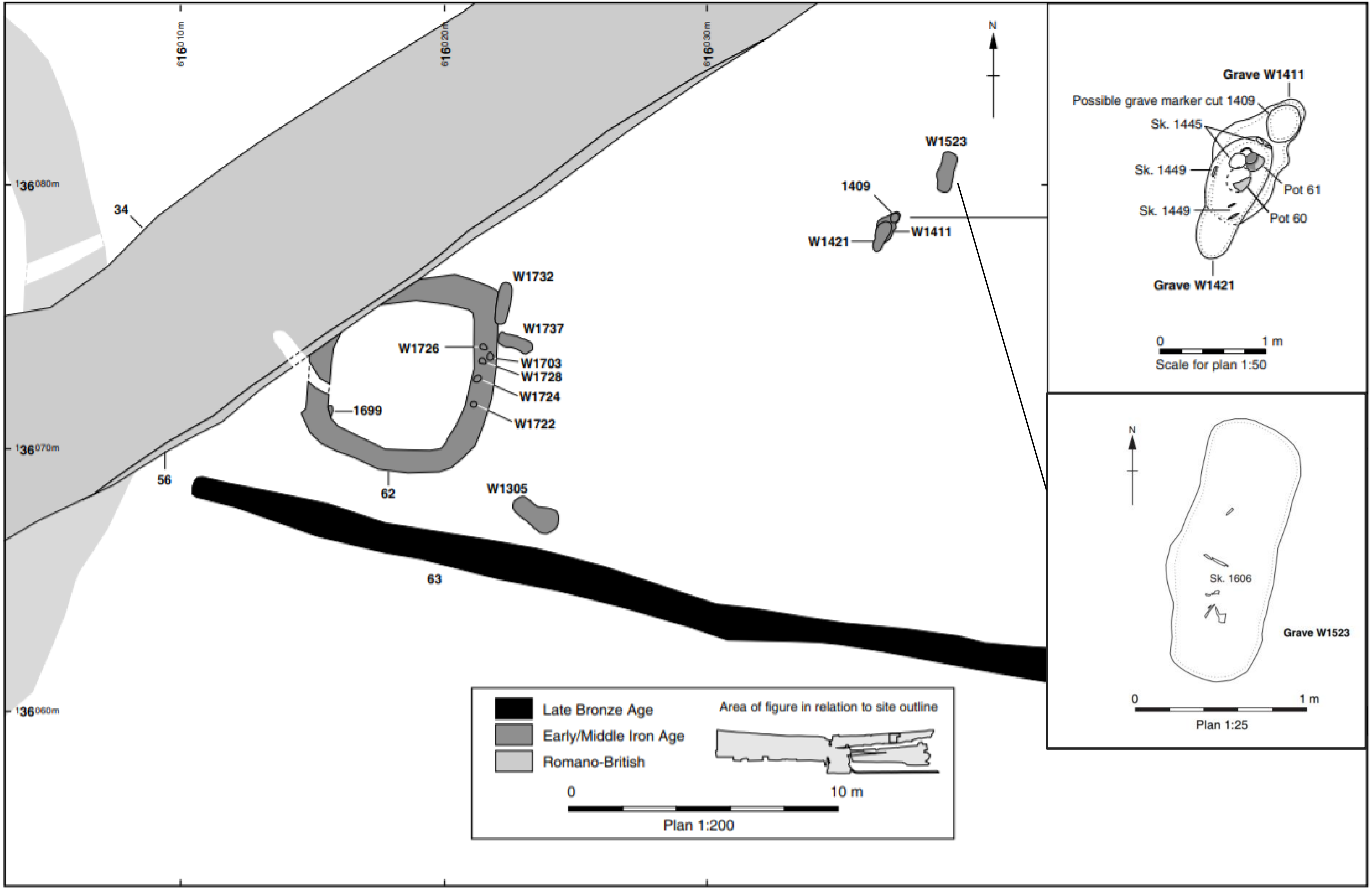


Figure 4.5: Plan of the Saltwood Tunnel cemetery and enclosure. The two inset grave plans show the paucity of surviving human remains. ID 293=W1305, ID 295=W1411, ID 296=W1421, ID 297=W1523, ID 298=W1732 and ID 299=W1737. IDs 292, 294 and 300 are not visible in the plan. Source: Edited from Riddler and Trevarthen, 2006:Fig.16.

4.5. Depositional context

Feature type	Frequency (individuals)	Frequency (site)
Ditch	2	1
Ditch terminus	1	1
Ditch total	3	2
Sub-rectangular grave	10	3
Ovoid grave	4	4
Unspecified grave	1	1
Grave total	15	6
Storage pit	24	11
Grave pit	8	6
Unspecified pit	1	1
Pit total	33	20
Multiple burial	5	2
Other	7	5
Associated with a structure	2	1
Unknown	3	3

Table 4.3: Table showing the frequency of various inhumation contexts for the Early Iron Age.

4.5.1. Pit burials

Pit burials are the most common inhumation type in the EIA assemblage, with 24 individuals placed in re-used pits (often, if not entirely disused storage pits) (Table 4.3, Fig. 4.6). One other (ID 59, Bradley Fen, Cambs,) was deposited in a pit of unspecified description (but not described as a grave), and eight others were buried in circular grave pits – pits dug for burial, not re-used for it. Multiple burial IDs 136-7 (Trumpington Meadows), a crouched adult female and a neonate, was also within a re-used storage pit, taking the total for pit burials to 35 –over half of the overall total (35/65, 53.8%). The EIA pit burials extend to sites in Bedfordshire, Cambridgeshire, Essex and Kent[4]. The number of examples and their widespread nature is consistent with previous studies here and in other parts of the country (e.g. Davis, 2018:61, 69; Sharples, 2014:147; Whimster, 1981:8), and continues into the MIA and beyond (Chapter 5). Figure 4.6 shows the distribution of all forms of EIA pit inhumation in the study area. There are two main concentrations apparent – around modern-day Cambridge, and on the Isle of Thanet. The pins on Figure 4.6 increase in size (see caption) depending on the number of pit

[4] Though there are doubtless others elsewhere in the study region that have either suffered from poor preservation or poor dating evidence.

inhumations at a site. The three assemblages on Thanet total 12 individuals, and the six around Cambridge total 14.

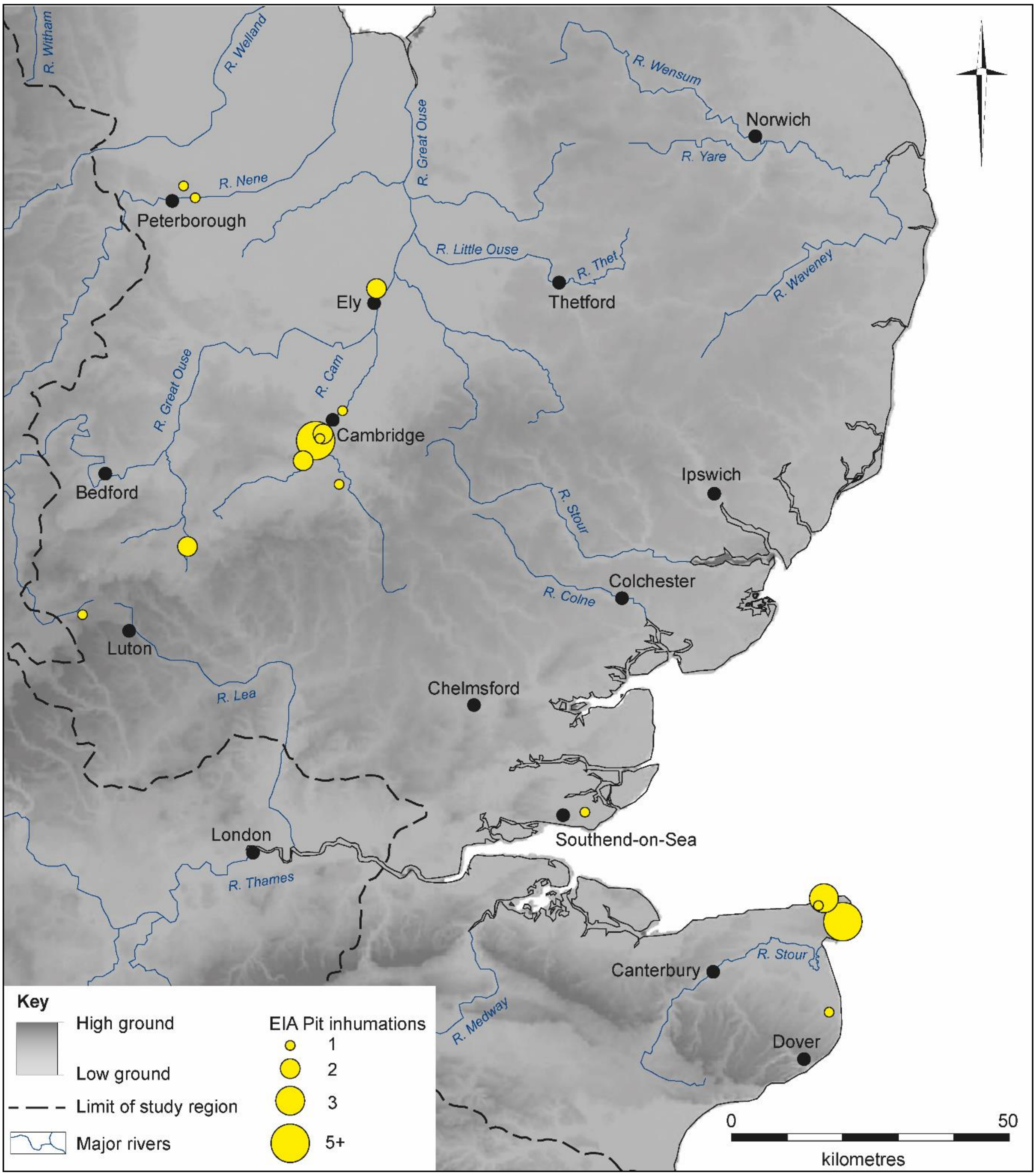


Figure 4.6 : Map showing all the EIA pit inhumations in the dataset. The smallest pins represent sites with a single individual, the next largest pin = 2 individuals, the next largest = 3 individuals, and the largest pins (Trumpington and Dumpton/Broadstairs) both contain more than 5 individuals each. Source: Author (data) and Laura Hogg (image).

4.5.2. Grave burials

Sub-rectangular grave inhumations are the next most frequent, making up 15.4% (10/65) of the EIA total, but from only three sites. Seven of the 10 examples are from the cemetery at HS1 – Saltwood Tunnel (Kent), the other three being from Clay Farm (ID 79, Cambs.) and Trumpington Meadows (IDs 129-30, Cambs.) – two adjacent sites. One of the four oval grave inhumations is also from HS1 – Saltwood Tunnel (ID 295). IDs 419-21, the triple burial from Gunton's Close (Cambs.), were placed in what may have been a shallow grave, but the cut was seemingly truncated and could not be identified (Fig.4.3) (Barton, 2016:11). Overall, grave burial was much more restricted in scope than the pit inhumations, but the isolated cases here may be originators for later traditions. Outside of the single cemetery, grave inhumation is atypical for the period here. ID 115 (March Northern Offices, Cambs.) was placed in a broadly ovoid grave which, as with the others, could arguably be considered a grave pit.

4.5.3. Ditch burial

Only three individuals from two sites were recovered from ditch contexts (IDs 165, 350, 356). Considering the large number of burials in settlement environs, and the supposedly common nature of ditch burial (Davis, 2018:61, 63; Pollack, 2006:20), this figure is low. Ditches do, however, form a more common depositional context for disarticulated remains (section 8.3).

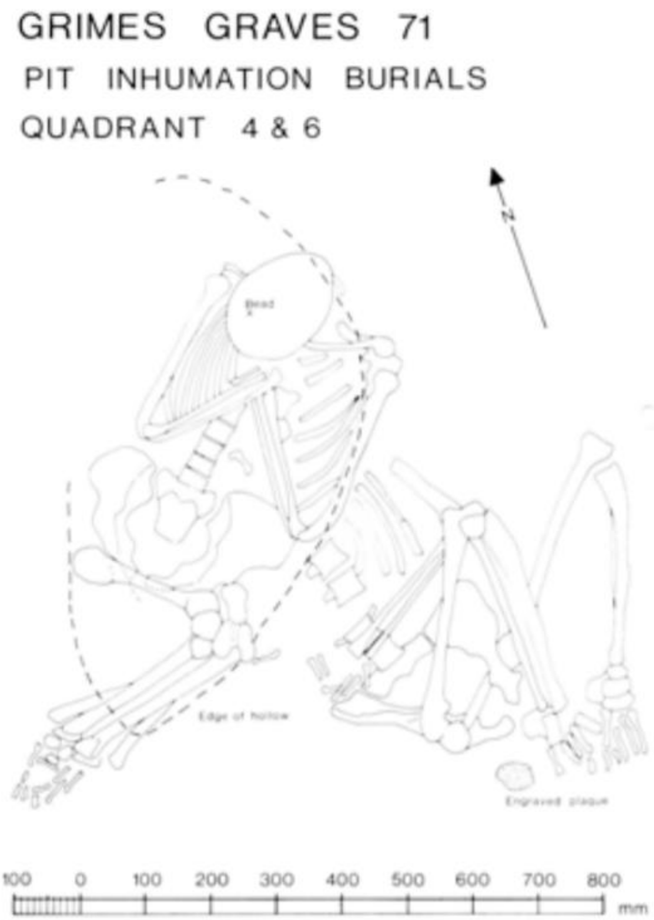
4.5.4. Other contexts

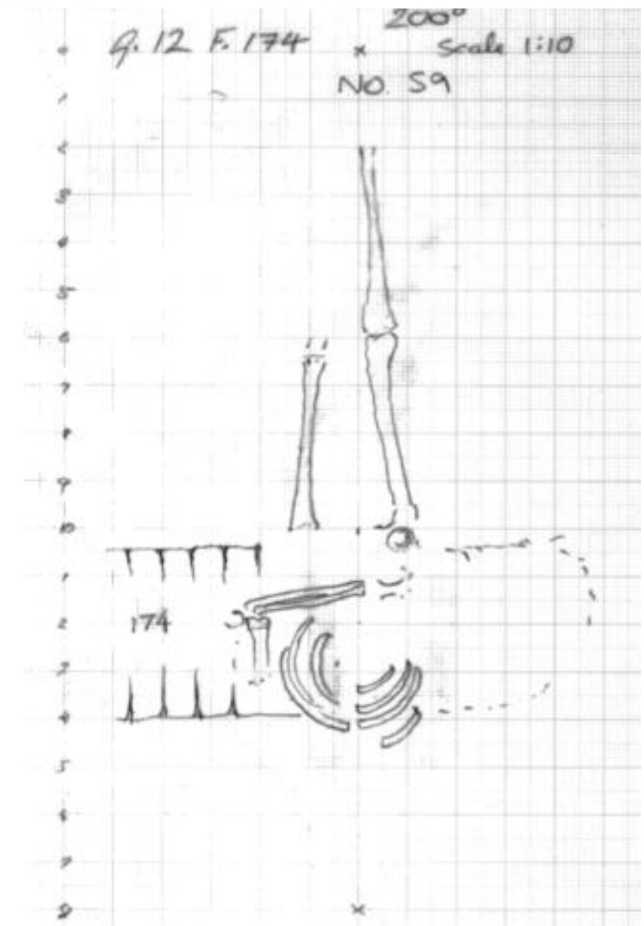
Seven burials do not fit into any of the major categories. ID 12 (Eggington, Beds.) was the inhumation of an adult male buried crouched on his left side, accompanied by two locally made Early Iron Age vessels, one by the head, one by the feet (Gurney and Hawkes, 1940:236). The burial is described as disturbed (*ibid*, 236) but it is likely they were placed in a grave pit or ovoid grave, owing to the position of the skeleton.

IDs 402-3 (Grime's Graves, Norfolk), (Fig.4.7) and ID 360 (Tothill Street, Kent) were both placed in disused quarries/mines. In the former case, burial ID 403 was truncated by the later addition of ID 402, both crouched, the cuts were not fully definable but described as pits (Mercer, 1981:16; Figure 4.7). The burial from Tothill Street was placed crouched inside a disused LBA-EIA chalk quarry pit, above silt horizons containing pottery, shell and animal bone (Gollop and Mason, 2005:2-3). In this respect it has similarities with the other storage pit burials.

IDs 238 and 241 from Cliffs End Farm (Kent), were both placed crouched (/flexed) in grave cuts, one sub-rectangular, one not identifiable (Leivers and McKinley, 2014:55-7). These grave cuts were themselves cut into a large, complex feature which may originally have been a brickearth quarry but was re-purposed for the burial of multiple deposits of human remains from the LBA to MIA (*ibid*, 37). These could be considered in the sub-rectangular grave burial category, but their context as part of Mortuary Feature 2018 is very different to many, if not all the other material. Comparisons could be made between these and the other quarry inhumations, but the Cliffs End assemblage is the product of much more complex post-mortem practices, over an extended period of time – it is not simply the re-use of an industrial feature.

Finally, ID 355 (South Dumpton Down, Kent), was recorded as a ditch burial, one of three with ID 350 and 356, all extended, headless and buried in the same palisade ditch (Perkins, 1994:12; Moody, *pers. Comm*.). However the original grave plan for this individual shows an extended inhumation with no visible grave, cutting the ditch at a perpendicular angle (Fig.4.8). The headless nature of this individual is therefore likely truncation due to a very shallow grave. The two individuals placed in the floor of a building at Fort Hill – Trinity Square, Kent (IDs 277-8) were also buried in grave cuts, within the structure.





Figures 4.7 (top) and 4.8 (below): Figure 4.7 shows inhumation IDs 402-4 from Grime's Graves, placed in indiscernible cuts in the top of a disused flint mine. Source: Mercer, 1981:Fig.7. Figure 4.8 is a pre-excavation plan of ID 355 (South Dumpton Down) - recorded as a ditch burial. Source: Moody (Pers comm).

4.6. Burial position

Body Position	Frequency
Extended supine	7
Extended prone	4
Extended left	0
Extended right	1
Extended total	12
Crouched left	13
Crouched right	9
Crouched (unknown side)	7
Flexed supine	4
Flexed prone	5
Flexed left	0
Flexed right	4
Crouched / Flexed total	42
Other	2
Unspecified / Poor preservation	12

Table 4.4: The frequency of different burial positions for EIA inhumations. Source: Author.

4.6.1. Extended inhumations

Seven individuals were buried in an extended supine position. Four were from the Dumpton/Broadstairs settlement (Kent), the fifth (ID 278) from Fort Hill (Kent), and two more from the Marshall 'Wing' site at Greenhouse Farm, Cambridge Airport. Their depositional contexts varied – both the Marshall 'Wing' individuals were within graves (Fig. 4.9), while the others were placed in houses, storage pits, ditches and unidentified features. Due to severe preservation issues, none of the Saltwood Tunnel cemetery inhumations could be assigned a burial position, but extended inhumation is the norm for grave burial in cemeteries (See 5.5 and 6.5). Four other individuals were extended but placed prone (IDs 134, 419-21) and one on their right side (ID 350). The latter individual also comes from the Dumpton/Broadstairs site, Kent. ID 134 was a neonate from a storage pit at Trumpington Meadows (Cambs.), and 419-21 were an adult female, a child and an infant, all prone, buried together at Gunton's Close, Cambs. ID 350's position (on right side) may be due to the ditch cut in which they were placed being too narrow to accommodate them fully supine. It is equally possible that their positioning was deliberate, but there are a number of extended supine inhumations from the same site. Extended inhumations make up 21.4% of the recorded total (12/56), but this would almost rise significantly if the Saltwood Tunnel burials were identifiably extended (20/64, 31.3%).

Figure 4.9: Plan of the Marshall 'Wing' site, Greenhouse Farm, Cambridge Airport. The plan shows the IA settlement features, and the distribution of human remains within. Human skeletal material was found in varied contexts, with inhumations, ABGs and disarticulated bone all present. IDs 116, 118 and 121 are EIA in date, IDs 117, 119, 120 and 122 are MIA. The EIA inhumations predate the large boundary ditch, and much of the material predates the larger enclosures, eastern occupation and the trackway to the northwest. Even so, it could be argued that the remains centre around the entrance/boundaries of the settlement. Source: Adapted from Tabor, 2019:Fig.13 by Laura Hogg.

4.6.2. Crouched and flexed inhumations

Crouched and flexed burials have been considered separately in the raw data but have been grouped in the discussion (Chapter 9). They are separated here and in the datasheets to reflect the terminologies of the original excavators/publishers. They are considered together in the discussion, as these terms are used seemingly interchangeably (e.g. 'tightly flexed') .

Thirteen individuals were buried in a crouched, left side position, and nine crouched on their right side (23.2% and 16.1% respectively – 13/56 and 9/56). Whimster (1981:269) and Wilson (1981:138-9), have stated that 'crouched left' was the prevailing position for Iron Age burials, but in this dataset sidedness shows little bias (more in common with Davis, 2018:73). Of those buried crouched on their left side, 11 were buried in pits, the other two with unknown burial contexts. Of those crouched right, eight were buried in pits, one in a sub-rectangular grave (ID 79, Clay Farm, Cambs.). Seven others were also buried crouched, with no side specified. Of these, four were pit burials, one the quarry burial from Tothill Street, Kent (ID 360), which has many similarities to pit burial, and two of unknown contexts (IDs 166, 413).

Five individuals were buried in a flexed right position. If these are considered with the crouched individuals, then there are a total of 13 on their left side, 13 on their right – no prevalence in sidedness. Only one of the flexed right individuals was a pit burial (ID 88, Duxford, Cambs.), the others were buried in graves. No EIA inhumations were placed 'flexed left' but five were flexed and prone and four flexed and supine (meaning a prone or supine torso and sometimes head, with legs flexed to one side or beneath the skeleton). Some of these may be the result of the body 'slipping' during decay, causing the torso to slump from one side, onto the front or back, though this would require a void during decay, or an open grave, and could be noticeable in skeletal articulation (Duday et al., 2014:239). Three prone individuals were in pits (IDs 59 (Bradley Fen, Cambs.), 78 (Clay Farm, Cambs.), 279 (Fort Hill-Trinity Square, Kent)), one was buried in a sub-rectangular grave (ID 129, Trumpington Meadows, Cambs.), and one in a house (ID 277, Fort Hill-Trinity Square). The flexed supine individuals included the two from Grime's Graves, Norfolk (IDs 402-3, Figure 4.7), one from Cliffs End, Kent (ID 241) and another from Dumpton/Broadstairs, Kent (ID 347). Three of the four are in uncommon burial contexts, with ID 347 placed in a storage pit (legs flexed right, torso supine) (Boast et al., 2006:47-8).

Overall, for the EIA data, crouched and flexed individuals make up 75% of the recorded total (42/56). Of these, 28 (66.7% - 28/42) are in pit contexts, not including ID 360 (Tothill Street quarry pit inhumation).

4.6.3. Other positions

ID 137 (Trumpington Meadows, Cambs.) was a neonate, buried in a seated position, propped against the edge of a storage pit as part of a double burial with an adult female (Evans et al., 2016a:162). The burial in itself is atypical (the only double-inhumation from the EIA data), and the position of the neonate doubly so. The adult female was crouched on her right side – it was argued by the excavator that the neonate may have been dropped in, the eventual position accidental (*ibid*, 162). ID 132 also from Trumpington Meadows, was another storage pit burial, this time with the legs flexed, pointed south, and the torso arms and head twisted to face north (*ibid*, 153). This too may represent 'dropping' or 'dumping' of the body – though many others from the site are carefully positioned. The severe twisting of this individual could also indicate that the body was slightly decayed prior to final deposition (See Chapter 7), or was otherwise forcibly manipulated.

Twelve individuals are of unknown position. In all but one case this is due to poor skeletal survival - those from Saltwood Tunnel. The final example (ID 77, Clay Farm, Cambs.) was a neonate burial with the skeletal position not recorded despite the remains being in good condition (Phillips and Mortimer, 2012:28).

4.7. Orientation

Figure 4.10 shows the orientation of all EIA inhumation burials, rounded to the nearest of eight compass alignments (see 3.3.3). Of the 68 identified EIA inhumations, 16 had no recorded orientation, so Figure 4.10 represents the remaining 52.

There is a clear prevalence towards broadly North-South oriented inhumation (19/52, 36.5%), though East-West inhumation is also fairly common (9/52, 17.3%). For those oriented between one of the four main compass points, their position may be deliberate, but it seems reasonable that they were *meant* to be aligned either North or East, however without compasses there must be some degree of variation in placement. This would be especially true if it is assumed that E-W / W-E inhumations are aligned based on the rising and setting sun, as N-S inhumations must therefore be placed at 90 degrees to these, with presumably no way to measure it accurately – not to mention the fact that sunrise/sunset are only due East/West on the two Equinox days. There is sure to be variation on broadly directional alignments.

Orientation may be affected by feature type and location in some cases (e.g. placement within a pre-existing ditch) but the prevalence of circular pit burial here limits this.

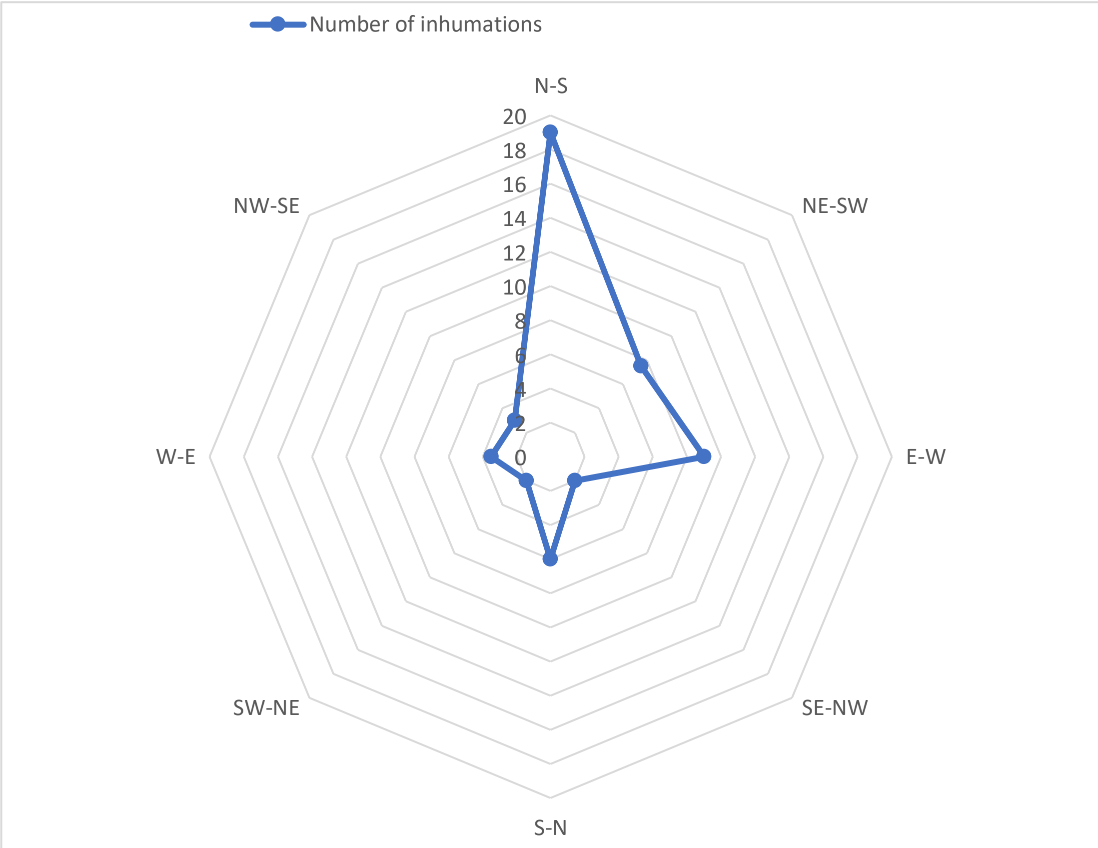


Figure 4.10: Radar chart showing the orientation of EIA inhumation burials, to the nearest of eight compass points. Source: Author.

Nine of the N-S inhumations were in crouched/flexed positions, one was extended supine, four prone, and three unknown (poor survival, but likely extended due to sub-rectangular graves)[5]. Of the nine E-W oriented inhumations, two were of unknown position, one was extended supine, five were crouched/flexed, and one was the twisted burial from Trumpington Meadows, Cambs. (ID 79). The N-S individuals originated from 12 sites, the E-W from only five (with six of nine from Kent).

Of the 42 crouched/flexed inhumations, orientation was available for 32. Of those, 17 were broadly N-S oriented (the head placed between NW and NE) (53.1%, 17/32). When compared to sidedness, there does appear to be some variety – Nine of 12 left-sided crouched inhumations with recorded orientation were broadly N-S (75%), but only six of 12 right-sided crouched inhumations (50%). Neither is statistically significant though, and the data here is

[5] This amounts to 14, not 16 as displayed in the chart. This is because 14 were originally recorded as N-S, but others were originally recorded as NNE and NNW, bringing the total to 16 for N-S inhumations when these were condensed (Methods).

very small, and based on the assumption that NE-SW and NW-SE aligned inhumations were supposed to be placed N-S, which could not be the case. Despite that, 6/12 left-sided crouched inhumations were directly N-S, but only 3/12 right-sided.

4.8. Facing direction

Only 40 EIA inhumations had a recorded 'facing direction' (Fig.4.11). Eleven of 40 (27.5%) are facing east, another two NE and three SE, but beyond this no patterns are discernible. Ten of these 14 'broadly east' facing individuals were those placed crouched on their left side, in broadly N-S orientations. Two of the east-facing individuals and one west-facing were all from the same grave (IDs 419-21), buried together side-by-side. They were all prone and N-S, two facing left, one right. In instances like this the angle of the head seems of little importance.

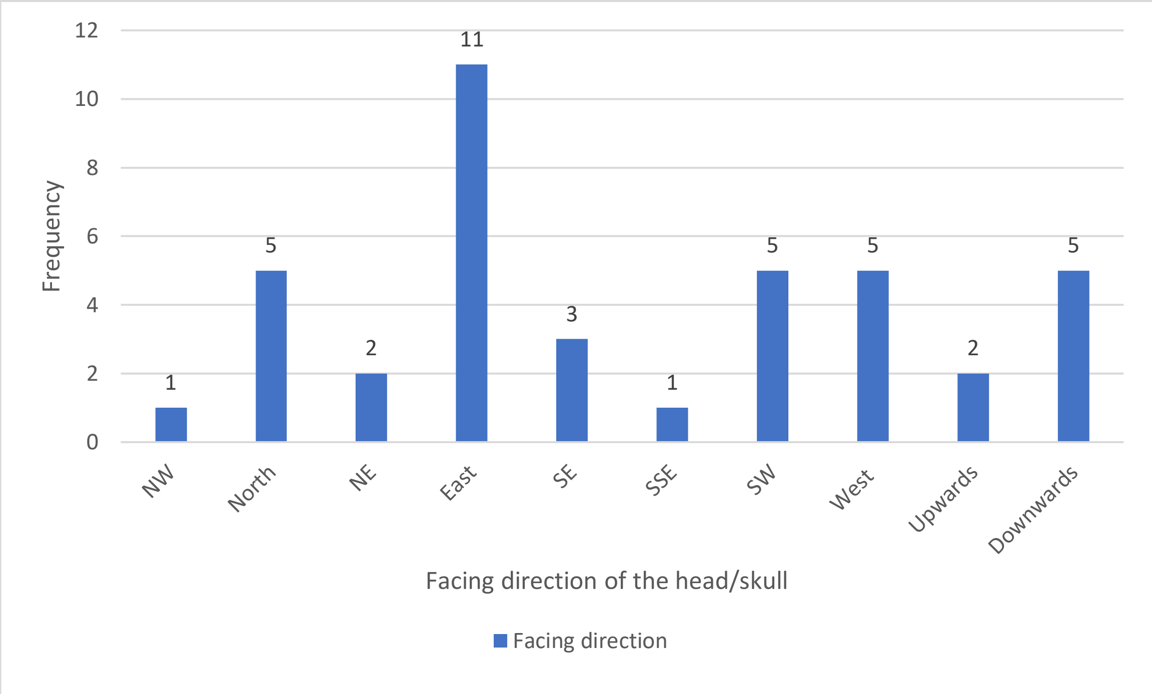


Figure 4.11: Bar chart showing the frequency of different 'facing directions' for EIA inhumations. Source: Author.

4.9. Burial accompaniments

For 10 individuals, no data regarding burial accompaniments could be found. Of these, six are all from Fort Hill excavations, one is truncated (ID 118, Marshall 'Wing', Cambs (Fig.4.9)) and another disturbed (ID 165, North Shoebury, Essex). In each case it is probable that the dead were unaccompanied, as it is more likely that the presence of goods would be recorded than the absence, but this cannot be proven.

4.9.1. Pottery

Four individuals were buried with only pottery. ID 12 (Eggington, Beds.) was placed with two locally made vessels, both largely complete; one each by the head and feet (Gurney and Hawkes, 1940:236). IDs 295-6 (Saltwood Tunnel, Kent) both contained sherds of a 5th-4th century BC carinated bowl – however ID 296 cut 297 so these sherds may only originate from the earlier inhumation (Riddler and Trevarthen, 2006:16). ID 349 (North Foreland Avenue, Kent) contained EIA pottery fragments similar to continental Marnian ware (Perkins, 1998:1). Only one of these individuals (ID 12, Eggington, Beds.) was associated with clearly placed vessels, though this is likely true of ID 295 too. For ID 349 the pottery may be waste material in the backfill, or may be residual, as with others in the dataset (e.g. IDs 125 (Prickwillow Road, Cambs.) and 129 (Trumpington Meadows, Cambs.)).

4.9.2. Personal ornaments

Six individuals were accompanied by personal ornaments. ID 130 (young adult female, Trumpington Meadows, Cambs.) was buried with an iron bracelet on their wrist and a circular jet-ring pendant on their neck (Evans et al., 2016a:154). ID 402 (25–30-year-old male, Grime's Graves, Norfolk) was accompanied by two iron ring beads, one beneath the right mandible and one behind the base of the skull – interpreted as a necklace or earrings (Mercer, 1981:16). Perhaps the most extraordinary of this group is ID 421 (Gunton's Close, Cambs.). The 6–8-year-old child buried together with an infant and an adult female had a number of pendants around their neck, made from a ceramic bead, a worked mammal rib, a pig canine, and the large claw (foot phalanx) of an eagle, all perforated for suspension (Hodkinson and Madgwick, 2016:47; Fig. 4.12). The three individuals in this grave appear to be genetically related, as all have retained metopic sutures in their frontal bones and both children had Carabelli's cusps, in both cases inherited traits (Anderson, 2016:31). They are therefore likely to be a mother and children, and all died or were killed at the same time, and buried prone in a shallow feature (Barton, 2016:56). There are several aspects of this burial that suggest exclusion or deviation from social norms, but the inclusion of this almost unique pendant does not overtly align with such ideas (*ibid*, 56). The adult and infant were unaccompanied.

The three others were placed in storage pits, with other fills above and below the skeletons containing quantities of 'domestic waste' (as with 4.9.4). ID 110 (Harston Mill, Cambs.), a 25–35-year-old female, had a copper alloy ring around her neck. The backfill of the pit in which she was buried contained EIA pottery, struck flint, animal bone and ironstone (O'Brien, 2016:17). Similarly ID 347, a 35–45-year-old female (St. Stephen's College, Kent) had three glass beads at her neck, plus 'domestic waste' in fills above and below the skeleton (Boast et al., 2006:47-8; Moody, 2008:124). Finally ID 351 (South Dumpton Down, Kent), a possible adult male, had an iron buckle and bone pin, one placed by each shoulder. Here, other pit fills contained pottery, iron slag, spindlewhorls, quern fragments, animal bone and charcoal (Perkins, 1994:16).

Figure 4.12: The unique pendants found with ID 421, the child from Gunton's Close, Soham. Source: Barton, 2016:Figure 11.

4.9.3. Multiple associated goods/remains

ID 20 (Puddlehill, Beds.), a young adult female, was the only one in the EIA dataset with more than one category of material, directly included, that could be classed as 'grave goods'. Animal bones including cattle and pig remains were found with the skeleton, plus the top of a horse skull placed across the left tibia (Matthews, 1976:63). The burial also contained potsherds, charcoal and a shaped chalk block with visible tool marks (*ibid*, 63-4). Other material including a bone point, more animal bone, pottery, baked clay, flint and quartz pebbles was recovered from fills within the pit (*ibid*, 63-4).

4.9.4. Material in other fills

Eighteen individuals from 17 burials on ten sites were not given ‘grave goods’ as such but contained material in fills other than the immediate burial context. Of these, 11 are storage pit burials, three (IDs 124-5, 418) were within grave pits, one (ID 360, Tothill Street, Kent) was in a quarry pit and two (IDs 129, 412) were grave burials. All 11 of the storage pit inhumations, and the quarry pit burial, fit the established pattern of ‘domestic waste’ or structured deposition within these features. They each contain varying amounts and combinations of pottery and animal bone in their fills, as well as, in some cases, daub, worked flint, spindlewhorls, quern fragments, worked bone, metalwork and slag. Some contained unusually large quantities of material, the most extensive assemblage coming from ID 77 (Clay Farm, Cambs.), which alongside disarticulated human remains, included nearly 30kg of pottery and 20kg of animal bone, plus flint and bone tools, and a copper-alloy penannular brooch or ring (Phillips and Mortimer, 2012:28).

Six of 11 storage pit burials (seven individuals) are from Trumpington Meadows, Cambs. (IDs 131-7), as is ID 129 – the grave burial. Four of the other storage pit burials in this category are also from Cambridgeshire, the final one from Kent (ID 276 – Fort Hill). Of the 24 total EIA storage pit inhumations, fifteen had deposits typical of ‘domestic waste’ assemblages commonly found in storage pits[6]. Of those that did not contain such material, four are from Kent (IDs 352-4, 357, South Dumpton Down), two from Bedfordshire (IDs 13-14, Fairfield Park), and one from Essex (ID 164, North Shoebury), plus two more from Kent with no recorded data (IDs 273, 279, Fort Hill). The densest, most frequent assemblages all come from sites in Cambridgeshire. This may suggest a regional trend in storage pit depositions, but it is also probable that others in the dataset have additional domestic material in fills, unmentioned in final publication – especially with earlier excavations.

IDs 131 and 136-7 (Trumpington Meadows, Cambs.) contained common storage pit assemblages, but above the skeletons in both cases was a capping or covering of stones. For ID 131 this took the form of a mound of gravel, with a bed of gravel beneath the skeleton also (Evans et al., 2016a:154). For IDs 136-7 a band of stones, 10-20cm each in size, laid over the dead (double inhumation).

Additional human remains were found with five – all storage pit burials, and all from Cambridgeshire, in a *c*.10km NE-SW line (Fig. 4.13).

[6] As well as directly associated grave goods, in some cases.

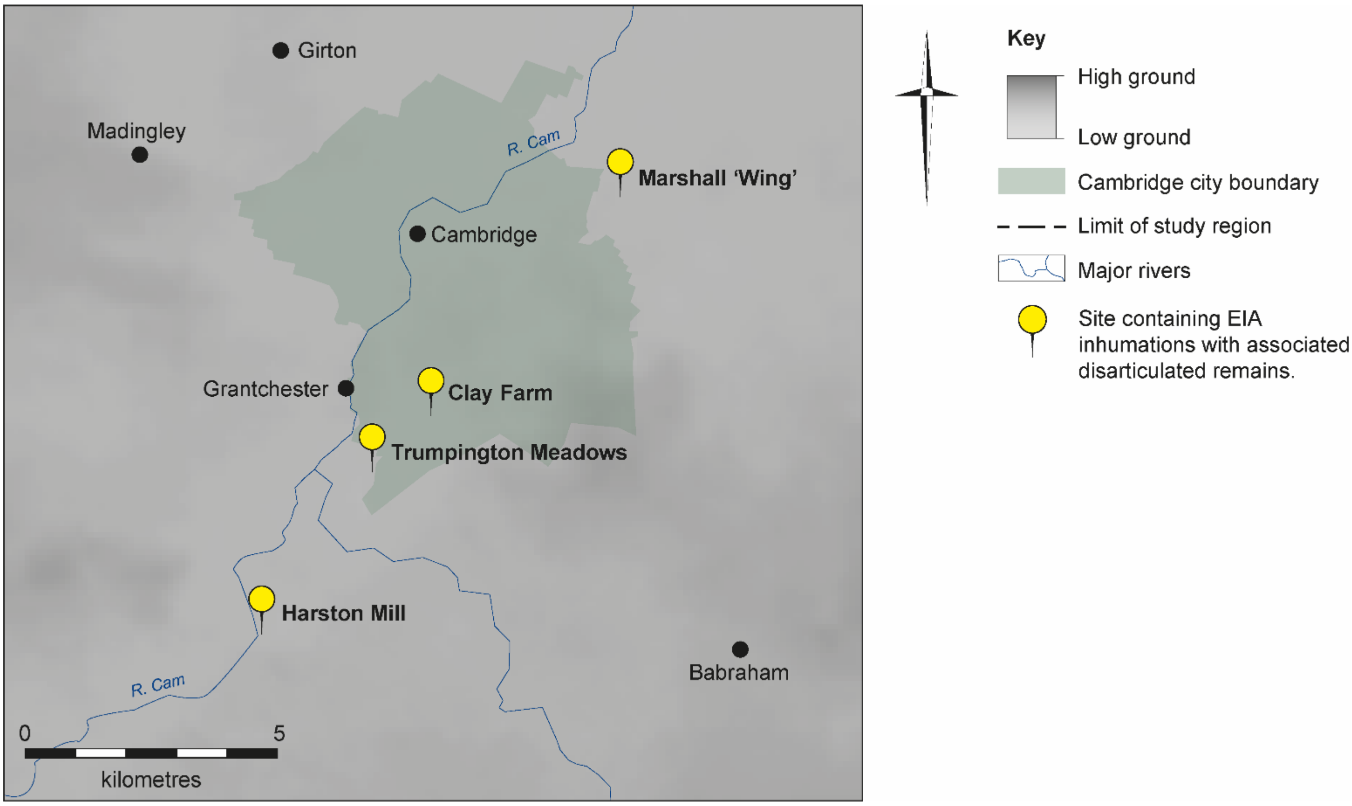


Figure 4.13 : Map showing the locations of EIA inhumations with additional disarticulated human remains in the same features. Source: Author (data) and Laura Hogg (image).

ID 77 was a neonate from Clay Farm. Aside from an extensive 'domestic waste' assemblage (see above), a complete adult frontal bone was recovered from the skeleton fill, and the tibia of a different neonate from another fill in the pit (Phillips and Mortimer, 2012:28). ID 103 (Harston Mill), a 40–50-year-old female, is somewhat unlike the others in the EIA dataset. This individual has been interpreted as a curated body bundle, rather than a primary inhumation (see Discussion), and in the fill beneath the skeleton was two human infant bones (femur and tibia), over 3kg of pottery, 3kg of animal bone, daub and struck flint (O'Brien, 2016:38). The widest variety of finds came from ID 116 (Marshall 'Wing'). The pit fills contained 920 pottery sherds, 1250 animal bone fragments (84% sheep/goat, plus several types of bird bone), slag, a quernstone, an iron pin, a spindlewhorl and an adult skull fragment (Brudenell, 2004:315-6). ID 133 (Trumpington Meadows) was placed with a complete adult female skull, positioned behind the lower back of the inhumation, as well as 62 sherds of pottery and 126 animal bone fragments in surrounding fills (Evans et al., 2016a:156). Moderately large quantities of pottery and bone were found in the fills around ID 135 also (303 pottery, 253 bone fragments), as well as neonatal bones in the upper fill (*ibid*, 156).

ID 418 (Broadlands, Cambs.) contained 60 sherds of EIA pottery in the fill, perhaps domestic waste or related to funerary rites (Nicholson, 2012:70-1). As well as this though, a wooden post marking the grave pit was hammered in below the cut of the pit itself (Fig. 4.14). This is the only solid evidence of a grave marker from the entire dataset, for the whole of the Iron Age. The rest of the 18 in this category contain similar deposits but in much smaller quantities, in each case probably indicative of accidental waste inclusions in the backfill, or residual material. ID 412 (New Arrivals Lane, Suffolk) for example contained one small pottery sherd and both burnt and struck flint (Mustchin, 2014:13), while ID 129 (Trumpington Meadows) had just a single sherd in the backfill.

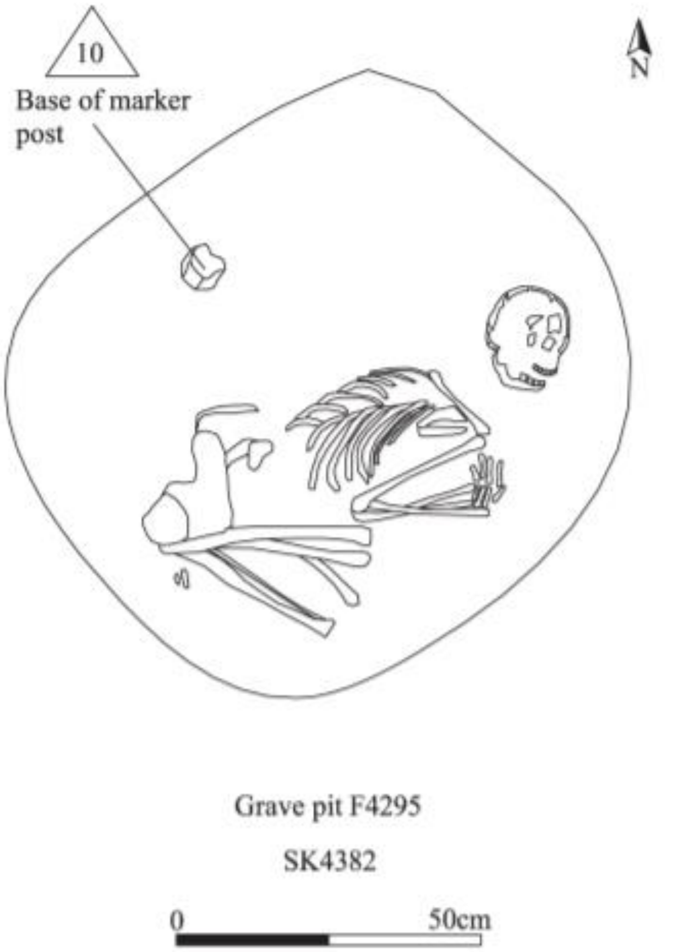


Figure 4.14: Grave plan of inhumation ID 418 (Broadlands, Cambridgeshire) showing the placement of a marker post to the north of the skeleton. Source: Nicholson, 2012:Fig 9.

4.9.5. Other inclusions

Four individuals were deposited with material which did not fit into any of the previous categories. ID 403 (Grime's Graves, Norfolk, 20–25-year-old female) was found with an etched chalk plaque by her pelvis, with a 'simple abstract criss-cross design' (Mercer, 1981:16). This is similar to the chalk block with ID 20 (Puddlehill, Beds.), but here it is the only inclusion. ID 88 (Duxford, Cambs.) also contained selected stones – this time two smooth red stones placed behind the skull (Lyons, 2011:10,12). The grave fill contained a horse mandible, as well as sheep and dog mandibles and cattle teeth, plus 14 sherds of one EIA-MIA pot (*ibid*, 10,12). There is no indication that these were deliberately placed offerings, though the number of mandibles is unusual. The backfill also contained large quantities of animal bones including a sawn cattle horncore, horse foot bones, cattle and sheep leg bones and a pig maxilla (*ibid*, 10,12).

ID 354 (South Dumpton Down, Kent) was the only EIA individual to have been buried with a complete animal. A dog skeleton was recovered from beneath the head of the child in a storage pit (Minter and Herbert., 1973:15; Moody, 2008:123). This could have been included with those burials containing animal bone, but none included even partially complete animals, unlike ID 354. ID 353 (also South Dumpton Down) had an 'iron fragment' by their left lower arm and pelvis (Moody, pers. Comm). This is possibly a brooch or other personal ornament, but it was too degraded to be more certain.

Twenty-five individuals, 16 from Kent, were buried unaccompanied, though of these ID 352 (South Dumpton Down) was placed on a layer of black ash – somewhat echoing the stone-covered burials. Six of 25 are the remaining grave inhumations from Saltwood tunnel, and five were storage pit inhumations. In the latter case, owing to the nature of storage pits, it seems very likely that additional material was recovered from the fills surrounding the skeleton, but this cannot be confirmed.

4.10. Age

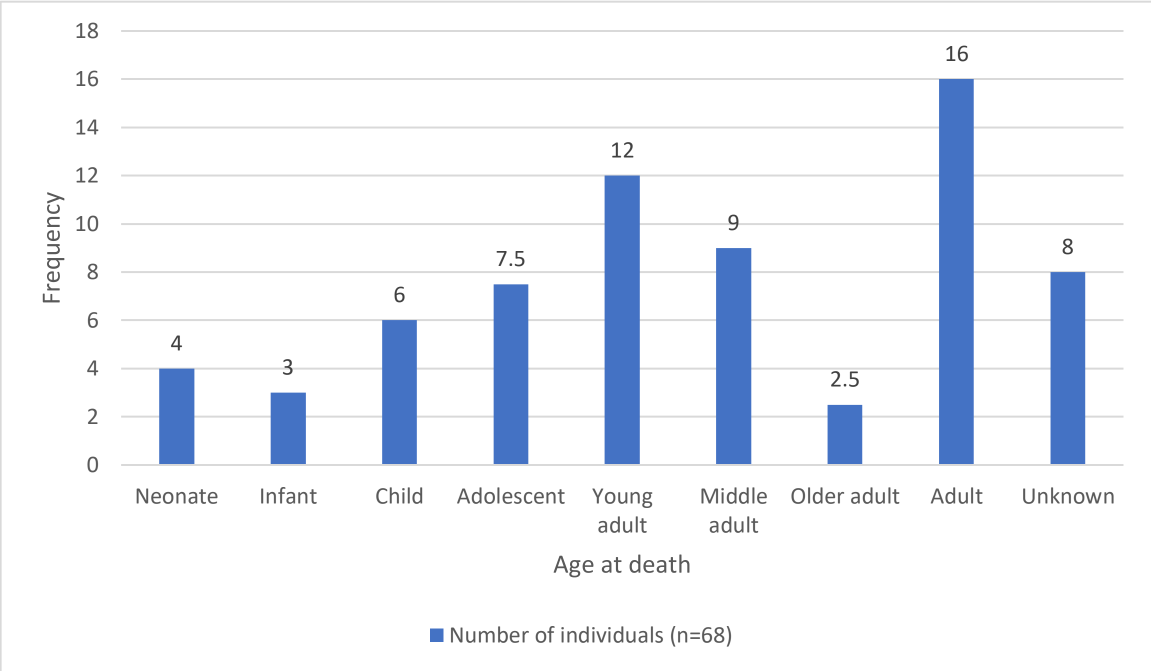


Figure 4.15: Age-at-death distribution for EIA inhumations. Source: Author.

Figure 4.15 shows the number of EIA inhumed individuals attributable to different age categories. Where individual ages straddled two categories (e.g. young to middle adult), their value was divided equally between all applicable categories – for example, someone aged 15-25 would add 0.5 to 'adolescent' and 0.5 to 'young adult'. This was done as extra categories make the data cumbersome and overly complex.

Those simply definable as 'adult' far outweigh any other category (26.7%, 16/60). Neonate and infant remains are somewhat underrepresented, but the sample is relatively small, and there is much debate over the survival of neonate/infant remains (for example Gordon and Buikstra, 1981; Baxter, 2004:39; Booth, 2015:492). An inability of excavators to identify neonatal bones is also a factor here. Burial IDs E.16-18 are all EIA neonates from storage pits, but none were identified until the post-excavation analysis stage (Evans et al., 2016a:162). The same is true of ID E.13, an infant from Glebe Farm, Addenbrooke's, Cambs. As such, their articulation, position and orientation cannot be confirmed and they have all been excluded from detailed analysis, but would bring the total here to seven neonates and four infants, out of a total 72 individuals (64 of known age) (17.2%, 11/64).

Even if they were included, all neonates from the EIA material would still only have come from the small area around Cambridge - five from Trumpington Meadows, one from Clay Farm, one from the Marshall 'Wing' site. Infants, children and adolescents are more widespread. This may be a reflection of variable preservation, or that neonates elsewhere in the country are not being inhumed as they are in the Cambridgeshire area (see Discussion and Evans et al., 2016a).

Aside from the low infant representation, the demographic profile for this small sample does appear to be relatively normal, or as expected for the period. The largest category is those dying as ‘young adults’ – ages 20-35, closely followed by ‘middle adults’ – ages 35-50. Of the young adults, six have maximum ages of 30 or more.

Only one adult (ID 135, Trumpington Meadows, Cambs.) actually reached the ‘older adult’ (50+) age group, but there were three others (IDs 59 (Bradley Fen, Cambs.), 121 (Marshall ‘Wing’, Cambs.), 280 (Hartsdown College, Kent)) who were categorised as ‘middle–older’ and two of these were at least 45 years old. Middle adult ID 99 (Glebe Farm, Cambs.) was also *c.*45 at time of death, and ID 103 (Harston Mill, Cambs.) was estimated at 40-50.

4.10.1. Age and burial context

No clear relation could be seen between age and burial context, for any age group. Individuals of all ages were buried in pits, frequently in the majority. All neonates were recovered from storage pits, and two infants and all but two children also came from pit contexts. There is more variety in those adolescent and older.

4.10.2. Age and grave goods

Unaccompanied inhumations were found in every age group except for older adults and neonates. Only one older adult (plus two unaccompanied middle–older adults) was identified, so this is not significant. All four neonates were part of storage pit assemblages with domestic waste recovered from outside the immediate skeletal surroundings (see above) – this is also true of the three neonates not included in this wider analysis.

The number of neonates in storage pits filled with ‘domestic waste’, against all other age groups in the same context is highly significant (χ^2=8.163, df=1, *p*=.00427536).

Twenty total individuals had domestic waste deposits in the fills, as well as grave goods in some cases. Of these four were neonates.

One child was placed with the unidentified iron object, another the dog skeleton, and another the animal bone pendant. These are the only three individuals under *c.*20 years old (sub-adult) to contain any form of seemingly deliberate grave offering. All other finds were included in adult inhumations.

4.10.3. Age and sex

	??F	?F	F	??M	?M	M
Child*[6]	0	0	0	1	0	0
Adolescent	1	1	0	0	0	1
Adol - YA	0	0	0	1	0	0
Young adult	0	1	6	0	0	2
YA - MA	0	0	1	0	0	0
Middle adult	1	0	4	1	0	1
MA - OA	0	0	1	0	0	2
Older adult	0	0	1	0	0	0
'Adult'	0	0	2	1	0	2
Total	2	2	15	4	0	8

Table 4.5: Table showing the number of positively sexed EIA individuals, attributable to different age groups. Source: Author. See footnote 7 (below) for an explanation of the 'sexed' child.

Table 4.5 shows the number of males and females attributable to different ages, this time using the full range of categories. Females, 'probable females', and 'possible females' outweigh their male counterparts in five age categories. Seven young adults are female (36.8%, 7/19), only two are male (16.7%, 2/12). Five middle adults are female, only two male (26.3% and 16.7% respectively). Only five of 16 'adults' could be sexed. These numbers are all too small to test for statistical significance. The number of young adult females here is considerably higher than the males (7/2) but even this is not significant at this scale (χ^2=1.453, df=1, p=.22804719).

4.11. Sex

??Female	?Female	Female	??Male	?Male	Male	Unsexed
2	2	15	4	0	8	37

Table 4.6: Sexed EIA inhumations. Source: Author.

Thirty-one individuals (45.6%) could be assigned a sex – though of these, six are tentative. This is 67.4% of the 46 individuals of known age, over *c.*12 years old (adolescent+)[7]. At least

[7] ID 46 was a 10-13 year old child (/early adolescent) from Fairfield Park. Despite their young age, they were assigned a very tentative sex estimation of male by the excavator (Webley et al., 2007:22).

11 of the unsexed adults were in a state of poor preservation and completeness. Nineteen of the 31 sexed individuals are either female, probably female or possibly female, while 12 are male or possibly male (61.3% female). The small sample size limits the importance of this, but females are more common in the EIA adult inhumations than males.

4.11.1. Sex and location

Males and females are identified from Cambridgeshire, Bedfordshire, Norfolk, Essex and Kent. There appears to be no sex-based geographic division in the data. However, the securely female and male inhumations came largely from Cambridgeshire (11 and 5 respectively), while the less secure examples were more commonly from Kent (3 female, 3 male). This is likely indicative of preservation issues (Section 1.4). Of the 17 unsexed individuals over *c.*13 years old, 12 are from Kent. In some cases though (e.g. IDs 273, 276 – Fort Hill), the skeletal completeness is good, the recording is simply incomplete.

4.11.2. Sex and burial context

There appears to be no clear relationship between sex and burial context. Ten of 18 females (55.6%) (including possible/probable) were deposited in pits, compared to 8 of 12 males (66.7%), not including the Tothill quarry pit burial (Kent, ID 360 - ??M). Though five females were buried in graves, compared to one male (27.8% and 8.3% of respective totals) –the male Eggington burial (ID 12, Beds.) may also be a grave inhumation, and at least one of the female grave burials could also be interpreted as a grave pit burial.

4.11.3. Sex and position / orientation

In all, 16 of 19 sexed females were in a crouched or flexed position (84.2%, 16/19), with five on their left side, six on their right, the others prone, supine and unsided. Similarly, 11 of 12 sexed males were crouched or flexed (91.7%, 11/12) – with three on their left side, five on their right, one unsided, one prone and one supine. The remaining females were one extended supine, one prone, and the 'twisted' burial (ID 132) from Trumpington Meadows (Cambs.). The male was in an unknown position (ID 299, HS1-Saltwood, Kent). Crouched burial is the overwhelming majority for both sexes, with broadly similar numbers of males and females placed on their left and right side. With orientation, once again the numbers are small. Three males and six females were buried N-S, two males and four females E-W, two males and one female S-N. Two females were also buried SSW-NNE. Two males and one female were

This was due to 'strikingly male traits' of the skull, and the original sex estimation has been upheld here.

placed W-E, one each also placed NE-SW. No sex/orientation based patterns could be discerned.

4.11.4. Sex and grave goods

Eight males and nine females were deposited with some form of grave accompaniment, or other material recorded in the fills. Four males (IDs 88, 99, 133, 351) and six females (IDs 103, 110, 132, 135, 136, 347) were buried with storage pit assemblages of ‘domestic waste’.

Two male (IDs 351, 402) and three females (IDs 110, 130, 347) were buried with personal ornaments, one male (ID 12, Eggington, Beds.) had pottery (plus three unsexed individuals), one female (ID 403,Grime’s Graves, Norfolk) was placed only with a carved chalk block, but ID 20 (Puddlehill, Beds.), accompanied by multiple animal bones and another carved block of chalk, was also female. The other sexed adults, 10 females and four males, were unaccompanied - 52.6%, (10/19) of females compared to only 33.3% (4/12) of males. No other sexed-based patterns are visible in this small assemblage.

4.12. Conclusions

The Early Iron Age material covers the largest span of time but produced the smallest number of inhumations. There are clusters of burials in Kent and Cambridgeshire, which far outweigh other parts of the study region; not one EIA inhumation was recorded for Hertfordshire or Lincolnshire. Crouched inhumations in pits within settlement contexts made up the majority, with a single cemetery in Kent suggesting either regionality, continental contact or possibly poor dating. While not a novel finding, there is a repeated pattern here for the positioning, orientation, and burial context of the inhumed dead; pit burials are not as ‘haphazard’ or ‘casual’ as once thought. The majority of EIA inhumations were buried unaccompanied, though deliberately associated grave goods did occur, as well as complex storage pit assemblages. Personal ornaments were well represented among the associated material, and five instances of disarticulated human remains included with the inhumed dead are evidence of a connection that carries through the MIA and LIA periods (Chapters 5-8).

The EIA inhumations are demographically representative of a wider population; all ages are represented, and there appear to be no divisions in treatment based on biological sex. Neonatal dead are under-represented and geographically restricted, but despite this there is a statistically significant pattern between their deposition and the inclusion of ‘domestic waste’ material in the same feature.

5. Results 2 - Middle Iron Age Inhumations

Of the 425 individuals subject to detailed analysis, 118 have been dated to the Middle Iron Age (MIA – 400-100 BC). Several of these (e.g. IDs 391-4 (The Bridles, Lincs.) were given broader date ranges by their excavators, or via C14 dating (e.g. ID 84 - 350-30 cal BC, Dimmock's Quote Quarry, Cambs.). In these cases, they have been included in the MIA category either because their C14 date range falls largely in the MIA period, or because the site and surrounding features, or associated grave goods, are dated primarily to the MIA, rather than the EIA or LIA.

5.1. Geographic distribution

	Lincs.	Beds.	Cambs.	Herts.	Norfolk	Suffolk	Essex	Kent	Total
Sites	3	3	14	3	2	0	1	14 (12)	40 (38)
Individuals	11	7	40	7	2	0	4	47	118

Table 5.1: The distribution of Middle Iron Age inhumations across the study area. Source: Author.

As with the EIA, the majority of inhumations come from Kent and Cambridgeshire (47 and 40 respectively, Table 5.1). In this period, the first examples from Lincolnshire and Hertfordshire have been identified, but there are none from Suffolk. As with the EIA also, some sites could be conglomerated, bringing the total number of sites in Kent down to 12.

Figure 5.1 shows the location of all identified sites containing MIA inhumations, in the study area. As with the EIA data (Fig. 4.1), there is a clear cluster of inhumations around Cambridge, with more sites identified there in the MIA than in the preceding period, and a dense distribution of inhumation burials in the surrounding area, especially to the west of the region. Figure 5.2 shows the assemblages within the red squares on figure 5.1 – area A contains almost half the total MIA individuals (45.8%, 54/118) but this is every site in Cambridgeshire, Hertfordshire and Bedfordshire.

Also, consistent with the EIA findings is a small cluster of sites on/around the Isle of Thanet in Kent (Fig. 5.2B). The number of identified sites has increased (eight), but this represents a smaller percentage than in the EIA, and of these eight, five are EKA2 sites. The total number of individuals within square B on Fig. 5.1 is 37, 31.4% of the MIA total (37/118), 13 alone uncovered from the cemetery at EKA2 Zone 12. Within this cluster also is the Thanet Earth site, with a large cemetery that may date to the MIA (Appendix 4, Fig.15.2).

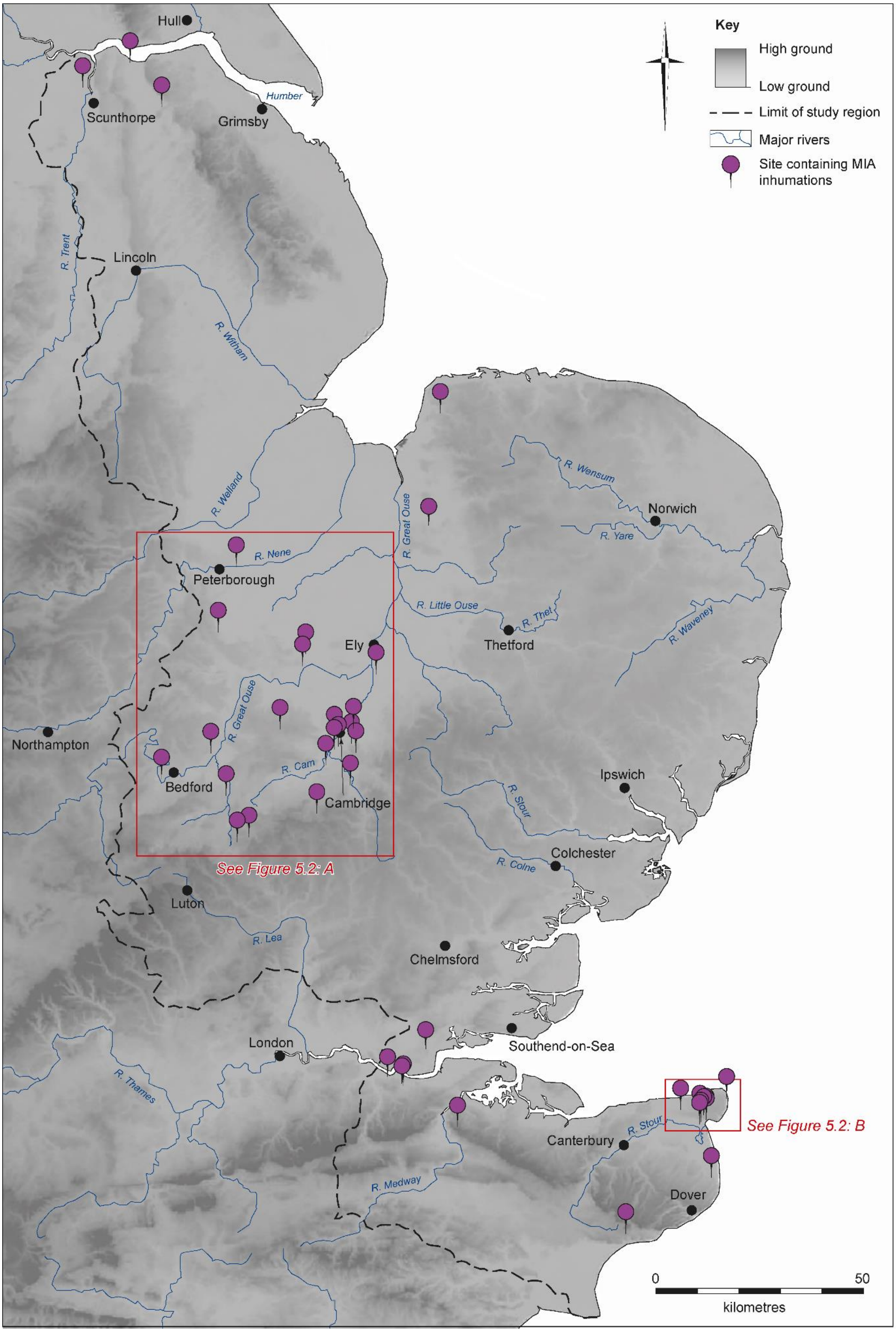


Figure 5.1: Map of all MIA inhumations. The red squares denote clusters of inhumations around the Isle of Thanet (B) and in Cambridgeshire (A) (see Fig. 5.2). Source: Author and Laura Hogg.

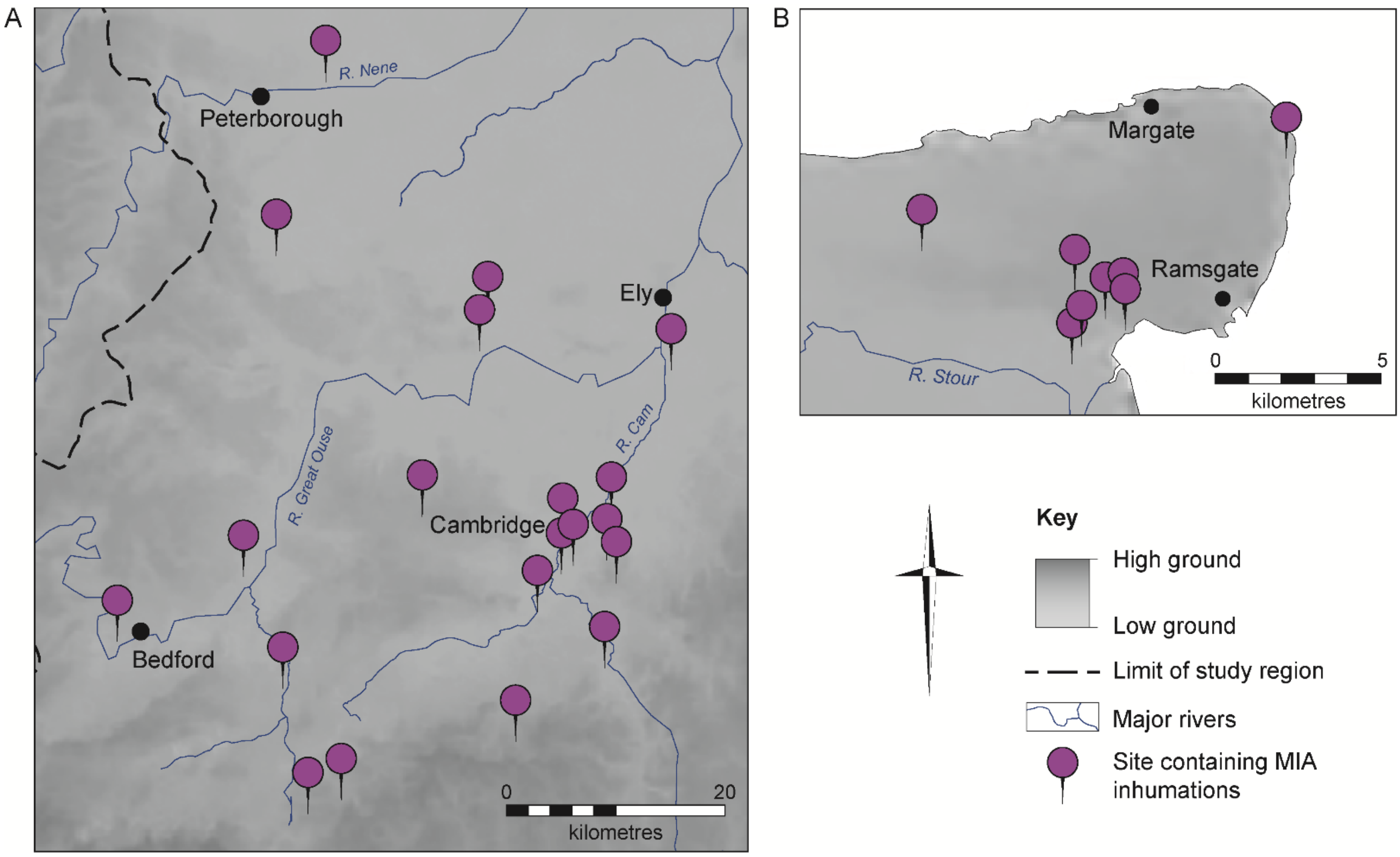


Figure 5.2 A and B: Enlarged maps of the cluster of MIA inhumations around Cambridgeshire and western Bedfordshire (A) and Thanet (B). Source: Laura Hogg and Author.

An additional cluster of sites appears in NW Kent and SW Essex, encompassing the sites of Mucking, Pepper Hill (two conglomerated investigations) and Waterstone Park, Stone Castle – eight total individuals (6.8%, 8/118). Once again the lack of material from large parts of Norfolk and Suffolk is a stark contrast to other parts of the region.

5.2. Chronology

Twenty-seven inhumations from 19 sites (conglomerated) were radiocarbon dated to the MIA by their original excavators (Table 5.2). The date ranges for these individuals are much more precise than those in the EIA – only six give ranges of 300 years or more (IDs 84, 291, 302, 331 and 378), all edging into the 1st century BC at the latest. IDs 1, 104, 140, 263, 395 and 397 all produced date ranges under 100 years and of the remaining 15, ten all have date ranges of 200 years or less, all securely in the MIA period. One of these (IDs 427-8, Thanet Earth) was a double inhumation, so while only one was subject to C14 dating, they are contemporary (provided one was not curated prior to burial).

Nine individuals were broadly dated between the EIA and MIA. IDs 138, 144 and 145 are all from Trumpington's Park and Ride site, Cambs. ID 138 was dated to between the 6th and 1st centuries BC by associated pottery, and is thus included here as this span covers the entirety of the MIA (Hinman, 2004:28). Additionally, other human remains from the site (ID 140) were C14 dated to the MIA, though the site overall appears long-lived, from *c.*700 BC onward, it is possible that any of these three inhumations belong to the EIA.

ID 227 from Wilbury Hill, Cambs. is included here as it was placed under a LIA road surface, and while the occupation of Wilbury may have begun in the EIA, it was reoccupied and substantial ramparts constructed *c.*400 BC, along with new ditches (Moss-Eccardt, 1964; Applebaum, 1949:12). IDs 260-1, 264-5 are all from EKA 2, Zone 13, Kent. They are included here due to EIA-MIA pottery in the fill of at least one grave providing a *terminus post quem*, and the inhumations from Zones 6, 7-8, 12 and 19 all being more securely dated to the MIA. ID 120 (Marshall 'Wing', Cambs.) also contained EIA-MIA pottery in the pit fill. They are included here based solely on the TPQ of the pottery, as the site itself straddles both the EIA and MIA, and of the six other inhumations from the site, three are EIA and three MIA.

Thirteen individuals were dated between the MIA and LIA. IDs 84, 291 and 331 all have C14 dates placing them largely in the MIA (Table 5.2). IDs 391-4 (The Bridles, Lincs.) are included here as two others from the cemetery (IDs 395 and 397) were C14 dated to the MIA. IDs 153-4 (Wandlebury, Cambs.) are included here as the hillfort dates largely to the MIA (French, 2004:15). IDs 169-71 (Aldwick Field, Herts.) all have a *Terminus Ante Quem* of the 2nd Century BC, and all are settlement burials in pits and hollows, burial traditions more common in the MIA than the LIA (Section 9.3). Finally, ID 67 (Cat's Water, Cambs.) is included here as they were placed crouched, in the gully of an MIA structure, with much of the settlement evidence dating to this period, though it did continue into the LIA and beyond (Pryor, 1984:122-4).

ID no.	Original context number	Site	County	C14 result
1	SK2079	A421 Great Barford Bypass	Beds.	160-130 cal BC (OxA-15513)
6	SK1522	Biddenham Loop	Beds.	415-170 cal BC (Beta-139483)
82	F.334	Colne Fen	Cambs.	360-160 cal BC (OxA-15793)
84	SK801	Dimmock's Cote Quarry	Cambs.	350-30 cal BC (no lab number)
104	SK3058	Harston Mill	Cambs.	410-370 cal BC (Beta-243505)
126	213	Rectory Road	Cambs.	210-50 cal BC (GrN-30305)
140	[1551]	Trumpington P & R	Cambs.	410-350 cal BC (SUERC-21979)
231	SK 12744	A2 Pepperhill	Kent	380-200 cal BC (no lab number)
247	Burial 136034	EKA2 - Z12	Kent	410-210 cal BC (SUERC-40287)
251	Burial 153027	EKA2 - Z12	Kent	380-200 cal BC (SUERC-40288)
259	Burial 126128	EKA2 - Z13	Kent	380-200 cal BC (SUERC-40289)
262	Burial 220093	EKA2 - Z13	Kent	390-200 cal BC (SUERC-40299)
263	Burial 246012	EKA2 - Z13	Kent	290-200 cal BC (SUERC-40301)
266	Burial 205108	EKA2 - Z19	Kent	410-210 cal BC (SUERC-40712)
291	SK10405	HS1 - Pepper Hill	Kent	350-40 cal BC (KIA-23946)
292	C24	HS1 - Saltwood Tunnel	Kent	370-110 cal BC (NZA-27734)
302	2291/2284	HS1 - White horse stone	Kent	410-90 cal BC (GU-9089)
331	Grave 31	Mill Hill	Kent	356-45 cal BC (BM-2868)
378		Flixborough Sand Quarry	Lincs.	400-110 cal BC (no lab number)
381	SK144	Horkstow Road	Lincs.	370-100 Cal BC (no lab number)
382	SK177	Horkstow Road	Lincs.	400-190 Cal BC (no lab number)
383	SK191	Horkstow Road	Lincs.	390-200 Cal BC (no lab number)
385	sk274	Horkstow Road	Lincs.	400-210 cal BC (no lab number)
395	Burial 6	The Bridles	Lincs.	420-370 cal BC (no lab number)
397	Burial 8	The Bridles	Lincs.	350-310 cal BC (no lab number)
404	S8002	Sedgeford	Norfolk	375-205 cal BC (no lab number)
427/8	Barrow 9	Thanet Earth	Kent	360-110 cal BC (TEP8-14029)

Table 5.2: Recorded radiocarbon dates for MIA inhumations. Source: Author. Data gathered from original site reports.

5.3. Site type

Site Type	Cemetery	Hillfort	Isolated burials	Mortuary landscape	Settlement	Settlement periphery	Total
No. of sites	4	3	6	3	18	9	43
No. of individuals	25	7	6	14	55	11	118

Table 5.3: Site contexts for MIA inhumations. Source: Author.

Several site contexts in this MIA assemblage can be categorised in multiple ways. ID 232 was recovered from within the settlement at Pepper Hill, Kent (A2 excavations), while ID 231 from the same excavation was outside of it, and ID 291 (HS1 – Pepperhill) was further isolated. IDs 138-140, 144-5 also (Trumpington Park and Ride, Cambs.) came from a site that shared characteristics with other MIA settlements, but also contained features interpreted as mortuary enclosures, as well as extensive pit groups and possible shrines (Fig.5.3) (Hinman, 2004). It is considered with the wider Trumpington occupations, but this site area is arguably not a purely domestic settlement. Because of this, the total number of sites in Table 5.3 is more than the actual total (43, instead of 40 (38 conglomerated)).

As with the EIA, the majority of the individuals from this period were recovered from settlement contexts (46.6%, 55/118), and the number of settlement sites was also the largest – an average of 3.1 inhumation burials per settlement (55/18). If the 'peripheral' and central settlement inhumations are considered together, they account for over 50% of the MIA total (66/118, 55.9%).

Individuals from cemetery contexts have become the next most common, accounting for just over a fifth of the total (21.1%, 25/118), but from only four sites, two in Lincolnshire and two in Kent. No MIA cemeteries were identified in the large cluster of inhumations in Fig. 5.2, though the Thanet Earth site featured several settlement area burials in this period, with a large cemetery developing in the later MIA to LIA period (Rady, 2010). The cemetery is unfortunately excluded from detailed study here, as the remains are yet to be analysed and published (Appendix 4).

Six individuals from six sites are from isolated burial contexts (IDs 84, 123, 291, 292, 378 and 405). In cases like ID 378, from Flixborough Sand Quarry (Lincs.) and ID 405 from Shouldham (Norfolk), the circumstances of the excavation may be a factor. The former was found during quarrying work and was excavated under rescue conditions (Lincolnshire HER number 19694), while the latter was discovered in 1944, also during quarrying (Clarke and Hawkes, 1955:198). ID 123 (Newnham Croft, Cambs.) was excavated before 1903, and with limited publication or investigation of the surrounding area (Fox, 1923:81). ID 291 (HS1 – Pepper Hill, Kent) has been discussed above, they were isolated, but their placement very close to the settlement uncovered during the A2 excavations (Clay, 2006) would suggest they are related. ID 292 was similarly isolated, but close to the only EIA cemetery in the dataset (HS1 – Saltwood Tunnel), and here again is likely related. Finally ID 84 (Dimmock's Cote Quarry, Cambs.) was found near a few pits and a four-poster within an enclosure (interpreted as a possible shrine), but no evidence of domestic occupation, and no other mortuary features were identified (Gilmour, 2014:29). In most, if not all cases, the 'isolated' appear actually to not be – but are likely related to known or unknown occupation areas.

The three sites defined as 'mortuary landscapes' are Cliffs End, Duxford and Trumpington Park and Ride. Continuing on from the LBA-EIA inhumations at Cliffs End, in mortuary feature 2018 six more MIA internments were recovered. Two of the three inhumations from Duxford, Cambs. (IDs 85-6) come from what has been interpreted as a mortuary enclosure, a sub-rectangular ditched enclosure with a possible fence, later replaced by a LIA-ERB shrine (Fig. 5.4) (Lyons, 2011:15). The third was a pit burial (ID 95) in a 'ritual pit' – a re-used storage pit outside the enclosure (*ibid*, 18). Carrying on from ID 88 buried in the EIA, the site continued to be used as a place of funerary activity into the LIA (see below). The Trumpington Park and Ride individuals have been discussed above (Fig.5.3).

Hillfort burials are more common here than in the EIA - Wandlebury (IDs 153-4) and Cherry Hinton (IDs 156-7, 159, 435) are less than 3km apart (Cambs.), with Wilbury Hill (ID 227) some 36km away to the south east (Herts.) All three see funerary activity continue into the LIA (see below), and several hillfort sites provide evidence for less common post-mortem practices (Discussion).

The four cemeteries each contain multiple individuals, more than most other sites in the period. The EKA2 Zone 12 (Kent) cemetery is made up of 13 individuals, 11 buried in a group (IDs 245-250, 253-7), plus two more several metres away (IDs 251-2). Two cemeteries from Lincolnshire (The Bridles and Horkstow Road) represent some of the earliest Iron Age burials (and cemeteries) known from the region. None were identified in the EIA data and several of these MIA individuals produced C14 dates from 400 cal BC (section 5.2). The Bridles contained six MIA inhumations (IDs 391-5, 397), with four at Horkstow Road (IDs 381-3,385), both cemeteries continuing into the LIA with further inhumations (see below). The final cemetery in the MIA assemblage is Mill Hill, Kent. The 'founder burial' for this extensive cemetery is mentioned above (section 4.4), and in the MIA at least two more inhumations are added (IDs 322, 331), the majority following in the LIA.

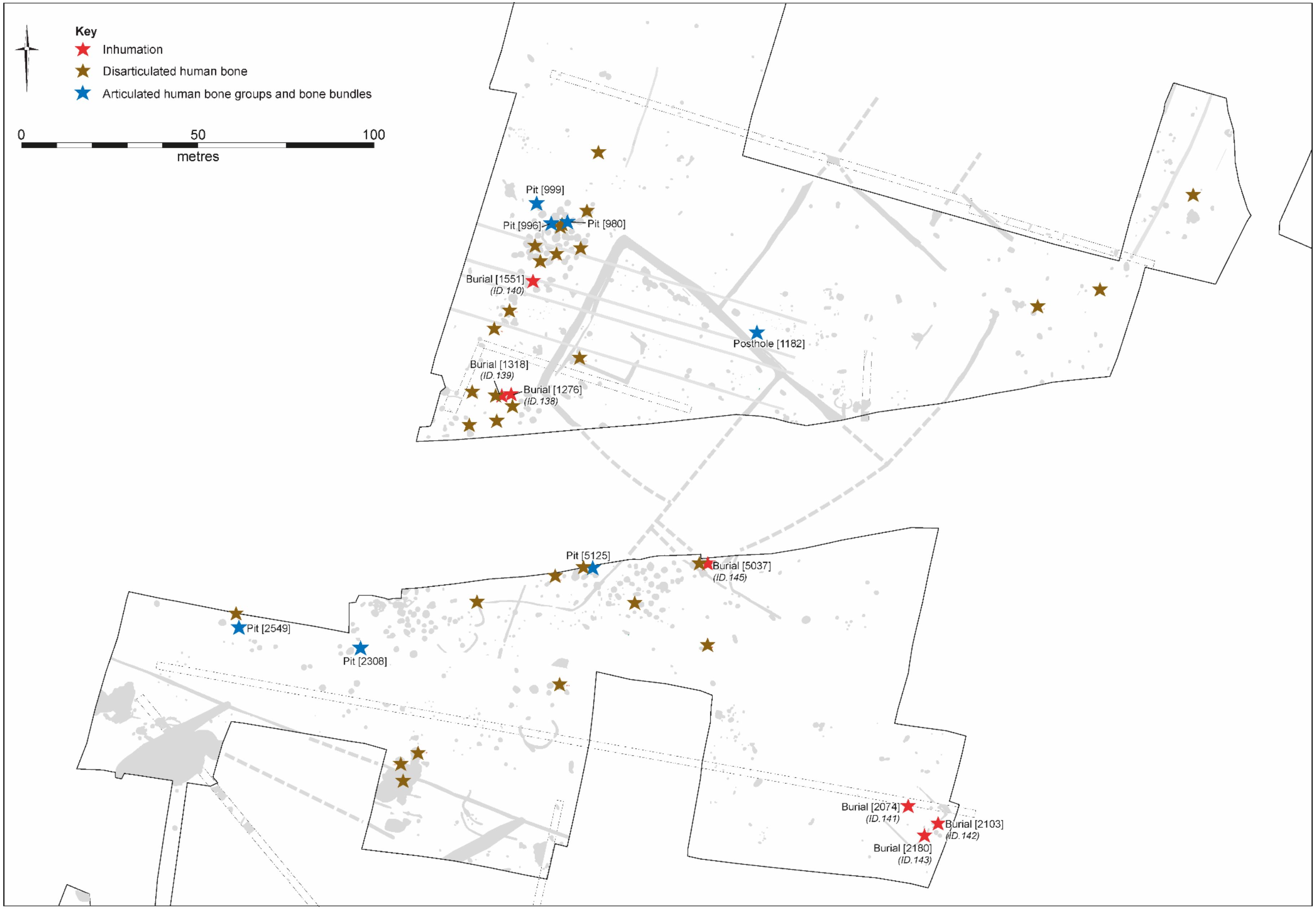


Figure 5.3: Site plan of the Trumpington Park and Ride site, showing the locations of all inhumations, partial human remains deposits and disarticulated remains. Source: Laura Hogg and Author, edited from Hinman et al., 2004: Fig.13.

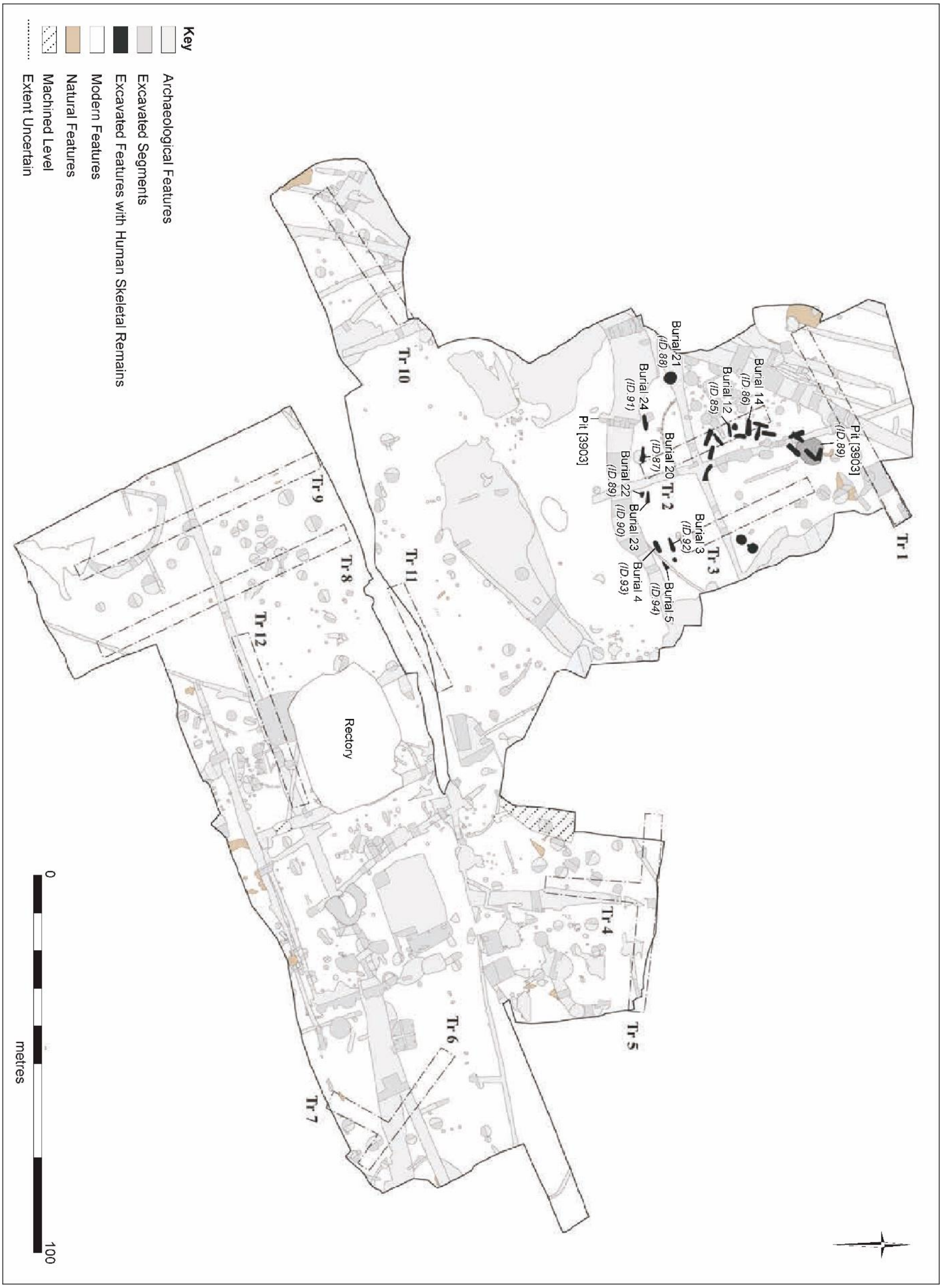


Figure 5.4: Site plan of Duxford, Cambridgeshire, with burials and deposits of human remains spanning the entire Iron Age. Source: Lyons, 2011:Fig.5, edited by Laura Hogg and Author.

5.4. Depositional context

Feature type	Frequency (individuals)	Frequency (site)
Ditch	5	3
Ditch terminus	1	1
Ditch total	6	3
Sub-rectangular grave	24	14
Ovoid grave	15	5
Irregular grave	8	3
Unspecified grave	1	1
Grave total	48	21
Storage pit	24	10
Grave pit	10	8
Unspecified pit	6	4
Pit total	40	16
Double burial	4	1
Associated with a structure	3	3
Burial enclosure	1	1
Other	14	6
Unknown	2	2

Table 5.4: Depositional contexts for MIA inhumations. Source: Author.

As the depositional context is unrecorded for two individuals (IDs 378 (Flixborough, Lincs.) and 405 (Shouldham, Norfolk)) the statistical analysis for this section concerns the remaining 116 individuals.

5.4.1. Pit burials

A change is seen with the MIA assemblage, grave burial surpassed pit burial as the most common mode of deposition. Now only 34.5% (40/116) of the total assemblage were buried in some form of pit, compared to 53.8% (35/65) in the EIA. Twenty-four individuals from only 10 sites were buried in storage pits. Of those, eight are from Harston Mill, Cambs. (IDs 101-2, 104-5, 107-9, 111), and 15 in total are from Cambridgeshire. The two individuals from EKA 2 Zone 13, Kent (ID 260-1) are dated EIA-MIA but included here due to C14 dates on others from the same area. ID 120 (Marshall 'Wing', Cambs.) was also dated EIA-MIA, there is a possibility that any or all of these three are actually not MIA inhumations, making storage pit burial in this period more restricted.

Six individuals were placed in pits of unspecified type. Two of these (IDs 106 and 265) are from Harston Mill and EKA2 Zone 13 respectively, both of which also had storage pit inhumations. It is therefore probable that IDs 106 and 265 are also both storage pit inhumations, but this cannot be confirmed. IDs 140 and 145 (Trumpington Park and Ride, Cambs.) are from a site with extensive pit deposits, not all fitting the standard definition of storage pits (Fig.5.3) (Hinman, 2004:28). Again here, two pit inhumations were dated somewhere between the EIA and MIA (IDs 145 and 265). IDs 425-6 were from Thanet Earth, Kent, a currently unpublished settlement site – it is very possible that these two were storage pit burials, but it cannot be confirmed.

Ten further individuals were placed in 'grave pits'. ID 404 (Sedgeford), and ID 160 (Mucking), are the only MIA pit burials from Norfolk and Essex. Overall, pit inhumations of one form or another were identified at 16 sites, with 22 of 40 in Cambridgeshire (55%). Fig.5.5 shows the distribution of MIA pit burials, with pin sizes increasing based on the number of individuals at a site (see caption). Individuals from Harston Mill represent a quarter of all MIA pit burials (10/40), with more than two individuals each from Broom (Bedfordshire), Blackhorse Road (Hertfordshire), Marshall 'Wing' (Cambridgeshire (Fig.4.9)) and Trumpington Park and Ride also. Thirty-three (82.5%, 33/40) of the pit inhumations came from settlement contexts (37 of 40 *if* Trumpington P&R is a settlement, but this seems unlikely). Geographically they are fairly restricted but do appear in the same areas (and in some of the same sites) as the EIA pit inhumations.

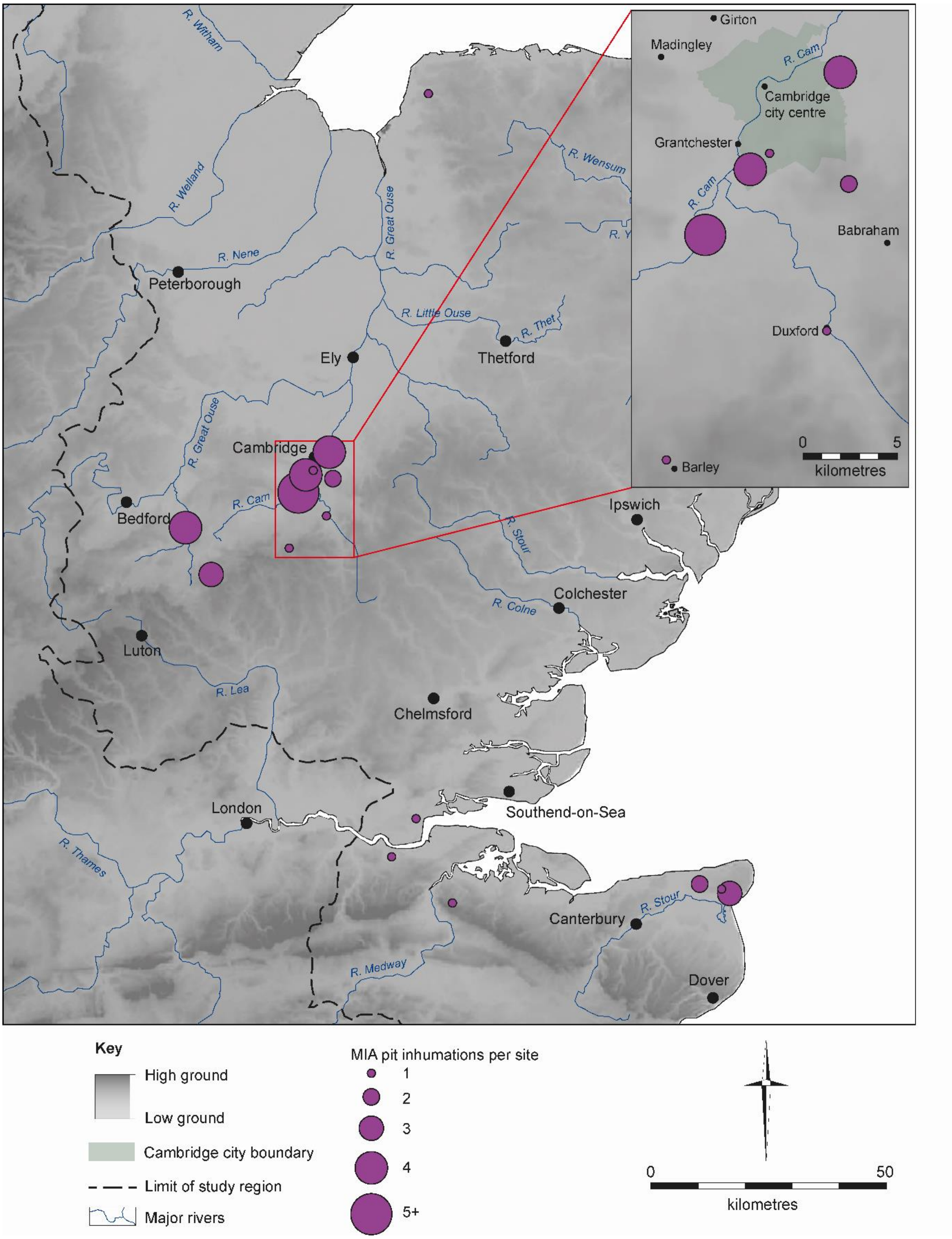
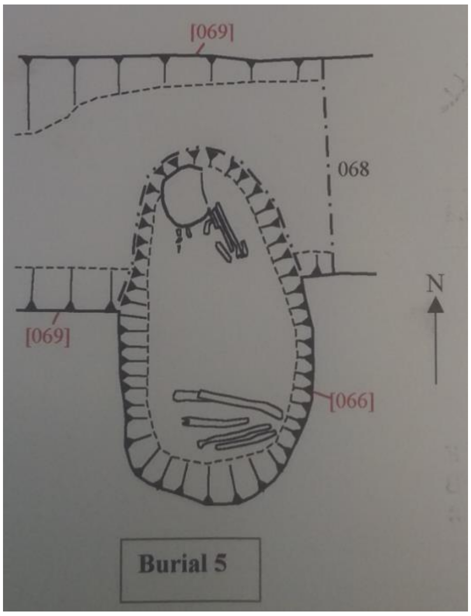


Figure 5.5: Map showing the distribution of MIA pit inhumations. The different pin sizes indicate increasing numbers of individuals at various sites. The smallest pins represent 1 inhumation, with pin sizes increasing for 2, 3, 4 and 5+ individuals. Source: Author and Laura Hogg.

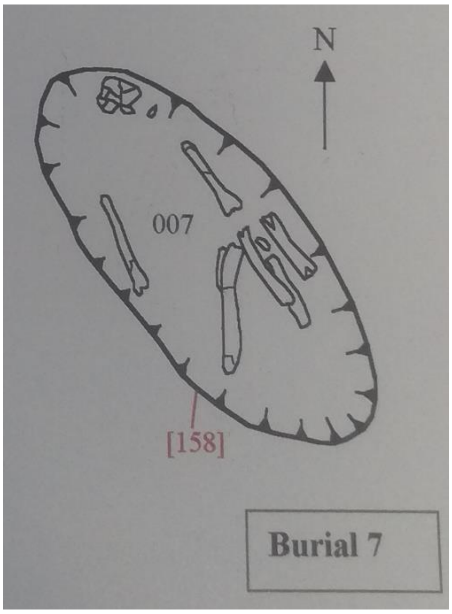
5.4.2. Grave burials

Sub-rectangular grave burial represents 20.7% (24/116) of the MIA total. Including ovoid, unspecified and irregular graves this rises to 41.4% (48/116) – almost half of all MIA inhumations in the study area. This is a discernible increase from the EIA, where grave burial represented 26.2% of the total (17/65). The sub-rectangular grave inhumations come from four sites in Cambridgeshire (seven individuals) and nine sites in Kent (including conglomerations) (16 individuals), plus a single inhumation from Broom, Bedfordshire. One site contained four individuals (EKA2 zone 13, Kent) and two sites each contained three (Cambourne New Settlement, Cambs. and EKA2 zone 12, Kent). Mill Hill (Kent), EKA2 Zones 7-8 (Kent) and Cat's Water, Fengate (Cambs.) all produced two inhumations, the other sites only had one each. This is again in contrast to the EIA material, where the majority came from one cemetery population (4.5.2).

Fifteen oval/sub-oval inhumations were found from five sites in three counties (Lincolnshire, Bedfordshire and Kent). IDs 391-395 all come from The Bridles, Lincs. (Figs.5.6-7), IDs 381-3, 385 are from Horkstow Road, Lincs. and IDs 252-5 are from EKA2 Zone 12, all cemeteries. The remaining two are from Biddenham Loop, Beds. (ID 6), and St. Stephen's College, North Foreland, Kent (ID 348), both settlements.



Figures 5.6 (left) and 5.7 (right): Burials 5 (left, ID 394) and 7 (right, ID 396) from The Bridles, Lincs. Showing the oval-shaped grave cuts. Source: Bray et al., 2003:Fig.21



Irregular graves were found on three sites, six from the cemetery at EKA2 Zone 12 (IDs 245-6, 248-51), one from The Bridles (ID 397) and one isolated burial from the A2 Pepperhill to Cobham excavations, Kent. (ID 233). ID 123 (Newnham Croft, Cambs.) is the only MIA grave burial of unknown shape – this was not recorded by the excavator, though the body was crouched, it is possible they were actually in a grave pit.

Only one grave inhumation was dated broadly EIA-MIA (ID 264, EKA2 zone 13, Kent), so while it may be an Early Iron Age burial, it seems more probable that it dates to this period. Seven individuals were given MIA-LIA dates, three of which were C14 dated and much more likely to be MIA (IDs 84 (Dimmock's Cote, Cambs.), 291 (HS1 Pepper Hill, Kent), 331 (Mill Hill, Kent)). The other four were IDs 391-4 from The Bridles, Lincolnshire, a cemetery that contained individuals C14 dated to the MIA, the LIA, and with dates straddling both periods (ID 398) (Lincs. HER 20030). In this instance it is likely that the site was utilised for a reasonably long time, between the later MIA and the LIA.

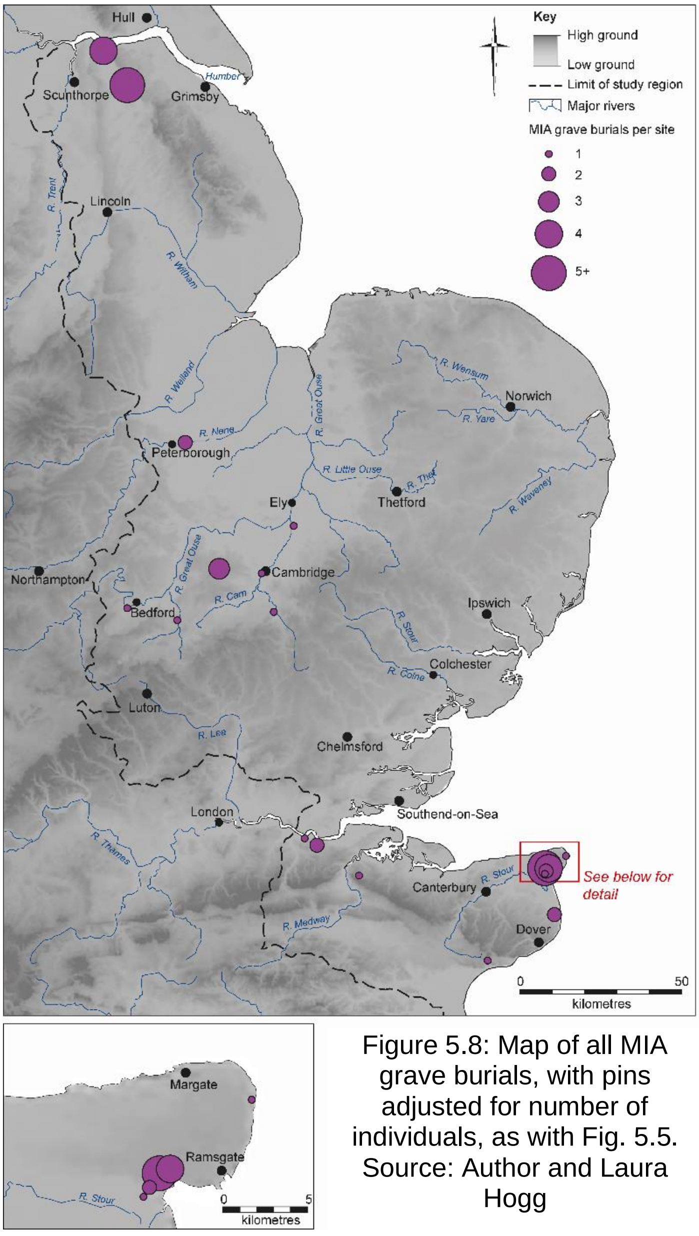


Figure 5.8: Map of all MIA grave burials, with pins adjusted for number of individuals, as with Fig. 5.5. Source: Author and Laura Hogg

Twenty-four of the 48 total grave inhumations come from cemetery contexts (50%), all of which are from only five sites, and 13 of 48 (27.1%) are just from the cemetery at EKA2 zone 12. Eighteen are from settlement contexts (37.5%, 18/48) – found on 10 total sites. Three were 'isolated' and the final individual was from Duxford, Cambs. (ID 85), argued by its original excavator as a mortuary landscape (Fig.5.4) (Lyons, 2011:IX). There seemed to be no real distinction between sub-rectangular, ovoid and irregular graves, all occurred on the same sites. If the Thanet Earth cemetery can be confirmed as MIA (Appendix 4, Fig.15.2) the 24 individuals within would drastically alter the representation of grave inhumation, especially in Kent, with parallels at EKA2, Mill Hill and Saltwood Tunnel.

Fig. 5.8 shows the distribution of MIA grave inhumations in the study region, with pin sizes varying based on number of burials at a site (See Fig.5.5 caption). The two cemeteries in Lincolnshire represent a sizeable portion of the total, and while there are multiple sites in the central area, the total represented individuals is small. The far east coast of Kent, including the isle of Thanet, is where the largest frequency of MIA grave inhumations occurs – even without the Thanet Earth cemetery included in the map. This is all in contrast to the pit burials (Fig. 5.5), which do not seem to spread to Lincolnshire, and are much better represented in Cambridgeshire than Kent.

Five sites contained inhumation burials both in pit and grave contexts – a total of 19 individuals. It seems that one depositional context was not exclusive to a site or area, inhumations could occur broadly contemporaneously in graves, pits and other contexts, in the same sites and local regions.

5.4.3. Ditch burials

Six individuals were placed within ditches (5.2%, 6/116). Four were from the hillfort enclosure ditch at Cherry Hinton, Cambs. (IDs 156-7,159, 435), and two more from settlements at A2 Pepperhill and the A421 Great Barford Bypass excavations (Fig. 5.10). The Cherry Hinton inhumations are unlike almost any other from the study region, in that they may be the result of a massacre event (Pickstone and Mortimer, 2011, 2012,) (Fig.5.9). While violent deaths are attested at Stonea Camp and Wandlebury, both hillforts/enclosed camps in Cambridgeshire, the large number of dead at Cherry Hinton, all contemporary, sets it aside (see Discussion). The placement of the dead here, in ditches, may not be indicative of any broader rite, but a result of the events at the site – the dead 'dumped' in the ditch as the hillfort was abandoned.

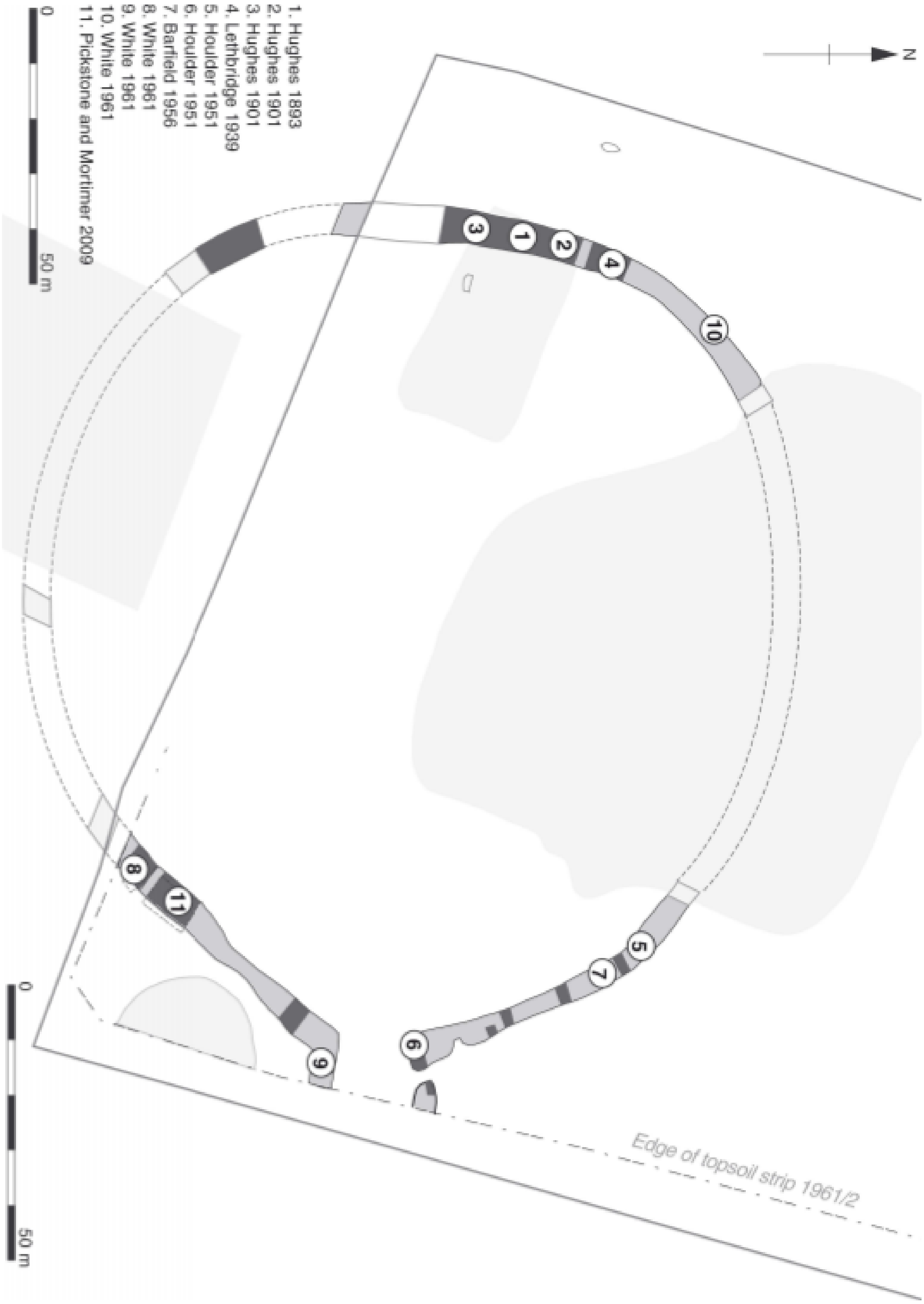


Figure 5.9: Plan of excavations at Cherry Hinton 'War Ditches'. Human remains were recovered from each excavation of the single enclosing ditch. ID 156 was found by Barfield (CAFG), no. 7 in the figure. IDs 157, 159 and 435 were found by White, nos. 8-10 in the figure respectively. ID I58 was found by Pickstone and Mortimer, no.11 in the figure. Source: Pickstone and Mortimer, 2011: Fig.5.

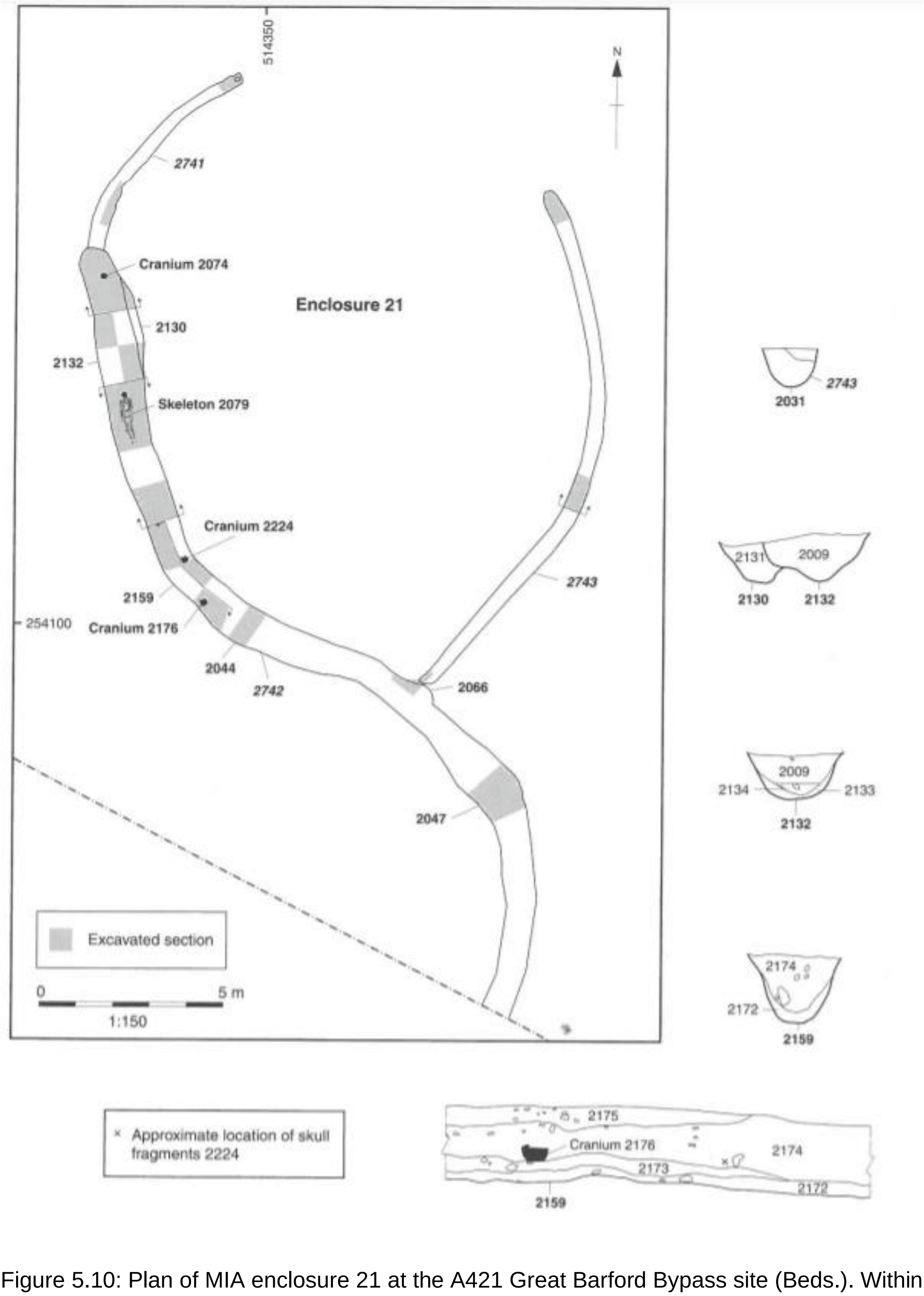


Figure 5.10: Plan of MIA enclosure 21 at the A421 Great Barford Bypass site (Beds.). Within the ditch were ID 1 (sk2079), as well as disarticulated bones D.ID 16-18 (2074, 2176, 2224). Source: Timby et al., 2007:Fig.2.7.

5.4.4. House burials

Three individuals were buried in association with houses or other buildings. All are from sites in Cambridgeshire, in an area of less than 74 sq. miles. ID 82 (Colne Fen), a middle-older adult female, was placed in a grave cut into the floor of a disused house. The backfill of the grave contained domestic debris and hearth material, including burnt animal bone, flint and clay (Evans, 2013a:173). ID 67, a young adult male (Cat's Water) was placed in a roundhouse drip gully (Pryor, 1984:116). ID 53 was a neonate (38 weeks) from Black Horse Farm, Sawtry, placed outside a roundhouse, in an indistinct cut (Newton, 2012:109). The first two of these could be respectively described as grave and ditch inhumations, but the association with the buildings sets them apart.

5.4.5. Burial enclosures

ID 126 (Rectory Road, Bluntisham, Cambs.) may be the only MIA inhumation surrounded by its own enclosure. Buried in an oval grave/pit, surrounded by a ditch, and close to a settlement area (Burrow and Mudd, 2010:65). The skeleton, that of a 45–49-year-old male, was tightly contracted with the legs probably bound (*ibid*, 65). Other enclosure burials occur in the study area, but not until the LIA (section 6.4.5). Again here this could be recorded as a grave inhumation, or a pit burial, but its enclosed status is seemingly unique.

5.4.6. Double burials

Two double inhumations could be dated to the MIA period, both from the Thanet Earth settlement, Kent. IDs 427-8 were two adults placed in a 'spooning' position, within an irregular cut at the centre of a circular barrow, defined by a ditch (Rady, 2010:Pl.25). This double inhumation is also the only confirmed MIA barrow burial from the study region, except perhaps for the Horkstow Road burials, which may have been covered by mounds (Discussion 9.6.2). Currently awaiting analysis (Rady, 2010:205), both individuals are described in a local newspaper article as over 1.8m tall and at least one 'certainly male' (Kent Online, 29th August 2008)[8]. If they are both male, they represent a unique double inhumation for the region. Their placement within a barrow is also highly unusual (see section 9.6.2.). The other double burial was that of a young adult female, buried with a perinate – possibly a case of death during childbirth, though the excavators do mention there is a possibility of the perinate being a later insertion into the female grave (Rady, 2010:24).

[8] The sex and stature of these individuals has NOT been included in any statistical analysis as it has not been confirmed by any professional source – site publication forthcoming.

5.4.7. Other

Fourteen MIA burials do not fit any major category. Six were placed in the northern area of mortuary feature 2018 at Cliffs End, Kent (section 5.3) (Fig.4.4, 5.11). IDs 240 and 242 were within irregular cuts, IDs 239 and 243 were in sub-rectangular cuts, and ID 244 was in an oval grave. No cut was visible for ID 237. Again here, these fit criteria for grave inhumation, but their placement within the complex Mortuary Feature 2018 is unlike the other grave burials placed in cemetery and settlement contexts.

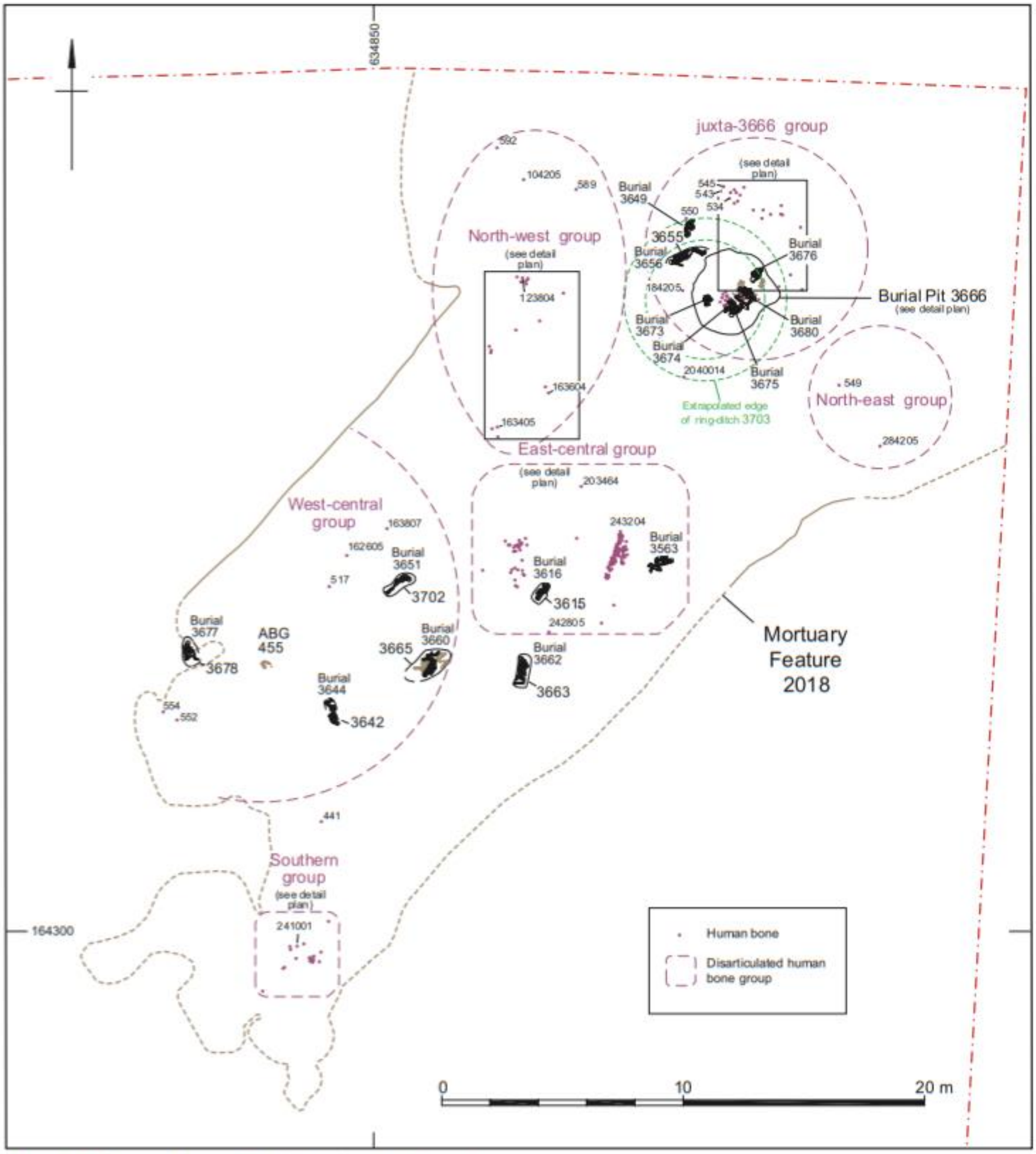


Figure 5.11: Plan of Mortuary Feature 2018 from Cliffs End, Kent, showing deposits of human remains from the Bronze Age and Iron Age. ID 237 = Burial 3563, ID 238 = Burial 3616 (EIA), ID 239 = Burial 3644, ID 240 = Burial 3651. ID 241 = Burial 3656 (EIA), ID 242 = Burial 3660, ID 243 = Burial 3662, and ID 244 = Burial 3677. Source: McKinley et al., 2014:Fig.2.23.

5.5. Burial position

Body Position	Frequency
Extended supine	19
Extended prone	5
Extended left	1
Extended right	0
Extended total	25
Crouched left	14
Crouched right	13
Crouched (unknown side)	6
Flexed supine	7
Flexed prone	5
Flexed left	9
Flexed right	5
Crouched / Flexed total	59
Other	9
Unspecified / Poor preservation	25

Table 5.5: Burial position of all MIA inhumations. Source: Author.

Twenty-five of 118 (21.2%) MIA individuals had either no recorded burial position, or were so poorly preserved that the position could not be discerned. As such, figures for this section concern only the remaining 93 inhumations.

5.5.1. Extended inhumations

Extended inhumation burials increased in number and relative proportion for the MIA, with 19 buried in an extended supine position (20.4%, 19/93), compared to seven in the EIA (12.5%, 7/56). These come from eleven sites in six counties, though the majority are from Kent (twelve individuals from five sites). Ten of the 19 are from cemetery contexts, plus three from mortuary landscapes (IDs 85-6 (Duxford, Cambs.), 243 (Cliff's End, Kent)), two isolated (292 (HS1 Saltwood, Kent), 405 (Shouldham, Norfolk)), one hillfort burial (ID 153, Wandlebury, Cambs.) and three from settlements (IDs 1 (A421, Beds.), 422 (Blackhorse Road, Herts.), 428 (Thanet Earth, Kent)). Thirteen of 19 are grave burials (seven of these from EKA2 zone 12).

Five individuals from three sites were in an extended prone position. ID 154 was within a pit in Wandlebury hillfort, the other four were grave burials from sites in Kent. Two were from the EKA2 Zone 12 cemetery (IDs 254, 256), one from the Zone 13 settlement (ID 262), and one isolated burial from the HS1 excavations at Pepperhill (ID 291).

Extended inhumations make up 26.9% of the MIA total with known positions (25/93), though of these nine are from one site (EKA2 Zone 12, Kent). The excluded Thanet Earth burials are also likely to be extended inhumations, based on the grave shapes on the site plan (Figs.15.1-2). These would almost double the MIA total (49 individuals), but until the site is analysed fully, they cannot be included.

5.5.2. Crouched and flexed inhumations

Fourteen individuals were buried crouched on their left side (15.1%, 14/93). They were identified at eight sites in only three counties. Six of these were from The Bridles and Horkstow Road cemeteries, while the single Bedfordshire individual (ID 6, Biddenham Loop) and five of the seven from Cambridgeshire (IDs 60 (Cambourne), 65 (Cat's Water), 104-5, 107 (Harston Mill)) are all from settlement contexts. ID 84 (Dimmock's Cote Quarry) was isolated. Ten of 14 were in graves of various shapes, the remaining four in pits, though six (including five of the cemetery inhumations) were in ovoid graves.

Of the 13 individuals in a crouched right position, 12 are from settlements/settlement peripheries, and one (ID 385) was from a cemetery. This is the only crouched right inhumation from MIA Lincolnshire, another Horkstow Road burial, with six others from Cambridgeshire, one from Bedfordshire (ID 9, Broom), one from Hertfordshire (ID 424, Blackhorse Road) and four from Kent. Only one crouched right inhumation was found from each site[9] – unlike the left-sided burials. Four individuals were in graves (IDs 264 (EKA2 zone 13, Kent), 348 (North Foreland, Kent), 372 (Waterstone Park, Kent), 385 (Horkstow Road, Lincs.)), two sub-rectangular, two ovoid, with two others placed in grave cuts associated with houses (IDs 67 (Cat's Water, Cambs.), 82 (Colne Fen, Cambs.)). ID 126 (Rectory Road, Cambs.), the only inhumation in its own enclosure, was also buried crouched right, with the final five individuals in pits (three storage pits, two grave pits).

Six individuals from four sites were buried crouched, but with no side specified. Four of these were from the settlement at Broom, Beds. (5.12) (IDs 7-8, 11), with another from The Bridles, Lincs. (ID 392), and two isolated inhumations from Flixborough Sand Quarry, Lincs. (ID 378) and Newnham Croft, Cambs. (ID 123).

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[9] Though Blackhorse Road (Hertfordshire) contained a 'crouched right' and a 'flexed right' inhumation (IDs 424 and 423 respectively).

Figure 5.12: Site plan for Broom, Bedfordshire, showing the locations of all inhumation burials and disarticulated human remains within the Iron Age settlement. F.1588 = ID 7, F.1884 = ID 8, F.311 = ID 9, F.855 = ID 10 and F.897 = ID 11. Source: Tabor, 2014:Fig.13.

In all, 33/93 MIA inhumations were crouched (35.5%). Of these, 17 were in graves (51.2% of crouched), and 11 in pits (33.3%). Crouched individuals occurred more frequently in ovoid graves than rectangular (9 and 6 respectively).

Nine individuals were in a flexed left position, all but one from Kent. Five were from Cliffs End, in graves cut into in Mortuary feature 2018 (IDs 237, 239, 242-4). Another came from the cemetery at EKA2 Zone 12 (ID 246 – irregular grave), and one from the settlement in Zone 13 (ID 261 – storage pit). ID 233 from the A2 Pepperhill settlement excavations was also flexed left, as was ID 119, a storage pit inhumation from the Marshall 'Wing' site, Cambridgeshire (Fig.4.9).

Only five individuals were buried flexed on their right side. ID 249 is again from the EKA2 Zone 12 cemetery (irregular grave), and 265 is from the Zone 13 settlement (pit inhumation). The other three are from settlements at Mucking, Essex (ID 160 – grave pit), Blackhorse road, Hertfordshire (ID 423 – grave pit) and Black Horse Farm, Cambridgeshire (ID 53 – house burial).

Flexed prone inhumations were found at five sites (five individuals). All were from settlement contexts. ID 404 (Sedgeford, Norfolk) appears to have been very carefully placed, tightly contracted with the head placed on two 'pillow stones' and several other finds (McKinnon and Hatton, 2011:30), while ID 117 (Marshall 'Wing', Cambs.) was accompanied by a complete pot (Evans et al., 2016a:429) and there is no indication that ID 232 (A2 Pepperhill. Kent) was not deliberately positioned. ID 64 (Cat's Water, Cambs.) may have been bound and several elements were dislocated (Powell, F. 1984:281-2), while ID 111 (Harston Mill, Cambs.) is interpreted as having been pushed or thrown into a pit (O'Brien, 2016:38).

Seven further individuals were placed in a flexed supine position. Of these five were from Kent, one Cambridgeshire (ID 157, Cherry Hinton) and one from Bedfordshire (ID 10, Broom). Five were from settlement areas, one from a cemetery (ID 252 – EKA2 zone 12, Kent), and one from a hillfort (ID 157). Three individuals were from Zones 7-8, 12 and 19 of the EKA2 excavations (IDs 272, 252, 266). As discussed above the position of ID 157 within enclosure ditch fills, may not be deliberate, as it has been repeatedly suggested that the dead here were dumped, following a massacre at the site (Discussion). The remaining six were placed in graves (IDs 252, 272), and pits (IDs 10, 266, 301, 425).

Only four crouched individuals were identified in Kent for the MIA data, but there were 16 flexed individuals. This is highly likely to be indicative of inconsistent terminology when describing burials rather than any real pattern. Considering the crouched and flexed inhumations together, then 63.4% of the MIA total are crouched/flexed (59/93). This is more than double that of extended inhumations, despite the increase in grave contexts for this period.

Twenty-three crouched/flexed individuals were on their left side, only 18 on their right, the rest either prone, supine or unsided – 56.1% of the sided individuals were on their left (23/41). Eleven total crouched/flexed individuals came from cemetery contexts, from only three sites (Horkstow Road, The Bridles and EKA2 Zone 12) – two of which were in Lincolnshire. Thirty-eight individuals (64.4% of crouched/flexed total, 38/59) came from settlement contexts, and were much more widespread regionally, from 21 sites in six counties. Twenty-three were in pits[10] while 29 were in graves[11].

5.5.3. Other positions

Nine examples do not fit into any major category for burial position. ID 163 (Mucking, Essex) is recorded as flexed, but survives only as a mastoid and a body stain, with no side given (Evans et al., 2016b). ID 140 (Trumpington Park and Ride, Cambs.) may have been thrown into the pit they were deposited in – the middle-older adult female was in a splayed position, with the torso supine, the arms flexed to the sides and upper arms above the head, but the pelvis and legs were facing right, perpendicular to the torso, legs almost extended (Hinman, 2004:28) (Fig. 5.13).

[10] Plus ID 144 from Trumpington Park and Ride, buried in a pit within a ditch terminus
[11] Plus the Cliffs End inhumations, in graves cut into Mortuary Feature 2018.

Figure 5.13: ID 140 (originally 1550) from Trumpington Park and Ride, Cambs., showing the 'splayed' burial position, highly suggestive of having been thrown or dumped into the pit in which they were deposited. Source: Hinman, 2004:Pl.17c.

Five of the nine are likely to be the result of inhumation after a period of decay – or of post-depositional disturbance. IDs 102, 108-9 (Harston Mill, Cambs.), 159 (Cherry Hinton, Cambs.) and 302 (HS1-WHS, Kent) all have missing elements, and/or elements out of articulation. All were found in storage pits. ID 108, a perinate, was anatomically complete but with bones separated, some within and some outside of a complete MIA burnished ware jar (O'Brien, 2016:39). The skeleton is not described as disarticulated, but not articulated either, and the presence of frog/toad and mouse bones (*ibid*, 39) could suggest animal disturbance, by the rodents especially. ID 102 was described as 'sprawled', with the right arm and leg disarticulated (post-depositionally), the lower legs, hands and feet missing (*ibid*, 38). ID 109 was missing the skull, shoulder girdle and several foot bones, and also suffered post-mortem fractures – this time interpreted as a body bundle (*ibid*, 38). ID 159, buried in a ditch terminus, was facing left, the left arm up by the face and left leg tightly crouched, but the torso and pelvis were supine, with the right leg rotated 180 degrees and extending out in front of the body (White, 1964:Plate III). ID 302 had a displaced cranium, moved to the lower spine/pelvis area, and the left femur was found over the body, diagonally from left humerus to right elbow. One tibia also was also positioned diagonally across the legs, with the distal end near the lower right arm (Booth et al., 2011:234-5). All of these individuals are discussed further in Chapter 8 as in each case the individual was placed largely complete and for many of them, the displacement/disturbance of bones appears post-depositional, or could be the result of truncation. Some will undoubtedly be body bundles, but as the remains are kept largely whole, and buried together, this practice is still viewed as inhumation, albeit delayed.

The final two examples are both from EKA2 (Kent) sites. ID 245 (Zone 12 cemetery) was placed in an irregular grave, part flexed, part extended and supine (Andrews et al, 2015:156). The arms are across the chest, the legs bent at the knee, but only slightly, the body as a whole is broadly extended (*ibid*, fig.3.45). They are not considered an extended supine burial as the excavator has classified them otherwise. ID 263 (Zone 13 settlement) was placed on their right side, with three limbs contracted and the right leg extended (*ibid*, 165). Here again they could be considered a crouched right inhumation, but the extended leg (and larger grave size needed to accommodate it) implies deliberate positioning.

5.6. Orientation

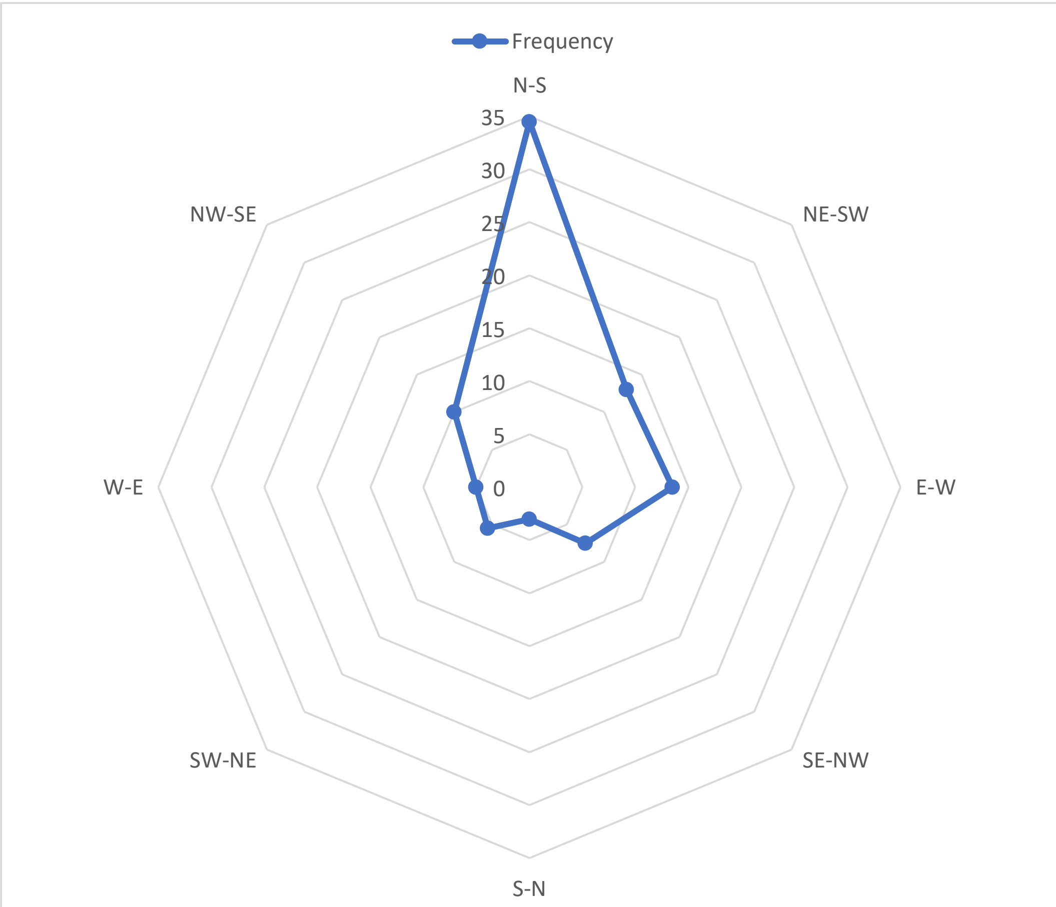


Figure 5.14: Radar chart showing the orientation of all MIA inhumations. Source: Author.

Figure 5.14 shows the orientation of all MIA inhumation burials, rounded to the nearest of eight compass points (see methods). As with the EIA examples, there is a clear trend towards broadly N-S burial (34.5 individuals), with a second, slightly less frequent trend towards E-W alignment (13.5), as well as NE-SW (13) and NW-SE (10). There is a clear minority in those placed with their head to the SE, S, SW, and West. Twenty-six inhumations had no recorded orientation, so the total number expressed in Fig. 5.14 is 92 inhumations.

Of the 34 N-S burials, seven were extended supine, ten were crouched left, five crouched right, three flexed left, two flexed right, one ‘other’ (part flexed, part extended), two extended prone and one flexed prone, and three are of unknown position. The only NNE-SSW inhumation was buried crouched, but unsided. Broadly N-S burials, representing 37.5% of inhumations of known alignment (34.5/92), are therefore 62.3% crouched/flexed (21.5/34.5). It is of note that of the sided crouched/flexed individuals placed N-S, 13 are on their left side, only seven on their right.

Owing to the large number of N-S inhumations compared to the smaller frequency of E-W and W-E aligned burials, it seems very likely that those oriented NW-SE, and NE-SW were buried with the intention of being oriented broadly north-south, rather than anything else, as with the EIA.

The NE-SW and NW-SE aligned inhumations showed slightly more variety in body positioning though. Of the 23, four had unknown positions, two were extended supine (both NE-SW), two were flexed supine, one crouched left (NE-SW), four crouched right (all NW-SE), 2.5 crouched but unsided (NNE, two NW-SE), one prone (NW-SE), two prone flexed, one flexed right (NE-SW), and three ‘other’ (NE-SW), plus an ENE-WSW aligned individual, placed flexed left.

If these are added to the N-S aligned total, then individuals aligned with the head broadly northerly, and feet broadly southerly total 57.5/92 (62.5%), over half of which are crouched/flexed. However, these numbers are heavily influenced by the EKA2 burials – 15 of 57.5 are from EKA sites, making a regional trend likely (especially as 21.5 total are from Kent), though 10 are also from Lincolnshire, four from Essex, one from Norfolk, 15 from Cambridgeshire, three from Hertfordshire, and three from Bedfordshire. Broadly N-S inhumation in the MIA, does appear to be widespread, and while the majority are crouched and flexed inhumations, they are not exclusively so.

5.7. Facing direction

Only 63 MIA inhumations had a recorded facing direction. Similarly to the EIA examples, just over 1/4 (28.6%, 18/63) are facing east. Ten faced west (15.9%), six faced NW, six SW and four North. Six faced south, but of these one (ID 427) was part of a double burial and seems to have been placed so they faced the other grave occupant, rather than with regard to any wider cosmological alignment (Rady, 2010:Pl.25). The numbers here may be too small to identify any real patterns, but the lack of broadly north facing individuals is consistent with the large proportion of broadly N-S aligned inhumations.

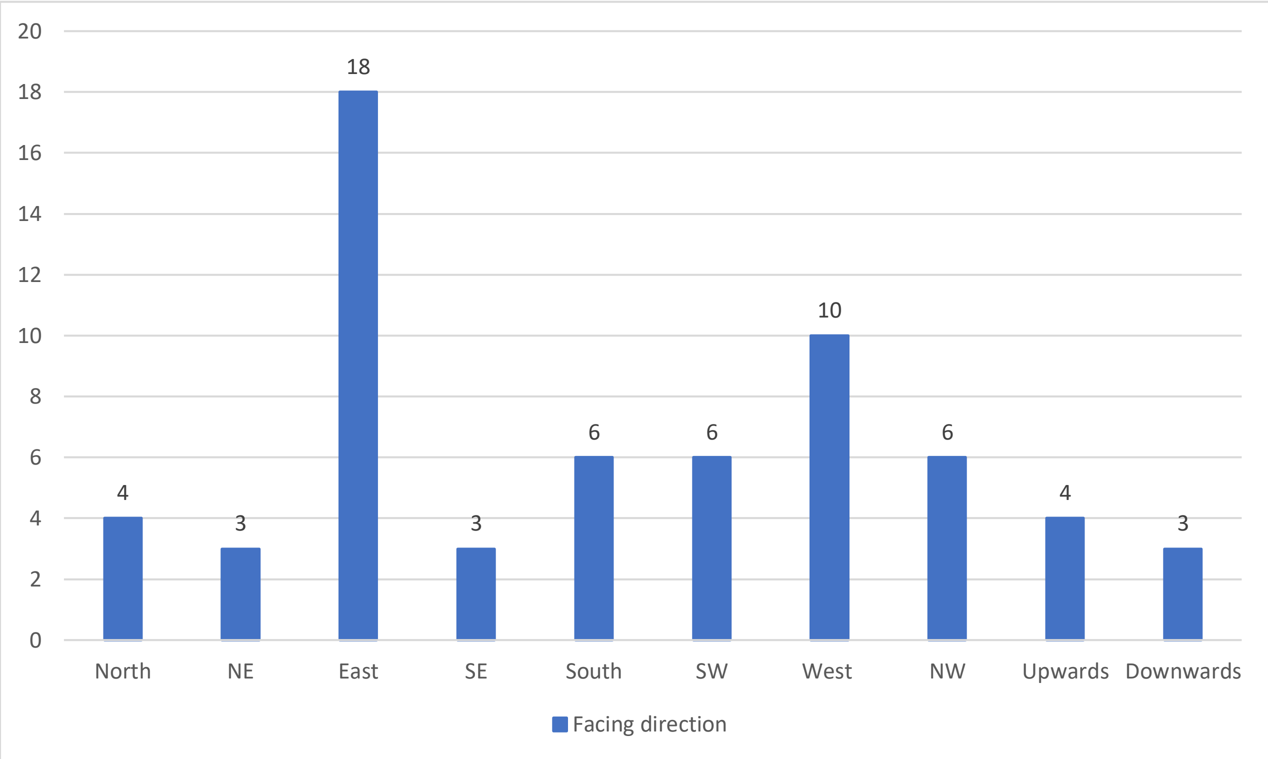


Figure 5.15: Bar chart showing the facing direction of the head of all MIA inhumations. Source: Author.

5.8. Burial accompaniments

Associated material	Frequency
Animal bone	1
Pottery	4
Personal ornaments	6
Multiple associated goods	12
Domestic waste in fills outside the immediate skeletal surroundings	23
Other	3
None	59
No data	10

Table 5.6: The frequency of associated goods/material with MIA inhumations. Source: Author.

No data regarding burial accompaniments could be found for ten individuals. For IDs 8 (Broom, Beds.), 119 (Marshall 'Wing', Cambs), 145 (Trumpington Park and Ride, Cambs.) and 435 (War Ditches, Cambs.) it is likely that they were unaccompanied, but this cannot be confirmed. For IDs 425-30 (Thanet Earth, Kent) the lack of data is due to the incomplete nature of the investigation. Proportional calculations for this section concern only the 108 remaining MIA inhumations.

Fifty-nine of 108 MIA inhumations were unaccompanied (54.6%). Of these, 26 were from Kent, 12 from Cambridgeshire, nine from Lincolnshire, and four each from Essex, Bedfordshire, and Hertfordshire. Twenty-six were buried in or near settlement areas, 22 were within cemeteries, two were 'isolated'[12] and six were from mortuary landscapes. Unaccompanied inhumations are common, widespread and seem unrestricted to site type.

5.8.1. Animal bone

ID 242 (Cliffs End, Kent) was placed over the partial remains of a horse (torso, parts of the right limbs) (Leivers and McKinley, 2014:61). The horse was on the same side and orientation as the human (*ibid*, 61). This is the only inhumation from the MIA that was buried with only animal bone, though this deposit likely represents something very different to burials containing disarticulated meat-yield bones. Others in the region were placed with complete or partial animals, and are discussed together (Discussion 9.6.3).

5.8.2. Pottery

Three individuals from Cambridgeshire and one from Kent were placed only with pottery. ID 61 (Cambourne New Settlement) and ID 259 (EKA Zone 13, Kent) were both accompanied by small sherds of unspecified pottery – in each case it is possible that these were accidental inclusions. ID 84 (Dimmock's Cote Quarry) had a complete vessel placed close to the face (Gilmour, 2014:29), while ID 76 (Clay Farm) had most of a jar, also next to the head (Phillips and Mortimer, 2012:29). ID 117 (Marshall 'Wing') could also be included here, as a complete pot was placed by the right side of the body, however other material was recovered from different fills (possibly unrelated to the burial), and there may be a related feasting deposit with this individual (Evans et al., 2016a:429).

[12] Though one is ID 291, found close to the settlement at Pepper Hill.

5.8.3. Personal ornaments

Personal ornaments were the sole grave accompaniment in six cases. ID 395 (The Bridles, Lincs.) and ID 322 (Mill Hill, Kent) were both placed with La Tène brooches, the former broken in two (Start, 2002:10), the latter of an involuted type, dating the burial to the mid-2nd century BC (Parfitt, 1995:26). ID 154 (Wandlebury, Cambs.) was placed with a bronze needle, in this case interpreted as having been used to tie a sack containing the body (Hartley, 1957:15). ID 257 (EKA Zone 12, Kent) had a complete iron bangle on their left wrist.

Animal bone toggles/amulets were found with both ID 126 (Rectory Road, Cambs.) and ID 266 (EKA2 Zone 19, Kent). With ID 126 was a toggle made from a sheep metapodial, plus two perforated cattle rib fragments (and a single IA pot sherd in the fill), (Burrow and Mudd, 2010:65-7), while with ID 266 was a polished and pierced cattle carpal, plus ‘domestic refuse’ in the other fills – pottery, worked and burnt flint, animal bone and fired clay (Andrews et al., 2015:169). These are included here as the worked animal bone objects are the only ones directly associated with the dead.

5.8.4. Multiple associated goods

Twelve individuals from 11 sites were accompanied by more than one category of objects. Unlike with the EIA assemblage, multiple personal ornaments were rare. The variety and number of grave goods in general was smaller than in the EIA, perhaps related to the changing depositional contexts (fewer storage pits).

ID 123 (Newnham Croft, Cambs.) contained only metal artefacts (or, more likely, these are all that survived, or all that were recorded). Three bronze fibulae brooches with white enamelling, a decorated bronze bracelet (or armlet) and probable harness fittings were found with the skeleton (Fox, 1923:81; Pope and Ralston. 2011:400). At least one brooch dates to the La Tène II period (250-150 BC) (Fox, 1923:81). This represents the largest assemblage of metalwork in any of the MIA inhumations, and one of the ‘richest’ in the entire dataset. This individual could be included with the personal ornament burials, but the number and quality of the goods, plus the harness fittings sets them apart.

ID 261 (EKA2 Zone 13, Kent) contained perhaps the most deliberately deposited material. A bi-conical vessel was placed inverted in front of the torso, the rim absent and the area where the break occurred ground smooth prior to deposition (Andrews et al., 2015:165). Beneath this was a shale armlet. Also found were two triconique form fired clay spindlewhorls, a fragment of another, smaller armlet, and an iron rod or shank (*ibid*, 165). ID 404 (Sedgeford, Norfolk) was also found with a large variety of material. The head was placed on two large flint 'pillow stones', and another flint nodule was also associated (McKinnon and Hatton, 2011:30). A cow scapula with butchery cuts, the base of a vessel and between one and six amber beads were also around the body, plus eight IA pot sherds in the grave fill (*ibid*, 30-2). The inclusion of stones also occurs at Harston Mill, Cambs. (ID 100), where three pot sherds and a 'cache of imported pebbles' were placed in the grave (O'Brien, 2016:37).

The only MIA weapon burial was ID 405 from Shouldham, Norfolk. An anthropoid sword was laid across the chest, and two other silver objects were recovered – both tentatively described as a ring and a box (Clarke and Hawkes, 1955:198; Norfolk HER MNF4256). A copper alloy ring was included with ID 272 (EKA2 Zone 7-8, Kent), behind the left tibia, and an iron object, possibly a nail, was found by the left arm also (Andrews et al., 2015:141)

Two more contained jars, like IDs 76 and 84 (above). ID 108 (Harston Mill, Cambs.), a perinate, was found partially within a complete MIA burnished jar, and was also associated with sheep, frog/toad and mouse bones (O'Brien, 2016:39). ID 270 (EKA2 Zone 6, Kent) had an MIA jar over their legs, as well as a horse skull (Andrews et al., 2015:30). The frog/toad and mouse bones could easily be accidental inclusions, either by burrowing, or through the animals falling into the open pit. The horse skull though is clearly deliberate, and somewhat echoes the horse remains found with ID 242 (5.8.1.) and others (Discussion 9.6.3). ID 424 (Blackhorse Road, Herts.) was also placed with horse remains, this time a mandible, along with a flint blade placed below the skeleton (Moss-Eccardt, 1988:65). This burial also contained 'domestic waste' deposits in other fills.

ID 85 (Duxford, Cambs.) contained a cattle calcaneum, which could be viewed similarly to the toggles/amulets in ID 126 and 266 (5.8.3.), though perforation is not recorded, and it would be a significantly larger bone than the others (except the ribs). It could also have been part of a symbolic food offering (Morris, 2012:17). ID 85 also contained one iron nail near the right thigh, and a clay and charcoal deposit around the ankles interpreted as a funerary hearth (Lyons, 2011:17). There is no mention of this affecting the bones. Burnt material has been found in backfill deposits for other burials (e.g. 20,351), but this is the only one with a hearth either placed over the legs or dumped directly on top of the body (except perhaps ID 403 (Grime's Graves, Norfolk) – Mercer, 1981:16).

ID 139 (Trumpington Park and Ride, Cambs.) was one of five MIA individuals to have additional human remains associated with the skeleton. The right ilium of a neonate, as well as pottery fragments, a bone awl and animal bone, including a complete horse mandible (Hinman, 2004:28) were included here. ID 139 was itself a neonate. It is possible in this instance that all the associated material, and perhaps ID 139 itself represent the deposition of midden material (Discussion). ID 138, another neonate from the same site, was treated similarly – buried in a pit with one fill, which also contained 6th-1st century BC pottery, a bone awl, a fragment of a bone needle and a large quantity of animal bone (*ibid*, 28). Again this fits the pattern of 'domestic waste' rather than grave goods, but the material was found with the skeleton.

5.8.5. Material in other fills

Material found in other fills not directly associated with the body, was identified in 23 cases[13]. Pottery featured in at least 17 of these, ranging from sparse, small sherds (e.g. IDs 348, 378) to larger quantities (e.g. ID 153 (Wandlebury, Cambs.) – containing 1.6kg of pottery and animal bone). Animal bone was similarly common, found in at least 16 cases, and included sheep/goat, cattle, horse, vole, several types of birds, frog/toad, pig and hare. Animal bone and pottery were found together in at least 13 instances. Spindlewhorls were found in two cases (IDs 301-2, HS1–WHS, Kent), as were iron nails (IDs 247 (EKA2 Zone 12, Kent), 302). ID 302 also contained loomweight fragments, among other finds. ID 1 (A421, Beds.) contained an iron latch lifter (Webley, 2007:62). Personal ornaments also, were identified in three cases. Around 10% of an unfinished shale armring was recovered from the fill of ID 256 (EKA2 Zone 12, Kent), and two penannular brooches in ID 153 (Wandlebury, Cambs.) alongside the pottery and bone. ID 260 (EKA2 Zone 13) had five fills which included a bone toggle, possibly made from a dog tooth (similar to IDs 126 and 266) and a copper alloy ring or fitting fragment (similar to ID 272 and perhaps EIA burial ID 110). Overall though, 'domestic waste' makes up the majority of the finds, and much could be explained away as residual material, midden deposits or backfill inclusions. ID 169 (Aldwick Field, Herts.) was a neonate placed in the middle of a storage pit, with the other fills containing 'the usual selection of rubbish' as well as a rotary quern (Cra'ster, 1961:33). It is highly probable that this means pottery and animal bone at the very least, but it cannot be assumed. Of the 23 burials in this category, 14 are from storage pits, with two others from other pit contexts also.

[13] Though 'domestic waste' was also found with IDs 266 and 424 above.

Three of the 23 inhumations contained more complex deposits. All are storage pit burials from Cambridgeshire and are three of the five MIA inhumations to contain additional human remains. ID 104 (Harston Mill, Cambs.) contained a child inhumation, with the cranium, mandible and long bones of a goat near the head, and crushed pottery fragments near the skeleton. More animal bone was found in the other fills, totalling 716 sheep/goat bones (MNI=15), plus pig, cattle, water vole and frog/toad (O'Brien, 2016:30). A partial infant skeleton (*c.* 9 months old) was also found higher up in the pit (See Chapter 7). Though this individual had bone and pottery directly associated, they are included here as the whole depositional sequence seems connected beyond the immediate body surroundings. While the vole and frog/toad bones can again be explained as accidental inclusion or burrowing, the goat bone is clearly deliberate and entirely unique in the dataset. ID 102, also from Harston Mill, included a cattle skull, water vole bones and pottery in the basal fill below the skeleton, as well as three partial child skeletons and three other disarticulated human bones in later fills (See chapters 7 and 8) (*ibid*, 37). Finally, ID 95 (Duxford, Cambs.), a perinate, was laid on top of fills including ash, animal bone, organics and hearth debris, and was covered by a complex sequence of further deposits (Lyons, 2011:18). MIA pottery, hare, mouse, vole and toad/frog bones followed, then cattle, sheep/goat, horse and more vole bones (at least 21 water voles in one fill alone) (*ibid*, 18). A horse skull, bird bones and LIA pottery followed this, then a complete stallion (*ibid*, 18). The final fill contained more animal bone, MIA pottery and human finger bones (*ibid*, 18). The horse was stratigraphically in the middle of the pit, and dated *c.* 370 cal BC to cal AD 10 (*ibid*, 18).

The fill of ID 1 (A421, Beds., ditch burial) is interpreted as midden material, but it also contained three deposits of human skull fragments, from three different individuals (Fig.5.10) (Webley, 2007:19). These were spaced fairly evenly, with one 3m north of the skeleton, one 3.3m south of it, and one 2.8m south of this (6.1m from the skeleton) (*ibid*, 19). Though not in association with the skeleton, they are in a contemporary ditch fill and appear deliberately placed. One skull fragment may have been curated, as it presented a C14 date much older than the articulated skeleton (*ibid*, 19) (Chapter 8).

5.8.6. Other

Three final inhumation burials did not fit any major category:

ID 227 (Wilbury Hill, Herts.) was accompanied by 'half a dozen casually worked flints' and nothing else – though no more detail is given, and it is likely that these are residual (Applebaum, 1949:45).

ID 372 (Waterstone Park, Kent) was a sub-rectangular grave burial containing many types of stones. A quartzitic sandstone pebble, water worn and used as either a pounder or rubbing stone, was found with the skeleton, and had signs of use-wear (Haslam, 2005:29-30). In the backfill were flints, as well as a large quantity of pebbles and stones, up to 1kg each. Some were black tertiary pebbles, some were orange flints, and some were flint that had been burnt until it turned red (*ibid*, 29-30). While other MIA burials included stones, flint and stone objects, this is the only burial containing what appears to be a deliberately chosen stone capping, which would have been quite colourful and distinctive during backfilling of the grave (Discussion 9.6.4).

ID 117 (Marshall 'Wing', Cambs.) had a complete pot placed by the right side of the body, between the pelvis and the ribs. In fills below the body were animal bone, pottery and burnt clay/daub – likely domestic waste, and possibly unrelated to the burial, as they preceded it. However, in an adjacent and near identical pit was a large deposit of animal bone which may represent a feasting deposit, as part of the funerary rites. It is possible the two pits are unrelated, but their size, shape and relationship to one another suggests otherwise. The unusual symmetry of the human and animal bone is also tempting to consider but may be coincidental (Fig. 5.16).

Figure 5.16: ID 117 from Marshall 'Wing', Cambridgeshire (F.226), and the ajacent, almost mirrored animal bone deposit in F.172. Source: Tabor, 2019:Figure 11.

5.9. Age

Fig. 5.17 shows the number of MIA inhumed individuals attributable to different age categories. Where individuals were given age attributions straddling two age brackets (e.g. young–middle adult), they were divided equally between the two (see section 4.10).

There is only one individual of 'unknown' age (ID 426, Thanet Earth, Kent), and those recorded as 'adult' do not drastically affect the data. Once again individuals under three years old are under-represented, making up 11.9% (14/117) of the total, slightly more than in the EIA (7/60, 11.7%), but they are more widespread. There are larger numbers of children in the MIA also, and overall the distribution in Fig.5.17 appears demographically normal, with the majority of individuals (24.8%, 29/117) dying between the age of 35 and 50.

There were actually no MIA individuals attributable to the 'older adult' age category (50+) – however ID 383 had an age estimation of 45-60+, and suffered extensive antemortem tooth loss as well as osteoarthritis and other age-related pathologies (Kitch, 2006:143), so while technically 'middle–older' adult, it seems more likely they were closer to 50+, and have been categorised as an older adult here. Fifteen other individuals were also of 'middle–older' adult age, nine of which were at least 45 years old, again closer to 'older adult' than anything else, but all were divided equally between 'middle' and 'older in Fig. 5.17, making the 8.5 'older adults' in the chart (15/2 + ID 383 = 8.5).

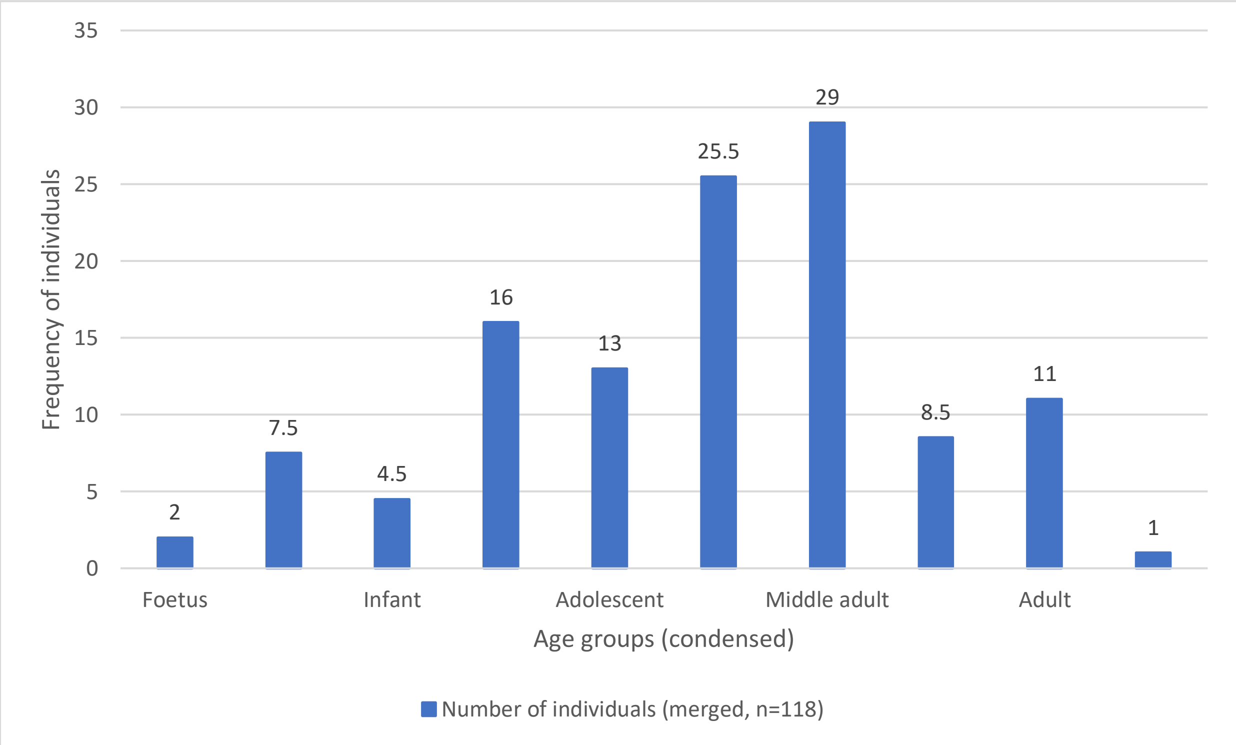


Figure 5.17: Age-at-death distribution for MIA inhumations. Source: Author.

5.9.1. Age and burial context

As with the EIA material, few clear relationships between age and burial context could be identified. For children, young adults and middle-older adults, sub-rectangular grave burial was most common, but for all age categories the burial contexts were varied. For those under three years old with known contexts, 69.2% (9/13) were in pits, mostly storage pits. The remaining four were in graves cut into ditches (IDs 162-3, Mucking, Essex), in a pit cut into a house (ID 53, Black Horse Farm, Cambs.), and in one irregular grave (ID 250, EKA2 Zone 12, Kent). Not one individual below child age was placed in a 'formal' grave. Of the 14 individuals with burial contexts in the 'other' category, 10 were under 20 years old (sub-adult). However, they are varied and the inhumations themselves have little in common. The first Hertfordshire inhumations appear in the MIA, so it is notable that of the seven identified (three sites), four are children and one a neonate – ¼ of the total children in the MIA come from this area, despite much larger inhumation populations elsewhere.

5.9.2. Age and grave goods

Patterns were only sought for individuals with multiple goods, individuals with material outside the body area, and unaccompanied inhumations, as these were the only three categories for the MIA with reasonably large numbers (i.e. at least 10). Two neonates, one perinate and two children (IDs 138-9 (Trumpington P&R, Cambs.),108 (Harston Mill), 270 (EKA2 Zone 6, Kent) and 424 (Blackhorse Road, Herts.) respectively) were buried with multiple grave goods. In the case of the perinate, all but a jar may be intrusive, for both the neonates every item may be part of a 'domestic waste' deposit, and the pit in which the child ID 424 was placed also contained domestic waste, the finds of a flint blade and horse mandible possibly not grave goods . Definitively associated goods were only identifiable for three-pre-adolescents. ID 108, ID 154 (Wandlebury, Cambs.), a *c.* six-year-old child with a bronze needle, possibly a shroud/bag fastener, and ID 270, a 7–9-year-old child with a jar and horse skull placed over the legs. Domestic waste deposits were common with pre-adolescents (at least eight individuals), and two of the most complex pit sequences (IDs 95 (Duxford, Cambs.) and 104 (Harston Mill, Cambs.)), contained a perinate and a child, both also containing multiple animal remains and additional human remains also. Middle adults still make up the majority in the burials with material outside the body area (five individuals, plus two middle-older and two young-middle adults), but this is the most common age category.

Unaccompanied inhumations seem widely distributed among age groups, all are represented, including nine children (56.3%, 9/16), nine adolescents, 10 young adults, five young–middle adults, eight middle adults and seven middle–older adults.

5.9.3. Age and sex

	??F	?F	F	??M	?M	M
Adolescent	0	2	0	2	2	1
Adol - YA	0	0	2	1	0	1
Young adult	1	0	8	0	0	9
YA - MA	0	3	1	1	2	3
Middle adult	0	0	6	1	1	8
MA - OA	0	0	5	0	0	7
Older adult	0	0	0	0	0	1
'Adult'	0	0	1	0	1	0
Total	1	5	22	5	6	30

Table 5.7: Age and sex comparisons for MIA inhumations. Source: Author.

Table 5.7 shows the number of males and females attributable to different ages, this time using the full range of categories. Unlike the EIA material, males outnumber females in nearly every age category. There are two probable female adolescents (6.9%, 2/29), but five males/?males/??males (12.2%, 5/41). There are almost twice as many middle adult males as females (but they represent 24.4% and 20.7% respectively). While young adults are evenly split (nine females, nine males), proportionally this represents a greater percentage of females dying between 20 and 35 years old (31% and 22% respectively). None of these age/sex divisions are statistically significant.

Adolescent = χ^2=0.53, df=1, *p*=.46660686

Young adult = χ^2=0.293, df=1, *p*=.588304444

Middle adult = χ^2=0.132, df=1, *p*=.71636732

5.10. Sex

??Female	?Female	Female	??Male	?Male	Male	Unsexed
1	5	23	5	6	30	17

Table 5.8: Biological sex estimations for MIA inhumations. Source: Author.

For the MIA, 87 individuals were of known age and over *c.*12 years old (adolescent or older). Of these, 70 (80.5%) could be assigned to a sex. This is a dramatic increase from the EIA material, even considering that 17 of 70 are either 'probables' or 'possibles'. Twenty-nine of 70 (41.4%) are either female, probably female or possibly female, while 41/70 (58.5%) are either male, probably male or possibly male. In the EIA females were slightly more common, while the reverse is true here, with a near 60/40 male/female split for the MIA. Again though the number of individuals is still small. Of the 17 unsexed individuals over *c*.12 years old, three were adolescents in a good state of preservation (IDs 231-2 (A2 Pepperhill, Kent), 262 (EKA2 Zone 13) but too young to be accurately sexed. ID 405 (Shouldham, Norfolk) was excavated in 1944 and unsexed. Ten were all adults in poor states of preservation and the final three are yet to be analysed by their excavators.

5.10.1. Sex and burial context

There appear to be no real sex-based differences in the burial contexts for MIA males and females. Eleven females were recovered from pits (37.9%, 11/29) (seven storage pits, three grave pits, one unspecified) and twelve males (30%, 12/40[14]) (nine storage pits, two grave pits, one unknown pit). While proportionally, more females were recovered from pit contexts, it is not statistically significant (χ^2=0.476, df=1, *p*=.49023976).

Four females were buried in sub-rectangular graves compared to nine males. If all grave burials are considered together (sub-rectangular, ovoid, irregular and unspecified), then there are 11 females (37.9%, 11/29) and 18 males (45%, 18/40). (χ^2=0.345, df=1, *p*=.55695725)

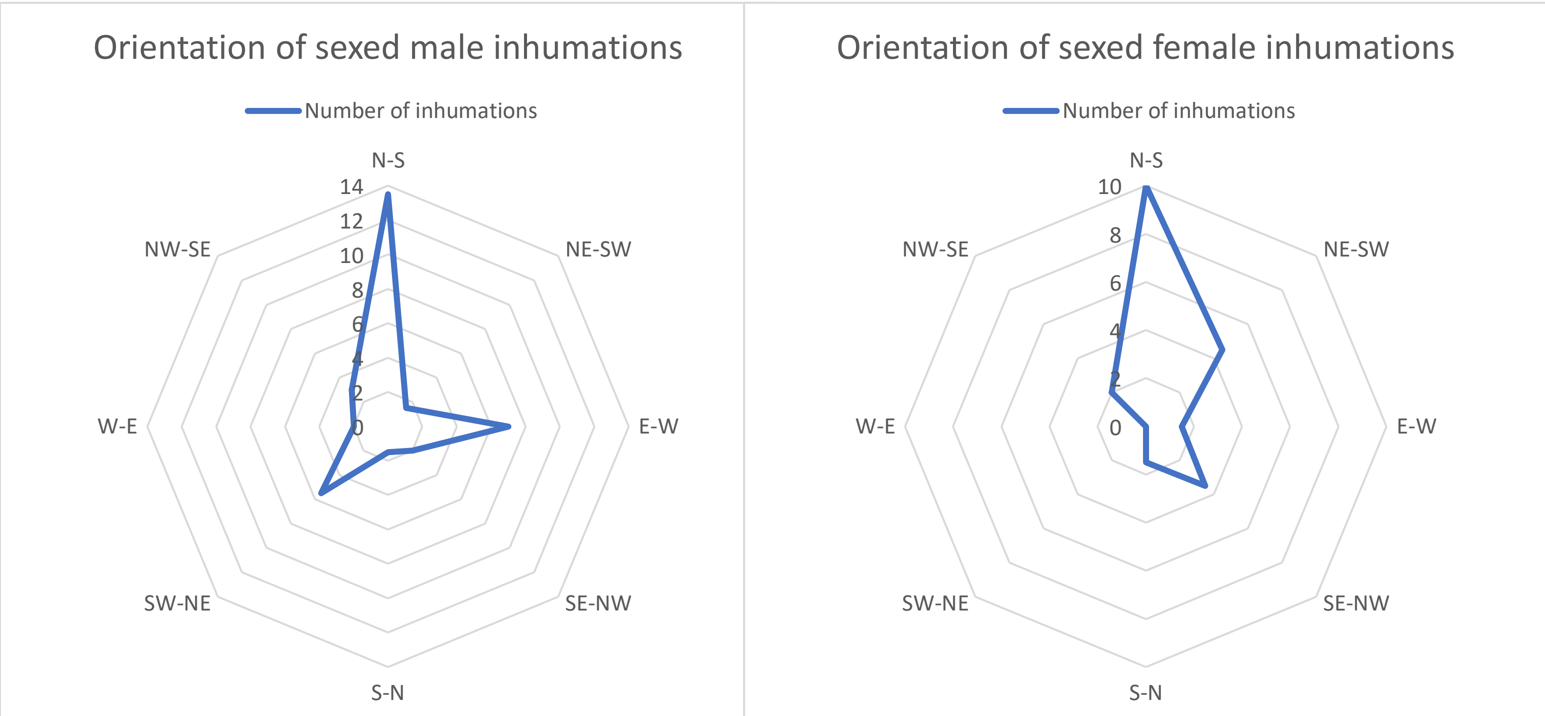
5.10.2. Sex and position/orientation

Crouched/flexed burial seems to have no significant sex-based division, though there are differences – eight females (30.8%, 8/26)[15] and 10/39 males (25.6%) were crouched or flexed left, but seven females (26.9%, 7/26) and only five males (12.8%, 5/39) were crouched or flexed right. Three males were crouched with the side unspecified. Crouched/flexed right side inhumations are less common in the data than left side (18 and 23 respectively), so it is surprising that more females were identified on their right side than males, considering that fewer females were found overall, but these numbers are small.

[14] ID 378 (?male) had no recorded context
[15] Three females and two males had no recorded burial position.

The only more noticeable sex-based division is with extended supine inhumation. Ten males and only three females were buried in this position (25.6% of males, 11.5% of females (3/26). This was, however, not statistically significant (χ^2=1.939, df=1, p=.16377715). The numbers of sexed adults placed in other positions were also too small to be of significance.

A total of 59 sexed MIA adults had recorded orientations (23 females, 36 males) (Figs. 5.18-19). For both males and females, N-S orientation dominates (43.4% of females (10/23), 37.5% of males (13.5/36)). Overall there appears to be no sex-based patterns with regard to burial orientation. The only difference appears to be that 5.5 males and zero females were oriented SW-NE, but again the numbers are small.



Figures 5.18 (left) and 5.19 (right): Radar charts showing the orientations of male and female MIA inhumations, with a prevalence for N-S burial in each case. As with other orientation charts, the orientation was recorded to the nearest of eight compass points. Source: Author.

5.10.3. Sex and grave goods

Thirty-two sexed adults were buried with grave accompaniments, 16 females and 16 males. Two females (IDs 100 (Harston Mill, Cambs.), 404 (Sedgeford, Norfolk) and three males (IDs 85 (Duxford, Cambs.), 123 (Newnham Croft, Cambs.), 261 (EKA2, Zone 13)) were buried with multiple goods. All of these are discussed in detail above (5.8). Even with these, for IDs 100 and 85, the status of the associated material as ‘grave goods’ is questionable.

Complete/near complete pottery vessels were found directly associated with two males (IDs 168 (A505 Baldock Bypass, Herts.), 261) and two females, (IDs 84 (Dimmock's Cote, Cambs.), 404) though many others had pottery sherds included in the fills.

Four females and six males had associated personal ornaments, either as the only accompaniments, or as part of a larger assemblage. Two males (IDs 123, 322 (Mill Hill, Kent)) and two females (IDs 153 (Wandlebury, Cambs.), 395 (The Bridles, Lincs.)) had brooches, though for ID 153 the single brooch was broken in two, and for ID 395, two were recovered from the backfill, not directly associated. Armlets or bracelets were found with three males (IDs 123, 256, 261) and one female (ID 257), though again, for ID 256 (male), only *c.*10% of an unfinished shale armlet was found, in the grave fill. IDs 256, 257 and 261 all come from EKA2 sites (Zones 12 and 13), both the male armlets were shale, the single female (257) had an iron armlet on her left humerus. ID 123 (Newnham Croft, Cambs.) had what was described as a bronze bracelet, but its location within the grave is unknown. Perforated objects (amulets, toggles, beads) were found with two males (IDs 126 (Rectory Road, Cambs.), 266 (EKA 2 Zone 19, Kent) and one female (404, Sedgeford, Norfolk). All were directly associated. Both males had perforated animal bone objects – a sheep metapodium and two cattle ribs, and a cattle carpal respectively, while the female had amber beads (possibly six in total). It is interesting to think that there may be materials specifically associated with certain individuals, the shale and bone only with male burials, but the data is too small to make such assumptions.

Ten females and six males had material in fills outside the immediate skeleton surroundings. This is the only sex-based division of statistical significance (χ^2=3.9277, df=1, p=.047496). Of these, eight females and four males had 'domestic waste' deposits in the fills, and all but two were in pits (IDs 1 (A421, Beds.) and 82 (Colne Fen, Cambs.)). The preferential deposition of females in contexts where the body is covered with material including quantities of pottery, animal bone, loomweights, and sometimes human remains, is statistically significant for the MIA data (χ^2=3.9088, df=1, p=.048033). The remaining individuals (two male, two female) with material outside the skeletal surroundings were those with very small, possibly residual or accidental inclusions.

This practice may not be widespread across the region though – five of these eight females are from storage pits at Harston Mill, Cambs. (IDs 101, 102, 105, 109, 111), all the females were from Cambridgeshire sites, with one male also (ID 122, Marshall 'Wing'), the others from neighbouring Bedfordshire (IDs 1 (A421) and 9 (Broom)) and one from Kent (ID 301 (HS1-WHS). Three of the Harston Mill females (IDs 101, 102, 109) also have some evidence of post-mortem manipulation (see Discussion and Chapter 7).

5.11. Conclusions

The region under study produced 118 Middle Iron Age inhumation burials, just over a quarter of the total for the dataset (27.8%, 118/425), despite covering a *c.*300-year period[16]. As with the Early Iron Age individuals, the greatest clusters of inhumations were in western Kent (Thanet) and much of Cambridgeshire[17], while large areas of Norfolk and Suffolk appear totally empty. It seems highly likely that this is an unfortunate result of acidic soils on bone, rather than a real absence of the dead (Appendix 4).

Settlement burial is still the majority for the region in the MIA, representing over half of the total if those placed on the 'periphery' of settlements are included too. However, grave burial surpassed pit burial as the most common depositional context – a notable shift considering settlement burial still made up the majority. Grave burial became more widespread in the MIA, but especially so in Kent, with pit inhumations still frequent in the central Cambridgeshire-based cluster of inhumations. The dead were still predominately crouched or flexed but, in line with an increase in grave burial, more of the dead were placed in extended, largely supine positions. As with the EIA, an overwhelming majority regardless of geographical region or burial context, were placed in a broadly North-South alignment.

The majority were also buried without any accompaniments (grave goods) directly associated. Those burials that did have associated goods often contained a small number of objects – single pottery vessels or personal ornaments – with only two that could be considered 'rich' – ID 123 (Newnham Croft) and ID 405 (Shouldham), both excavated over 75 years ago and sadly lacking in detail. There were, however, several individuals inhumed as part of large, complex pit assemblages, involving additional human remains and unusually large and varied animal bone deposits (e.g. IDs 102, 104, 95 – Harston Mill and Duxford, Cambs.).

Inhumation burial in the Middle Iron Age seems to have been afforded to males and females of all ages – the sample data had a broadly normal age distribution, while those under three years old were under-represented, but not absent. Sub-adults were, however, less likely to be found in 'formal' grave contexts. Males outweighed females in the data, but not significantly so and they were afforded the same treatment in most cases. There was however a geographically restricted, but statistically significant prevalence for females as part of complex storage pit fill sequences.

[16] The cemetery at Thanet Earth will put the MIA total closer to 142, providing all 24 are MIA
[17] As well as parts of adjacent Bedfordshire and Hertfordshire.

6. Results 3 - Late Iron Age – Conquest Period

Of the 425 individuals subject to detailed analysis, 223 have been dated from the Late Iron Age to the Conquest Period (*c.*100 BC to AD 60) – meaning that over half of all the inhumation data for this region originates from only *c.*150 years of the Iron Age. Several individuals were given broad date ranges by their excavators (MIA-LIA or LIA-RB). These have been examined individually, and those that have been included in this period section are discussed below (6.2). As with the preceding chapters, this chapter concerns the wider chronological, geographical and site data for LIA inhumations, as well as patterns in burial context, position, orientation, burial accompaniments, and how these relate to basic demographic data (age and sex).

6.1. Geographic distribution of sites and burials

	Lincs.	Beds.	Cambs.	Herts.	Norfolk	Suffolk	Essex	Kent	Total
Sites	5	5	14	13 (9)	0	5	2	11 (10)	55 (50)
Individuals	13	14	58	61	0	10	2	65	223
Avg. individuals per site	2.6	2.8	4.1	4.7 (6.8)	0	2.3	1	5.9 (6.5)	2.9 (3.3)

Table 6.1: Distribution of sites and inhumations by modern county. Source: Author.

Similarly to the EIA and MIA, Cambridgeshire and Kent contained the most sites and most individuals (respectively). In the LIA though, the number of sites and individuals from Hertfordshire expanded dramatically, from only seven in the MIA. Fig. 6.1 shows every site within the study region containing LIA inhumation burials. As with the preceding periods, there is a large cluster of sites around the Cambridge area, and a smaller one in eastern Kent. This is less pronounced though, as the number of sites and inhumations is larger, and they are more widespread than before, covering much of Kent, as well as large portions of Cambridgeshire, Hertfordshire and Bedfordshire.

While Cambridgeshire and Hertfordshire had almost identical numbers of individuals and sites (Table 6.1), several of the Hertfordshire cemeteries could reasonably be conglomerated – bringing the total site areas in Hertfordshire from 13 to nine. This is due to V.LIA – Conquest period Baldock, where multiple excavations over many years unearthed several cemetery areas, all broadly contemporary and in very close proximity. The Hill Cottage, Icknield Way Roadside, Stane Street, Walls Field and California/Sale Drive sites are all within a few metres of one another, outside the contemporary settlement. While they are of variable character, their proximity and contemporaneity cannot be overlooked.

The number of sites in Kent is also broadly similar, though the number of identified LIA inhumations is higher (Table 6.1). Large cemetery sites in Kent (Mill Hill, Tothill Street) form a sizeable portion of the burials in this county. The excavations at EKA2 Zone 4 crossed over the exact area of the earlier Weatherlees-Margate-Broadstairs pipeline investigations, around Ebbsfleet Lane and the Weatherlees Water Treatment Works. Both excavations uncovered LIA settlement features and inhumations, and as such they are considered to be one site here.

For Lincolnshire and Bedfordshire the number of sites and individuals is also almost identical. No LIA inhumations were identified from Norfolk, but small numbers were present in Suffolk. Essex, once again, is very limited.

Larger numbers of individuals within each site become more common in the LIA, with the majority of sites producing at least two inhumations. Five sites all contained 10 or more individuals, all from cemetery contexts. The various Baldock sites could be included here too, as in total 15 inhumations were found, though one was seemingly isolated (ID 224, Walls Field). If Baldock is included, three of these larger sites are in Hertfordshire (Baldock, Lee Valley Pipeline (10) and King Harry Lane (17), with two more in Kent - Tothill Street (12) and Mill Hill (39)[18]. Only one site in Cambridgeshire had 10+ individuals – the Addenbrooke's Hutchinson site, though it is considerably larger than most, with 22 inhumations. The cemetery at Mill Hill represents the largest single assemblage in the entire region, for the whole of the Iron Age.

[18] Highsted (Appendix 3) could also be included here, but it is uncertain how many, if any of the inhumations date to before the conquest.

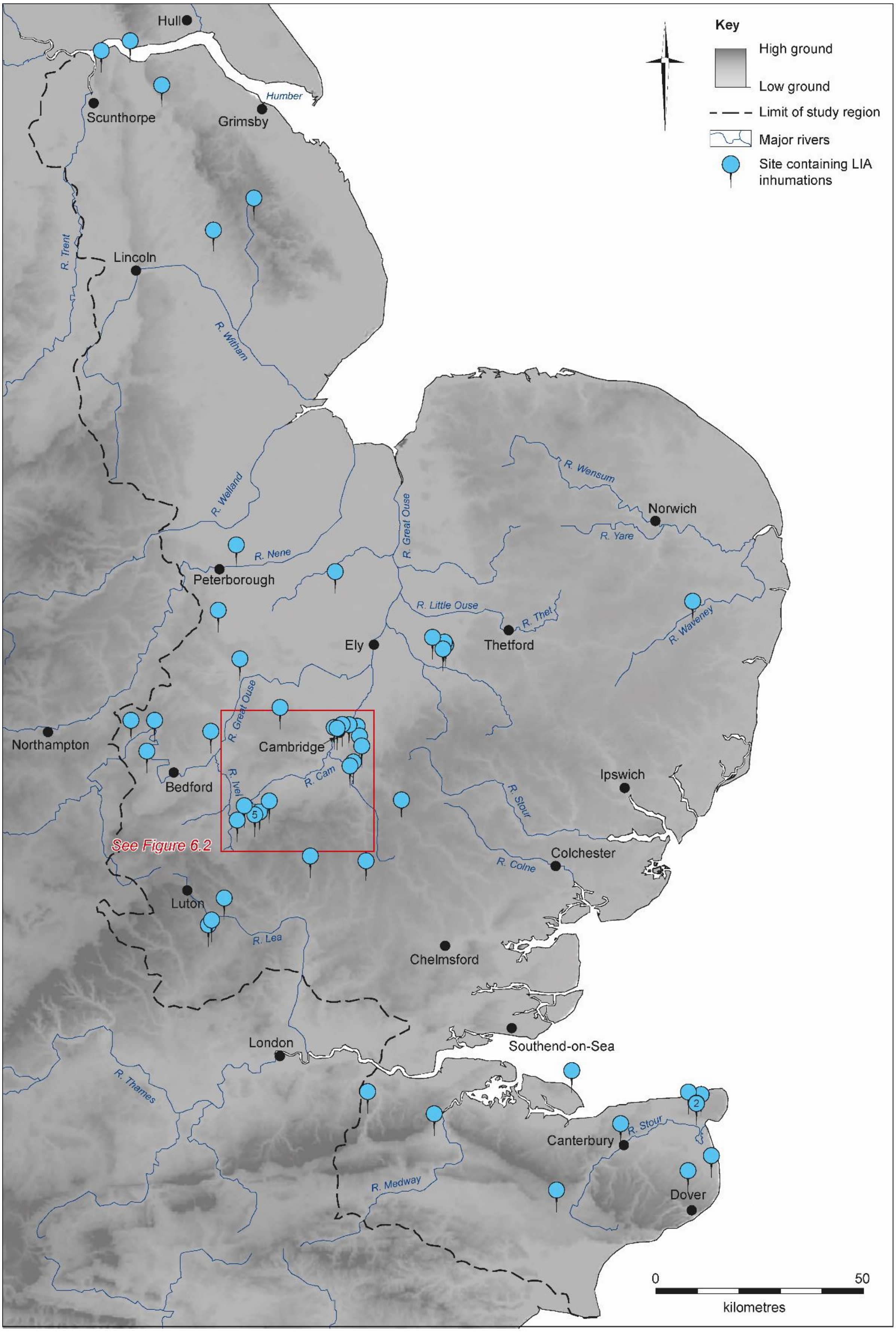


Figure 6.1: Map of all LIA inhumations, with clusters in Cambridge, Hertfordshire and Kent. As with previous periods, the rivers play a major role in site locations, though not exclusively, as cemeteries become more common. Source: Laura Hogg and Author.

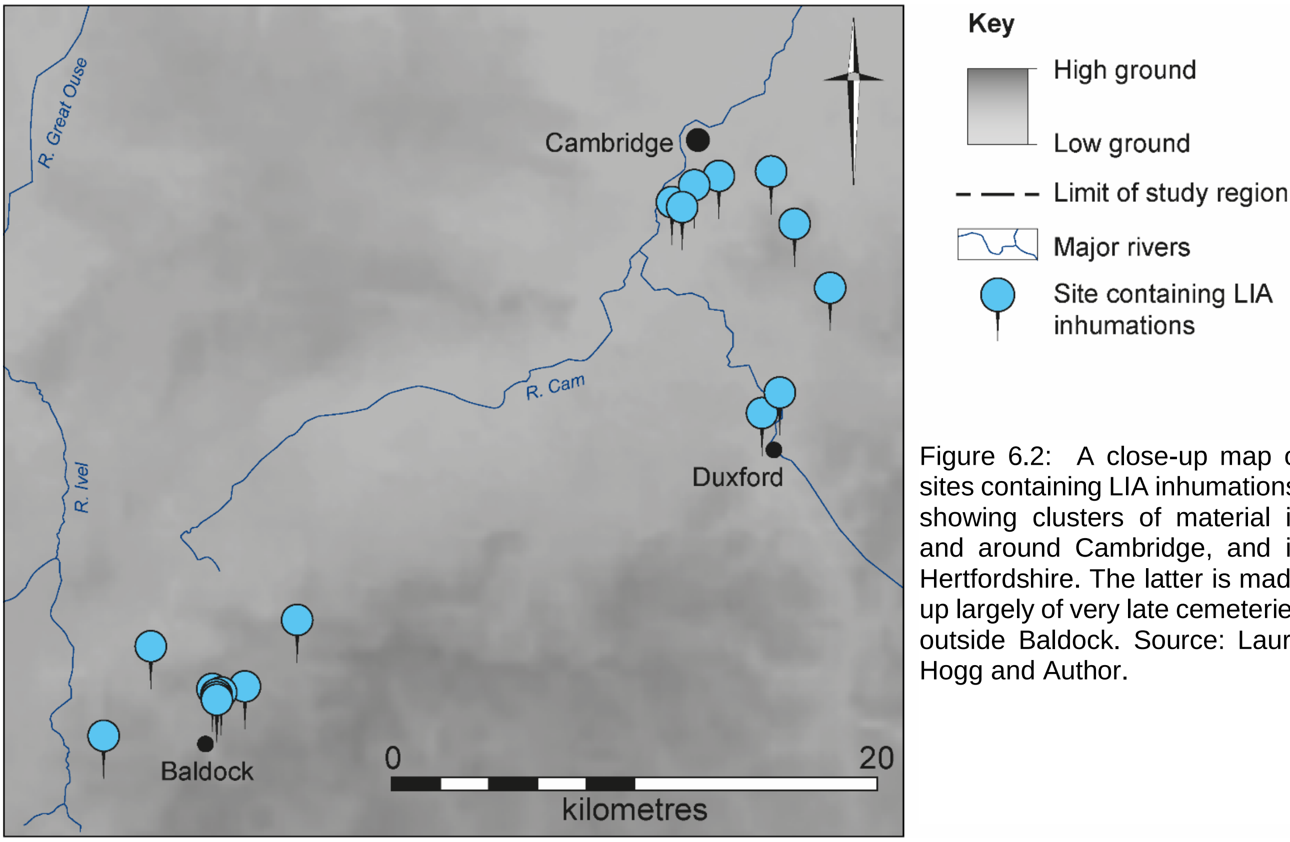


Figure 6.2: A close-up map of sites containing LIA inhumations, showing clusters of material in and around Cambridge, and in Hertfordshire. The latter is made up largely of very late cemeteries outside Baldock. Source: Laura Hogg and Author.

6.2. Chronology

Of the 223 LIA individuals, 105 are dated with no further precision. Fifteen individuals are dated artefactually to within the established LIA date boundaries (100BC-AD43).

IDs 112-4 (Hinxton Rings, Cambs.) are dated to the 1st century AD, so technically are LIA-ERB, but they are all cut by an early Romano-British droveway and thus considered LIA by their excavator (Hill et al., 1999:250-1). They cut a 1st Century BC Aylesford-Swarling cremation ditch though, and one (ID 112) was found with an enamelled copper alloy ring of 1st-2nd century AD date, which is interpreted as a trade good, rather than the burials being Romano-British (*ibid*, 250). Another nine have C14 dates in this range, or C14 dates and contextual evidence to place them in the LIA boundary. ID 91 (Duxford, Cambs.) for example, produced a C14 date of 50 cal BC to cal AD 140, which alone would place it as an LIA-ERB inhumation, but stratigraphically it was dated to the LIA period.

Twenty-nine individuals from only four sites are specifically dated to the conquest period – the mid- to late- 1st century AD. None of these individuals have been subject to radiocarbon dating, and it is possible that at least some are technically Romano-British. Twenty-two are from one site (Addenbrooke's Hutchinson).

ID no.	Original context number	Site	County	C14 result
52	SK 2332 F.2325	Black Horse Farm, Sawtry	Cambridgeshire	30 cal BC – cal AD 130 (no lab number)
54	SK 2987 F.2985	Black Horse Farm, Sawtry	Cambridgeshire	190 cal BC – cal AD 10 (no lab number)
90	Burial 23	Duxford	Cambridgeshire	50 cal BC – cal AD 320 (GU-6000, 1910±70 BP)
91	Burial 24	Duxford	Cambridgeshire	50 Cal BC – cal AD 140 (GU-6001, 1960±50 BP)
93	Burial 4	Duxford	Cambridgeshire	200 cal BC – cal AD 70 (GU-5999, 2050±50 BP)
98	SK 438 F.88	Glebe Farm, Addenbrooke's	Cambridgeshire	187 cal BC – cal AD 25 (Beta-257286, 2060±40 BP)
143	[2180] (2179)	Trumpington Park and Ride	Cambridgeshire	120 cal BC – cal AD 60 (SUERC-21980, 2025±30 BP)
158		'War Ditches', Cherry Hinton	Cambridgeshire	35 cal BC – cal AD 65 (OxA-23233, 2013±29 BP)
168	Burial G27	A505 Baldock Bypass	Hertfordshire	210-0 cal BC (Beta-210612, 2100±40 BP)
222	SK 1327	Wallace Lands, Skeleton Green	Hertfordshire	190 cal BC – cal AD 50 (SUERC-66518)
223	SK 736	Wallace Lands, Skeleton Green	Hertfordshire	110 cal BC – cal AD 130 (SUERC-66162)
267	Burial 147256	East Kent Access 2 – Zone 4	Kent	200 – 1 cal BC (SUERC-40286, 2080±30 BP)
324	Grave 15	Mill Hill	Kent	170 cal BC – cal AD 145 (OxA-2966, 1975±70 BP)
325	Grave 20	Mill Hill	Kent	200 cal BC – cal AD 115 (OxA 2967, 2030±65 BP)
373	Grave 1110	Weatherlees-Margate-Broadstairs Pipeline	Kent	50 cal BC – cal AD 80 (NZA-28975, 1974±30 BP)
375	Grave 3121	Weatherlees-Margate-Broadstairs Pipeline	Kent	100 cal BC – cal AD 60 (NZA-28976, 2016±30 BP)
396	[158] Burial 7	The Bridles	Lincolnshire	60 cal BC – cal AD 20 (no lab number)
398	(090), plus skull (116)	The Bridles – Phase 5	Lincolnshire	180 cal BC – cal AD 30 (no lab number)
407-10	SK 0951-4	Flixton Park Quarry – New Phase 7	Suffolk	60 cal BC – cal AD 90 (SUERC-1190, 1985±35 BP)
414	Grave 0035	RAF Mildenhall – Parking lots (MNL 491)	Suffolk	260 – 30 cal BC (OxA-7642, 2115±45 BP)
431	SK 767	East View Close, Radwinter	Essex	311 – 41 cal BC (SUERC-64517, 2112±37 BP)

Table 6.2: Radiocarbon dates for LIA inhumations, all produced by the original excavators.

Fifty-one individuals from seven sites are dated to sometime between the LIA and the Conquest (broadly 0 to *c.*60 AD). Of these 10 are from Lee Valley Pipeline, eight are from Verulam Hills Field, 17 are from King Harry Lane and two from Sale Drive Doline (Baldock) all cemeteries in Hertfordshire, in areas where Romano-British settlements and cemeteries developed at the same time or shortly after. In all 42 of 51 (82.4%) are from Hertfordshire. Six have C14 dates that place them in this category. IDs 407-10 are a four-person mass grave from Flixton Park Quarry, Suffolk, dated between 60 cal BC and cal AD 90. ID 373

(Weatherlees, Kent) has been dated from 50 cal BC to cal AD 80, and ID 375 (Weatherlees, Kent) from 100 cal BC to cal AD 60.

Sixteen individuals are dated between the LIA and Roman period, but included here as contextually, they are all likely to be LIA (for example ID 324 (Mill Hill, Kent) was C14 dated 170 cal BC to cal AD 145, but the cemetery broadly covers the later MIA to LIA periods, and Iron Age pottery was found within the grave. Of these 16, five have been radiocarbon dated. IDs 52 (Black Horse Farm, Cambs.), 223 (Wallace Lands, Herts.) and 324-5 all have date ranges not exceeding the mid-2nd century AD, while ID 90 (Duxford, Cambs.) has been dated between 50 cal BC and cal AD 320. It is included in the dataset as it was found in a burial group of LIA inhumations (IDs 87, 89-94) and is therefore considered to be contemporary.

Five are conversely dated to sometime between the MIA and LIA. ID 406 (Bridge House Dairies, Suffolk) is included here as associated pottery was dated to the Middle to Late Iron Age, much of the other ceramic from the site not pre-dating 100 BC, and the main occupation period falling in the LIA (Woolhouse, 2010:4). IDs, 54, 98 and 398 were all subject to radiocarbon dating, and had ranges from the early 2nd century BC to the early 1st century (Table 6.2). ID 431 (East View Close, Essex) was C14 dated to 311-41 cal BC (Moan, 2016:13), but LIA pottery in the grave fill and wider contextual data led the excavator to ascribe it to the LIA.

In total, 21 LIA individuals were subject to radiocarbon dating by their original excavators (Table 6.2), though one of these was part of a four-person burial (IDs 407-10, Flixton Park Quarry, Suffolk). As the LIA only covers *c*.160 years, it is not surprising that the C14 dates for LIA individuals span part of the MIA and part of the Romano-British period also.

6.3. Site type

Site Type	Cemetery	Hillfort	Isolated burials	Mortuary landscape	Settlement / periphery	Other
Lincs.	2 / **7**	0	0	0	2 / **3**	1 / **3**
Beds.	1 / **4**	0	0	1 / **3**	4 / **7**	0
Cambs.	4 / **28**	3 / **4**	1 / **2**	2 / **4**	7 / **20**	0
Herts.	9 / **51**	1 / **3**	2 / **3**	1 / **4**	0	0
Norfolk	0	0	0	0	0	0
Suffolk	0	0	1 / **1**	0	4 / **9**	0
Essex	0	0	1 / **1**	0	1 / **1**	0
Kent	3 / **51**	0	1 / **1**	0	7 / **11**	1 / **2**
Total sites	19 (17 merged)	4	6	4	25 (24 merged)	2
Total individuals	**141**	**7**	**8**	**11**	**51**	**5**

Table 6.3: LIA inhumations and sites, by type and county. Inhumations are the figures in bold. Source: Author.

Several sites in this LIA assemblage can be categorised in multiple ways. For example, all but one individual from Tothill Street (Kent) was found in a cemetery, and the final one from a settlement area (ID 359). Addenbrooke's Hutchinson (Cambs.) consisted of 16 cemetery inhumations and six from the settlement. For this reason, the total number of sites in Table 6.3 is more than the actual total (60 instead of 55 (57 instead of 50 when conglomerated). Several cemeteries are adjacent to, or otherwise associated with settlements. This includes the Baldock and Verulamium sites, Addenbrooke's Hutchinson, Tothill Street, Trumpington Park and Ride and Bob's Wood, Hinchingbrooke (Cambridgeshire). The dolines at Sale Drive and California (considered one site), are both mortuary landscapes with the internment of the dead in filled natural features, but also contain cremation burials as part of small mixed-rite cemeteries (Fig. 6.3).

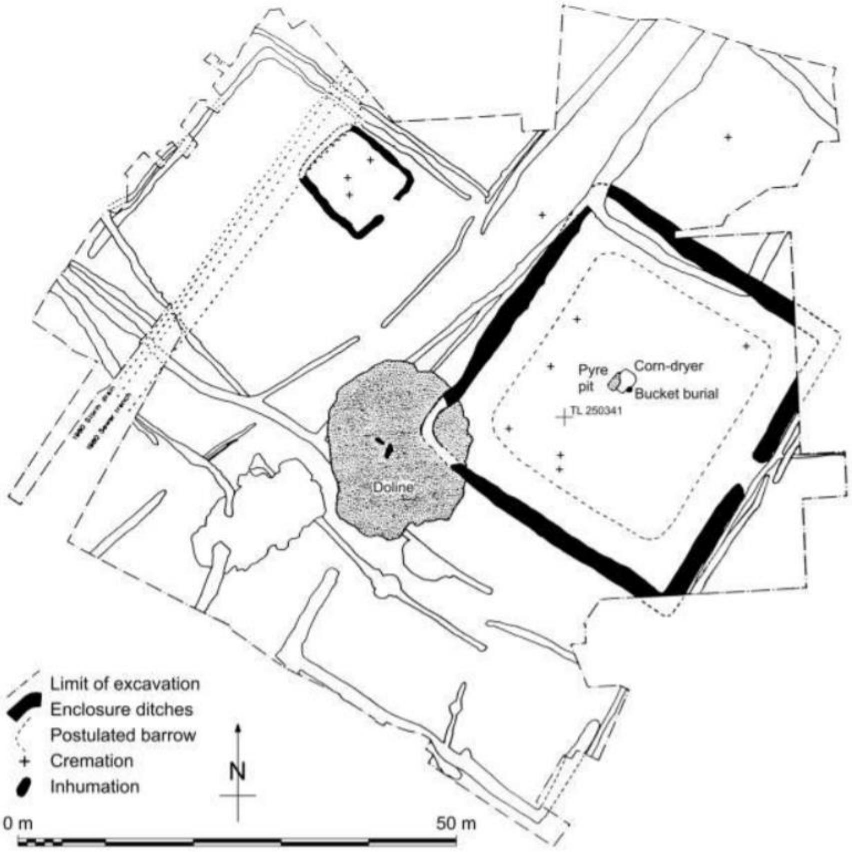
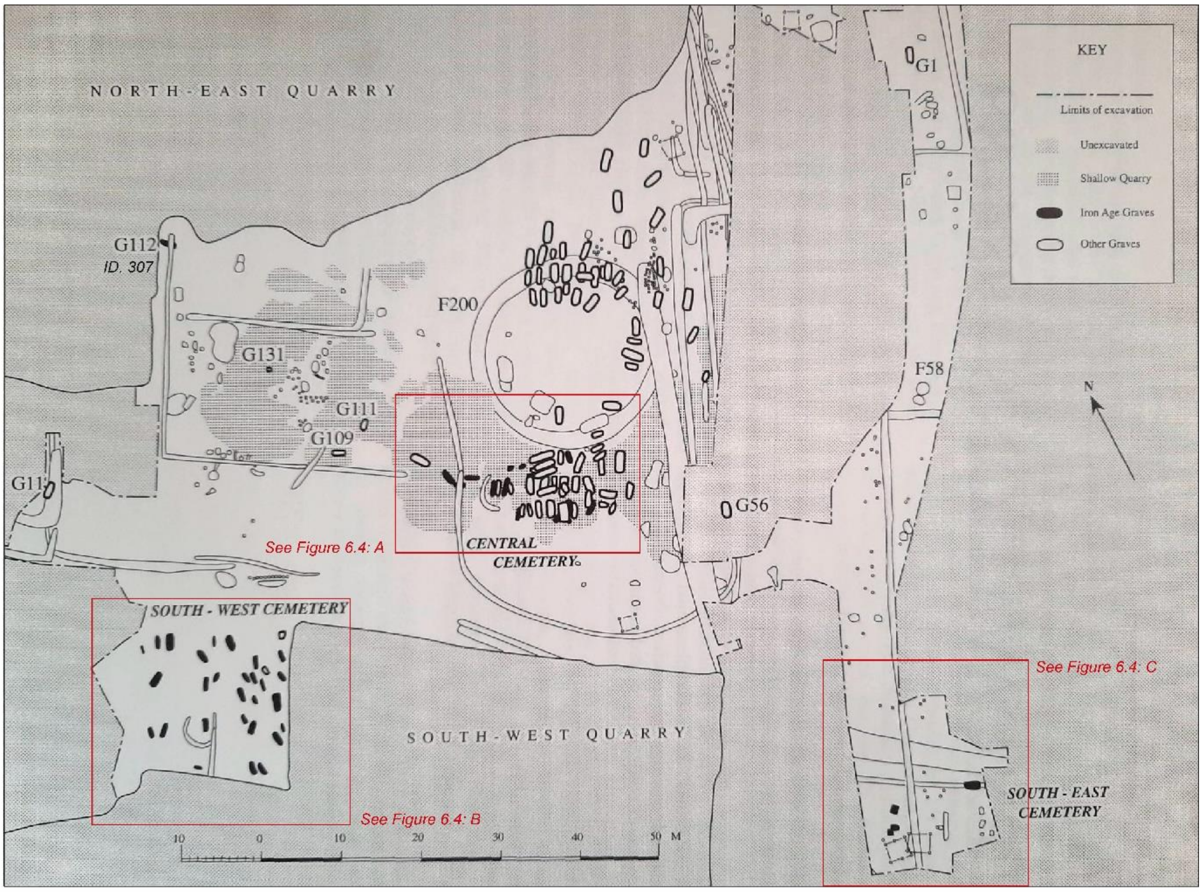


Figure 6.3: Plan of California Doline (shaded grey) and the later California mortuary enclosures, one containing a central LIA bucket burial (cremation.) Within the silts of the Doline were IDs 172-3. Source: Fitzpatrick-Matthews and Burleigh, 2007: Fig.16.

6.3.1. Cemeteries

In the LIA, cemetery burial far outweighed all other site types (63.2%, 141/223). There are more settlement sites containing inhumation burials than there are dedicated cemeteries, but not by a great margin, and almost three times as many individuals were within cemetery contexts. LIA cemeteries were identified in Lincolnshire (two sites), Bedfordshire (one site), Cambridgeshire (four sites), Hertfordshire (nine sites, unmerged) and Kent (three sites). There is regionality in cemetery size also – 51 individuals in total came from the three Kent sites (39 from Mill Hill), and 51 from Hertfordshire, but only 39 in total from the remaining counties. Of the 51 individuals dated between the LIA and the Conquest period, 41 of them (83.7%) were from cemeteries[19], as were 11/16 of those dated LIA-RB (68.8%) and 20/29 of the Conquest period dead (69%). Cemeteries then, appear in larger numbers, and are larger in scale, in the LIA, but increasingly so during the LIA-RB transition in the 1st century AD, outside new conquest period settlements.

[19] The Sale Drive doline burials could also be considered here, dated LIA-Conquest and from a site with multiple internments.



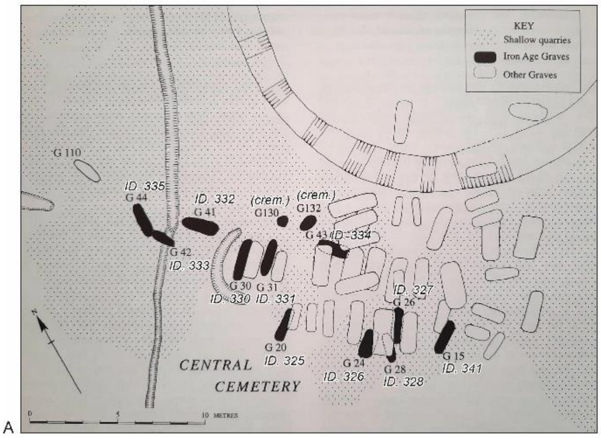
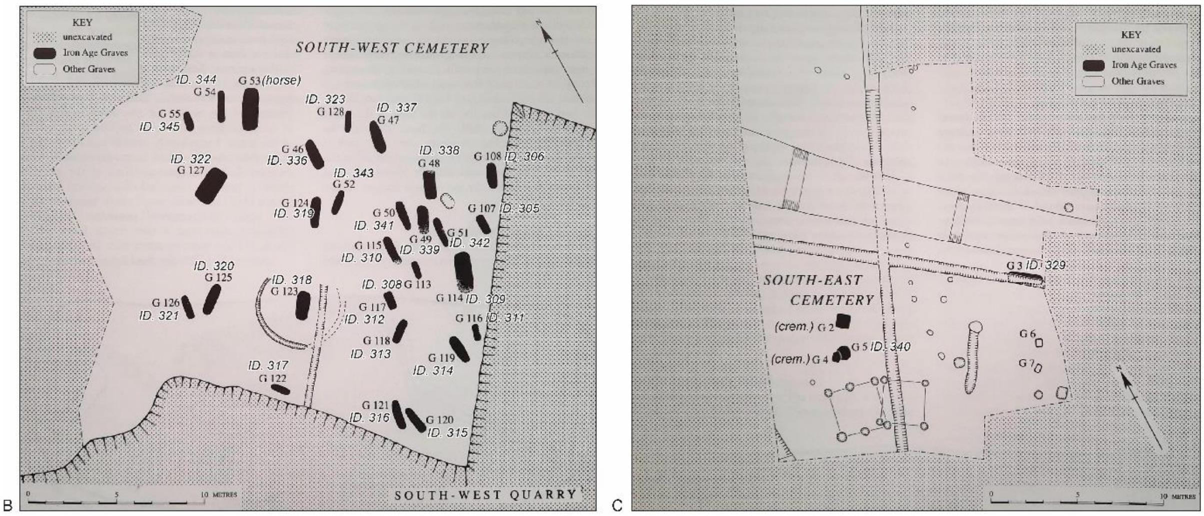


Figure 6.4: Site plans for the cemeteries at Mill Hill, Kent, showing the three distinct cemetery clusters (6.4 A-C) of LIA-ERB inhumations, as well as ID 307 (G112) the ‘Mill Hill Warrior’. Source: Parfitt, 1995: Figures 2, 4, 5 and 7, edited by Author.



6.3.2. Settlements

Fifty-one individuals were buried on settlement sites (22.9%, 51/223), compared to 73.5% of the EIA total, and 55.9% of the MIA total. Throughout the Iron Age there is a steady decrease in the proportion of settlement burials, though the total individuals within settlement contexts does not drastically decrease from the MIA to LIA (66 and 51, respectively). Of these 51, only ID 69 (Cat's Water, Cambs.) appears to be a peripheral burial, with two other LIA inhumations from the same site (IDs 66, 68) buried within the settlement area itself. As stated above, while settlement burials account for much less of the total LIA data than cemetery inhumation, they were identified on the most sites – 23 sites in six counties[20]. Settlement burial was most frequent in Cambridgeshire (Table 6.3), but the remainder were fairly evenly distributed. It is notable that not one Hertfordshire inhumation was recovered from a settlement context. Fourteen of 51 individuals were dated somewhere between the LIA and the Conquest period, but these came from only three sites, with two more individuals (IDs 52 (Black Horse Farm, Cambs.), 303 (Leysdown Road, Kent)) dated LIA-ERB.

6.3.3. Hillforts/ringworks

Hillfort burials continued on here from the MIA, at the same sites - Wilbury Hill, Herts. (IDs 228-30), Wandlebury (ID 147) and Cherry Hinton, Cambs. (ID 158). The final LIA site is Stonea Camp, Cambs. (IDs 127-8). This ringwork has been included here as a defended enclosure, with more similarities to the hillfort sites than domestic settlements. Only seven complete, inhumed individuals were found in total on these sites (3.1%, 7/223), but incomplete and disarticulated remains also occurred here, and there was a higher-than-average indication of violence (Discussion 9.4.2).

6.3.4. Isolated burials

Eight seemingly isolated inhumations from six sites have been identified in the LIA material. IDs 50-1 (Babraham Research Campus, Cambs.) are both conquest period inhumations, in an area that would develop into a R-B farmstead (Armour, 2007:12, 18). ID 431 (Radwinter, Essex) also pre-dates an R-B settlement with 12 further inhumations (Moan, 2016:7). ID 224 (Walls Field, Baldock, Herts.) was an isolated ditch burial, recovered from an area close to what would become one of Baldock's many LIA-RB cemeteries (Stead and Rigby, 1986:391), and part of the Baldock cemetery group (see above).

[20] By conglomerating EKA2 Zone 4 and Weatherlees together.

The other four 'isolated' inhumations all suffer from the issues in excavation and recording practices that affect several of the earlier burials. ID 411 (Mildenhall, Suffolk) was an apparently high-status inhumation including a sword and two horses, uncovered in 1812 by labourers levelling land (Fox, 1923:81). The associated goods were taken, sold to a silversmith and melted down (HER MSF9311), the human remains lost. It is therefore possible that the inhumation was not isolated at all. The same may also be true of ID 225-6 (Wick Avenue, Herts.). This double burial was found in a ditch containing metalworking debris, local pottery, charcoal and animal bone, but no other features or burials are recorded (Rowlinson, 1998). The excavation area is also not specified, though the remains were uncovered during building work in domestic gardens, so it is probable that investigations did not expand much beyond the immediate area (*ibid*.). ID 358 (St. John's Lane, Kent) was uncovered when a trench was dug in a car park, around 1948-50. The crouched inhumation of an adult female was found with an iron bracelet (HER TR15NW1798), but there is no mention of surrounding features, though the skeleton was supposedly found in a ditch (*ibid*.).

6.3.5. Mortuary landscapes

Eleven individuals were recovered from 'mortuary landscapes' – sites that do not appear to be formal cemeteries, but do contain multiple burials, and no evidence of permanent domestic settlement. ID 87 is from Duxford (Cambs.), a continuation or revisitation of the MIA activity in the mortuary enclosure that became an LIA-ERB shrine (Lyons, 2011:10). IDs 16-18 (Norton Road/Groveland Way, Beds.) are three inhumations cut through the enclosure ditch surrounding a LIA cremation burial, but not contemporary to it (Steadman, 1995:14-16). Here the inhumed dead were associated with the earlier cremation through the re-use of the site. There are several other LIA cemeteries where cremation and inhumation burials exist broadly contemporaneously (e.g. Folly Lane), but this was not the case here. IDs 172-3 are from California Doline and IDs 433-4 are from Sale Drive Doline, which are considered to be the same site. They are part of the Baldock 'cemetery group', but different to the others. At California the doline (solution hollow) contained fragmented human remains dated to the 3rd century BC (Chapter 8), with a shrine or mortuary house also present on the site during the MIA (Fitzpatrick-Matthews et al., 2007:112). IDs 172-3 were cut into the later fills of this hollow, the latter cut through the floor of the structure (*ibid*, 112-3). In the Sale Drive area there was no mortuary house, but LIA-Conquest period inhumations were cut into the fills of the doline, alongside several cremation burials. In this instance the area may be considered closer to a formal cemetery, the doline simply serving as softer geology in which to cut graves.

Trumpington Park and Ride (Cambs.) also has continuity, with five MIA inhumations and IDs 141-3 from the LIA.

6.3.6. Other

IDs 399-401 (Thealby Ironstone Mine, Lincs.) are from a site that could be described as industrial. At Thealby, iron smelting furnaces and ironstone mining pits were uncovered, as well as a causeway. However, the site spans the LIA and RB periods, and it is not clear to when the features are dated. Hawkes called it a ‘native tenant village’ for the nearby Roman Villa, in the first century AD, but few domestic features are recorded (Dudley, 1949:218). IDs 235-6 from Brisley Farm (Kent), were cut into a then-disused settlement area, once again evidencing the re-use of earlier sites (Fig. 6.5). Following these two inhumations, Brisley Farm became a focus for funerary activity (Stevenson, 2012:89). IDs 235-6 therefore do not meet the criteria for settlement burial, as the settlement was defunct, but they were not yet part of a cemetery.

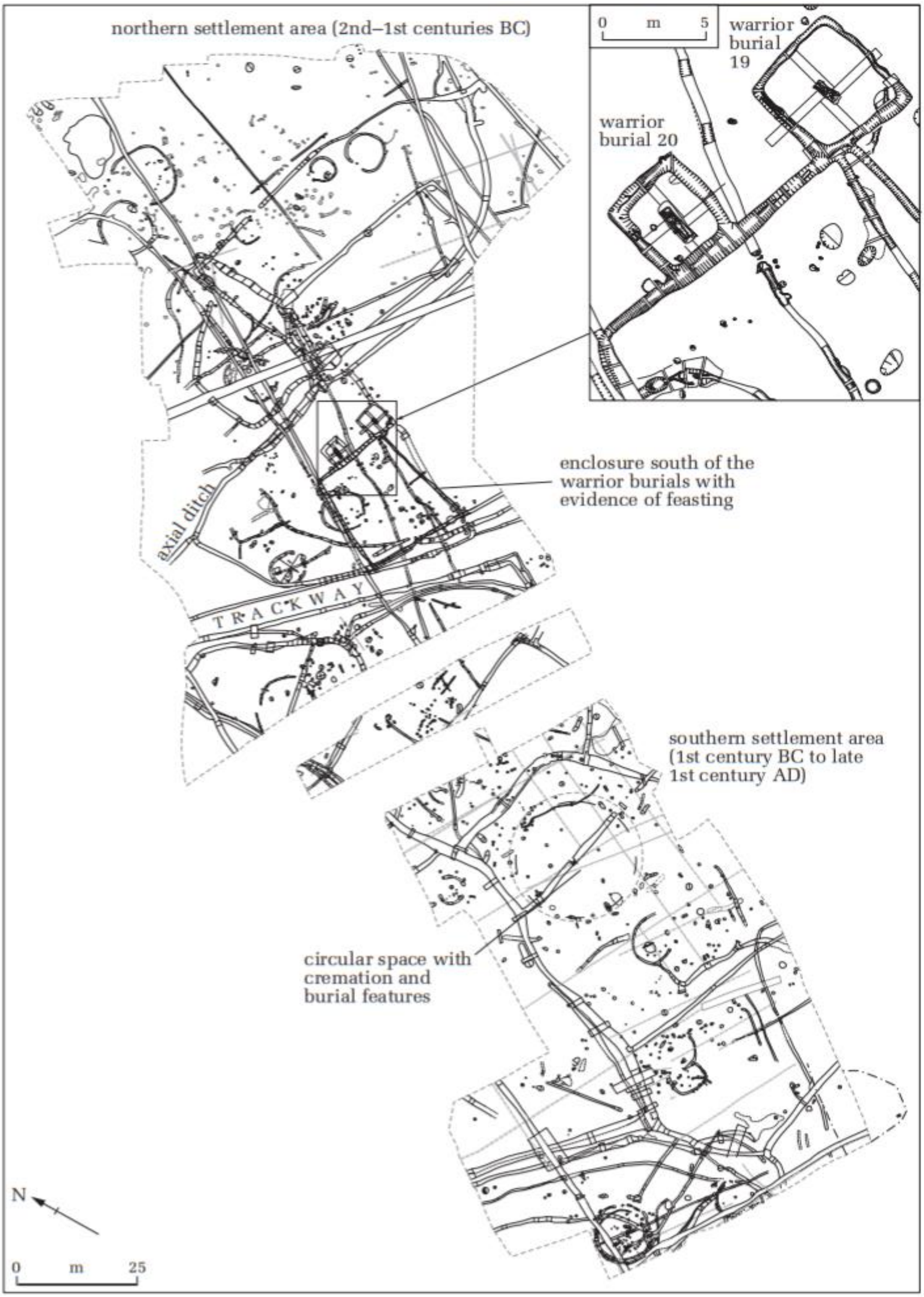


Figure 6.5: Site plan of Brisley Farm, Kent, showing the location of both LIA inhumations, surrounded by square enclosures, in an area of then abandoned settlement. Source: Johnson, 2002:Fig.2.

6.4. Depositional context

Feature type	Frequency (individuals)	Frequency (site)
Ditch	19	15
Ditch terminus	3	3
Ditch total	22	15
Sub-rectangular grave	113	19
Ovoid grave	14	9
Irregular grave	1	1
Unspecified grave	13	3
Grave total	141	26
Graves cut into other features	29	16
Storage pit	2	2
Grave pit	6	6
Unspecified pit	4	3
Pit total	12	11
Double burial	8	4
Multiple / mass burial	4	1
Associated with a structure	1	1
Burial enclosure	4	3
Other	2	2

Table 6.4: Depositional contexts for LIA inhumations. Source: Author.

6.4.1. Grave burials

With the LIA came a noticeable shift in depositional contexts. Grave burial far outweighs any other category, and the number of pit burials drastically reduced. Over half of the LIA total were buried in sub-rectangular graves (113/223, 50.7%). Of those, 99 are from cemetery contexts (87.6%, 99/113). The number of ovoid and irregular grave burials remains low, with 14 and one respectively. Eleven of the 14 ovoid grave burials are also from cemeteries, but only two ovoid grave inhumations (IDs 190, 337) were from sites that also had sub-rectangular graves - King Harry Lane (Herts.) and Mill Hill (Kent), and while half the ovoid grave inhumations were from sites in Lincolnshire (7/14), not one sub-rectangular grave inhumation was.

That ovoid graves occur in the same contexts as sub-rectangular – cemetery sites – suggests that they should be seen the same way, rather than as elongated pit burials, but the lack of overlap, and their greater presence in Lincolnshire is notable. That ID 190 and 337 were from sites with sub-rectangular graves shows that some excavators are making distinctions between the two grave forms, but it is also very probable that other ovoid graves were recorded as sub-rectangular by excavators who do not.

The only irregular LIA grave (ID 57 – Bob's Wood, Cambs.) was from a settlement and described as 'vaguely rectilinear'. Thirteen individuals were buried in graves of unspecified shape, 11 from the cemetery at Tothill Street, Kent (IDs 361-371), and two others from settlements (IDs 5 (A421, Beds.), 70 (Clay Farm, Cambs.)). Six of the eight individuals in double burials (6.4.4.) were also in graves. Including these, 147 (65.9%, 147/223) of the LIA total were buried in graves of some form – and this does not include those in graves cut into existing features (6.4.6.). Of the 147, 123 (83.7%) are from cemetery contexts, 16 from settlements, five isolated, two from an industrial site (see below) and one from a mortuary landscape. Fifty-two (35.3%, 52/147) are from Kent, 41 (27.9%) from Hertfordshire, 35 (23.9%) from Cambridgeshire, nine from Lincolnshire, six from Bedfordshire, three from Suffolk and one from Essex. This is broadly consistent with the overall geographic pattern for the period – grave burial, overwhelmingly in cemetery contexts, is not geographically restricted but a majority rite for large parts of the study region in the LIA.

6.4.2. Pit burial

Pit burials of all forms (storage pit, grave pit and unspecified) make up only 5.4% of the LIA total (12 individuals from 11 sites). Of these, eight are from settlements, two from hillforts, one from a mortuary landscape and one from a cemetery. The only individuals recovered from storage pits were ID 147 (Wandlebury, Cambs.) deposited in a pit within the hillfort, and ID 406 (Bridge House Dairies, Suffolk) who may have been thrown into a pit within the settlement. Only two are from Kent, five from Cambridgeshire, two from Bedfordshire, two from Hertfordshire and one from Suffolk. Ten of these 12 were sub-adult (83.3%) (6.9.1.). Pit burial, previously widespread, is all but absent in the LIA, outweighed even by ditch burials.

6.4.3. Ditch burial

Nineteen LIA individuals were placed in ditches, and a further three in ditch termini. A double inhumation (IDs 225-6, Wick Avenue, Herts.) was also placed in a ditch, and altogether, ditch burials represent 10.7% of the LIA assemblage (24/223) –twice the number placed in pits.

For the EIA period ditch burials made up 4.6% (3/65) and for the MIA 5.2% (6/116[21]). The LIA appears to show an increase in ditch inhumations, coupled with a large increase in those cut

[21] Four of these are from one site – Cherry Hinton

into filled/filling ditches, rather than placed into open ones (6.4.6.). Twelve of the ditch burials were from settlement contexts, on nine sites. Four were from hillforts/defensive enclosures, in each case placed within the rampart ditches (IDs 127-8 (Stonea, Cambs.) (Fig. 6.7), 158 (Cherry Hinton, Cambs.), 228 (Wilbury Hill, Herts.)). Four were from cemeteries, though three are from one site – Folly Lane, Herts. (IDs 174-6), (Fig. 6.6) while one was from the industrial site at Thealby, Lincs. (ID 401), and one isolated (ID 358, St. John's Lane, Kent)[22]. Again here the proportion of subadults is high (9/21). The three Folly Lane burials (IDs 174-6) were all placed on the floor of a newly constructed enclosure ditch, surrounding a pyre site, a funerary chamber and a very high-status cremation burial (Niblett, 1999). They were covered by sterile subsoil, either backfilled purposefully, or from natural silting/slippage, the bodies otherwise exposed (*ibid*, 21). All three were placed very soon after the ditches were constructed, close to one terminus, at the entrance to the enclosure (*ibid*, 20). It is possible they represent sacrifices or dedicatory offerings, though none was sufficiently preserved to ascertain signs of trauma (Mays and Steele, 1999:311-2). The site itself is unique in the region, but inhumed individuals in the ditches surrounding a cremation cemetery do occur nearby at Verulam Hills Field.

[22] Plus the double burial from Wick Avenue (below).

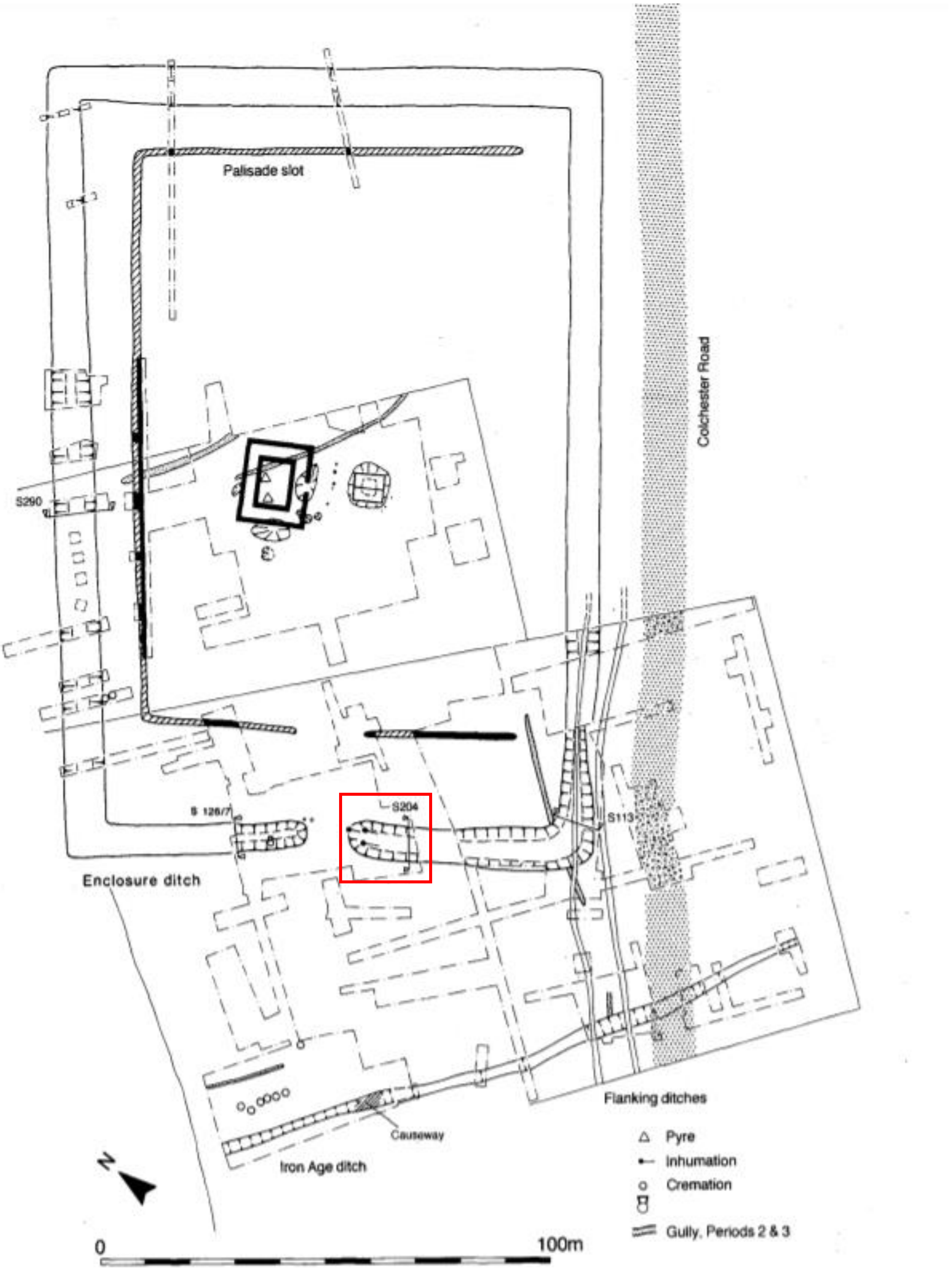


Figure 6.6: Plan of the ceremonial enclosure at Folly Lane, Hertfordshire. Three LIA inhumations (IDs 174-6) were placed within the ditch at the entrance to the enclosure (indicated in red). At the centre of the enclosure was a pyre site and funerary chamber, containing the remains of a high-status cremation. The three inhumations occupy a liminal space in this context. Source: Niblett, 1999:Fig.8.

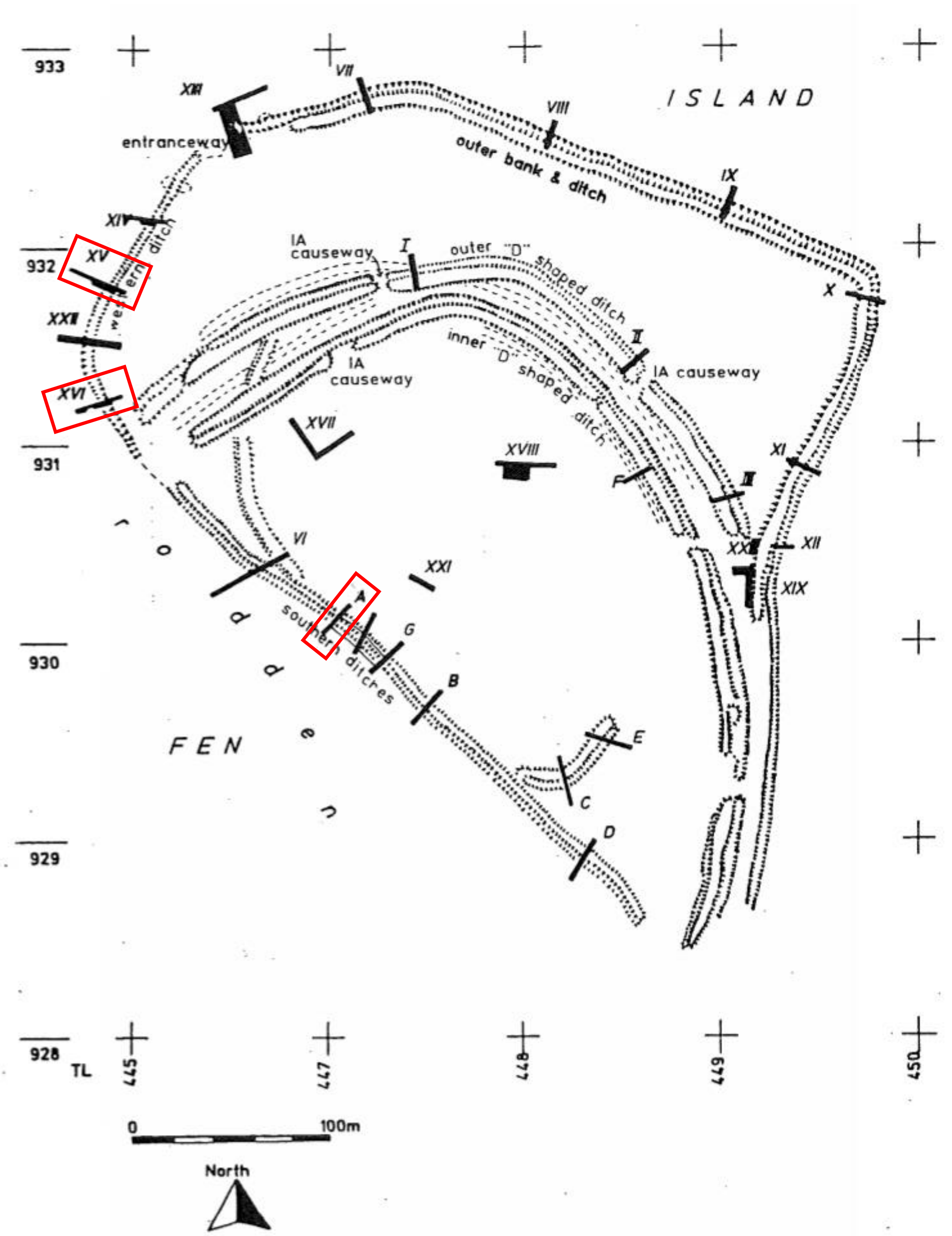


Figure 6.7: Site plan of Stonea Camp, Cambridgeshire. The plan shows the multi-phase ditched enclosure, cited on the fen edge. All areas containing human remains are highlighted in red. Within trench A were SK1 (ID 127) and partial individuals SK2-3,, within trench XV was SK4 (ID 128), and within trench XVI was disarticulated bone D.ID 175. All remains came from the outer ditch. Source: Malim, 1992: Fig.2.

6.4.4. Multiple burials

Eight individuals were found in four double burials. IDs 225-6 are the possibly isolated inhumations of a 25–35-year-old female and a neonate from a ditch at Wick Avenue, Herts. (Rowlinson, 1998). The pairing of the neonate and the adult female makes it tempting to assume that this is the burial of a mother and baby, who both died in childbirth. IDs 399-400 are two adolescent probable females from a grave on the industrial site at Thealby Ironstone Mine, Lincs. (HER MLS12943). ID 267-8 is likewise a double burial of two females, one aged 16-17 and one over 50, placed facing one another in a grave at EKA2 Zone 4, Kent (Andrews et al., 2015:187). Again here it is tempting to assume a familial relationship, based on the ages between them. Finally, IDs 197-8 are an adolescent and middle adult (both unsexed) from a sub-rectangular grave at the King Harry Lane cemetery site in Herts. (Stead and Rigby, 1989). It is interesting that in two cases here, an adolescent is placed with a considerably older adult, and in at least two cases the double inhumations are both female.

Four further individuals were recovered from a mass grave at the settlement of Flixton Park Quarry, Suffolk. The deposit consisted of IDs 407-10, an unsexed 15–16-year-old, two middle aged adult females and a middle aged adult male adult. They were placed on top of one another and at least two, possibly three had evidence of perimortem trauma (Anderson, 2008:217). These are not included in the grave burial statistics above as their character is different to more common grave inhumation. This mass burial deposit is almost unique in the LIA data, though a five-person mass grave was identified outside Wandlebury hillfort, Cambs. (IDs 148-152), poorly dated but likely LIA (section 6.12). At least one of these (ID 149) also suffered perimortem sharp force trauma.

6.4.5. Enclosed burials

Four individuals were inhumed with burial enclosures. IDs 235-6 were 1st century AD inhumations from Brisley Farm, Kent, both originally interpreted as males, though only ‘sand bodies’ survived (Stevenson, 2012:Fig.1). Both were richly accompanied, covered by barrow mounds and surrounded by square ditches (*ibid*, 92), (Fig. 6.5). ID 58 from Bob’s Wood, Cambridgeshire was also buried in the centre of a ditched enclosure, in a large sub-rectangular grave. The older adult female may have been bound, and no goods are mentioned. The only MIA inhumation in a burial enclosure (ID 126) was also from Cambridgeshire, and also may have been bound. At Bob’s Wood two other inhumations were placed in ovoid graves, but with relation to/awareness of the enclosure (IDs 55-6). Another adult female (20-25 years old) was placed in an enclosed grave at Mill Hill, and again covered by a barrow (ID 318).

6.4.6. Other

Only one LIA individual was found directly associated with a building. ID 173 (California Doline, Herts.) was cut through the floor of a shrine or mortuary house building that may at the time, have still been standing (Fitzpatrick-Matthews et al., 2007:112-3).

ID 69 (Cat's Water, Cambs.) was placed within a soil horizon in a settlement enclosure, near a roundhouse and other inhumations (Pryor, 1984:122). No cut was discerned, and the remains are not directly associated with any other features (e.g. the roundhouse gully).

ID 411 (Mildenhall, Suffolk) must be placed in this category due to the nature of its discovery. Mentioned above, ID 411 was the inhumation of a possible adult male, with weapons, torcs and horses (Fox, 1923:81). It is likely therefore, that it was a grave burial, possibly even with a surrounding barrow and ditch. However, none of this was ever recorded, and it must remain a mystery.

Twenty-nine further individuals were buried in graves cut into other features, in much the same way as IDs 161-3 from MIA Mucking were, the vast majority cut into ditches. ID 87 (Duxford, Cambs.) was in a grave of unrecorded shape, cut into a filled LIA pit (Lyons, 2011:38). ID 229 (Wilbury Hill, Cambs.) was cut into the hillfort rampart. Seven individuals from four sites in Cambridgeshire, Essex and Kent were all in graves cut into ditches within settlement areas, as at Mucking (IDs 37 (Addenbrooke's), 63 (Cambourne), 167 (Stanstead Airport) and 373-6 (Weatherlees Pipeline, Kent)). ID 98 (Glebe Farm, Cambs.) was another settlement burial, this time in a shallow scoop cut into a tree throw. ID 224 (Walls Field, Baldock, Herts.) was in a grave cut into a ditch, but was seemingly isolated – though on the periphery of several other cemeteries (the Baldock group). ID 143 (Trumpington Park and Ride) was in a grave cut into an enclosure ditch on the site. IDs 172, 433-4 (California /Sale Drive Dolines) were mentioned above, in graves cut into the upper fills of natural solution hollows.

Eight LIA-Conquest period inhumations were placed in graves cut into the silted ditch surrounding an LIA cremation cemetery at Verulam Hills Field, St. Albans (Herts.). IDs 214-221 are all in poor condition, all but one are male, and at least one may have been bound (ID 221 – may also have been killed by an arrow). Likewise IDs 16-18 (Norton Road/Groveland Way, Beds.) all cut through the ditch of a square enclosure surrounding a single high-status

LIA cremation burial (Steadman, 1995:14-16). IDs 112 and 114 also (Hinxton Rings, Cambs.) were both in graves, cut into the ditch of a 1st century BC Aylesford-Swarling cremation burial (Hill et al., 1999:247). Finally, ID 398 (The Bridles, Lincs.) was in a rectangular grave, once again cut into a cemetery ditch. The skeleton was headless, and some 3.5m from the grave was a pit containing the skull of a similarly aged female (36-50). It cannot be proven (without destructive analysis) that the skull and ID 398 are one, but the placement and age are very convenient if unrelated (Discussion).

6.5. Burial position

Body Position	Frequency
Extended supine	121
Extended prone	14
Extended left	3
Extended right	0
Extended total	138
Crouched left	8
Crouched right	15
Crouched (unknown side)	13
Flexed supine	9
Flexed prone	5
Flexed left	5
Flexed right	6
Crouched / Flexed total	61
Other	7
Unspecified / Poor preservation	17

Table 6.5: Skeletal position of LIA inhumations. Source: Author.

As 17 individuals have no recorded skeletal position, the analysis below concerns the remaining 206 inhumations.

6.5.1. Extended inhumations

Considering the proliferation of grave burials in cemetery contexts, it is unsurprising that 58.7% (121/206) of the LIA individuals were placed in an extended supine position. Of these, 97 are from cemetery contexts and at least 97 were placed in graves. Extended supine positioned individuals were found in 30/55 sites[23] (54.5%) from six counties. Six examples came from Bedfordshire (2 sites), 29 from Cambridgeshire (8 sites), two from Essex (2 sites), 32 from Hertfordshire (11 sites (not conglomerated)), 51 from Kent (6 sites) and one from Suffolk. That

[23] Sites not conglomerated.

the number of sites in Kent is less than Cambridgeshire and Hertfordshire[25], but it contains a much greater number of individuals as either other county, highlights the larger cemetery sizes in that part of the south-east during the LIA, though 34/51 are from Mill Hill alone.

Three individuals were 'extended left', and all were also in sub-rectangular graves – IDs 72 (Clay Farm, Cambs.), 209 (Stane St., Baldock, Herts.) and 327 (Mill Hill, Kent). All Stane Street inhumations were in sub-rectangular graves, but their positions varied. The Mill Hill burials showed much less variation (Only four were not extended supine). At Clay Farm, four individuals were crouched right, one prone and ID 72 extended left.

Fourteen individuals were prone and extended (6.8%). Proportionally, this is slightly more than the MIA dataset (5.4%, 5/93). IDs 28, 39-40 and 44 are all from Addenbrooke's Hutchinson (Cambs). IDs 57 and 71 are also from Cambridgeshire. ID 398 (The Bridles) is the only Lincolnshire example and IDs 364 and 338 are the only two from Kent (Tothill Street and Mill Hill). The remaining five were from three Hertfordshire sites, Lee Valley Pipeline, Verulam Hills Field and Wick Avenue. At least eight of the 14 are dated to the time of the conquest, around the mid-1st century AD. Nine were from cemetery contexts, four from settlements and one isolated (225).

Two of the prone burials show signs that their position may be a punishment. ID 398 (The Bridles) was either buried in a grave within a ditch, or 'thrown' into the silt layers, and was headless, with one foot also separate from the body, possibly cut off (Lincs. HER 20030). Her skull may have been buried in a nearby pit (see above). ID 221 (Verulam Hills, Herts.) also had his hands behind his back as if bound, and may too have been killed – an iron arrowhead was found near the right elbow (Wells, 1968:20). There are other individuals with signs of perimortem trauma (see Discussion), not buried prone, so the connection is tenuous, but two prone flexed inhumations (see below) also may have had bound hands. ID 39 (Addenbrooke's, Cambs.) was also 'squashed' into their grave, as were two others from the same site (below).

6.5.2. Crouched and flexed inhumations

Body Position	Cemetery	Settlement	Hillfort	Mort. Landscape	Isolated	Industrial
Crouched left	3	4	0	1	0	0
Crouched right	10	4	1	0	0	0
Crouched (unknown side)	4	4	0	1	1	3
Flexed supine	2	6	0	1	0	0
Flexed prone	2	1	2	0	0	0
Flexed left	4	1	0	0	0	0
Flexed right	3	2	0	0	0	0
Total	28	22	3	3	1	3

Table 6.6: Crouched and flexed LIA inhumations, plotted against site type. Source: Author.

Crouched burial, again unsurprisingly, is much less common with the LIA data. A total of 36 crouched individuals were identified (17.5%, 36/206). Nearly twice as many were crouched on their right as on their left (Table 6.6). For both the EIA and MIA assemblages, crouched left inhumations slightly outnumbered crouched right, but not significantly so. This may be a real change in position with the LIA material, though there are more than enough 'crouched but unsided' individuals to negate this ratio.

Additionally, there were 24 flexed individuals, bringing the crouched/flexed total to 60 (29.1% of the total, 60/206). There appears to be no significant difference in the treatment of crouched and flexed individuals for the LIA (Table 6.6). Considering the crouched and flexed together does make this position much more common than it initially appears for the LIA, though still considerably less than in the preceding periods (63.4% for the MIA, 75% for the EIA). There is also much more variation within this category than with extended inhumations, for the LIA.

There were five individuals buried flexed on their left side, six on their right, plus five more prone and nine supine. Combining the sided crouched and flexed inhumations does not balance them (21 right, 13 left).

Crouched and flexed burials of all variations occur on cemetery sites most frequently (28/60, 46.7%), closely followed by settlements (22/60, 36.7%). Likewise multiple individuals from each variation of crouched/flexed burial were placed in graves (28/60) with ditch burial also fairly common (11/60, 18.3%) (Table 6.7).

Body Position	Grave	Ditch	Grave in ditch	Pit (all)	Enclosure	Multiple burial	Other
Crouched left	3	2	0	1	0	0	2
Crouched right	6	3	2	2	1	0	0
Crouched (unknown side)	5	3	0	0	0	2	0
Flexed supine	6	1	2	2	0	0	0
Flexed prone	2	1	0	1	0	0	1
Flexed left	3	0	1	0	0	1	0
Flexed right	3	1	1	0	0	1	0
Total	28	11	6	6	1	4	3

Table 6.7: Crouched and flexed LIA inhumations divided by depositional context. Source: Author.

Geographically, Kent is somewhat poorly represented, only 11.3% of the Kent inhumations with recorded positions were crouched/flexed (7/62). Bedfordshire, Suffolk, Cambridgeshire, and Hertfordshire all had larger proportions of crouched/flexed inhumations, but over 80% of the total Lincolnshire inhumations were crouched (11/13, 84.6%). Cambridgeshire contained the largest number of crouched/flexed individuals.

Nine individuals from five sites were found in a flexed supine position. IDs 26 and 36-8 are from Addenbrooke's Hutchinson. IDs 37-8 are both recorded as having been 'squashed into the grave' (Addenbroke's, Cambs., Evans et al., 2008:Table 2.13). ID 168 (A505 Baldock Bypass, Herts) was decapitated, the head included in the burial. The legs were flexed right but the torso supine. Six of the nine are from settlement contexts.

Five more were flexed and prone. Three were from Cambridgeshire (55 (Bob's Wood), 98, 147) and two from Hertfordshire (204 (Lee Valley Pipeline), 228). Two are from Hillforts (Wandlebury and Wilbury Hill), two from cemeteries and one from a settlement. ID 147 (Wandlebury) may have been bound, and was the only prone inhumation from a storage pit. ID 228 (Wilbury Hill) was within the rampart ditch (Applebaum, 1949:29) and may also have had bound hands (they were under the torso). ID 98 (Glebe Farm) was placed in an irregular shallow scoop of a pit, cut into a tree-throw. In this case the position may in part be due to the restrictive nature of the cut, as with the 'squashed' flexed burials above.

6.5.3. Other positions

Eight individuals did not have recorded positions that fit any major category. Four of these were from the mass grave deposit at the settlement of Flixton Park Quarry (IDs 407-10). They were placed one on top of another, and deposited 'carelessly' but no more detail was identified beyond site photos (Fig.6.8). ID 406 (Bridge House Dairies, Suffolk), a pit burial, was also described as carelessly placed. The left arm was flexed, the left hand inside the mouth, the right arm above the head, the trunk twisted to the right and the legs higher up than the superior half (Woolhouse, 2010:39) (Fig 6.9).

Figure 6.8 (above): Photo of the mass grave at Flixton Park Quarry, Suffolk. Source: Boulter, 2008:Fig.20.
Figure 6.9 (below): Photo of ID 406 from Bridge House Dairies, Suffolk, seemingly 'thrown' into a pit. Source: Woolhouse, 2010:Fig.15.

The final two in this category are individuals with unproveable positions. ID 396 from the Bridles (Lincolnshire) was recorded as supine, but when analysed, the bags containing the limbs were all incorrectly sided (Start, 2002:11). This, coupled with poor preservation means it is possible the skeleton was prone, not supine. ID 374 (Weatherlees, Kent) was described as ‘originally on its side...disturbed by slumping of ditch fills’, but the preservation was poor, and this cannot be confirmed (Egging-Dinwiddy and Schuster, 2009:110).

Seventeen further individuals were of unknown position. In all but two cases this is due to poor preservation. ID 234 (A228, Kent) was a neonate placed in a grave pit, but their position and orientation are unrecorded in publication despite good bone preservation and 57% completeness. ID 432 (Recreation Way, Suffolk) likewise was a neonate, complete and articulated, but their position unrecorded. ID 142 (Trumpington Park and Ride, Cambs.) was an infant in a pit, their head apparently crushed by a loomweight (Hinman, 2004:22). The final publication is forthcoming and as such the position of the infant is unknown.

6.6. Orientation

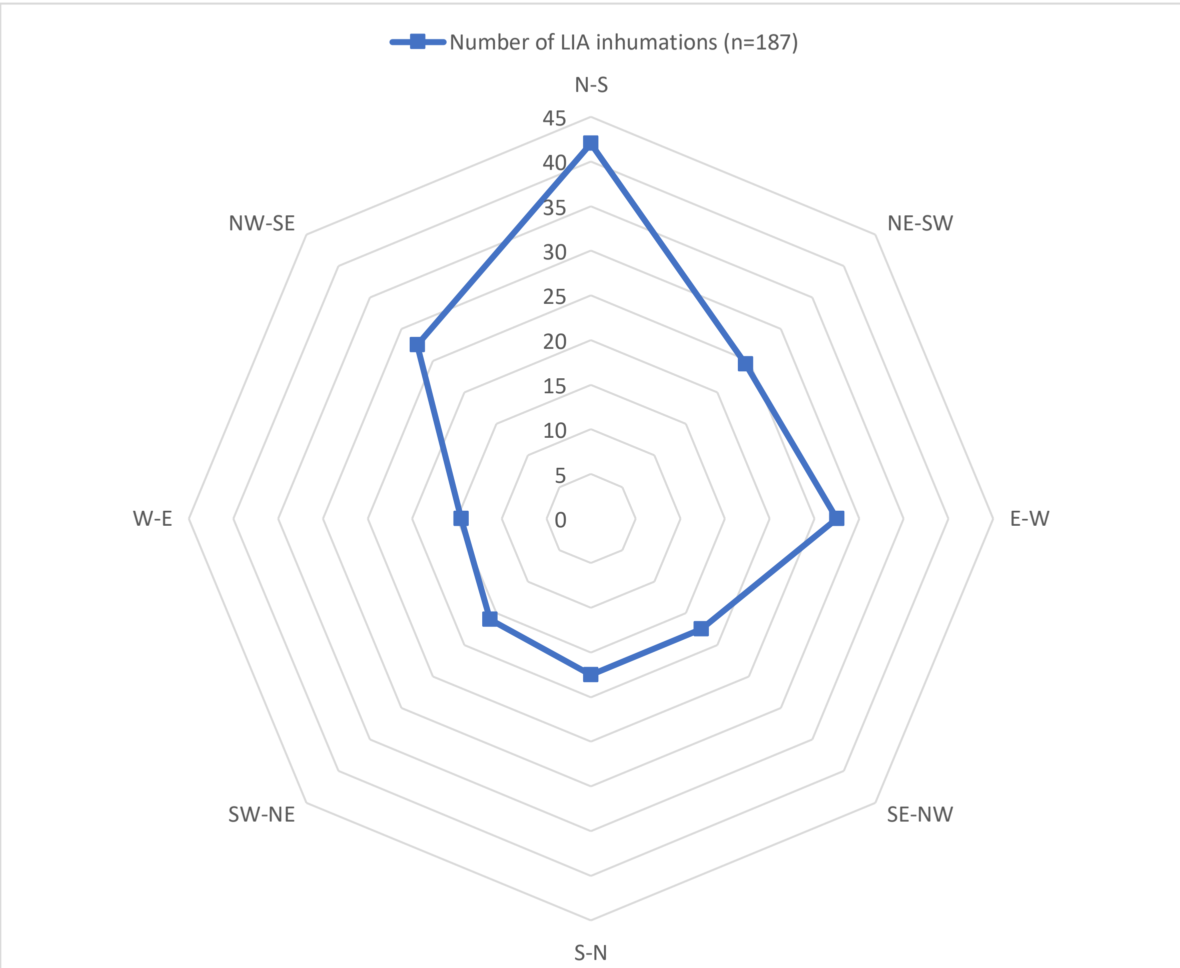


Figure 6.10: Radar chart showing the orientation of all LIA inhumations. Source: Author.

Orientation could not be ascertained for three inhumations from King Harry Lane (Herts), as despite grave plans, so little survived that it cannot be known which end the head rested (IDs 186, 189-90). Thirty-three others had no recorded orientation, poor preservation being a factor in many, as well as others with no published photographs or grave plans. Orientation was available for 187 individuals.

Figure 6.10 shows the orientations of these 187, rounded to the nearest of eight compass points (e.g. NW), as with the EIA and MIA data. As with both preceding periods, N-S aligned burial is the most common (42 individuals), followed by E-W and NW-SE (27.5 each). NE-SW oriented inhumations also occurred frequently (24.5). Owing to the relative paucity of W-E aligned burials (14.5), it could be argued that at least some of the NW-SE inhumations were placed to be broadly N-S, as some of the NE-SW examples may also have been, though these are equally likely to have been broadly E-W in this case. There is more variation than in the EIA and MIA. Only 22.5% of the LIA inhumations are N-S (42/187), compared to 37.5% (34.5/92) for the MIA and 36.5% for the EIA (19/52).

The solely N-S group[24] came from 17 sites in six counties, though 15 of 37 were from Kent. Twenty-two of 38 were from cemetery contexts (57.9%), and 33 were in graves (89.2%). Twenty-three were extended supine (62.2%).

Seven were oriented NNE-SSW, from three sites in three counties. Four of seven were from the cemetery at Mill Hill (66.7%), the same four in graves, but burial positions varied (three were extended). The only NNW-SSE inhumation was also from a cemetery, in a grave, and extended (but prone) – ID 206.

The NE-SW group came from 14 sites in four counties. Thirteen of 21 were from cemeteries (61.9%), 13 in graves and 14 extended supine (66.7%).

The solely NW-SE group came from only nine sites in five counties, 12 of 25 were from Hertfordshire. Twenty-two were from cemetery contexts (88%), 17 were grave burials (68%) and 13 extended supine (52%).

The solely E-W group came from 12 sites in only three counties, 18 of 23 being from Cambridgeshire (78.3%). No E-W inhumations were identified in Kent and only four in

[24] Discounting those placed NNE-SSW and NNW-SSE

Hertfordshire. Twelve of 25 were from cemetery contexts (52%), the same number were grave inhumations and 14 of 23 were extended supine (60.9%).

The NE-SW inhumations seem to have more in common with the N-S than the E-W in terms of geography, but all of the common orientations are comparable in burial context, grave type and position. There is no clear distinction between these orientations that would allow patterns in burials rites to be identified, but more broadly it can be shown that those oriented between NW-SE, and E-W (3/8 of the compass) make up 65% of the LIA total (121.5/187), there is a clear pattern of orientation in these quadrants over the opposing ones, and it occurs across much of the study region.

6.7. Facing direction

Facing direction was only available for 101 individuals (45.3%, 101/223). Although the burial position and orientation was known for many of the others, facing direction was not assumed, especially for extended supine burials.

Two of the north facing individuals (310 and 337), two of the south facing ones (316, 341) and one SW facing burial (318) had their heads 'propped up' in the grave due to the small size of the cut. All were from Mill Hill. ID 168 (NW facing,) was decapitated, the head in the grave. The facing direction here has no relation at all to the direction of the postcranial skeleton.

Fig. 6.11 shows that there is much more variation in the facing directions for the LIA sample than the preceding periods. East, South and SW all have equal representation (14 individuals), closely followed by North facing (12 individuals). More broadly though, the South and Southwest quadrants are more common, conversely to the most frequent orientations (see above) .

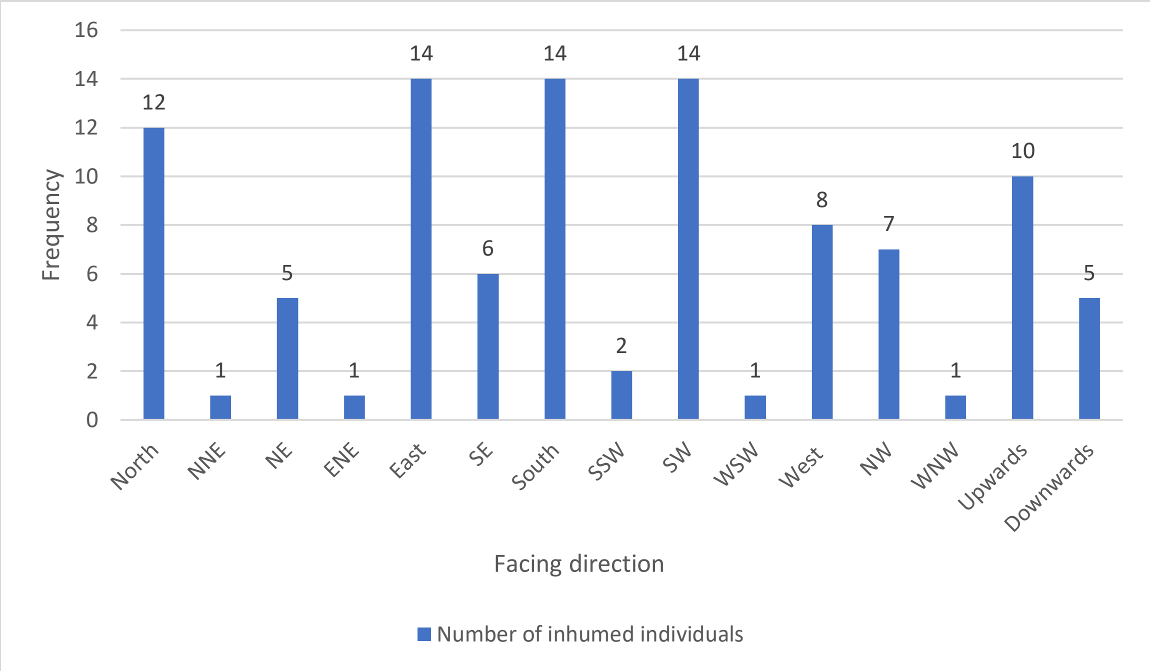


Figure 6.11: Chart showing the facing direction of all LIA inhumations. Source: Author.

6.8. Burial accompaniments

Associated material	Frequency
Animal bone	5
Pottery	12
Personal ornaments	15
Metalwork	3
Weapons	2
Multiple associated goods	14
‘Domestic waste' in fills outside the immediate skeletal surroundings	11
Other	8
None	138
No data	15

Table 6.8: Categories of material associated with LIA inhumations, and their frequency. Source: Author.

The majority of LIA inhumations, where data was available, were unaccompanied (66.3%, 138/208). This is slightly more than the MIA percentage and considerably more than the EIA. The increase in cemetery burial in part relates to this, as fewer individuals are being placed in domestic settings (e.g. storage pits), and thus fewer contain ‘domestic’ material. A further 15 have no data regarding grave goods. As before, while this is likely to mean that they were unaccompanied, it cannot be assumed.

6.8.1. Animal bone

Animal bone was the sole accompaniment in only five cases (2.4%, 5/208), though additional associated animal remains do occur (section 6.8.7.).

ID 147 (Wandlebury, Cambs.) was buried with a cow mandible beneath his body, and a roe deer pelvis near his feet. This 40–50-year-old male also suffered an antemortem sharp force injury to his own mandible, with a subsequent infection still active at death (Dodwell, 2004:57-9), as well as a contemporary rib fracture and chronic spinal pathologies. It is possible in his case that the included animal bone relates to these pathologies as a sort of surrogate. There are instances of animal burials on prehistoric sites interpreted as cenotaphs or surrogates for human remains (Perri, 2013:57), but in this instance the associated animal bone may be coincidental. ID 174 (Folly Lane.) was buried with a cattle humerus. ID 182 (King Harry Lane) had a horse skull placed next to the right leg. Both are from very Late Iron Age cemeteries in St. Albans (Verulamium, Herts.). One of the 11 inhumations from Tothill Street, Kent was buried with sheep bones, however as the post-excavation analysis was never completed for the site, it cannot be known exactly which one. ID 362 was chosen to represent this individual, but further detail about the skeleton cannot be related to the finds. Cattle appears twice, but in very different contexts, and all other species appear only once. ID 168 (A505 Baldock Bypass, Herts.) had a cattle tibia near the southern edge of the grave. Charred oats and wheat were recovered from the fills, but these could be residual.

6.8.2. Pottery

Twelve individuals from nine sites in five counties were buried with pottery and nothing else (that survives). IDs 89, 324, 379 and 399-400[25] contained sherds or fragments, or otherwise broken vessels. For ID 379 this was the inverted base of a pedestal jar placed beside the head. IDs 22, 28, 92, 196, 201-2, and 361[26] all had at least one complete pot. Of these, all but 196 and 361 (possibly) had the pot(s) placed beside the head, as with ID 379. ID 196 (King Harry Lane) had four vessels, a local honeypot or handled bowl, a local Camulodunum form 67 bowl, and two local Camulodunum form 94 beakers, all placed over the torso (Stead and Rigby, 1989:81). ID 361 (Tothill Street) has the same issue as 362 (above), so the pot location is unspecified. ID 92 (Duxford) had two vessels, one either side of the head, one of which was

[25] Duxford (Cambs), Mill Hill (Kent), Hatton to Silk Willoughby Gas Pipeline (Kent), and Thealby Ironstone Mine (Lincs.) respectively.

[26] Radwell (Beds.), Addenbrooke's Hutchinson (Cambs.), Duxford (Cambs.), King Harry Lane (Herts.), Lee Valley Pipeline (Herts. – IDs 201-2), and Tothill Street (Kent) respectively.

a platter that had been 'ritually killed' by drilling holes through the rim (Lyons, 2011:42). This is the only recorded example from the dataset.

6.8.3. Personal ornaments

Personal ornaments were found as the sole accompaniment with 15 individuals from nine sites in five counties. Six were from Mill Hill, eight in total from Kent. Seven were buried with finger-rings, all bronze or copper alloy (IDs 19, 31, 112, 186, 303, 335 and 401[27]). The ring was specified as having been on the hand in two cases (ID 303 and 335) while that from ID 19 (Norton Road/Groveland Way, Beds) is described specifically as a thumb ring. ID 112 (Hinxton Rings, Cambridgeshire) had the only ring with an enamel inlay – of a Roman (1st-2nd century AD in Britain) style but interpreted as having gotten to the site by pre-conquest trade, as the burials are cut by early Roman activity (Hill et al., 1999:251). The ring with ID 303 is described as undecorated, with 'thickened, slightly pointed terminals, possibly representing crude snake heads' (Margetts, 2012:46). The ring found with ID 335 (Mill Hill) was also an undecorated ring with two slightly pointed terminals, though these were flattened (Stead, 1995:108).

Beads were found with only one inhumation (ID 186 – King Harry Lane, Herts.). Five translucent glass beads were found with this burial, as well as the copper alloy ring.

Bangles or bracelets were found in three cases. ID 31 (Addenbrooke's, Cambs.) had a bracelet fragment as well as the ring. ID 358 (St. John's Lane, Kent) had an iron bangle on their arm, and ID 316 (Mill Hill, Kent) had a bronze bracelet with two crudely shaped and decorated bronze rings hanging from it, around the left forearm of the young adult (Stead, 1995:108).

Six individuals had brooches, four of whom were from Mill Hill. A Colchester brooch was found with ID 401 (Thealby, alongside the finger ring) and a mid-1st century iron brooch with ID 213 (Stane Street, Baldock, Herts.). All four Mill Hill examples (IDs 306, 317, 339, 341) had at least one La Tène II or III brooch, all dated mid-2nd-mid 1st century BC).

Finally, ID 47 (Addenbrooke's, Cambs.) had a pin fragment recovered from the area of the right ribs (Evans et al., 2008:Table 2.10). ID 208 (Lee Valley Pipeline, Herts) also had a very large copper pin placed over the legs, leaving copper staining across both tibiae and fibulae, but they appear to have been equipped with pottery as well (see below).

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[27] Norton Road/Groveland Way, Beds., Addenbrooke's Hutchinson (Cambs.), Hinxton Rings (Cambs.), Leysdown Road (Kent), Mill Hill (Kent), and Thealby Ironstone Mine (Lincs.) respectively.

The proportion from Mill Hill here is very high, and these are not the only individuals from the site with burial accompaniments, but it is also the largest cemetery in the dataset. Individuals from other areas of the region are represented, but the numbers overall are small. All but two (IDs 19, 401) were cemetery burials, 11 were in sub-rectangular graves, but three were in ditches and one (ID 112) in a grave cut through an earlier cremation ring ditch. Rings are widespread, with at least one individual from Lincolnshire, Bedfordshire, Cambridgeshire, Hertfordshire and Kent buried with a ring. Brooches appear more restricted geographically.

6.8.4. Metalwork and weapons

Three individuals had metal objects as the sole burial accompaniment, and two had metal objects that could be seen as weapons, or as more utilitarian items. ID 218 (Verulam Hills Field, Herts.) had a fragment of an iron knife blade near his left elbow. The size of the fragment is unspecified – it is not clear whether this was a complete knife, poorly preserved, or something else (Ilid, 1968). ID 221 from the same site had an iron arrowhead near their right elbow (mentioned above), which may be a burial accompaniment, or relate to their death. Only one other inhumation from the entire dataset was equipped with a knife – ID 173 below, from another Baldock site. No other arrowheads are recorded. Other individuals were accompanied by more overt weaponry, these are discussed below (6.8.5.).

ID 190 (King Harry Lane, Herts.) did not survive skeletally due to acidic soils, but two rows of nails were found in the small grave, either for a coffin or a wooden board placed around the dead, like ID 318 (below) (Stead and Rigby, 1989:111). With ID 327 (Mill Hill, Kent) was a bronze wire handle, probably for a bag made of organic material like leather or cloth, placed over the lower torso (Stead, 1995:109). ID 346, also from Mill Hill, was accompanied by two bronze ‘spoons’ placed beside the head. The exact function of these spoons is unknown and while others are recorded (23 in total), none have been published since 1951 (*ibid*, 106). A pair from Burnmouth (Scotland) were found with an inhumation, and others from the South West and Wales may also have, the bones not surviving (*ibid*, 106-7). The only examples from the southeast, aside from Mill Hill, were two single spoons found in London, though there are others from the continent (*ibid*, 107).

6.8.5. Multiple associated goods/remains

Fourteen individuals from 10 sites in five counties were deposited with multiple goods, of more than one category (i.e. not four vessels). Four of these were from Mill Hill (IDs 307, 318, 330, 337) and four more were from sites within the Baldock group, with a fifth not far away.

Six of 14 were placed with pottery and one other accompaniment. ID 25 (Stagsden Bypass, Beds.) was buried with a deliberately broken jar, and a new-born foal. The foal may have been complete, but was not fully excavated (Dawson, 2000:45-9), and was around the same age as the human neonate. ID 50 (Babraham Research Campus, Cambs.) was given two vessels (a beaker and a pedestal tazza), placed above the head, plus a Colchester type brooch (Fig. 6.13). ID 318 (Mill Hill, Kent.) also had pottery and a brooch, this time a La Tène II or III brooch and several small potsherds, which could be residual. ID 318 may also have been covered by a large board, as five iron joiners dogs were recovered from the area above the skeleton (Stead, 1995:110). ID 330 (Mill Hill) had broken Iron Age grog-tempered ware pottery and an unworn coin (King Eppillus, c. AD 1-10), the only example of a coin from the entire dataset (Holman, 1995:112). ID 173 (California Doline, Herts.) had a pottery disk over their spine, as well as an iron knife below the left hip. Iron staining in the grave to the north and west of the head suggests other metalwork did not survive (Hertfordshire HER 13174). ID 208 (Lee Valley Pipeline), mentioned above, had a large copper-alloy pin placed over the lower legs, and the grave plan for this individual shows a circular object, possibly with a spout, placed below the pelvis (Fig.6.12). It is likely this is a pottery vessel, analysis of the finds is forthcoming.

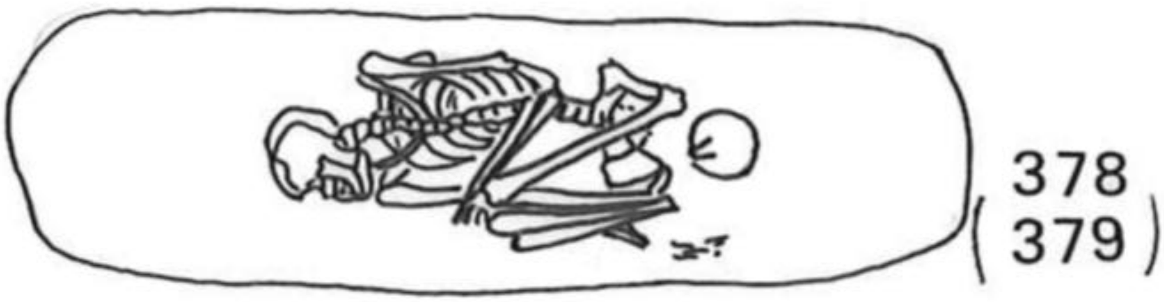


Figure 6.12: Grave plan of ID 208 from Lee Valley Pipeline, showing what appears to be a vessel with a spout, or handle, placed east of the pelvis. Source: Keith Fitzpatrick-Matthews, pers.comm.

Two other individuals (IDs 177-8, Hill Cottage, Herts.) had pottery, (small sherds), animal bone (41g and 14g) and a single copper bead each – by the left patella for ID 177 and the right patella in ID 178. In all nine of 14 contained pottery, from small loose sherds to multiple complete vessels.

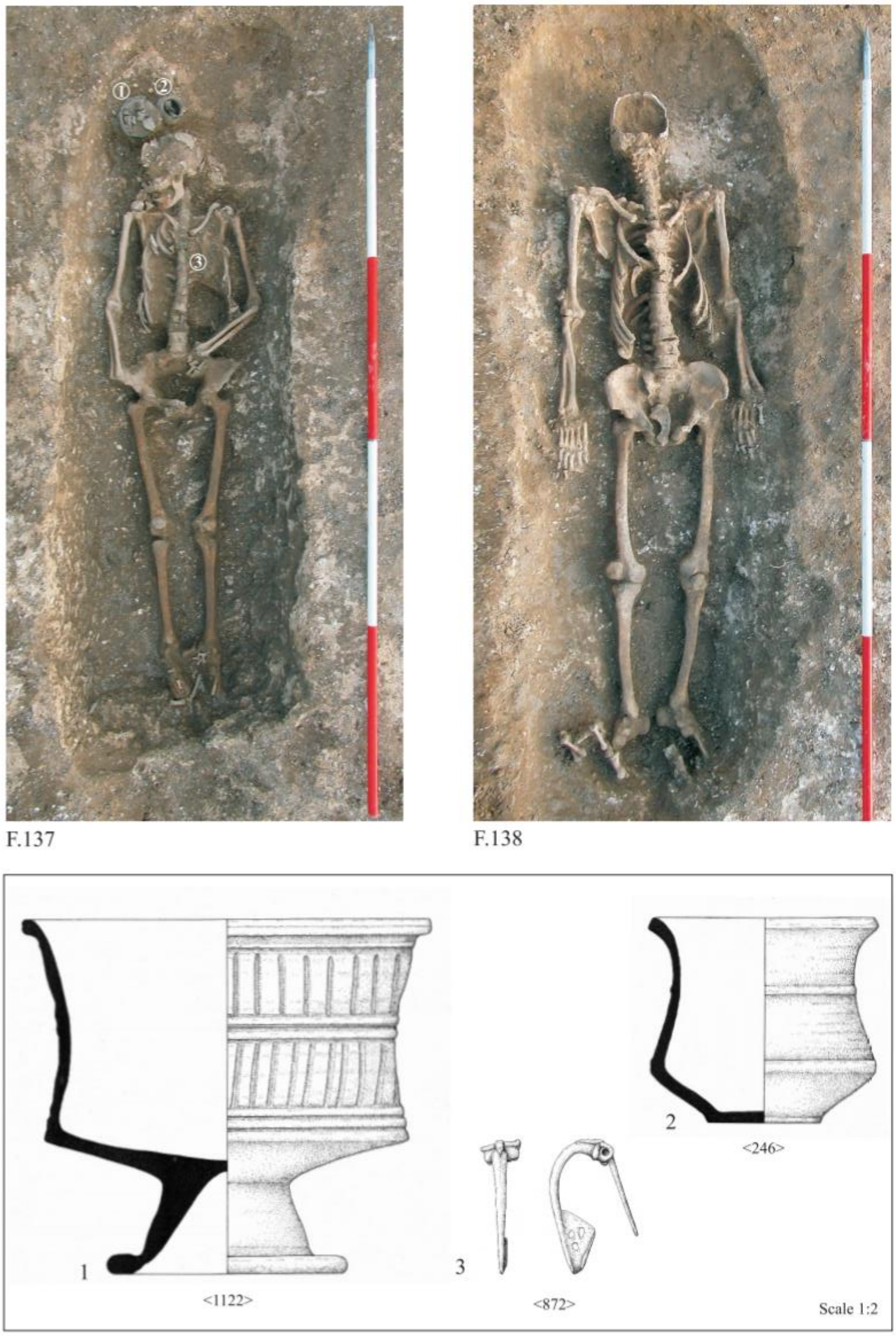


Figure 6.13: Burial IDs 50-1 (Babraham Research Campus, Cambs.), originally F.137-8 respectively, showing the two vessels and brooch found with the former. Source: Armour, 2007:Fig.8.

ID 224 (Walls Field, Herts.) was placed with additional human bone, part of an adult (probable male) cranium, by the right shoulder. ID 236 (Brisley Farm, Kent) is also another example of the deceased still wearing a ring at burial, a bronze finger ring on the left hand in this case. ID 337 (Mill Hill), like ID 25, contained an animal skeleton, and like ID 318, also had a La Tène II or III brooch. The brooch was with the body, and the disturbed skeleton of a lap dog was found above it, seemingly dumped in during backfilling.

Four of the fourteen were ‘rich’ burials – all contained a variety of goods and equipment far beyond the majority, and all contained weapons. ID 411 (Mildenhall, Suffolk) has been mentioned above, a person ‘of large dimensions’ (adult ??male) buried between two horses, with a sword on one side of the skeleton and a ‘celt’ on the other (likely an axe, adze or chisel), as well as more than one gold torc (Fox, 1923:81). As the remains were discovered by labourers in 1812, and the gold stolen and melted down, it is highly possible that other material was also with the skeleton, it may even have been a chariot burial, owing to the pair of horses (like the Pocklington chariot). IDs 235-6, the two 1st century AD burials from Brisley Farm (Kent) were equipped with a sword and spear, brooches and imported Gallo-Belgic pottery (Stevenson, 2012). For both, animal bone, charcoal, pottery and burnt clay were found in the ditch surrounding the burial, interpreted as feasting deposits. ID 235 is one of only two IA sword burials where the sword hilt is towards the feet, not the head (ibid, 92). Finally, ID 307 – The Mill Hill ‘warrior’ burial, the most elaborately accompanied individual in the region. ID 307 was a 30–35-year-old male, with a bronze crown/headband on his head, still in place upon excavation (Parfitt, 1995:18). An iron sword was placed over his right arm, with a decorated bronze scabbard and chape, plus a cast bronze decorated suspension ring and triangular strap fitting, both with coral beads (*ibid*, 18-21). A similarly decorated bronze brooch, also with coral beads, was found over the left lower leg, and may have been pinned to a cloak or other clothing placed over the legs. A shield was placed over the body (the only known shield from the dataset), which survived as bronze edge bindings and fittings (*ibid*, 18-21).

6.8.6. Material in other fills

Eleven inhumations had material in fills other than the immediate skeleton surroundings. Three were from the A421 Great Barford Bypass excavations (Beds., IDs 2-3, 5) and two from EKA2 Zone 4 (IDs 267-8, a double burial). Most of these 11 are likely the result of residual material being included in the backfill, or casual deposition of small amounts of waste. ID 5 had three sherds of grog tempered pottery in the fills, ID 167 (Stansted Airport, Essex) also had sparse pot sherds, as did 267-8, 406 (Bridge House Dairies, Suffolk) and 431 (East View Close, Essex). ID 359 (Tothill Street, Kent) contained a single iron nail, while 187 (King Harry Lane, Herts.) had three nails and sherds from a butt beaker, in this instance interpreted as a disturbed earlier burial (Stead and Rigby, 1989:354). ID 390 (Stenigot Reservoir, Lincs) contained an iron nail, LIA pottery and an unspecified amount of animal bone (Lindsey Arch. Services, 1997:11).

The final two individuals in this category had much greater quantities of material in the grave fills. ID 2 had large amounts of pottery, animal bone and quern fragments, interpreted as midden material used to backfill the grave (Webley, 2007:62). ID 3 was similar, with the addition of fired clay and a copper alloy Colchester type brooch. Both are from the same site. No complex deposits, like those seen in the preceding periods, were identified in the LIA dataset.

6.8.7. Other

Eight individuals have been placed in the 'other' category, as their accompaniments did not meet any major category, or they could not be refined further.

IDs 225-6 are the double burial from Wick Avenue, Herts. By the feet of the adult female, close to the neonate, was 626g of copper-alloy casting debris – crucible, mould fragments and more. Three moulds were for lynchpins or ferrules. Animal bone, charcoal and local pottery sherds were found in the fills also (Rowlinson, 1998). This double burial is not included in section 6.8.5. as the directly associated material is all of one character. It could be included with metalwork (6.8.4.) as it is all related, but there are no objects themselves, only paraphernalia for the crafting of objects. It is possible that the material here represents the dumping of industrial waste in the backfill of the grave, as is likely for the pot/bone/charcoal in the subsequent fills, but there may be some connection to the deceased also. No other inhumations with 'waste' deposits contained material like that at Wick Avenue.

ID 142 (Trumpington Park and Ride, Cambs.) has been mentioned above. A clay loomweight was found with a 3–4-month-old infant, and may have been used to crush its skull, either to cause death, or after death (Hinman, 2004:22). This, aside from perhaps the arrowhead with ID 221 (Verulam Hills Field, Herts.) is the only LIA individual where the associated object may have also been the instrument of death.

ID 234 (A228 bypass, Kent) was a perinate within a grave pit, covered by a layer of Kentish ragstones (Ellis, 2009:9). This is similar to IDs 131, 136-7 from EIA Trumpington Meadows, Cambs., and ID 372 from MIA Waterstone Park, Kent (Discussion 9.6.4). ID 15 (Harrold, Beds.) was similarly covered by stones, but this time they are described as having been 'crushed by large pebbles' (Eagles and Evison, 1970:23), similar to the adult female in Pit 19 at Wandlebury, her pelvis crushed by a chalk block (Chapter 8, Hartley, 1957:15). ID 204 (Lee Valley Pipeline, Herts.) may also have been buried with a stone – this time a large pillowstone, like ID 404 (MIA – Sedgeford, Norfolk), or perhaps a carved block like IDs 20 and 403 (above).

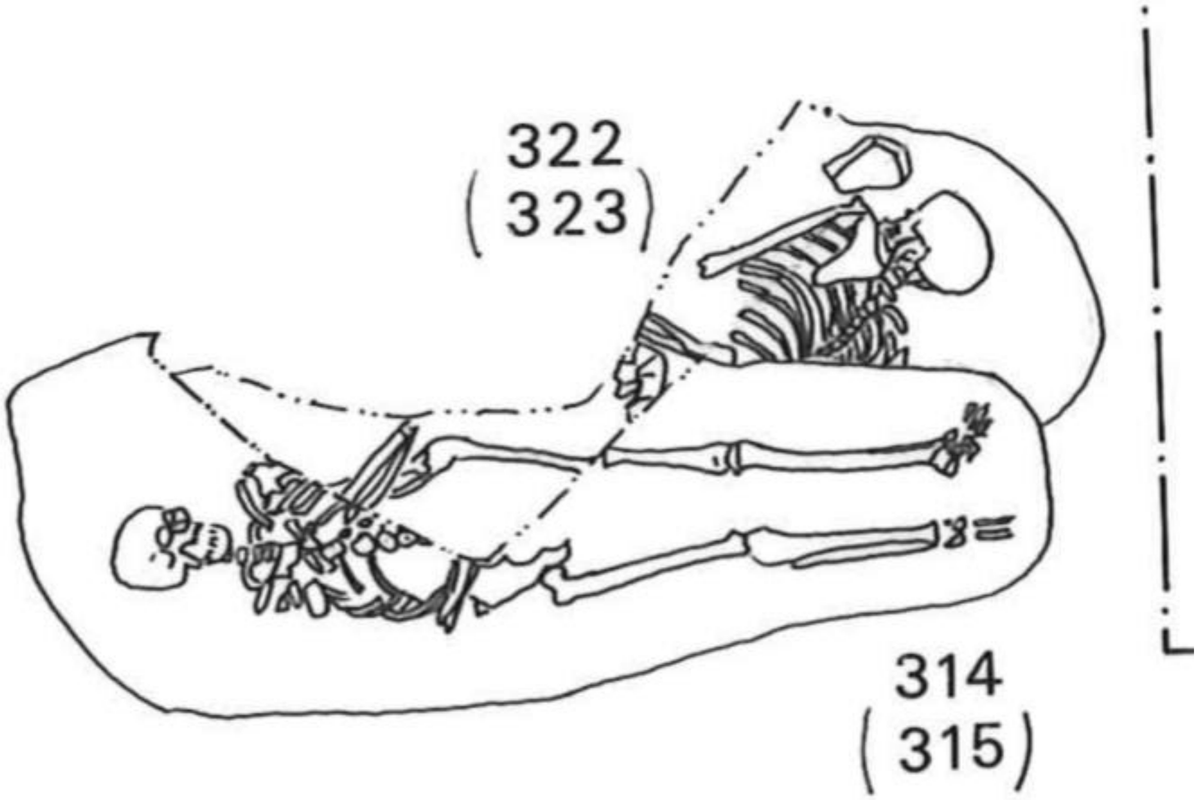


Figure 6.14: Grave plan of IDs 204 (322/323) and 203 (314/315) from Lee Valley Pipeline, Hertfordshire, showing a large flat stone by the left side of the head of ID 204. Source: Keith Fitzpatrick-Matthews, pers.comm.

ID 32 (Addenbrooke's Hutchinson, Cambs.) has similarities to IDs 25 and 337 (above), in that while nothing was directly associated with the dead, in a separate cut by the lower legs was a complete dog. Behind the dog's head was a flint nodule, perhaps its own pillowstone. ID 344 (Mill Hill, Kent) was likewise buried unaccompanied, but adjacent to the burial of a complete horse (Parfitt, 1995:Pl.V). They are parallel on near identical alignments, adjacent to one another, and separate from much of the rest of the cemetery.

6.9. Age

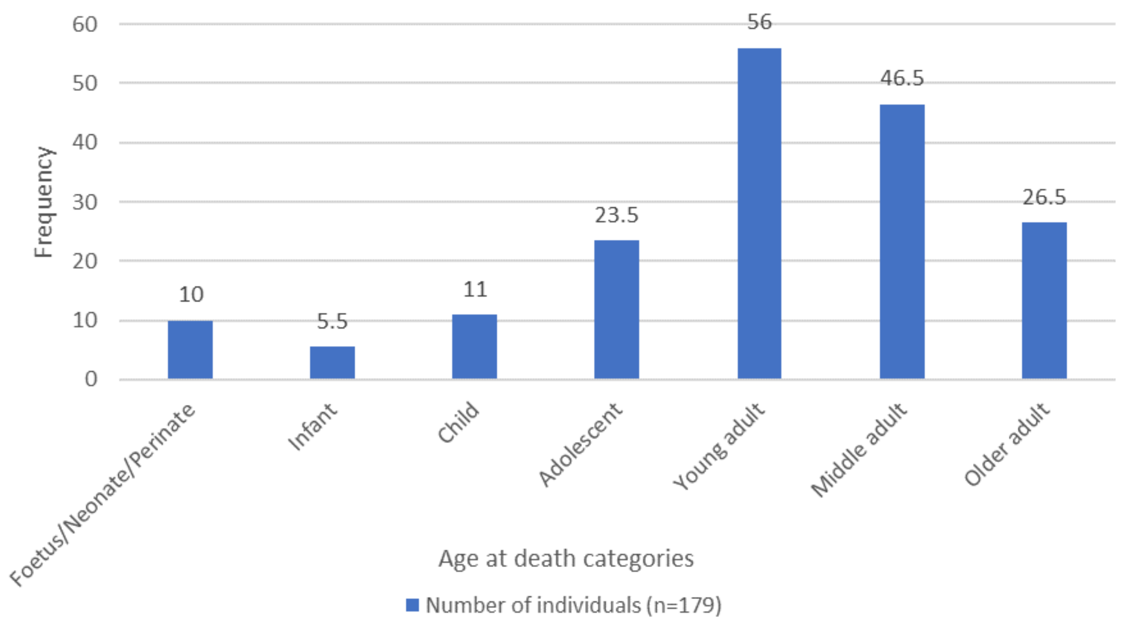


Figure 6.15 (above): Age-at-death demographics for LIA inhumations. Source: Author.

Table 6.9 (below): Age-at-death demographics (expanded categories), divided by country area. The largest number of individuals from any age category are highlighted in grey (Hertfordshire - Young adults). Source: Author.

	Foetus	Neonate/Perinate	Infant	Infant - Child	Child	Child - Adol.	Adolescent	Adol. - YA	YA	YA - MA	MA	MA - OA	OA	Adult	Unknown	Total
Lincs.	0	0	0	0	0	0	2	0	2	2	1	2	1	3	0	13
Beds.	0	2	0	0	0	0	1	0	1	0	1	0	3	2	4	14
Cambs.	1	4	2	0	2	0	3	2	11	2	4	15	2	10	0	58
Herts.	0	1	1	0	3	1	6	0	19	7	3	8	1	6	5	59
Norfolk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Suffolk	0	1	0	0	0	0	2	0	0	0	0	4	0	3	0	10
Essex	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	2
Kent	0	1	2	1	4	0	8	0	11	11	10	4	3	6	4	65
Total	1	9	5	1	10	1	22	2	44	22	19	33	10	31	13	223

Figure 6.15 shows the LIA inhumed individuals attributable to different age categories. Those who straddle two age categories are divided equally between them (see methods). Table 6.9 shows the same data, but without condensing the categories, and splitting them also by county.

Of the 223 LIA inhumations, thirteen individuals are of unknown age (poor preservation), and two more were recorded as 'possible infant' and 'possible adolescent' (IDs 190 (King Harry Lane, Herts.) and 69 (Cat's Water, Cambs.)). No bones from the former individual survived, but the grave was very small, and for the latter, some skeletal material was present, the rest visible only as a soil impression. ID 411 (Mildenhall, Suffolk) also, recorded as an ??adult as they were described as being 'of large dimensions', and so unlikely subadult, but no more detail could be confirmed (section 6.4.6). A further 31 individuals were only identifiable to 'adult' age, with no more precision. In Fig. 6.15, both the 'adult' and those of unknown age have been removed, leaving 179 remaining individuals of known age – including the 'possibles'. In addition, several individuals straddled more than two age brackets, and so were placed in the most appropriate ones. IDs 195 (King Harry Lane), 390 (Stenigot Reservoir, Lincs.) and 408-10 (Flixton Park Quarry, Suffolk) were all broadly aged to 'over 30', which technically would place them somewhere between young and old adult – however as 30 is the minimum age for these individuals, they were recorded as middle–older adults. ID 199 (Lee Valley Pipeline, Herts.) was estimated to be 30-50+ years old, and so too was recorded as a middle–older adult.

Foetal, neonatal and perinatal remains are again underrepresented, totalling 4.8% of the 210 aged individuals (6.7% for EIA, 8.1% for MIA). Children made up 10% (6/60) of the EIA assemblage, and 13.7% (16/117) of the MIA assemblage, but they are lacking in the LIA – only 5.2% (11/210) of the total, despite a much larger overall sample. This could be related to the shift to cemetery burial seen at the time. As with the preceding periods the population distribution appears otherwise normal, though young adults (20-35) were by far the most common, almost twice that of the adolescents, and more than double the middle adults (35-50). The young adults that could be given more precise age estimations do fit the whole age range – 13 have maximum ages-at-death of 25 or less, six have maximum ages of 26-30, and 22 have maximum ages of 31-35, closer to the middle adult category. For the young-middle adults also, a range of ages is present – eight are broadly 30-40 years old, another eight are simply 'under 45' (all from Tothill Street). Similarly for the middle–older adults, 16 of 34 were at least 45 years old at death, so in reality closer to older adult than middle.

For the LIA, overall, at least 23.3% (49/210) died before reaching 20 years old (foetal – adolescent). Discounting the 'adult' individuals, then over half the aged LIA total died before reaching 35 years old (106/179, 59.2%)[28]. Only 5.6% categorically reached at least 50 years

[28] 106 = the total of all those aged foetal to young adult inclusive, plus half the value of the young–middle adults (11). It may be that some or all of the young–middle adults are over 35, but this cannot be proven.

old (10/179), but some of the middle-older adults may well have also. The ‘adult’ individuals are not included in these figures as they may be anywhere from 20 to 75+ years old, they are useful only in comparing to sub-adults.

6.9.1. Age and burial context

Age category	No. of individuals	Number placed in graves	Additional individuals in graves cut into other features	Placed in pits (all types)
Foetus / Neonate / Perinate	10	0%	0	4
Infant	5	60% (3)	0	2
Infant - Child	1	100% (1)	0	
Child	10	30% (3)	3	1
Child - Adol.	1	0%	1	
Adolescent	22	63.6% (14)	1	3
Adolescent - YA	2	100% (2)	0	
YA	44	68.2% (29)	5	1
YA - MA	22	72.7% (16)	5	
MA	19	73.7% (14)	1	1
MA - OA	33	78.8% (27)	2	
OA	10	60% (6)	2	
‘Adult'	31	64.5% (20)	5	
Total	210	64.3% (135)	25	12

Table 6.10: LIA individuals divided by age-at-death and depositional context, showing a consistent majority in graves for almost all age groups. Source: Author.

For the very young, there do appear to be regional variations – nearly half of those under three years old are from Cambridgeshire (7/15), with four more from adjacent areas, but only three from Kent, despite it having the largest inhumation population.

Age appears to have played little role in burial context for adults but may have for subadults. Table 6.10 shows that for age groups adolescent and older, at least 63.6% and up to almost 80% of individuals were buried in graves, with others also buried in graves cut into ditches, dolines and other features, another four individuals (IDs 407-10, Flixton Park Quarry, Suffolk) in a mass grave and six more from double burials in graves. For children the percentage in grave contexts drops to 30% (3/10), while for infants it is still 60% (3/5) – but here the overall number is so small that 1-2 individuals makes a much larger difference. It is noteworthy though that not one inhumed foetal, neonatal or perinatal individual in the Late Iron Age came from a grave context. This is highly statistically significant despite the low number of foetal/neonatal/perinatal remains (χ^2=20.25, df=1, *p*=.0000068).

Ditch burial was also more common in younger individuals – 60% of foetal/neonates/perinates were in ditches (6/10), 20% of children (2/10), 9.1% of adolescents (2/22) and 12.8% (5/39) of young adults. For age groups above this it was lower – no young-middle adults and 5.6% of middle adults (2/36), rising slightly for middle-older adults (9.1%, 3/33). No older adults were found in ditches. This is complicated by the number of those in graves cut into ditches – almost all of which were individuals over 20 years old.

As mentioned above 10/12 pit inhumations were of subadults (under 20 years old), and seven of 12 had not reached adolescence (58.3%). All the remaining foetal/neonates/perinates were found in pits (4/10), as were 40% of infants (2/5), 10% of children (1/10) and 13.6% of adolescents (3/22). Conversely the figure is 2.3% for young adults (1/44), plus another individual in a pit cut into a tree throw (ID 98, Glebe Farm, Cambs.) and one in a grave cut into a pit (ID 87, Duxford, Cambs.), and 5.3% for middle adults (1/19), still only a single example. No young-middle or middle-older or older adults were found in pits. As stated above, the overall number of individuals in pits is very low in the LIA, and while single individuals of multiple age categories have been recovered from pit contexts it is the younger, rather than the adult, that appear more consistently deposited.

6.9.2. Age and burial position

Age category	No. with recorded position and age	Extended supine	Extended prone or on one side
Foetus / Neonate / Perinate	7	14.3% (1)	1 prone
Infant	3	66.6% (2)	
Infant - Child	1	100% (1)	
Child	9	88.9% (8)	
Child - Adol.	1	0%	
Adolescent	19	42.1% (8)	1 prone, 1 left
Adolescent - YA	2	0%	
YA	43	60.5% (26)	3 prone, 1 left
YA - MA	22	68.2% (15)	3 prone, 1 left
MA	18	61.1% (11)	1 prone
MA - OA	33	54.5% (18)	2 prone, 1 left
OA	10	50% (5)	1 prone
‘Adult'	30	66.7% (20)	2 prone
Total	198	58.1% (115)	14 prone, 4 left

Table 6.11: Age-at-death for LIA inhumations divided by skeletal position. Source: Author.

Skeletal position largely echoes burial context with regards to age – for all age groups except foetal/neonate/perinate, extended supine is the majority position, over 50% in all but one category (42.1% (8/19) of adolescents). Those extended but prone or on their side are also nearly all adolescent or older. Crouched/flexed individuals were identified for every age group, the second most common overall position in all cases except for the foetal/neonate/perinate inhumations (5/7, 71%). While other positions occur, none are frequent enough to discuss further – extended inhumation is a consistent majority.

6.9.3. Age and grave goods

Age category	No. with available data	Those unaccompanied
Foetus / Neonate / Perinate	10	60% (6)
Infant	4	25% (1)
Infant - Child	1	100% (1)
Child	9	77.8% (7)
Adolescent	20	55% (11)
Adolescent - YA	2	100% (1)
YA	42	59.5% (25)
YA - MA	21	71.4% (15)
MA	19	68.4% (13)
MA - OA	32	84.4% (27)
OA	10	80% (8)
‘Adult'	28	53.6% (15)
Unknown age	10	70% (7)
Total	208	66.3% (138)

Table 6.12: Age-at-death for LIA inhumations, divided by burial accompaniments (or lack thereof). Source: Author.

For all age categories except infants, the majority are unaccompanied. There appears to be a slightly greater proportion of unaccompanied adults compared to subadults, but this is likely due to the fact that there are far more adults, and they are thus more statistically valid. The greatest proportion of unaccompanied adults are those of middle-older age (84.4%), but in all age groups except infants, over half are unaccompanied.

Where cattle bones are included as the sole grave good, all the associated individuals are at least 30 years old, but there are only three such cases– IDs 147 (Wandlebury, Cambs.), 168 (A505, Herts.), 174 (Folly Lane, Herts.), two males, one female.

No subadults were given pottery as a sole burial accompaniment, and two of the three adolescents were IDs 399-400 (Thealby, Lincs.), a double burial with associated fragments, not a complete vessel. Beyond this, young, middle and older adults were placed with directly associated pottery vessels.

Only three subadults were directly associated with personal ornaments, and of these one was estimated to be 18-20 years old (ID 316), and another was very poorly preserved, determined to be a child in part due to the size of the grave (ID 317). Both of these were from Mill Hill, Kent. Ten other individuals associated with personal ornaments could be aged, all were adults. Here though it should also be remembered that 6/15 total individuals were from one site (Mill Hill), and 8/16 from Kent.

Likewise for those buried with more than one category of goods, only two were subadults, ID 25 (Stagsden Bypass neonate with a horse and a jar) and an adolescent estimated to be 16-20, so nearing young adult age, and seemingly one of a pair with a young adult female (25-35, IDs 177-8 (Hill Cottage, Herts.)), both with beads by their knees. Beyond this the more ‘richly’ accompanied burials are a range of adult ages with no obvious correlation between adult age and accompaniments.

For those with material outside the immediate skeletal surroundings (backfill etc.) all age groups except infants are broadly represented, the youngest a perinate (ID 3, A421, Beds.) and the oldest over 50 (ID 268, EKA2 Zone 4, Kent).

Overall it seems that there are few major age-based patterns with regard to grave goods, but where deliberately, directly associated material occurs, it is more common with adults than subadults.

6.9.4. Age and sex

	Possible F	Probable F	Female	Total	Possible M	Probable M	Male	Total	Unsexed
Adolescent		3	4	7	1	3		4	11
Adolescent - YA				0			2	3	
YA	1	5	14	20		5	16	21	3
YA - MA		1	7	8	1		6	7	7
MA		4	4	8		2	6	8	3
MA - OA		2	12	14			15	15	3
OA	2		4	6	1		3	3	
Total	3	15	45	63	3	10	48	61	27

Table 6.13: Age-at-death divided by biological sex estimations for LIA inhumations. Source: Author.

Age at death was compared to biological sex, to see if there were any visible patterns in the mortality profiles of different sexes (Table 6.13).

If including the ‘possible’ and ‘probable’ sexed individuals, of known age, then the data is almost exactly balanced in terms of sex – 63 females and 61 males. All age groups are also broadly evenly represented – there are three more adolescent females, and one more young-middle adult females, but conversely there are two more adolescent–young adult males and one more middle–older adult males. Even if the most questionable individuals are excluded (possibles), these ratios remain largely unchanged, except for adolescents – seven females, three males.

Of those with more precise age estimations, an almost equal number of males and females died before reaching 40 years old (31 females, 29 males) – and the only discrepancy here comes from the adolescents. An additional five females and nine males died at or before 45 years old. There appear to be no age/sex-based selection criteria in this LIA assemblage; there is no indication that, at any age, males and females were more or less likely to be inhumed at death.

6.10. Sex

Possible Female	Probable Female	Female	Total	Possible Male	Probable Male	Male	Total	Unsexed
4	20	48	72	5	11	52	68	83

Table 6.14: Biological sex estimations for LIA inhumations. Source: Author.

Sexing was attempted for 11 of 22 adolescents, though in only four is sex secure, all females. In total, 30 individuals were unsexed due to age (neonate to adolescent). The remaining 47 unsexed adolescents and adults were too poorly preserved for accurate sex assessment. The split between sexed females and males is even (51.4% female), and if the least securely sexed individuals (possibles) are removed this is largely unchanged. Overall this suggests that the dataset is demographically valid with regard to sex, and that in the LIA, both males and females are being inhumed with broadly equal frequency.

6.10.1. Sex and location

	Possible F	Probable F	Female	Total	Possible M	Probable M	Male	Total
Lincs.	0	3	1	4	0	1	3	4
Beds.	2	0	0	2	3	0	1	4
Cambs.	1	2	20	23	0	0	16	16
Herts.	0	9	10	19	0	6	17	23
Norfolk	0	0	0	0	0	0	0	0
Suffolk	0	0	4	4	1	0	3	4
Essex	0	0	0	0	0	0	0	0
Kent	1	6	13	20	1	4	12	17

Table 6.15: Sexed LIA inhumations divided by modern county area. Source: Author.

The geographic distribution of males and females is broadly even for all counties. There are more females from Cambridgeshire than males (59% female), and Kent (54.1%), but the reverse is true for Hertfordshire (54.8% male), the differences small in each instance. It appears that regionality plays no role in sex-based inhumation practices.

6.10.2. Sex and site / burial context

	Possible F	Probable F	Female	Total	Possible M	Probable M	Male	Total
Cemetery / **Periphery**	2	15	31 **(+2)**	50	2	10	31 **(+1)**	44
Hillfort	0	1	0	1	0	0	3	3
Industrial	0	3	0	3	0	0	0	0
Isolated	1	0	2	3	1	0	1	2
Mortuary landscape	0	1	1	2	0	0	3	3
Settlement / **Periphery**	1	0	12	13	2	1	12 **(+1)**	16

Table 6.16: Sexed LIA inhumations divided by site context. Source: Author.

Site context also seems to bear no relation to sex – broadly even numbers of males and females were placed in cemetery and settlement contexts (the two largest categories), with slightly greater numbers of females in the cemeteries. There were minor differences in the other categories, but the number of individuals is too small to be significant. Cemetery burial forms an overwhelming majority in the LIA and seems to have been afforded to males and females in broadly equal measure.

	Possible F	Probable F	Female	Total	Possible M	Probable M	Male	Total
Ditch / Ditch terminus	1	3	3	7	0	1	3	4
Sub-rectangular grave	2	11	29	42	2	10	26	38
Ovoid grave	0	1	2	3	1	0	4	5
Irregular grave	0	0	1	1	0	0	0	0
Unspecified grave	0	0	1	1	0	0	3	3
Graves cut into other features	0	1	3	4	0	0	14	14
Pits (all types)	1	1	1	3	1	0	1	2
Double burial	0	2	3	5	0	0	0	0
Multiple burial	0	0	2	2	0	0	1	1
Associated with a structure	0	0	1	1	0	0	0	0
Burial enclosure	0	0	2	2	0	0	0	0
Other	0	0	1	1	1	0	0	1

Table 6.17: Sexed LIA inhumations divided by depositional context. Source: Author.

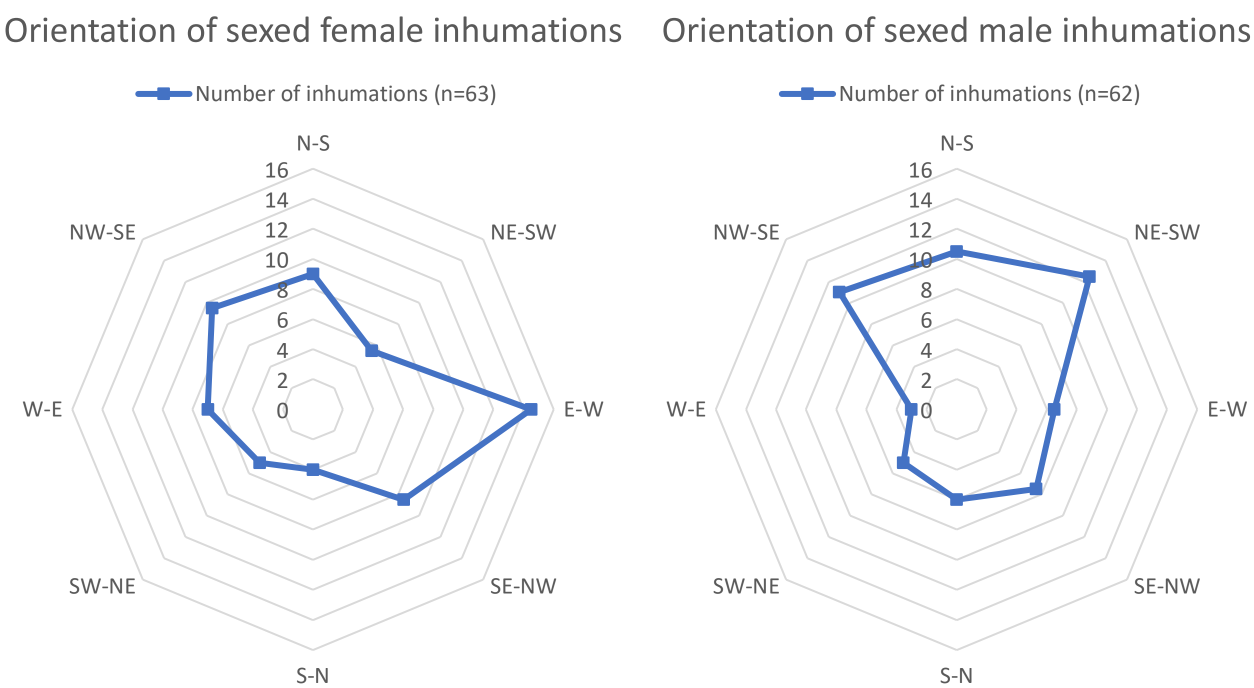
The same is true for burial context also. Sub-rectangular grave burial is the only category with a large sample size, and these are 52.5% female (42/80). Females also show more variety in grave context – with individuals in 12 categories compared to eight for males, but the numbers are very small for most categories, and some represent divisions that may not have meant much to Iron Age people (e.g. grave shape). The only category with any notable sex-based division is those placed in graves cut into other features (most often ditches). Here 77.8% are male (14/18). Of these however, seven males and one female are from a single site (Verulam Hills Field, Herts. – IDs 214-221), and three other males are from one site also (Weatherlees pipeline, Kent – IDs 373, 375-6). Even considering this though, the proportion of females in this type of context is very low, however restricted the practice, and the disparity here is statistically significant (χ^2=7.0536, df=1, *p*=.007911).

6.10.3. Sex and position / orientation

As expected, extended supine burial is the majority position for both sexes, and there is no difference between males and females. No other position category had enough individuals for further analysis, but each position is represented by both sexes, and with generally comparable frequency. There is some variety among the crouched/flexed individuals, but the number in each category is small, and if all the crouched and flexed individuals are grouped together, including those who are supine and prone but flexed, then there are 22 females and 21 males.

	Possible F	Probable F	Female	Total	Possible M	Probable M	Male	Total
Extended supine	3	11	25	39	4	7	28	39
Extended prone	0	1	5	6	0	0	5	5
Extended left	0	0	1	1	0	2	0	2
Extended right	0	0	0	0	0	0	0	0
Crouched left	0	1	1	2	0	0	1	1
Crouched right	0	2	3	5	0	2	4	6
Crouched (unknown side)	1	3	0	4	1	2	0	3
Flexed supine	0	0	2	2	0	0	6	6
Flexed prone	0	1	1	2	0	0	3	3
Flexed left	0	0	3	3	0	0	1	1
Flexed right	0	1	3	4	0	0	1	1
Flexed (unknown side)	0	0	3	3	0	0	1	1
Unspecified / Poor preservation	0	0	1	1	0	0	0	0

Table 6.18 (above): Sexed LIA inhumations divided by skeletal position. Source: Author.



Figures 6.16 (left) and 6.17 (right: Charts showing the orientations of sexed LIA inhumations. Source: Author.

Figs. 6.16 and 6.17 show the orientation of LIA males and females. Eight adult females and six males had no recorded orientation, so the number of females in Fig. 6.16 is 63, the number of males in Fig. 6.17 is 62. As with the preceding periods, the orientations have been presented to the nearest of eight compass points, with those who were oriented between these (e.g. NNE-SSW) equally between the adjacent two points.

Unlike with the EIA and MIA samples, there does seem to be some sex-based differentiation in orientation. Thirteen females (14.5 merged) and only four males (6.5 merged) were aligned E-W, while 12 males (12.5 merged) were NE-SW and only five females (5.5 merged). Overall there seems to be a broad pattern of males being oriented with the head between NW and NE – broadly North-South, while females were more commonly broadly East-West, the head somewhere between east and SE. There is more variety here than in the preceding periods also, with multiple individuals of both sexes oriented in every direction, including a large number of females oriented NW-SE and N-S, as the males are. The proportion of females placed E-W, compared to the males, is not statistically significant (χ^2=3.3681, df=1, p=.066471). The lower proportion of N-S aligned individuals overall here (19.5) compared to Fig. 6.10 (42) is due to the absence of unsexed adults and juveniles in Figs. 6.16-17.

6.10.4. Sex and grave goods

	Possible F	Probable F	Female	Total	Possible M	Probable M	Male	Total
Animal bone	0	0	1	1	0	1	2	3
Pottery	1	3	1	5	0	2	3	5
Personal ornaments	1	3	2	6	0	1	1	2
Metalwork	0	0	0	0	0	1	0	1
Weapons	0	0	0	0	0	0	2	2
Multiple associated goods	0	2	4	6	1	2	1	4
'Domestic waste' in fills outside the immediate sk. surroundings	0	1	3	4	0	0	2	2
Other	0	1	2	3	1	1	0	2
None	2	10	33	45	3	3	38	44
No data	0	0	2	2	0	0	3	3

Table 6.19: Sexed LIA inhumations divided by associated goods / burial accompaniments. Source: Author.

Again, for patterns with sex and grave goods, only unaccompanied burials have significantly frequent numbers – 45 females, 44 males, and there is no evidence for any sex bias. The only two burials solely with weapons are both male, however both are in poor condition, both from the same site, and both could be interpreted not as 'weapon burials'. One (ID 221, Verulam Hills Field, Herts.) contains an arrowhead near the elbow, which may be the result of an injury more than a deposit, while the other (ID 218) contains a knife blade, which may be more functional than martial. ID 173 (California Doline, Herts.) was also buried with a knife blade, among other items, and is female. The four 'rich' burials containing weapons (6.8.5.) were all originally interpreted as male, but in only one case has this been proven osteologically (ID 307, Mill Hill, Kent). Arguments of weapons as a solely male grave good, in this region and time at least, have no support one way or the other from skeletal material.

Three times as many females as males have personal ornaments, but the total is still only eight individuals. Inhumations with multiple goods are fairly equally split between male and female. Of the 10 that could be sexed, eight contained personal ornaments of some form, four male, four female. Seven total sexed individuals were accompanied by at least one brooch – five of seven (71.4%) were female. However, five of seven (3f, 2m) were all from Mill Hill. Five sexed adults had rings, again females are more common (80%, 4/5).

6.11. Conclusion

The 223 inhumations dateable to the LIA form a highly representative dataset, almost twice that of the MIA sample and over three times that of the EIA, despite easily the narrowest chronological timeframe (*c.*260 years). The sample is demographically valid, with an even split between males and females. All ages are represented also, with a relatively normal mortality profile for adults. Under 12's were poorly represented, but not absent. Under 3's were more commonly inhumed in Cambridgeshire and surrounding areas, and less so in Kent. Over half of the LIA individuals died at or before reaching 35 years old (106/179), with a broadly equal number of males and females having died at or before 40 years old (31f, 29m). There was little overall indication for the selection of, or exclusion of specific age groups and sexes for inhumation burial, aside from the underrepresentation of children.

As with the preceding periods, Cambridgeshire and Kent were two regions with large numbers of inhumations, but the LIA saw a dramatic increase in the number identified from Hertfordshire also, largely from cemeteries immediately pre-dating, or concurrent with the Roman conquest, outside settlements at Baldock and Verulamium. Again, as with the EIA and MIA, Norfolk, Suffolk and Essex produced very few, if any LIA inhumations.

While settlement burial was previously a majority (73.5% in the EIA and 55.9% in the MIA), in the LIA it was overtaken by cemetery inhumation, with 63.2% (141/223) of all the LIA individuals being placed in cemetery contexts. There was regional variety here though, with 20 Cambridgeshire individuals being identified on seven settlement sites, and 51 total settlement burials recorded (21.9%). Cemetery inhumation appears to have become more prevalent in the latest Iron Age, as 41/51 LIA-Conquest period inhumations were from cemeteries, as were 20/29 conquest period individuals and 11/16 LIA-ERB inhumations.

In line with cemetery inhumation, over half of the total were placed in sub-rectangular graves, with 38 others in graves of varying shapes, or with more than one individual per grave, and 29 more in graves cut into other features. Together these represent an overwhelming 80.7% (180/223) of the LIA data. Consistent with this also were those placed in an extended supine position (131/206, 58.7%), with 17 others extended but either prone or on their side. The only statistically significant pattern here regarding sex was that of males in graves cut into existing features (section 6.10.2). Burial context did appear to have an age-related component though, as only 3/10 children were found in graves, and not one foetal/neonatal/perinatal individual. Subadults (under 20's) in general were more likely to be placed in ditches and pits than adults.

While site type, burial context and position show consistent trends, the orientation of LIA inhumations were much more varied than in the EIA and MIA. There appear to have been sex differences too – with 14.5 E-W aligned females, but only 6.5 males, while more males were placed with their heads broadly NW to NE. In a very broad sense there was a consistent pattern, in that 65% of the total LIA individuals had their head between NW and E, with a much smaller percentage oriented in all the other directions combined.

Burial accompaniments, or a lack thereof, were consistent with most previous categories – 138/208 (66.3%) of the LIA individuals were unaccompanied. There was an increase in personal ornaments from the preceding periods – brooches, pins, torcs, rings, beads and bracelets all feature. Rings were relatively widespread, but brooches appear somewhat restricted, with many from the cemetery at Mill Hill. Four elaborate inhumations were identified, all with weapons and personal ornaments – all four could be interpreted as 'warrior burials'. Five individuals were associated with parts of, or complete horses. Of these two were neonates, which is statistically significant as only ten neonates/perinates/foetuses were recorded out of 223 LIA inhumations.

Overall, the LIA sees a shift to unaccompanied cemetery inhumation in sub-rectangular graves, a rite afforded to adult males and females equally, but somewhat less so to subadults. This became more prevalent in the final years of the LIA and into the Conquest period.

6.12 Iron Age – imprecisely dated

Sixteen inhumations could not be dated to a specific Early, Middle or Late division. They are included here, but with no in-depth analysis, as they are likely incomparable with one another.

Three are from Colne Fen, Cambs. (IDs 80, 81, 83). They are three of four individuals from the site, the last (ID 82) was C14 dated to the MIA. The Iron Age settlement however, lasts from the Middle and into the LIA, and the three remaining individuals were found in different areas, with no dateable goods (Evans, 2013a:178). Survival was very poor, but all were crouched and broadly N-S. There is also a possibility they are Bronze Age, but they certainly pre-date Romano-British activity on the site (Regan et al., 2004:19). The orientation of the graves and their crouched positions, coupled with the dated burial, is consistent with an MIA date for these three but it does not exclude them from being LIA.

Seven individuals are from Wandlebury hillfort, Cambs. Of these, five were found together in a mass grave, seemingly thrown on top of one another in an E-W aligned trench outside the ramparts, to the southeast (Denston and Taylor, 1977:1). All were of broadly adult age, ranging from 15-20 (ID 149) to at least 35-55 (ID 152). The youngest was unsexed, ID 151 was female, the others (IDs 148, 150, 152) were all male or probable males. The adolescent had suffered a perimortem sword cut to the left mandible (*ibid*, 1-2). Owing to the unusual burial context, the evidence for interpersonal violence, and the location outside a hillfort, the likelihood of these individuals being the victims of an attack on Wandlebury is high. It is tempting to link this to the LIA/Roman invasion; however the site was occupied for hundreds of years and again there was no dateable material with the remains. IDs 146 and 155 are also from Wandlebury. Both adults, one male, one unsexed (146), they were damaged by a bulldozer during construction of a cricket pitch, close to the five other individuals outside the ring ditches (Bevis et al., 1967:107). Their burial contexts and positions are unknown. Denston and Taylor (1977) argued that all seven may form part of an Iron Age cemetery, which, based on the data, would reasonably place them in the LIA. The ringwork was constructed sometime in the 5th century BC, though French (2004:15) posited that there could have been EIA occupation prior to this also. The site was occupied throughout the MIA-LIA period, and into the Romano-British (1st-2nd centuries AD), though on a reduced scale (*ibid*, 15). The three dated Wandlebury inhumations are all from this MIA-LIA period, and all are from pits (IDs 153-4, 147). The inhumations outside the ramparts appear quite different though, and owing to the long occupation period, and the fact that they are unlike most LIA cemeteries in the dataset, they cannot be dated any more precisely than ‘Iron Age’.

Two more were from the settlement at Ashwell, Cambs. IDs 48-9 were found 5m from one another, both badly truncated E-W grave burials. They were both fragmented and could only be assigned to 'possible male' sex, with ID 48 a middle-older adult and ID 49 only ascribable to 'adult'. Grave goods are not recorded with either and only 48 had an identifiable burial position (crouched left). The greatest occupation evidence dates to the LIA, though there is evidence of EIA settlement also (Mortimer et al., 2005:19-20). This, and the lack of burial data, limits the dating of these individuals.

ID 97 (Glebe Farm, Cambs.) must be included here as it was never fully excavated. It was identified during the evaluation stage of an Iron Age settlement, the legs were exposed but the rest remained buried (Evans et al., 2005:16). It was N-S aligned and appeared to be crouched on the left side in a pit, again more akin to EIA-MIA practice than LIA, but without the rest of the burial exposed this is tentative at best. ID 96 (Fengate Power Station, Cambs.) survived only as a body stain, some 200m from the largely MIA-LIA Cat's Water settlement. Due to the poor survival of this individual it is unknown if they were prone or supine, extended or slightly flexed; their burial context is also uncertain, they may have been placed directly in the water (Pryor, 2001:59).

ID 417 (RAF Mildenhall, Washington Square) is the only Suffolk example imprecisely dated. A young adult male was recovered from a pit, in a crouched position, with no recorded goods. A series of LIA-ERB settlement enclosures were found, with pits and finds suggesting continuation into the RB period (Tester, 2012:0,8). IDs 414-6 are from other excavations on the RAF base, and ID 411 was found in the town of Mildenhall. All are LIA (411 less securely so). IDs 414-6 were all crouched, also in a settlement context. The manner of inhumation (crouched in a pit) has a greater affinity to the EIA-MIA than the LIA (Chapters 4-5). However, settlement burial in pits does still occur in small numbers in the LIA, and it is likely that ID 417, based on the surrounding contexts, is one of these, though it cannot be confirmed.

Finally, ID 269 (EKA2 Zone 6, Kent) was a neonate, placed flexed right in a small circular grave pit, in a settlement area. They were covered by a horse skull. The only other IA inhumation from EKA2 Zone 6 was an MIA child, also with a horse skull, this time over the legs (ID 270). Activity across the EKA2 area spans the entire period, with the majority of the settlement evidence from Zone 6 dated from the early MIA to the LIA (Andrews et al., 2015:124-136). That two child burials, both with horse skulls should occur in the same settlement area and NOT be broadly contemporary seems unlikely. The lack of directly dateable material though, means it must remain 'broadly Iron Age'.

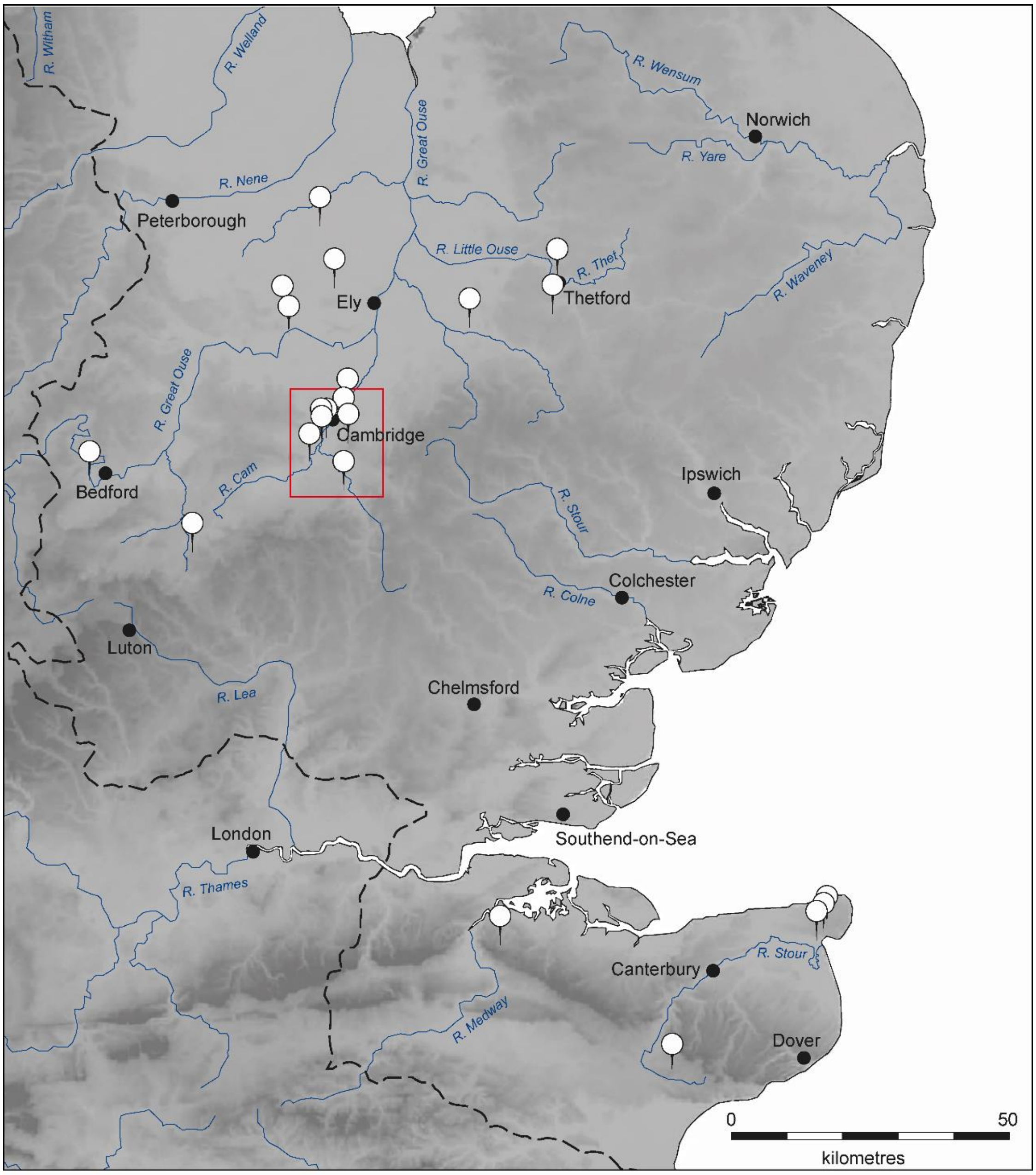
7. Articulated human skeletal deposits

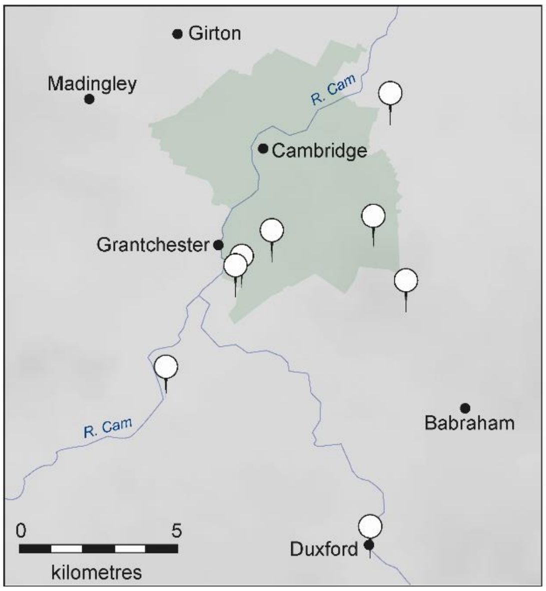
7.1. Introduction

Chapter 7 concerns the deposits of human remains that do not fit the criteria for complete articulated inhumation or disarticulated bone. Partial inhumations, articulated human remains and bone bundles (deposits of articulated or disarticulated skeletal elements from one individual) make up this third category. There are 44 such deposits identified from the study region, from 23 sites in five counties. The data here is much smaller than the other categories, and more varied in terms of depositional circumstances and represented elements. This chapter has therefore been laid out differently to the others as overall comparative analysis of the group would be of little value. The material has been divided into interpretive categories based on represented bones, level of articulation, context, and evidence of manipulation, truncation, or violence. These categories are discussed in turn, with summaries of each deposit and justification for their placement within a particular category. These categories help further inform on the wider post-mortem processes being undertaken here during the Iron Age, as it is argued that some of the deposits within this chapter are connected to processes surrounding disarticulated remains also (Discussion 9.7). A full detailed summary of each of the 44 deposits, as well as others that had to be excluded on the grounds of poor data, can be found in Appendix 2. The raw data is in Appendix 1.

7.2. Deposit demographics

While these deposits are geographically wide-ranging (Fig. 7.1), examples from Cambridgeshire make up over half (25/44). Half of the sites here contained more than one deposit, with Harston Mill and Trumpington containing 12 in total. Fig.7.1 shows a clear cluster of sites around Cambridge, which was also true for the inhumations and disarticulated bone, as many of the same sites are represented in all cases. There are no identified examples from Hertfordshire, Lincolnshire, or Essex.





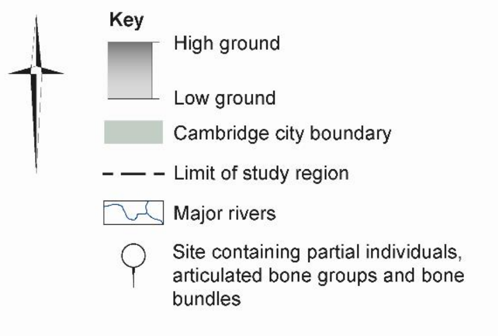


Figure 7.1 (above): Map of all sites containing partial individuals, articulated bone groups and bone bundles from the study region. The area in the red square is expanded (left) to highlight the cluster around Cambridge. Source: Author and Laura Hogg.

The majority of material came from domestic settlements, with 25 total deposits from 14 sites, though five were from Harston Mill alone. Five sites (six deposits) could be categorised as hillforts, ringworks or other enclosures with substantial banks and ditches but limited domestic settlement evidence. The remaining deposits came from sites which seem to have a greater mortuary focus and little to no domestic occupation - Godwin Ridge, Cliffs End, Trumpington Park and Ride, Duxford - they produced 13 deposits, and each also contained disarticulated bone and/or inhumations (Chapters 4-8).

The frequency of settlement contexts is consistent with the EIA-MIA inhumation data (60.9% (14/23), as is the frequency of pit deposition (56.8% (25/44) (Fig. 7.2). Seven deposits are from ditch contexts, including two in graves cut into ditches. Three are from the mortuary feature at Cliffs End and appear to have been lain on the floor (surface) of the feature, like the two surface finds from Godwin Ridge (below). A single deposit was recovered from a well (sk.293050) - perhaps the most uncommon context within the entire dataset – however association of human remains within watery contexts is widespread (Discussion 9.8.2).

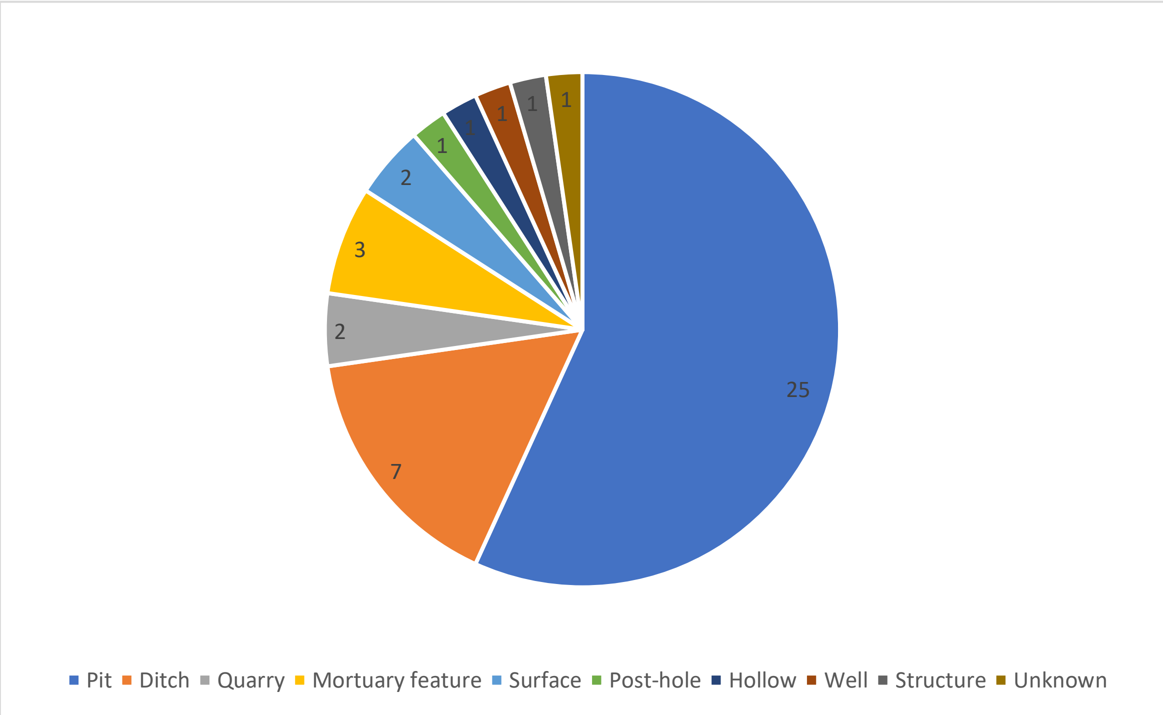


Figure 7.2: Pie chart showing the depositional contexts of all partial individuals, articulated bone groups and bone bundles. Source: Author.

The chronological spread is broad (Fig. 7.3) though the majority of deposits have been dated to the MIA, with a drop-off into the LIA and Conquest periods. This is consistent with changes in inhumation practices (Chapters 4-6), and also with the disarticulated material, though the largest single disarticulated bone deposit (Station Road) dates to the Late Iron Age.

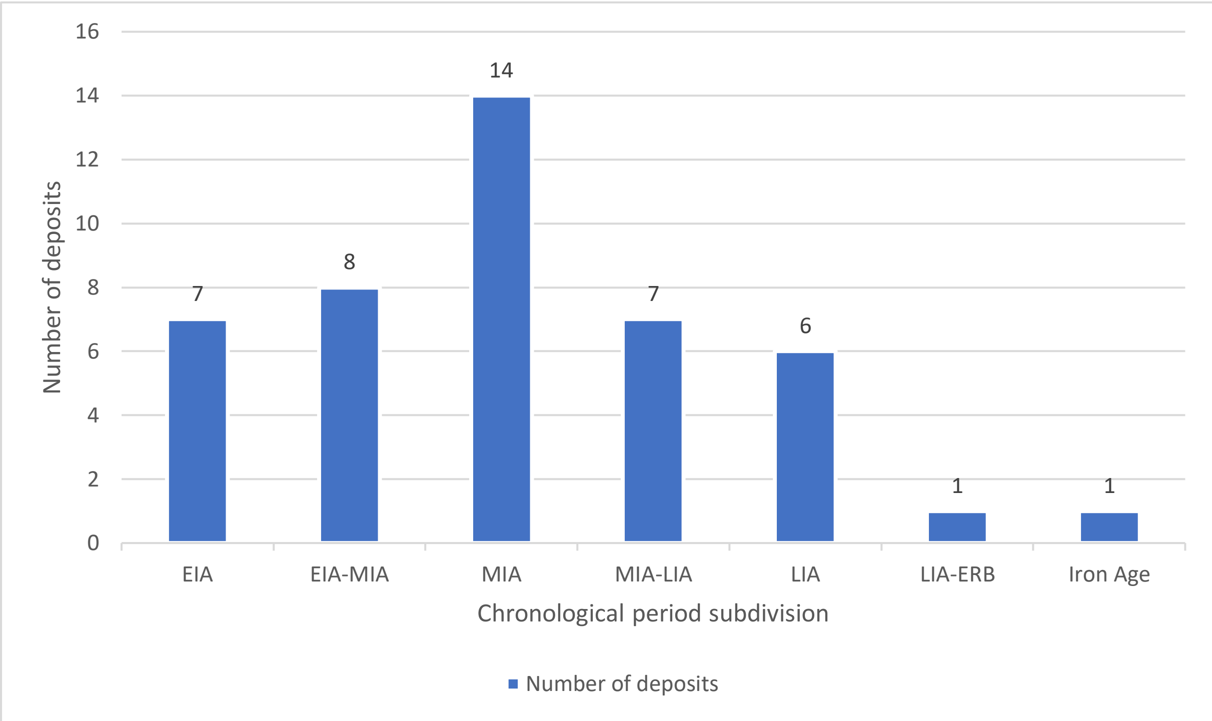


Figure 7.3: Chronological spread of all partial deposits, ABGs and bone bundles. Source: Author.

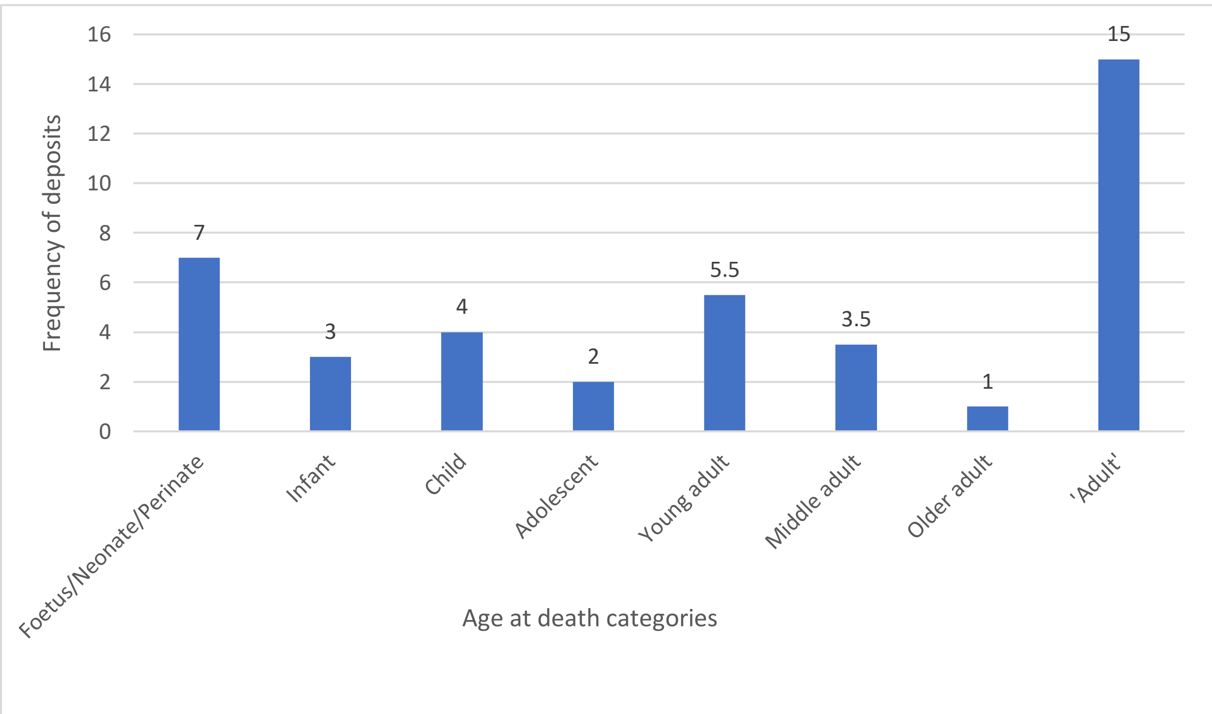


Figure 7.4: Age-at-death demographics for all partial deposits, ABGs and bone bundles. Source: Author.

A full range of ages were represented (Fig. 7.4) but like the disarticulated material, those simply attributable to 'adult' were by far the most common. Over 15% of the deposits are foetal/neonatal/perinatal though (7/44, 15.9%), a disproportionately high number for a normal demographic profile. However, six of these seven may actually be poorly preserved inhumations (7.4.1.). The high presence of foetal, neonatal and infant remains here may go some way towards explaining the low number of complete examples in the inhumation data. The majority of the total 44 (29) could not be sexed, but the males and females were broadly evenly split (7 males, 9 females)[29].

7.3. Represented elements

Twenty-six of the 44 deposits had individually recorded elements (60%) (Table 7.1). There is some uncertainty about specific bones in a few cases, e.g. the 'charred torso' from Cherry Hinton. The most common single element was ulnae, with at least 19 recorded from at least 12 deposits (Table 7.1). This was closely followed by radii and femora. Long bones overall were well represented, though it is notable that the largest bones of the arm and leg (humerus, femur, tibia) were found less frequently than smaller, more fragile bones like the radius and ulna. Even fibulae were comparably common, with at least 10 recorded from at least eight deposits. Bones of the skull occurred in only eight instances (30.8%, 8/26) and in only three did this constitute a complete or largely complete skull, the rest had only vault and mandible fragments recorded (Appendix 1). The absence of cranial bones here is in stark contrast to their overrepresentation in the disarticulated material (Chapter 8), and the same is true, to a lesser degree, for the femora. Hand and foot bones, likewise, are well-represented here considering they are small and frequently absent even from complete articulated inhumations. Hand and foot bones made up only 5.1% (28/544, Fig.8.9) of the disarticulated bone but here they occur often, in five cases as the sole body part.

The remaining deposits contain varying levels of detail regarding the represented elements (Appendix 1). The three dispersed bone groups from Cliffs End are each represented by cranial, axial and limb bones, but little else is mentioned. Both the Recreation Way deposits are merely recorded as 'partial', and both SK159119 and SK293050 from EKA2 are recorded in percentage completeness only.

[29] Five males, one ?male, one ??male. Four females, three ?females, three ??females.

Table 7.1: All present elements for the 26 partial deposits, ABGs and bone bundles with recorded data. Source: Author. *Multiple elements - ribs, vertebrae and hand/foot bones are recorded as present (1) or absent (0). Limb bones are numbered, as the maximum will only ever be two per element.

	A2 Pepperhill [4109]	Cherry Hinton "charred trunk"	Colne Fen F.1045	EKA2 292076	Fairfield Park 3011	Ford Place [64]	Ford Place [84]	Godwin Ridge F.436	Godwin Ridge Test pits	Godwin Ridge [2195]	Harston Mill F.2601/3	Harston Mill sk.3053	HS1 – White Horse Stone [8012]	Marshall 'Wing'F.254	Marshall 'Wing'F.500	Stonea sk2	Stonea sk3	Trumpington F.335	Trumpington P&R [999]	Trumpington P&R [996]	Trumpington P&R [5125]	Trumpington P&R [980]	Trumpington P&R [1182]	Trumpington P&R [2308]	Wandlebury Pit 19	Wardy Hill F.25/6	Total elements (*)	Total individuals with each element
Skull							1			1			1	1						1	1			1	1		8	8
Mandible							1		1	1			1									1		1	1		7	7
Vertebrae		1	1	1		1	1		1										1	1	1	1		1	1		12	12
Scapulae		?		1					2	1				1					1		1	1		?	2		10+	8+
Clavicles		?		1						1							1					1		1	2		7+	6+
Humeri			1	1			1			1	2		?	1								1		2	2		12+	9+
Radii			1	2					1	1	2		?	1		1	2			1		1		2	2		17+	12+
Ulnae			1	2					1		2		?	1		1	1			2	2	2		2	2		19+	12+
Hand bones			1	1					1	1						1	1	1			1			1	?		9+	9+
Ribs		1	1	1			1		1		1		1	1		1			1	1	1			1	1		14	14
Sacrum		1		1	1				1											1		1			1		7	7
Pelvis			1	1																1		1			1		5	5
Femora				2	1						1	1	1						2	2		2	1		2		15	10
Patellae				?																							?	?
Tibiae				1	1				1	1	1	1	1						1	2		1	1				12	11
Fibulae				1	1				2		1		?						1	2		1	1				10+	8+
Foot bones	1			1	1			1	1	1					1					1	1	1				1	11	11

7.4. Interpretation of depositional practices

Based on the elements present in each of these deposits, the contextual data and site histories, six interpretive groupings have been discerned.

1) Poorly preserved, disturbed, or truncated inhumations, buried complete
2) Body bundles of articulated/semi-articulated remains deposited after a period of decay, but representing much of a single individual
3) Single articulated body parts e.g. an arm, deposited as such
4) Bundles or grouped deposits of often disarticulated bone, sometimes deliberately arranged, and all reasonably from one individual (bone bundles/token deposits)
5) Victims of interpersonal violence/conflict, 'dumped', in some cases left uncovered
6) Bone 'spreads', loose conglomerations of bone, likely the result of exposure practices

7.4.1. Inhumations

Eleven of 44 (25%) can be placed into the first category. Poor preservation, truncation and disturbance are attested for the three adult deposits. All of the remaining examples are foetal/neonatal/infants. The small, fragile bones of foetuses and new-borns are easily mis-identified (Sharples, 2010:251; Appendix 4), lost or disturbed. It is very possible that some of these were deposited incompletely, but none have any clear evidence of manipulation or modification.

Several of the neonates/infants (Appendix 2) would be considered 'poor' or 'moderate' in preservation/completeness. This could be an indicator of more complex post-mortem processes (curation, dismemberment, body bundling), but it does not need to be. Poor survival would be hard to argue for larger, more robust adult remains, but is possible for these age groups. Incomplete neonates were also re-interpreted as inhumations at Danebury – again citing post-depositional factors affecting their preservation (Cunliffe and Poole, 1991:421). The Harston Mill infant (sk3057b) and neonate (sk5886a) are both easily as well represented as many of the inhumations (Table 7.2), but neither were considered as inhumations by the excavator (O'Brien, 2016), undoubtedly owing to the various manipulated and partial bone deposits from the site. In another context though, a similar neonate, missing only small bones of the hands and feet, would certainly be viewed as an inhumation burial.

Site and context	Age	Elements present	Reason for grouping
Clay Farm – 10832	Unknown	Humerus, femur, tibia, fibula, pelvis	Described as 'eroded and fragmentary', only parts of each bone present, 104g total bone. Bone preservation on site is variable. Other pit burials on site.
Harston Mill – sk3057b	9 month infant	Complete except for arm bones	Completeness and articulation, coupled with small infant bones, suggests arms did not survive rather than never having been included
Harston Mill – F2706	Foetus	'incomplete'	Small foetal bones easily displaced, lost, or not surviving
Harston Mill – sk5886a	Infant	Largely complete – no small hand/foot bones	Small bones easily displaced, lost, or not surviving
Duxford – 3903	Perinate	'partial'	Lack of detail is an issue, but poor survival/recovery of small bones is likely
Fairfield Park – 5110	Neonate	Left arm, pelvis and leg bones	Small neonatal bones easily displaced, lost, or not surviving.
Fairfield Park – 2143	Neonate	Left arm and leg bones	Small neonatal bones easily displaced, lost, or not surviving
Biddenham Loop – G384	Foetus	'partial'	Lack of detail is an issue, but poor survival/recovery of small bones is likely
Barnham	Adult	Left leg	Truncated shallow grave pit
Little Stock Farm – 2037	Young adult (20-30)	'partial'	Disturbed by intercutting pit – elements from same individual found in both pits.
EKA2 Zone 13 - SK.159124	Neonate	*c.*21% of skeleton	Small neonatal bones easily displaced, lost, or not surviving

Table 7.2: The partial deposits interpreted as disturbed, poorly surviving, or poorly recorded inhumations. Source: Author.

Of the inhumation data recorded in chapters 4-6, thirty-seven were aged between foetal and infant. Over 60% (20/32) of those with available data were at least 75% complete and/or well preserved (Table 7.3). This could suggest that those mentioned above are in fact less likely to be poorly surviving inhumations, or, conversely it could be that that neonates with poor survival are more likely to be thought of as 'bone deposits' rather than inhumations, and in many of these cases the position of the bones is not recorded.

The presence of only left-sided bones in three of these deposits is of note. However, the Barnham left leg is likely truncated (Appendix 2), and the other two are both neonates from pits at Fairfield Park. It may be that they were deposited this way – only the left side – but it is also possible that the right-side elements, along with most axial bones and the skulls, did not survive. Sidedness has been explored for the disarticulated material (section 8.7) and no patterns between the selection of left or right sided bones was found.

Age	Inhumations - Survival/completeness			
	Poor (<25% present and fragmented)	Moderate (26-50%)	Good (51-75% complete, more if fragmentary)	Complete (>75% and not fragmentary)
Foetus	0	1	2	0
Perinate	0	0	1	2
Neonate	0	0	1	14
Infant	7	0	0	4
Total	7	1	4	20

Table 7.3: Preservation / survival / completeness of all inhumed foetal to infant inhumations with recorded data. Source: Author.

7.4.2. Body bundles / secondary / tertiary inhumations

Site and context	Age	Elements present	Reason for interpretation
EKA2 – 292076	Middle adult (30-40)	Complete except for left lower leg, right humerus, cranium and C1-3	Rest of skeleton articulated, tightly crouched (possibly bound), sharp force trauma to 1st lumbar interpreted as post-mortem to speed up disarticulation/decay. Canid gnawing
Recreation Way, Mildenhall – SK21386	Unknown	‘Partial articulated skeleton’	No record of truncation and preservation was ‘exceptionally good’
Recreation Way, Mildenhall – SK21921	Adult	‘Partly complete adult skeleton’	No record of truncation and preservation was ‘exceptionally good’
Trumpington Park and Ride - [2308]	Adult	Head, right half of torso and right arm. Left arm in upper fill	Truncation may be a factor, all present bones articulated, but legs missing and one arm separated

Table 7.4: The partial deposits interpreted as body bundles / secondary inhumations. Source: Author.

Four deposits fit this category, two from the same site. All four are largely articulated, all four have elements missing, either removed after they had been deposited (292076), or before. Truncation/disturbance is possible in the latter three cases, but unlikely. Both the Recreation Way individuals were within middle fills of a large ditch, with later burials stratigraphically higher (Harvard and Holt, 2012:35), and for the Trumpington individual the majority of the remains were found beneath the articulated left arm, which would surely have been lost if post-depositional disturbance had occurred (Hinman, 2004:29). However, the excavation photo shows the head at the level of the ground surface, clearly truncated, so it is possible that machine damage affected more of this individual (Fig. 7.5). The ‘exceptional’ preservation of the Recreation Way deposits also limits the chance that they are poorly surviving.

Figure 7.5: Pre-excavation photograph of partial deposit [2308] from Trumpington Park and Ride, showing truncation of the skull and possibly lower body. Source: Hinman, 2004:Pl.13.

EKA2 292076 is the only one of the four with recorded evidence of canid gnawing, implying a period of exposure/access to the remains before they were buried. This seems to have occurred in the pit, perhaps with the body uncovered until sufficient decay had occurred (Andrews et al., 2015:133). This individual is also the only one with evidence of manual disarticulation – a single cut mark to the first lumbar vertebra was previously interpreted as a way to speed up the decomposition process and the breaking down of the skeleton (McKinley and Egging Dinwiddy, 2015:361). The Trumpington Park and Ride individual [2308], is one of several deposits from the site with signs of curation, manipulation or transformation of human remains. There are no recorded cut marks or signs of exposure, and the torso appears articulated, but the absence of the legs, and the separation of the articulated left arm would suggest a period of decay/curation prior to deposition. Four adult femora were among the disarticulated remains identified at this site, one of which (D.ID 223) had been worked into a scraper (Section 8.11.6). The legless individual from [2308] may therefore be the other side to such a process, the donor body deposited after selected 'useful' elements were removed. The Recreation Way individuals are notably less secure, they are yet to be fully analysed by the excavators, but there appears to be no taphonomic reason for their incompleteness (Harvard and Holt, 2012). Several individuals in the inhumation dataset may also be body bundles (Discussion 9.7.2.1).

7.4.3. Articulated body parts

Eight deposits have been assigned to this category, as none are obviously truncated, and none are complete enough to be considered a secondary burial/body bundle. All have articulating elements, suggesting they were deposited while somewhat fleshed. SK3053 from Harston Mill may be a very poorly represented inhumation but given the completeness of others from the site and the general preservation this seems unlikely. The same could be said for Trumpington Park and Ride [1182]. These are the only limbs within the group, both from very young individuals. The neck bones from Ford Place were complete and articulated, and found close to, but not directly with an adult mandible and occipital fragment. While they may collectively represent a 'bundle' and should therefore all be considered in category four (below), the vertebrae were placed in a deliberately cut 'scoop' and covered with chalk, while the others were not (NAU, 2009:10). The spine is often the last to disarticulate so the remains could have decayed for some time before burial (Hill, 1979:Table 1; Fernández-Jalvo and Andrews, 2016:314). There is no recorded evidence of manual separation of the C7 from the T1 (Boghi, 2009:20). All the other deposits in this category are bones of the hands and feet.

Table 7.5: The partial deposits interpreted as articulated body parts. Source: Author.

Site and Context	Age	Elements present	Reason for interpretation
A2 Pepperhill – [4109]	Adult	Left 1st and 4th metatarsal, right 1st and 3rd, right 1st proximal phalange	The remains of a pair of feet
Ford Place – [64]	Adult	All seven cervical vertebrae	Articulated and complete neck
Harston Mill – sk3053	Infant	Left femur and tibia	Could be a poorly preserved inhumation, but others from the same site are much more complete
Godwin Ridge – F.436	Adult	Left calcaneus, navicular, cuneiforms, five metatarsals, five phalanges	The remains of a foot
Marshall 'Wing' – F.500	Adult	Four right tarsals and five metatarsals	The remains of a foot
Trumpington Meadows – F.335	Adult	Two carpals, metatarsals, DISTAL phalanges	The remains of a hand. Distal phalanges not proximal is of note
Trumpington Park and Ride – [1182]	Neonate	Right femur, tibia, fibula	All bones complete, within small pit or post hole. No evidence of other remains
Wardy Hill – F.25/6	Adult	Right metatarsals 1-4 and 1st proximal phalange	The remains of a foot

Each of these was placed in specific cuts, six in pits, the vertebrae in a scoop pit within a ditch, and the Godwin Ridge deposit in a small hollow (or shallow pit) – some of these features contained other disarticulated remains, but there is no evidence that these bones were part of a more complete deposit. The Godwin Ridge bones were found close to a spread of disarticulated bone with an MNI of one (see below, deposit [2195]), it is possible they belong to the same individual, but the foot bones were placed in a hollow, not on the surface like the rest (Dodwell, 2016:521). The A2 Pepperhill deposit is the only one where parts of both feet are present, and while a truncation in this instance is possible (shallow pit), for only the feet to remain would require that either they were buried almost vertically, or that the rest of the skeleton was cut by a later feature, which is not mentioned (Allen et al., 2012:259). Bones of the hands and feet are notably absent from disarticulated material (See 8.4.). The bones are small, easily lost and disarticulate early on during the decay process (Hill, 1979:Table 1; Redfern, 2008b:283). That these deposits contain partial or complete hands and feet suggests they were deposited before fully defleshed. They may therefore represent deliberately severed appendages of the living or dead or, as they are the first to separate from a corpse, they may have been taken from a curated/decaying body, for deposition before the rest of the remains were ‘ready’. Inhumation ID 398 (The Bridles, Lincs.), as well as being headless, had the right foot separate from the body. It is unknown if this is the result of movement during decomposition or deliberate removal (Allen and Rylatt, 2002:8).

7.4.4. Bundles of bones (token deposits)

The largest category in this group is the deposits that can be labelled as ‘bone bundles’ or token depositions of remains from one individual. There are twelve such deposits, from nine sites (Table 7.6). A range of elements are present, in varied stages of disarticulation and in at least three cases deliberately placed and structured within the deposit.

Deposit [8012] from White Horse Stone consisted of long bones, placed to form ‘three sides of a trapeze’, with the skull at the centre and the mandible outside of the shape, teeth down (Hayden, 2006:159). Positioning of skull and long bones occurred at Trumpington Park and Ride also; deposit [996] included paired long bones, bundled together and placed atop a quern fragment, with a mandible placed longitudinally at one end, and the rest of the skull at the other (Hinman, 2004:27).

Site and Context	Age	Elements present	Reason for interpretation
Colne Fen – F.1045	Adult	Fragments of right ulna, radius, humerus, metacarpals, pelvis, ribs and thoracic vertebrae	All bones disarticulated and fragmentary (137 fragments) but placed together and consistent with one individual.
EKA2 Zone 13 – 159119	Middle adult (35-45)	*c.*10% of skeleton – disarticulated, eroded and decalcified	All bones disarticulated but consistent with one individual. Possibly redeposited from a disturbed burial. Other disarticulated bone from a neonate in same pit. Elements uncertain.
EKA2 Zone 6 – 263052	Mature adult (40-55)	28% of skeleton – disarticulated	Canid gnawing on pelvis suggests period of exposure/access to remains prior to deposition in well. Bones disarticulated but all consistent to one individual.
Fairfield Park – 3011	Older child	Left femur, tibia, fibula, one metatarsal shaft, 1st sacral vertebra	Small bones present suggests somewhat fleshed when deposited. Presence of femur and sacral vert. but not pelvis could be due to survival, or selection.
Ford Place – [84]	Young adult (25-30)	Right parietal fragment, mandible, two lumbar verts, four rib frags, right humerus	Bones not recorded as out of articulation, but only five molars present. Suggests decay before disposal. Generally poor survival in Norfolk
Harston Mill – sk2602	Child (10)	Arms, ribs, one leg	Additional rib in adjacent pit (D.ID 124). Decay prior to deposition or disturbed inhumation redeposited in these pits.
Marshall 'Wing' – F.254	Adult	Articulated left humerus radius and ulna, plus scapula, parietal fragment and right rib	All bones consistent with one individual. Articulated arm bones suggest decay arrested or unfinished, but other bone fragments disarticulated. No sign that this is a poorly preserved inhumation
Trumpington Park and Ride – [980]	Middle – Older adult	Mandible, 9 thoracic and all lumbar verts. Sacrum, pelvis, right arm, right scapula and clavicle, left ulna, both femora, right tibia and fibula, one metatarsal	Some bones articulated, some not, all consistent with one individual. Deliberately arranged and placed in stages, with associated animal bone. Canid gnawing/punctures on four bones
Trumpington Park and Ride – [996]	Adolescent (17)	Skull fragments, C1-2, L1-5 verts., right radius, ulna, left ulna, sacrum, pelvis, both legs (no patellae), calcanea, tali.	Bones disarticulated but consistent with one individual. Long bones deliberately paired, all bones placed in an arrangement. Canid gnawing on two bones.
Trumpington Park and Ride – [999]	Adult	Right femur, tibia and fibula shafts, left femur shaft, five left ribs, lumbar vert and right scapula fragment	Bones disarticulated but consistent with one individual. Lack of epiphyses and old breaks suggests period of use/exposure before deposition.
Trumpington Park and Ride – [5125]	Child	Occipital, parietals, both ulnae, left scapula, three ribs, two vertebrae, 4 metatarsals, 1 metacarpal	Described as a 'collection of bones', no evidence of anatomical positioning. Found with adult mandible, iron dagger fragment and animal bone. Some contradiction over elements present though
White Horse Stone – [8012]	Adult (25-36)	Skull, mandible, long bones	Remains positioned. Disarticulated but consistent to one individual.

Table 7.6: The partial deposits interpreted as bone bundles / token deposits. Source: Author.

In both cases the rest of the skull has been separated from the mandible, and the long bones act as a dividing barrier. Separation of the mandible also occurred in deposit [980] from Trumpington Park and Ride. Here the mandible was placed first in the pit, with some other smaller bones[30], before being 'trampled or pushed deeper into the fill' and covered by the pelvis, leg bones and other articulated and disarticulated elements, plus a horse skull (*ibid*:26). It was reported that upon discovery it appeared to be body, bent double, with the horses' head in place of the missing human skull (*ibid*, 26).

The only other possibly arranged deposit in this group is [5125], again from Trumpington. There is some uncertainty over this deposit, as within the main body of the report Hinman (2004:29) describes it as the human skull of an adult male and the mandible of a subadult, plus other bones, while the report on the remains by Duhig (2004:52) records that all the remains are from an approximately five-year-old child, except for the mandible, which is that of an adult. The inclusion of a separate mandible occurs again here.

Evidence of excarnation was present on at least four of these deposits, a large percentage given the limited scope of such evidence among the disarticulated material (Chapter 7), though the Trumpington Park and Ride material dominates here. Canid gnawing and/or tooth puncture marks were identified on three– EKA2 Zone 6 [263052], Trumpington Park and Ride [980] and [996], suggesting that these remains were somewhere accessible for animals, for even a limited period of time. This could have occurred within the settlement as dog bones/burials are frequently found on Iron Age sites (Discussion 9.6.3). The long bones in deposit [999] all lacked epiphyses and several had fractures, unlike the others from the site; this could be a factor of preservation or could suggest that these bones were subject to a period of exposure or manipulation prior to deposition.

Some of these may simply be redeposited, disturbed bone from earlier burials. In the pit adjacent to SK2602 from Harston Mill, a single rib was recovered of a size was consistent with the larger group of bones (D.ID 124). It is highly probable they are from the same individual, but the pits do not intercut (O'Brien, 2016:39). SK.159119 from EKA2 also, is represented by an unspecified *c*.10% of the skeleton, the bones in poor condition and disarticulated, there is no evidence they were deliberately placed, and the presence of adjacent graves makes disturbance and redeposition a credible origin (McKinley and Egging Dinwiddy, 2015:354). The Colne Fen deposit likewise (F.1045) is an apparent dump of fragmented bones rather

[30] Specific elements were unrecorded in the publication

than a placed collection and may have more in common with the bone spreads below, but was deposited as one, in the pit, and seemingly represents one individual, an adult ??female.

7.4.5. Victims of conflict and/or violent 'ritual' deposits

Site and Context	Age	Elements present	Reason for interpretation
Stonea Camp – sk2	Adult	Left lower arm, hand bones, ribs	Site has evidence of violence and all four human skeletal depositions are incomplete. No lower limbs. Could be issue of survival, presence of ribs suggests some articulation, but site history challenges complete articulated inhumation.
Stonea Camp – sk3	Infant (2-3)	Right lower arm, left radius, one hand bone, one clavicle	Small infant bones easily lost/disturbed, presence of hand bone and clavicle suggests some completeness and articulation. No lower limbs. Site history of violence.
Wandlebury – Pit 19	Adult (25-35)	Legs 'snapped off' at femora, upper body present but in poor articulation	Damage to femora appears perimortem. Pelvis crushed by chalk block. Movement/disarticulation of other bones suggests exposure in pit for some time before being covered.
Cherry Hinton	Adult	'Charred torso'	Too little detail present to be certain, but unlikely to be complete inhumation. Other disarticulated/partial remains known from site. Evidence of violence and destruction.

Table 7.7: The partial deposits interpreted as victims of conflict or 'ritual' violence. Source: Author.

All four of these deposits are from hillforts/ringworks/enclosed camps – the only examples from such contexts, except F.25/6 from the interior of Wardy Hill. They are also three of the four from ditch contexts (specifically enclosure ditches). Only one has evidence of perimortem trauma (Pit 19, Wandlebury, femora), though it is highly likely that this occurred post-mortem, while the bone was still fresh, as the other leg bones are not present (Hartley, 1957:15). Each of these sites contains other human remains, either disarticulated or more complete, with evidence of perimortem trauma. ID 127 (Stonea Camp, Cambs.) has two perimortem sword cuts to the skull, and is also incomplete, and contemporary to SK2 and 3 (Appendix 3; Duhig, 1992:I; Malim, 1992:32). ID 147 (Wandlebury, Cambs.) suffered a perimortem sword cut to the mandible, one of five in a 'mass grave' deposit (Denston and Taylor, 1977:1). ID 154 (Wandlebury) had a perimortem sword cut to the pelvis, and the legs reportedly cut off at the femora – very similar to the remains from Pit 19 (Hartley, 1957:14; 26). ID 153 (Wandlebury) also, suffered a perimortem sharp force injury to the 5th cervical vertebra – inflicted from behind, possibly an attempt to decapitate (*ibid*, 15, Denston 1956:1), and ID 147 (Wandlebury), a pit burial, had a healing antemortem blade injury to the mandible and fractured rib (French, 2004:58). Disarticulated Bone D.ID 274 (Cherry Hinton, Cambs.) suffered perimortem blunt force cranial trauma, and at least one other inhumed individual from the site has elements out of anatomical position (ID 159) (White, 1964:Pl.IIIb), while more than one excavator records burning deposits in the ditch fills (Lethbridge, 1949:121; Pickstone and Mortimer, 2011:31-2; White, 1964:11-2). Sk2 and 3 from Stonea could very well have suffered a similar fate to sk1. The interpretation of Cherry Hinton is discussed elsewhere but the 'charred torso' is consistent with partially decayed bodies being deposited in the ditch before a 'closure by fire' event. At Wandlebury the evidence for violence is most overt, though again here, Pit 19 seems to show sub-aerial/covered decay prior to eventual closure, as with Cherry Hinton, due to the largely complete, but disturbed remains.

7.4.6. Bone spreads

The final category concerns loose spreads of dispersed disarticulated material, placed on ground surfaces rather than deposited in specific cuts. In each case the material is still consistent with one individual (Table 7.8).

The deposits at Godwin Ridge were initially found through test pitting, with the bones located across several test pits, all lying on what would have been the ground surface. The site was a low-lying ridge along the river Great Ouse, with a diverse range of human remains recovered (Evans, 2016). These may either be the result of surface-level excarnation practices, allowing the dead to decay in the open before further modification, or, conversely, these deposits could be the final stage in the process – the deposition of the 'leftover' material in or close to the water (Discussion 9.8.2). The gnawing present on the tibia of the first Godwin Ridge deposit would suggest a period of time exposed while the bone was still fresh, and there is a single blade injury to this individual also, consistent with a cut to the back, again while the bone was fresh (perimortem) – affecting the right scapula and a right rib (Dodwell, 2016:521). Like the cut to the L1 vertebra of [292076] from EKA2, this could relate to the disarticulation/decay process.

No cuts are visible on the Cliffs End material, but in all cases small bones are present among the remains (fingers, patellae), increasing the likelihood that some degree of articulation remained when deposited. The unique and complex nature of the feature at Cliffs End makes interpretation difficult, but these three bone groups do share similarities to the Godwin Ridge material. The dispersed bones and lack of cuts could suggest they were placed on the ground surface to decay and may have been subject to scavenging also (though no gnawed bones were identified) (McKinley, 2014b:218).

Site and Context	Age	Elements present	Reason for interpretation
Cliff's End – 202807	Adult	Upper and lower limb frags., patellae, axial frags., skull	Presence of patellae suggests degree of articulation when deposited, much of skeleton represented, but dispersed when discovered and no cut found.
Cliff's End – 203003	Adult	<11% of skeleton – skull, axial, limbs, teeth, finger bone	Small bones and presence of multiple bones suggest relative completeness and articulation when deposited, but now dispersed with no cut.
Cliff's End – 243204	Subadult	<29% of skeleton – skull, axial, limbs, teeth	Presence of multiple bones and relative completeness may suggest articulation or body bundle when deposited, but now dispersed with no cut.
Godwin Ridge - TP101, TP32, J, X, Y / TP102	Adult	Mandible fragments, fibulae, right tibia, calcaneus, talus, scapulae, left radius and ulna, sacrum fragment, 16 verts, plus fragments of 8 ribs, a lunate, trapezium, hamate and a middle hand phalange.	Spread of disarticulated bones over Iron Age ground surface. Several vertebrae articulate, as do the right tibia, fibula, calcaneus and talus, and the radius and ulna. Canid gnawing and cut marks present. All consistent with one individual.
Godwin Ridge - [2195]	Young adult (25-35)	Right temporal and mandible, right humerus, radius and clavicle, left tibia, fifth metatarsal, scapula fragments, a capitate, 4 metacarpals and 5 hand phalanges.	Spread of disarticulated bones over Iron Age ground surface. Long bones survive as shafts only, weathered with longitudinal splitting. All consistent with one individual.

Table 7.8: The partial deposits interpreted as bone spreads. Source: Author.

7.5. Conclusion

There is no single box for which all these deposits fit. Aside from being incomplete skeletal remains, many of the deposits here have little in common, in represented material or post-mortem treatment and depositional circumstances. The interpretive categories presented in this chapter aimed to identify the treatments and processes leading to their final state. While some are most likely the result of preservation, truncation and recovery issues, there are patterns of treatment here concerning the disarticulation, curation and placement of human remains. Violent ends cannot be definitively attested for those in section 7.4.5, but contextual data in each case makes this interpretation convincing (see Discussion). Sub-aerial exposure evidence was limited among the disarticulated remains (Chapter 8), but the bone spreads here do lend support, as well as connecting the dead further to watery places (see Discussion). As with the disarticulated bone, there are clear cases of the careful manipulation of skeletal remains, structured placement of elements highlighting the intentionality of seemingly 'casual' deposits.

8. Disarticulated remains and macroscopic taphonomy

8.1. Introduction and aims

This chapter outlines and explores the disarticulated human remains identified in the study region, seeking patterns geographically, chronologically, by site type, depositional context and element. It is also an examination of taphonomic processes as applied to the sample data. This examination is then used to explore taphonomic evidence for post-mortem practices in the study region, with the aim of understanding how the elements came to be fragmented and disarticulated (see 2.2.3. and Discussion).

Taphonomy is the sequence of events and processes that affect humans and animals between the point of death and the moment of excavation (Hollund et al., 2012:537). This study focuses on perthotaxic processes, 'those which result in the movement and destruction of bones before they are finally incorporated into forming a deposit' (O'Connor, 2000:20). Bite marks from carnivores, gnawing by rodents, deliberate defleshing, chopping, splitting, or crushing of bones by humans, polishing or perforating bone, working it into tools or ornaments; trampling by humans and animals, the actions of water, wind, heat and cold; soil erosion and root etching – all these can have an effect on the condition of bones. The excarnation debate has already been outlined and addressed (2.2.3.), with this chapter seeking to build on, or challenge the conclusions of Madgwick (2008) and others. Multiple characteristics of each bone/fragment, and each assemblage have been recorded, collated, and analysed for patterns in treatment and selection.

8.2. The data

A total of 91 sites containing disarticulated human bone were identified, from all eight counties in the study region (Table 8.1, Fig. 8.1).

	Lincs.	Beds.	Cambs.	Herts.	Norfolk	Suffolk	Essex	Kent	Total
Sites	10	10	36 (31)	6	1	3	7	18 (16)	91 (84)
Bones / fragments	57	34	256	99	3	3	7	69	528

Table 8.1: Table outlining the number of assemblages containing disarticulated bone, from each county under study. Source: Author.

As with the inhumation data (Chapters 4-6), deposits from Cambridgeshire and Kent dominate, though here the former vastly outweighs all other regions in both sites and total remains. Though Hertfordshire only contained six assemblages, this included the joint largest assemblage of material from the entire dataset: the bone from Station Road, Puckeridge (see below). This dates to the LIA, as with the vast majority of inhumations from the region. Norfolk, Suffolk and Essex are largely devoid of material, a consistent pattern throughout the research (Sections 1.4 and 3.2.6.). Conglomeration of sites in Cambridgeshire and Kent takes their totals from 36 to 31, and from 18 to 16 respectively.

The distribution map below (Fig. 8.1) shows the relative number of elements from each site. The smallest pin size represents 1 bone/deposit, increasing in size in the following brackets: 2-5 bones/deposits, 6-10, 11-20, 21-50, 51+. The largest assemblages can be found at the conglomerated Trumpington sites and Station Road (89 bones/fragments each). These two assemblages are wholly different however – the Trumpington material spanning several hundred years (EIA – 1st century BC) over a large area, while the Station Road material originated from just three fills of a single LIA ditch (Partridge, 1980). Similarly, Harston Mill and Billingborough contain the next-largest assemblages (36 bones/fragments each, and again Harston Mill spans much of the period (though mainly MIA) and Billingborough is much more restricted.

The majority of assemblages contain only one bone/fragment (35 sites), followed by 2-5 (31 sites), then 6-10 (9 sites). Quantities larger than this result from atypical site contexts (as with the Billingborough skulls and the Station Road ditch), or from larger excavations over greater areas (Trumpington). There are two or three clusters visible in Fig. 8.1, one around the Thanet/East Kent area (Fig. 8.2), one around Cambridge (Fig. 8.3), and a larger cluster encompassing southern Cambridgeshire, and parts of Bedfordshire, Hertfordshire, and a very small part of Essex (Fig 8.4).

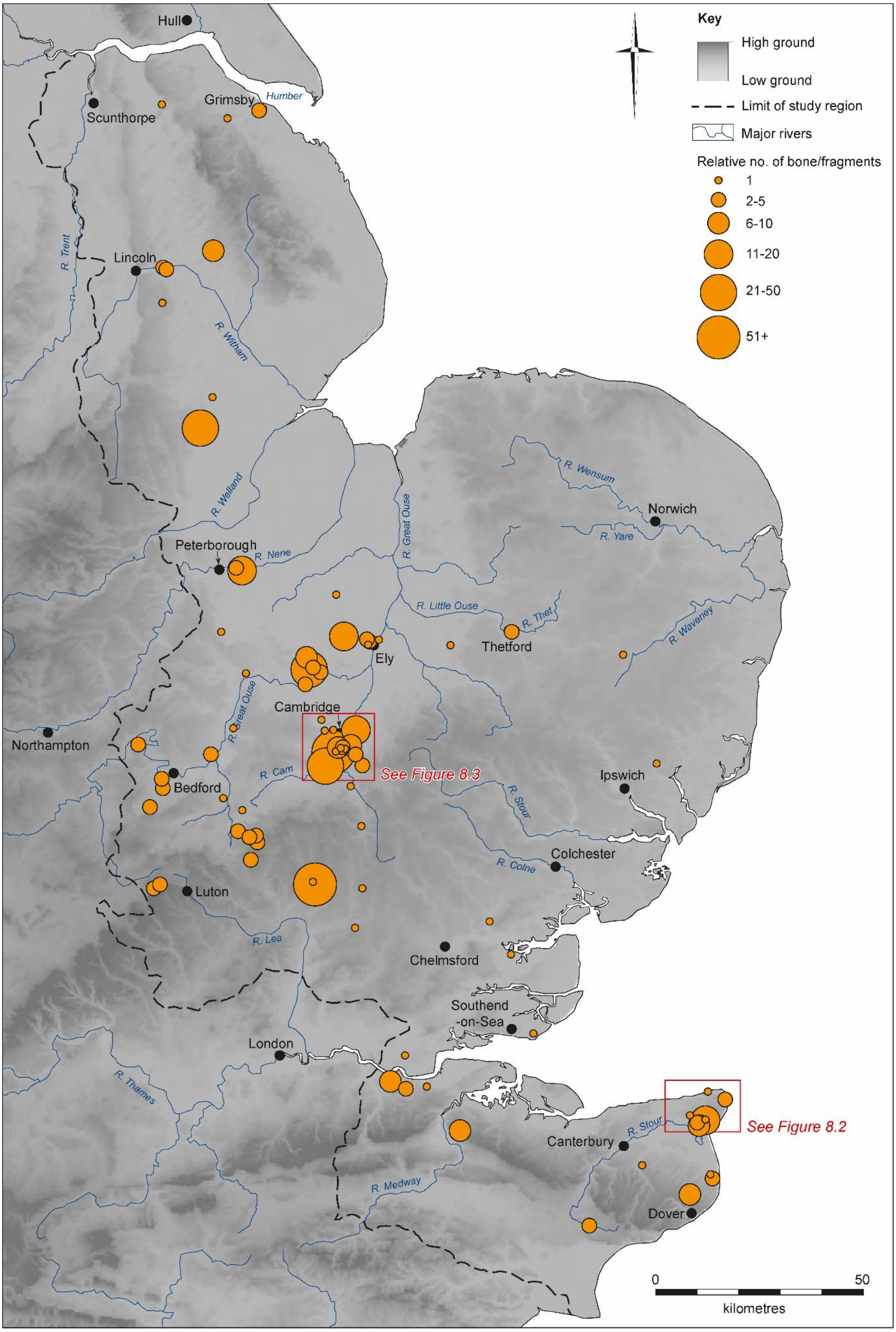
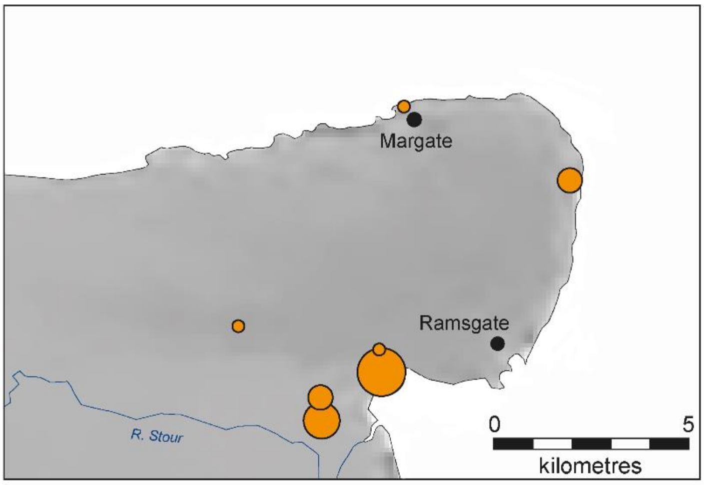
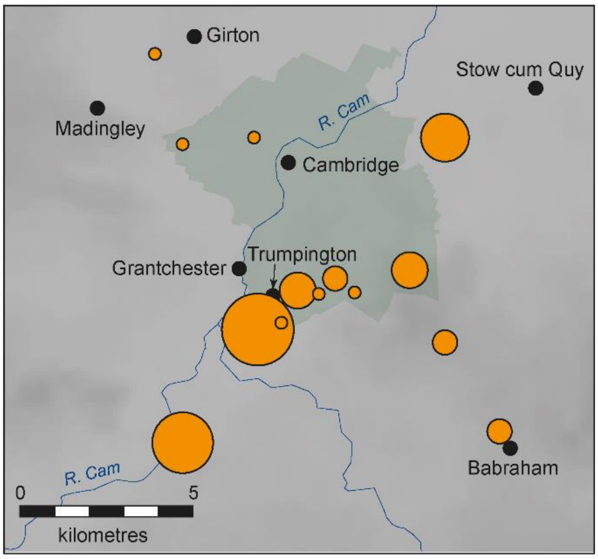
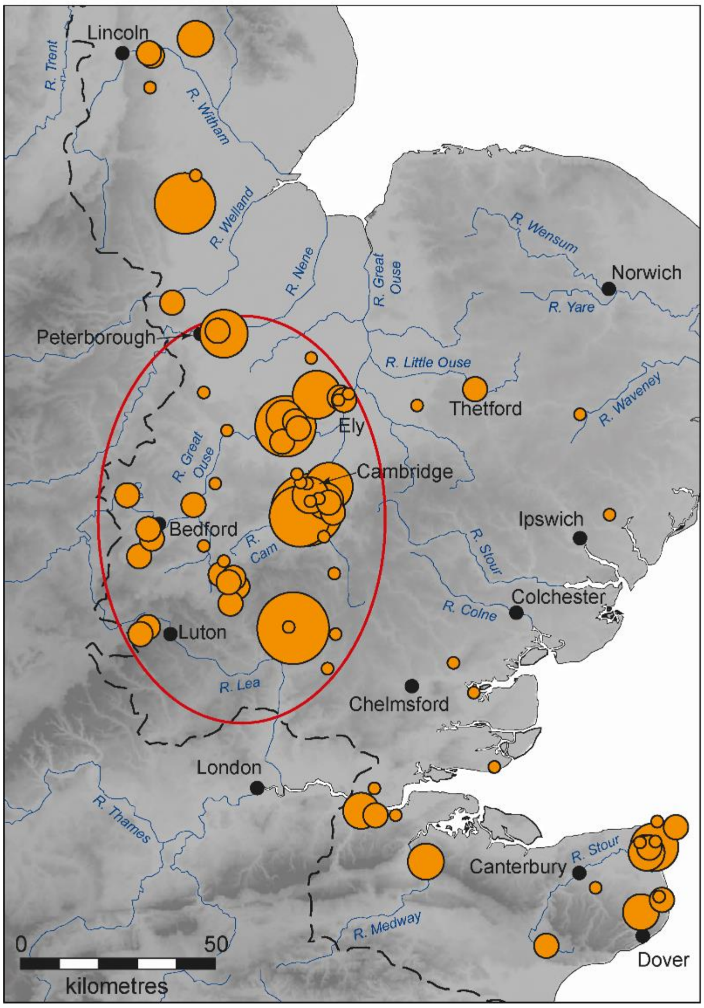


Figure 8.1: Adjusted distribution map for the study area, showing the relative number of bones/bone fragments found at each site. Source: Author







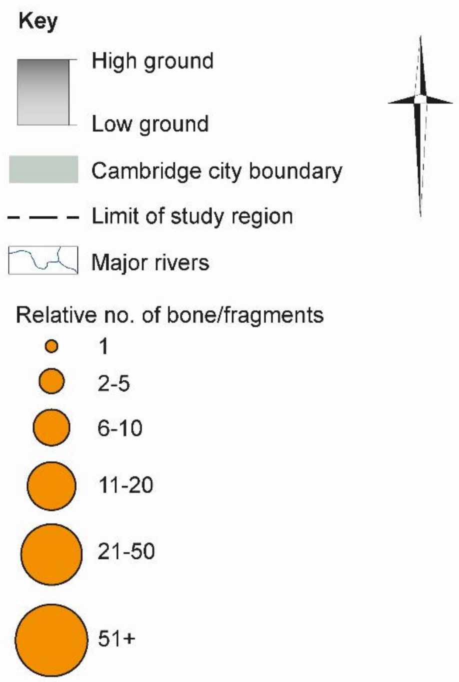


Figure 8.2 (Top left): Map showing the seven sites containing disarticulated human remains, all contained within the Isle of Thanet, representing 58.3% of the Kentish sites. Source: Author and Laura Hogg.

Figure 8.3 (Top right): Map showing the 14 sites in and around the city of Cambridge and containing two of the largest assemblages (Trumpington and Harston Mill). Source: Author and Laura Hogg.

Figure 8.4 (Above): The cluster of material covering parts of four counties, but primarily Cambridgeshire, Hertfordshire and Bedfordshire. Source: Author and Laura Hogg.

The area within the oval covers *c.*2,700 square miles (6,992 sq. km). The total study area is approximately 11,506 square miles (29,802 sq. km), the area within the cluster therefore making up under ¼ of the total but containing within it 61.5% of the sites (56/91). The sites within the cluster also represent 394 of the 528 total bones/fragments (74.6%). There is a very real nucleus of material in this area, and it would not be surprising if it continues into the neighbouring counties of Buckinghamshire and Northamptonshire.

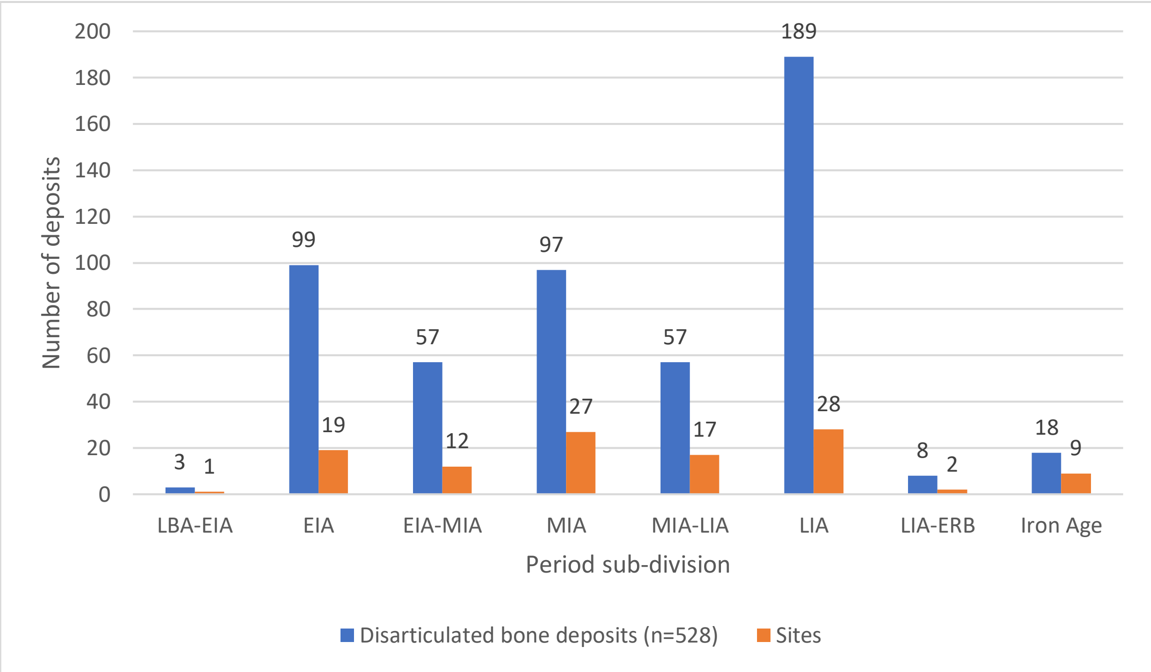


Figure 8.5: Chart showing the chronological spread of disarticulated human bones, and the sites containing them. Source: Author.

As with the inhumation data, LIA material significantly outweighs any other period (Fig. 8.5). Here though this is largely due to the 89 deposits from Station Road, and the 36 from Billingborough, together making up 66% of the LIA material (125/189). Several sites were long-lived, with material deposited in different periods, or straddling periods (e.g. EIA-MIA). There is a clear level of depositional consistency across the EIA and MIA, and EIA-MIA / MIA-LIA, and a slight increase in overall site numbers from the EIA-LIA, but not like the inhumation data. If Station Road were discounted then the EIA, MIA and LIA data would be almost exactly even (99/97/100).

The vast majority of remains came from either settlements (259) or ‘ritual’/votive sites (228) – those with little domestic occupation evidence (Station Road, Billingborough, Washingborough Fen) (Fig. 8.6). The settlement evidence is considerably more widespread though, and more representative of ‘typical’ practice – the settlement-derived remains came from 63 sites, while the ‘ritual’/votive/mortuary-derived remains came from only 12.

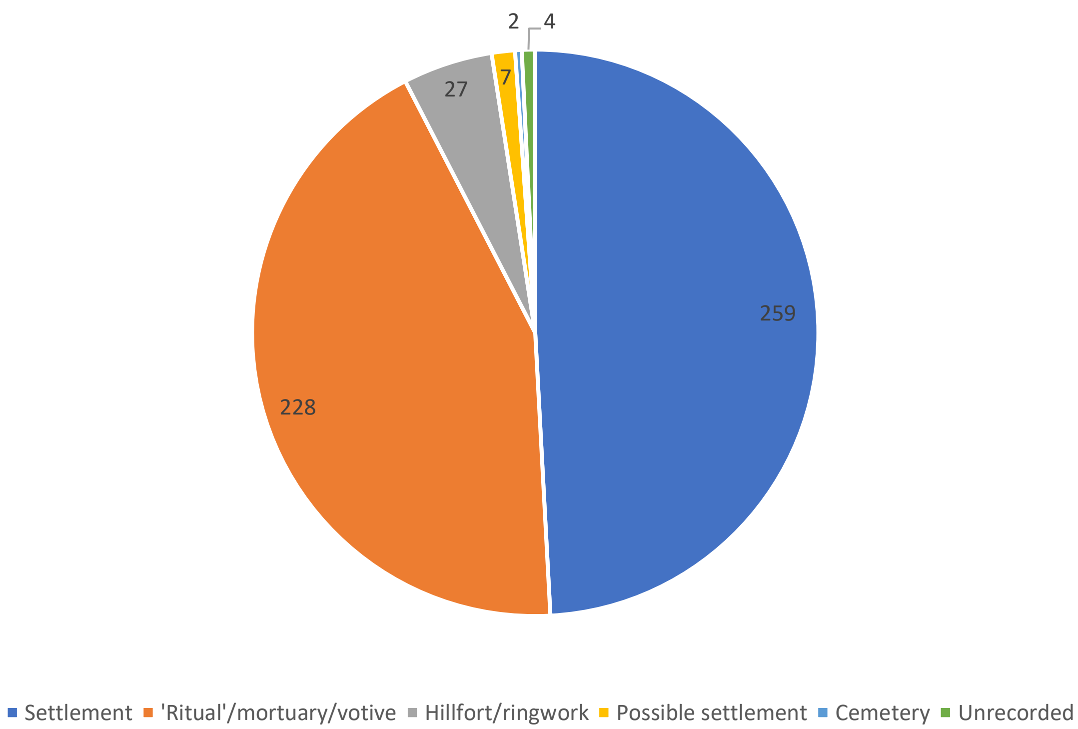
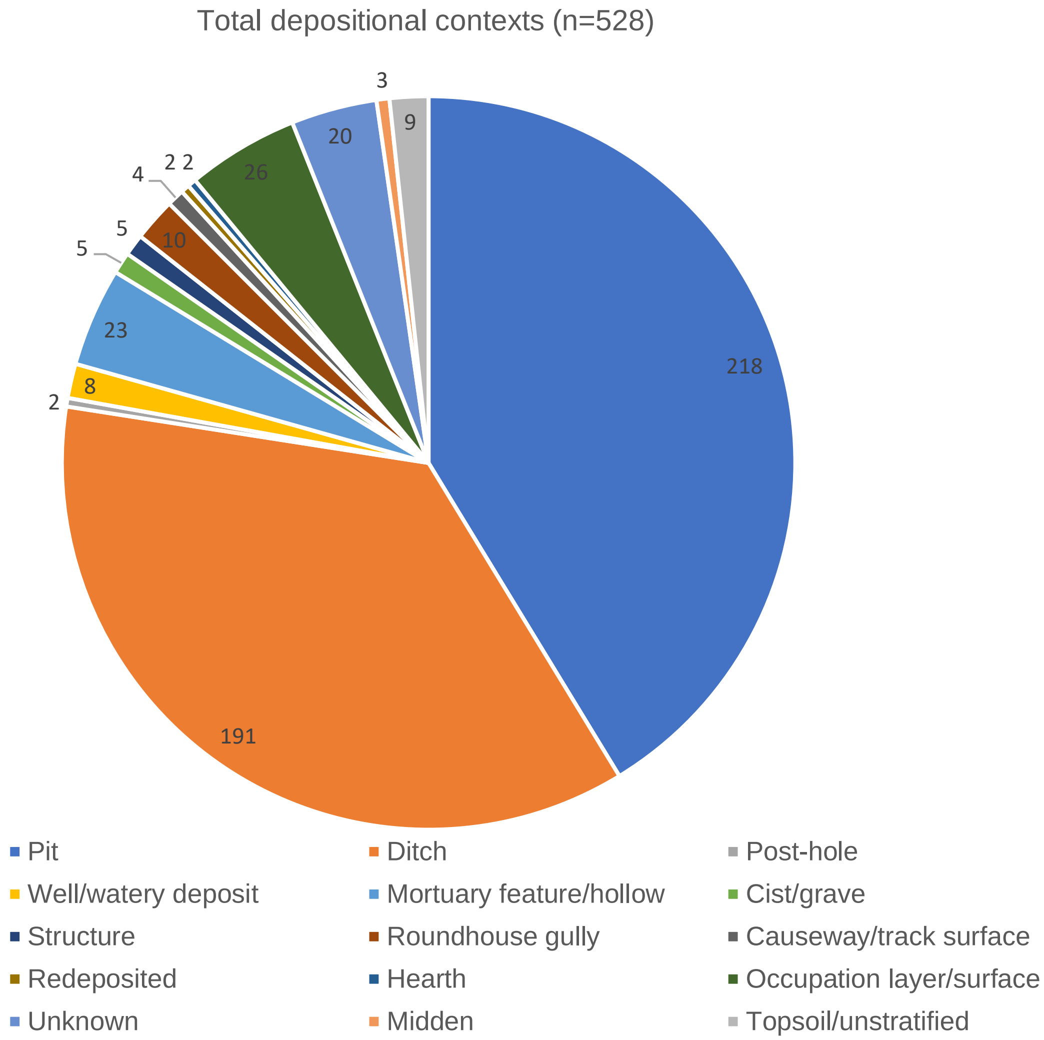
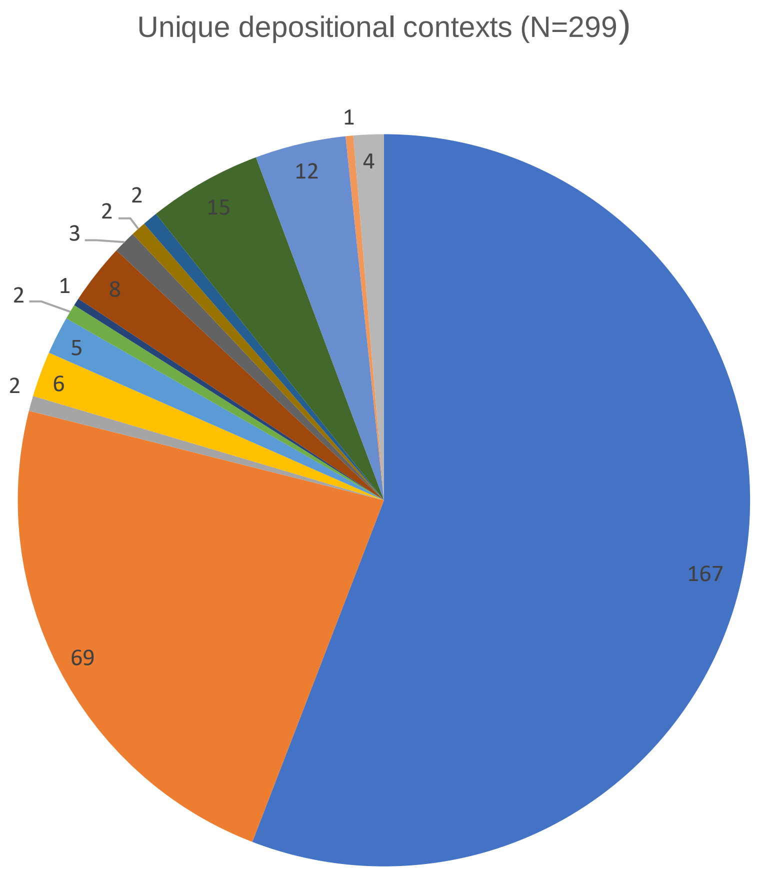


Figure 8.6: Chart showing the site types from which disarticulated material was recorded, showing an overwhelming prevalence for settlements and 'ritual' sites. Source: Author.

Figure 8.7 (top): Chart showing the total features containing disarticulated bone. Figure 8.9 (bottom): Chart showing only the unique features from which disarticulated bone was identified. Source: Author.

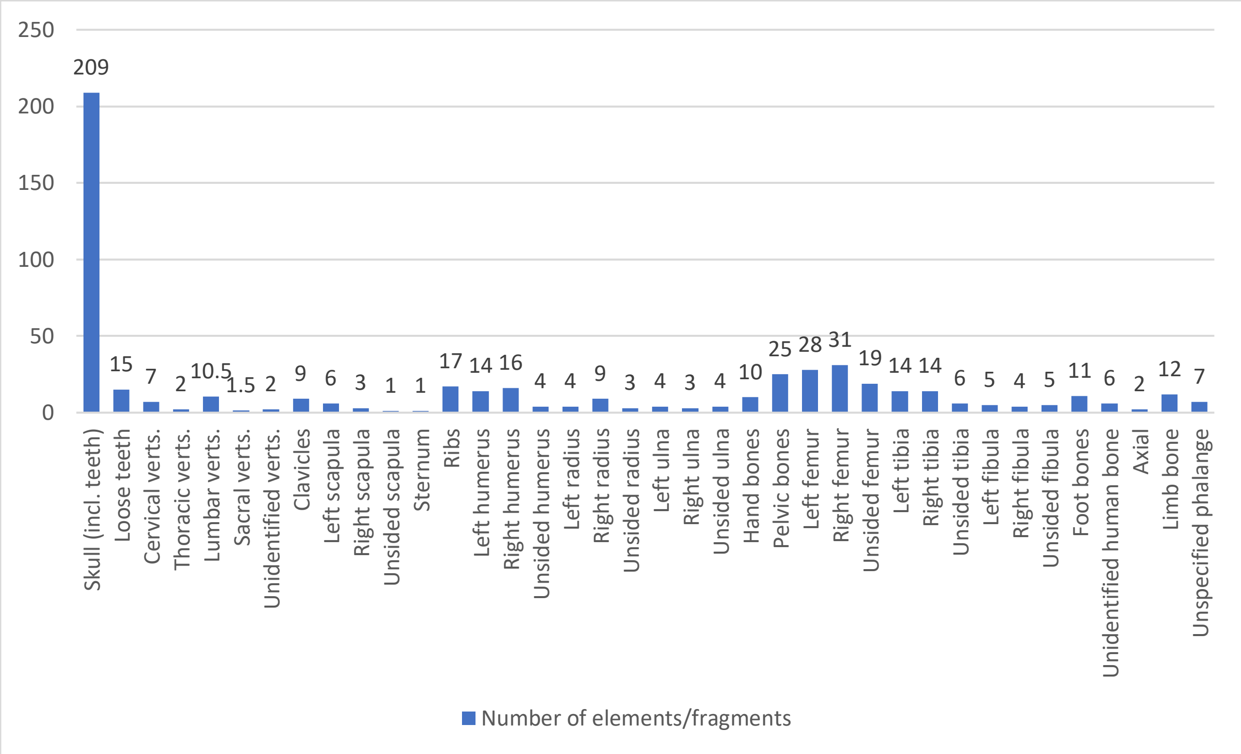




8.3. Feature type

Figure 8.7 shows that overwhelmingly, the disarticulated human bone comes from pits (218/528, 41.3%) and ditches (191/528, 36.2%). Pits are a frequent depositional context for articulated human remains also (Chapters 4-6), but for inhumations, ditch contexts were much less common. However, of the 191 bones/fragments from ditches, 89 (46.6%) are from the one ditch at Station Road. Figure 8.8 shows the frequency of different depositional contexts when all bones/fragments from a single feature are counted as one (n=299). This results in a drastic reduction in the proportion of ditches, as well as a reduction in pits and mortuary features (all 19 Cliffs End bones/fragments are from one large feature). Sixty-nine different ditches contain disarticulated human remains (23.1%, 69/299), compared to 167 pits (55.9%, 167/299). Pit depositions represent a clear majority, though the fact they are discrete, not linear features may be a factor here. Associations of human remains with watery contexts are also visible – wells, pit-wells and fenland layers are all represented (8 total), plus the Godwin/Marlow ridge bones (30 total) are all closely associated with water (see 7.4.6. and Discussion). Roundhouse gullies and other structures are a rare but present depositional context also (15 bones/fragments total). Overall the association between human remains and domestic features (houses, pits, trackways, ditches, hearths) is common and present across the region.

8.4. Represented elements



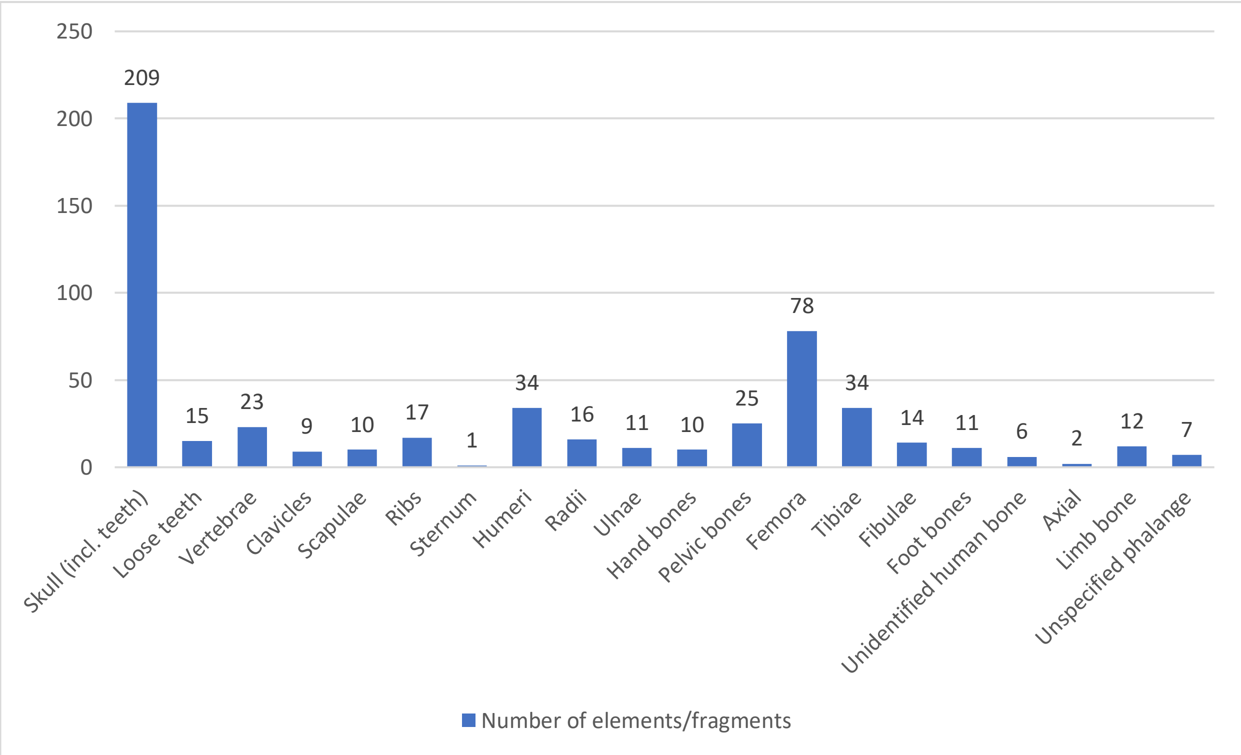


Figure 8.9 (top): Chart showing the total identified disarticulated bones divided be element. Figure 8.10 (bottom): Chart showing the disarticulated bones divided by element type. Source: Author.

Fig. 8.9 illustrates the frequency of different elements with the disarticulated bone assemblage. The total bone/fragment number in Fig. 8.9 is slightly larger than 528, as some entries contained more than one bone/fragment but were not separated – e.g. D.ID 68 (Fengate, Cambs.) consisted of L3-4 vertebrae, recorded as one entry as they articulate and were found together. This has no effect on the more common elements. When examined by element, it is clear there is a huge over-representation of skulls and skull fragments (38.4%, 209/544). The next most common element was femora (78), at just over 1/3 the total of the skull fragments. If all the long bones[31] are combined into a hypothetical 'long bone' category, they total 199 (36.6%, 199/544) – only 10 less than the skulls, though they are longer, more robust and more prevalent in a skeleton. Fig. 8.10 presents the same data, but sided elements are grouped. Section 8.7. below has shown that sidedness appears to have had little importance overall, and grouping the data here makes it much more visible.

Skulls may occur so frequently because they are much more likely to fragment into multiple pieces. This has already been balanced somewhat by recording each fragment in a per-context MNE – each entry in Fig. 8.9 represents a single occurrence of an element, per context, regardless of how many fragments it may be in (see section 3.3.4). For example, ID D.515 (The Bridles, Lincs.) is a cranial vault, surviving as 66 fragments from the parietals, frontal, occipital and temporals, but in Fig. 8.9, it has one entry (MNE=1). Fragments of the same elements from different contexts within the same feature may be over-represented, but this is minimised by the fact that the majority of sites only contained 1-5 bones/fragments.

A conservative MNE was calculated by counting any two or more incomplete fragments of an element as one, providing they were from the same feature and considering skeletal age and (where possible) fragment size (Table 8.2).

Element	MNE
Skulls (including mandibles)	193
Teeth	9
Vertebrae	22
Long bones	10

Table 8.2: MNE for disarticulated remains. Source: Author.

All other elements remain unchanged. This due to the number of sites with single elements, and the identification of remains in multiple features on larger sites – so the MNI for these sites

[31] humerus, radius, ulna, femur, tibia, fibula and the unidentified 'long bone' fragments

could well be low, assuming that skeletal elements from one individual were dispersed amongst multiple features, but the MNE remains high. The Station Road assemblage is also a factor here – the material was supposedly deposited in three groups, but all the bones were disarticulated. Partridge (1980:72) determined an MNE of 17 for the skull fragments, but only divided other elements into 'forelimb' and 'hindlimb', so here femora and other long bones may be slightly over-represented. This does nothing to balance the frequency of skulls in the overall dataset, they still make up the vast majority.

The skull fragments from Billingborough are also important. Two MIA-LIA enclosures on the site contained a hearth, a possible roundhouse (recorded via aerial photography), and multiple fragments of disarticulated bone in varied contexts (Chowne et al., 2001:20,79). From this site alone there are 24 deposits of skulls/skull fragments (MNE 16). In all the assemblage has an MNI of ten (9 left parietals and 1 infant skull fragment), though it seems likely the actual number is higher, as the fragments were found in multiple contexts and may not all be contemporary. All other larger assemblages (more than 4 deposits) contained a broader mix of elements – only Billingborough contained so many skulls/skull fragments, though 12 other post-cranial deposits were also recovered.

The presence of skulls was broadly consistent across multiple assemblages. Of the 18 sites with more than 5 elements/fragments present, four were somewhat atypical (Billingborough, Cliffs End, Godwin/Marlow Ridge and Station Road). The remaining 14 sites contained a total of 225 bones/fragments. Of these 225, 71 were skulls/skull fragments (31.6%), This is less than, but not un-consistent with the overall totals. Skulls/skull fragments were found at each one of these 14 sites. Even accounting for the unusually high number of skulls at Billingborough, they are still found in consistently high numbers across the dataset.

Calculating an overall MNI for disarticulated material would be near-impossible, as the exact amount of bone represented by each fragment cannot be known in many cases. It would also be somewhat redundant, as it would not differ vastly from the MNE figures, owing to the fact that the majority of sites have a single represented element, or between 2 and 5. A change would come with the larger assemblages, but calculating a meaningful MNI with long-lived, widespread material like that from Trumpington would not be possible.

In exposed mammalian carcasses, separation of the skull from the vertebral column is one of the first disarticulation stages (Fernández-Jalvo and Andrews, 2016:312). Fernández-Jalvo and Andrews (2016:314) suggest a ten-stage scale for disarticulation, with 10 being fully articulated, and 1 being isolated bones (Table 8.3). The scale follows a pattern of natural disarticulation of skeletal elements, which does not allow for human manipulation or selection. According to their scale, at stage 5 (mid-point) the only remaining articulated bones would be the spinal column and (presumably) the pelvis. The relative lack of vertebrae in the sample assemblage may suggest selection of the earlier disarticulating elements (skulls, limb bones) from their place of excarnation/deposition. The lack of these bones on Iron Age sites also suggests that either the dead were being excarnated outside of the site foci or were removed post-disarticulation.

10 = Fully articulated
9 = disarticulation of hyoid bone and/or the patella
8 = disarticulation of scapula and/or mandible and skull
7 = disarticulation of forelimbs
6 = disarticulation of hindlimbs
5 = disarticulation of phalanges and metapodials
4 = disarticulation of cervical vertebrae
3 = disarticulation of thoracic vertebrae
2 = disarticulation of lumbar vertebrae
1 = isolated bones

Table 8.3: 10-stage disarticulation scale for human skeletal remains. Source: Fernández-Jalvo and Andrews, 2016:314.

The degree of fragmentation was not always recorded by original authors, nor was the fracture type and freshness, where applicable (see Conclusion – future research). All available recorded data is visible in Appendix 1. Where data was available, the bone completeness is recorded in Fig 8.11. The chart only concerns postcranial elements as cranial bones are outlined in section 8.7. While there is a degree of variability, complete/near complete bones were recorded for almost all elements (88 instances). Shaft fragments were the most frequent (90), followed by those simply recorded as 'fragments' (61), and then all other incomplete bones. The overall lack of completeness suggests a period of exposure, excarnation, or manipulation between death and deposition, during which time the bones have been accidentally or purposefully fragmented. Sub-aerial exposure can cause bones to dry relatively quickly (Madgwick, 2016:332). Unfortunately, identifying an ancient dry bone fracture more precisely than 'ancient, post-mortem/dry' is much more difficult (Fernández-Jalvo and Andrews, 2016:284). Disturbance and variable preservation will have an impact here also.

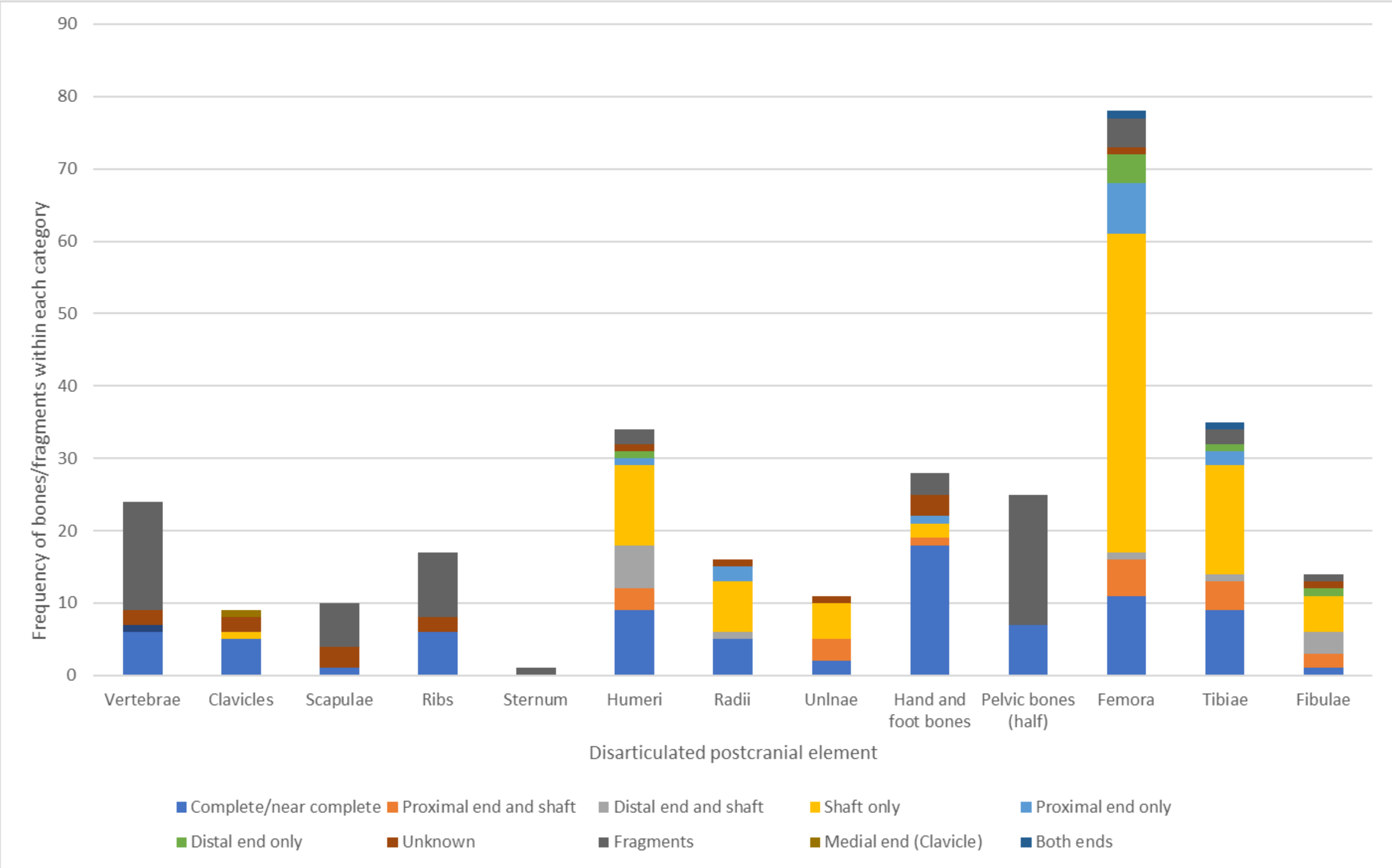


Figure 8.11: Chart showing the recorded degree of fragmentation/completeness for disarticulated postcranial elements. Almost all elements had complete examples, though shaft fragments are the most common. Source: Author.

8.5. Age

Identifying detailed osteological data is very rarely possible from single bones or small fragments (Osterholtz et al., 2014). Even so, attempts have been made to identify age and sex patterns in the assemblage. Figure 8.12. illustrates the deposits identifiable to an age group. By far the most common category are those recorded as 'adolescent or older'. For most of these it is impossible to be more precise, as the majority of the bones either contain no fusion centres but are large and robust enough to not belong to children, or they have already fused (meaning a minimum age of *c.*25-30 excluding cranial sutures). Bones/fragments of unknown age make up 26.7% of the overall data (141/528). More precise ageing methods like dental attrition are also only applicable for a few deposits, and even then, incomplete dentition is imperfect as a resource (Brothwell, 1981; Lovejoy 1985).

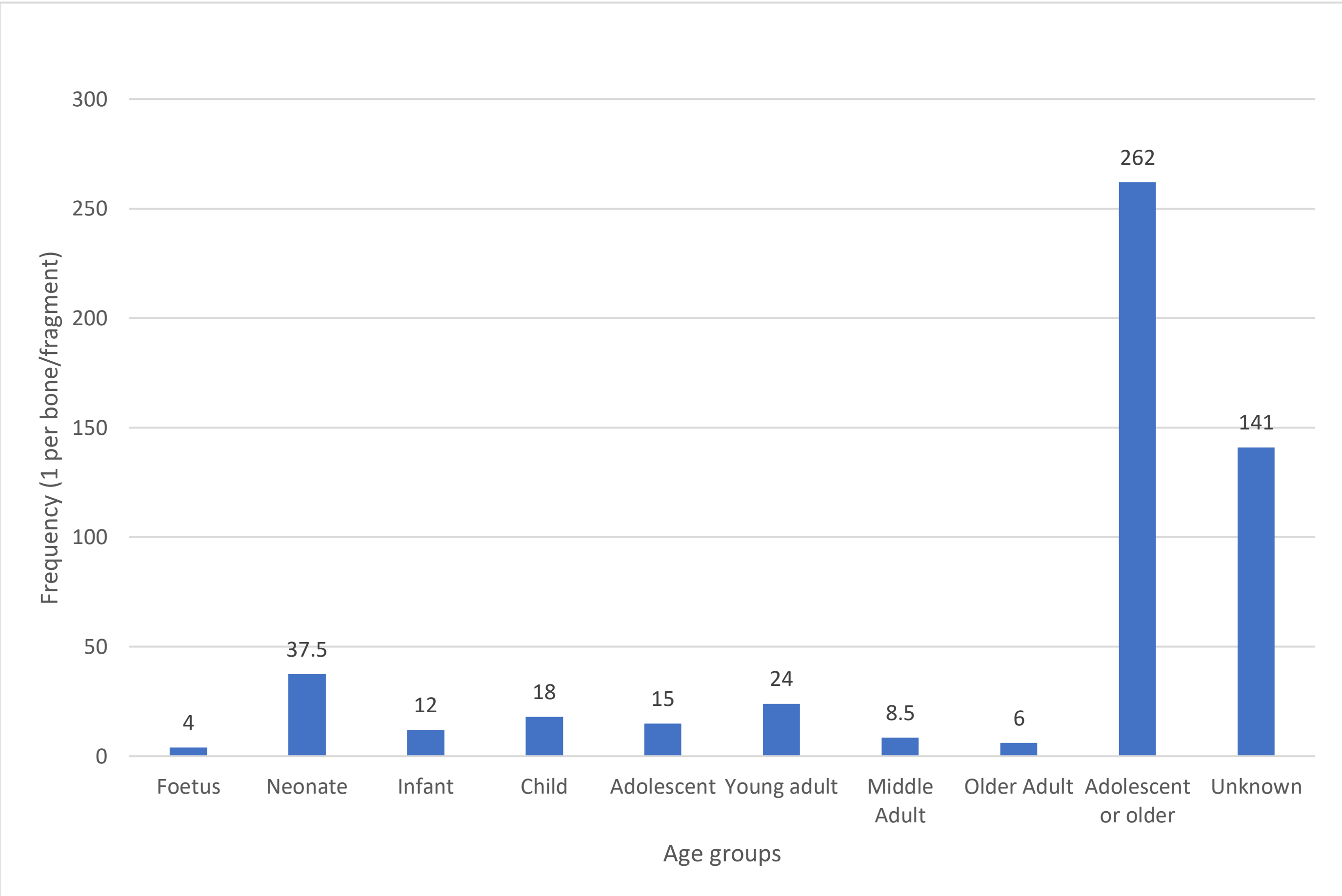


Figure 8.12: Chart showing the number of bones/fragments identifiable to age, and the subcategories therein. Source: Author.

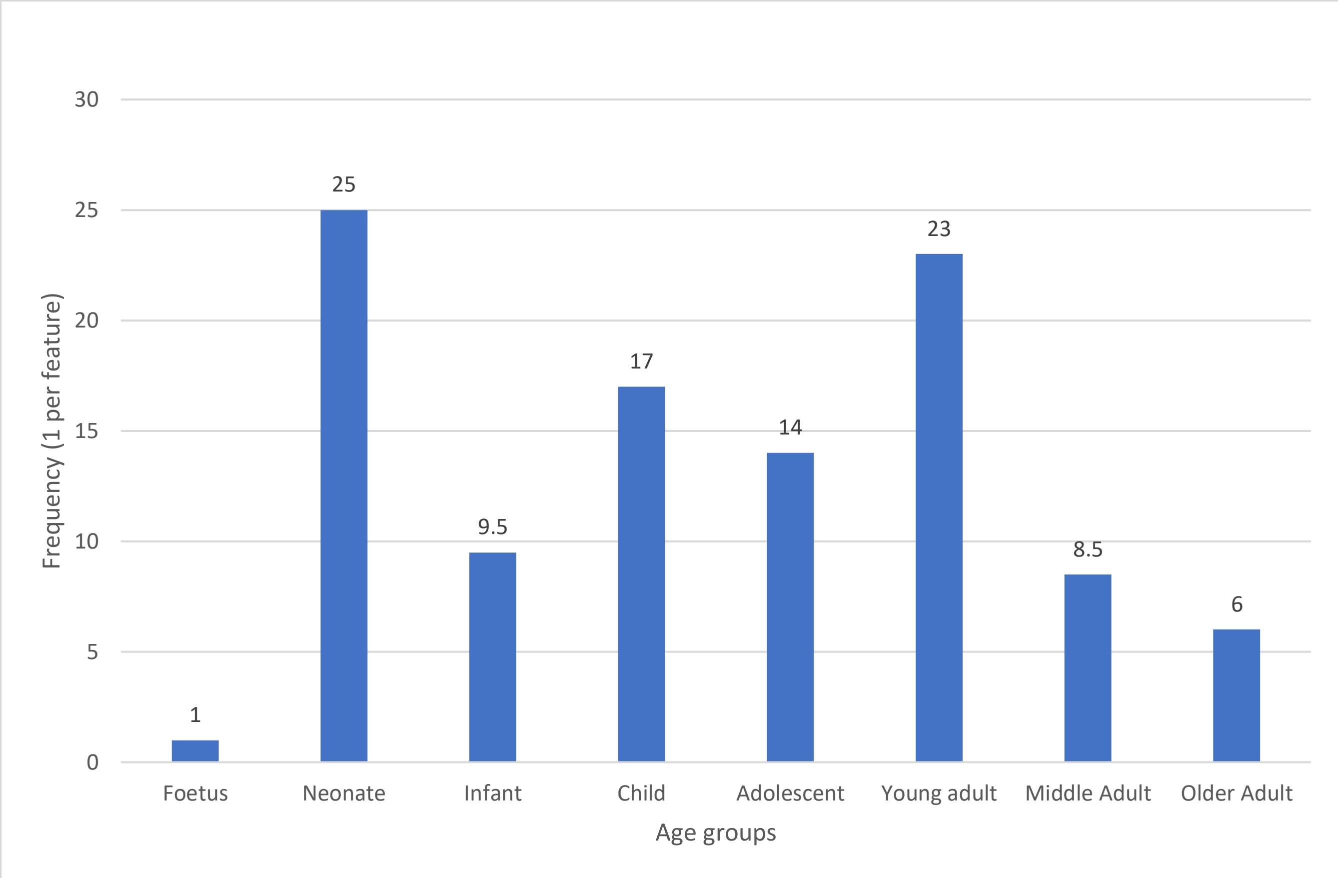


Figure 8.13: The disarticulated remains of known age only. Source: Author.

Fig. 8.13 shows only those of known age (n=104), with one entry per feature where multiple bones could be from the same individual, to limit over-representation of these deposits. Four foetal long bones (D.IDs 448-451) were found in LIA pit [547] at Waterstone Park, Stone Castle (Kent). It is very reasonable that they are from one foetus, and so the four in Fig. 8.12 becomes a one here. The chart shows far from a normal age distribution – the number of young adult remains is higher than would be expected (22.1%, 23/104) the number of middle adults far lower[32]. Under 20's here represent 63.9% of the total (66.5/104), over 1/3 of those are neonatal remains. It is argued that infant mortality rates would be high for the period (see Appendix 3), but for inhumed individuals the very young are under-represented (Chapters 4-6). The high proportion of neonate remains here could go some way to explaining their relative absence elsewhere – they may have been subject to different practices at higher rates than other age groups. However, neonatal bone is perhaps more easily assigned an age group than others

[32] For Figs. 8.12-8.13, any individuals assigned two age categories e.g. 'young to middle adult' have been equally divided into the standard categories, adding 0.5 to each respectively. See 4.10 for an explanation of this.

when disarticulated, and including all the data, 'adult-sized' elements are a clear majority - neonatal remains still constitute 9.7% of the total (37.5/387) though.

Of the 25 neonates from separate features (an approximate MNI), 18 are from Cambridgeshire, 12 of which are from the Trumpington excavations – meaning nearly half all disarticulated neonatal bone comes from one site area. In all only 10 of 84 (merged) sites contained neonatal bone, so despite its apparent over-representation in the aged data, it is in fact highly restricted geographically. This may point either to bone survival, overall quantity of material, or perhaps a regional practice regarding neonates in the Cambridgeshire area.

8.6. Sex

??Female	?Female	Female	??Male	?Male	Male	Pre-adolescent
17	7	5 (1 DNA)	27	12	3 (DNA)	70.5

Table 8.4: Table showing the number of fragments identifiable to sex. Source: Author.

The majority of the sample assemblage cannot reliably be assigned a sex (Table 8.4). Where the remains have been previously examined by trained osteologists in the last 20 years, estimations of sex have been upheld here. In these cases they are recorded as 'possibles' e.g. IDs 15 and 19, a left parietal and left humerus both published as female (Witkin, 2007:100; Gerber, 2007:305) – here they are both ??Female, owing to the nature of the material and the unreliability of sexing individual bones based on robusticity (see section 3.4.4.). Confident sex determinations have only been assigned when the remains were DNA tested, or when at least half of the pelvic girdle is present. These are the only definitive results from the whole assemblage, though where complete skulls are present, determination of sex can be as secure as 95% (Durić et al., 2005:159; Sakaue and Adachi, 2009:125).

Considering all degrees of surety, males make up just under 60% of the total (29 female, 42 male, 59.2% male). This is probably more due to determinations based on bone robusticity than deliberate sex-based choices in the Iron Age. When the 'possibles' are removed, males still make up over 50%, but less dramatically so (15/27, 55.6%). Three of the four subject to DNA analysis (Evans et al., 2016a:175-6) were also male.

8.7. Side

Left	?Left	Axial (incl. skull bones)	Right	?Right	Unsided
81	4	260	86	4	93

Table 8.5: All disarticulated remains divided by anatomical side. Source: Author.

Of 528 bones/fragments, 175 could be sided (33.1%), and a further 260 were categorised as axial (skull, vertebra, sternum, pelvis). There is an almost exact 50/50 split among the sided bones/fragments – (51.4% right). There appears to be absolutely no indication of side playing a role in element selection for disarticulated material. Sided bones originate from assemblages varied enough to say that they are reflective of wider practices, rather than one over-represented sample, especially as the largest site assemblages also contain unsided fragments.

Table 8.6 shows that specific post-cranial elements seem to have little bearing on sidedness – for humeri, femora and tibiae, the three most frequent elements, the figures range from 50/50 to 53.3% right – no clear selection of sided elements occurs, except for perhaps with right radii.

Sided element	Frequency – Left	Frequency - Right	%
Clavicles	2	4	66.7% right
Scapulae	6	3	66.7% left
Humeri	14	16	53.3% right
Radii	4	9	69.2% right
Ulnae	4	3	57.1% left
Metacarpals	2	0	100% left
Ribs	3	4	57.1% right
Femora	28	31	52.5% right
Tibiae	14	14	50/50
Fibulae	5	4	55.6% left
Tarsals	2	0	100% left
Metatarsals	1	2	66.7% right

Table 8.6: Post-cranial elements by side. Source: Author.

The overwhelming presence of bones from the skull has a significant effect on determinations of side. Complete crania/skulls are considered to be part of the axial skeleton, in that they are not 'sided'. However, when single cranial bones, or fragments thereof are recovered, it is relevant to assign them to a side as some are paired (e.g. parietals, temporals, zygomatics), and others are often and easily split (e.g. frontals, mandibles). Some disarticulated cranial deposits consisted of both left and right-sided fragments (e.g. ID D.49, the left and right parietals from Black Horse Farm, Cambs. (Weston, 2006).

Cranial element	Frequency
Frontal	45
Left parietal	38
Right parietal	32
Unsided Parietal	28
Left temporal	2
Right temporal	6
Unsided temporal	2
Occipital	40
Maxilla	8
Mandible	17
Zygomatic	3
Orbits	4
Facial bone	0
Largely complete skull*	12
Skull fragments	16
Cranial vault frags**	22
Unknown/Unspecified	8

* The bones present in the largely complete skulls are not also included in the individual element list in this table, as their depositional conditions are likely to have been different

** One entry per deposit, not per number of fragments in a deposit

Table 8.7: The individual bones of the skull represented among the disarticulated remains. Source: Author.

Table 8.7 shows a detailed breakdown of elements present for all cranial deposits. Single bones have been given one entry here, while joined bones or deposits containing fragments of several elements, have been given one entry per bone present. Additionally, 12 of these are recorded as 'largely complete skulls' and have not been broken down into elements present. This is because in all cases it is likely the skull was deposited whole, and as such the side of individual bones is irrelevant. In many cases the fragments are not fractured or separated along suture lines, so identifying sidedness, or the importance of specific elements is very difficult, and may even be irrelevant in terms of meaning to Iron Age people.

Parietal bones/fragments appear most frequently (98 instances), followed by frontal bones/fragments, and then occipitals. All other major bones of the skull are much less common. The parietals, frontal and occipital are all easily identified in an assemblage, as well as being the four largest bones of the skull – these factors will be relevant in the makeup of the overall material. Small bones of the face are much less likely to be identified (or even recovered) if fragmentary, whereas larger bones of the cranium will survive better, and have easily recognisable characteristics like the meningeal grooves on the endocranial surface of the parietals. Only the parietals occur frequently enough and are sided often enough to assess any patterns in element selection. Left parietals occur more frequently than right (38 and 32 respectively), with an almost equal number unsided (28) – there is no clear pattern of sidedness present here. The skull appears to hold greater significance beyond its simultaneous axial and sided nature, and categorising left and right cranial bones may well be a modern distinction.

8.8. Associated material

There is an argument that middens may have played a crucial role either as a depositional environment during the decay process, or as an eventual depositional location to remove the disarticulated bone from communal circulation (see Discussion). Pit deposits frequently contain 'domestic waste' in the same fills as the disarticulated bone, and where these are not clearly placed or 'special/structured' deposits, they may be the result of a dumping phase of pre-mixed material from nearby middens (Evans et al., 2016a:145).

Of the 218 pit deposits, further contextual data was available for 210, from 158 pits on 44 (unmerged) sites. Material from seven counties is represented, though 148 deposits were from Cambridgeshire, largely pit-cluster settlements (Appendix 1). Of these 210 deposits, 61 had no record of 'domestic waste' in the same fill as the human remains (61/210, 29.%), while 149 did (71%). There are factors to be borne in mind here though:

- The same sites feature heavily. Twenty-three deposits with domestic waste (15 pits) were from Harston Mill, 64 (47 pits) were from Trumpington sites.
- Not all of these 148 contained large amounts of other material, and they are certainly not all comparable. To be considered in this category they simply had to contain some quantity of pottery and animal bone or at least one other artefact type within the same fill as the human bone.
- Some of these are most certainly placed, 'special' or 'structured' deposits, not accidental inclusions/generic backfill. Seventy-two of 148 deposits have some degree

of ‘specialness’ - the inclusion of metalwork, bird/wild animal bone, articulated animal remains and other human remains (Hill, 1995:102-8).

There is a pattern though, of the association of disarticulated human remains with ‘domestic waste’. Not all 148 may have originated in middens, though the argument is strong for Trumpington and the surrounding areas, and there is no evidence to the contrary. Middens would serve as valid repositories for domestic waste, and domestic waste deposits are occurring here, with human bone, in large numbers (see Discussion).

8.9. Taphonomy

Analysis of macroscopic taphonomic modifications was possible for 460 of the 528 total bones/fragments. The remaining 68 were excluded for one or more of the following reasons:

- Poor cortical bone preservation due to acidic soil or root etching, risk of taphonomic data having been destroyed (overprinted)
- Concretion over the cortical surface masking any possible taphonomy (Fig. 8.14)
- Not examined in the last 20 years and primary (re)examination not possible
- Original report gives no mention of taphonomic analysis
- Lack of recorded detail for the material

Figure 8.14: Femur fragment (D.ID 025, Marston Vale, Beds.) with concretion covering the cortical surface, obscuring any possible taphonomic markers. Source: Author. Scale = 1cm

Of the 528 total, 212 were subject to primary analysis, and of those eight were either so abraded/root etched or covered in concretion that no analysis could be undertaken (Fig. 8.14), leaving 204 which were subject to primary analysis and produced valid data. The rest (including all those from Trumpington) relied on secondary data. It cannot, therefore, be certain that all 460 were examined to the same degree of accuracy, but as stated in the methods, macroscopic taphonomic modifications are often easy to identify, and all were examined by qualified osteologists, using established methodologies. Throughout the chapter, statistics have been given for both the primary analysis and the overall data.

Taphonomic modifications were identified on 108 bones/bone fragments, 23.5% of the analysed total (108/460[33]). The breakdown of this is outlined in the following sections. Research on large mammals has shown that certain elements are 'inherently more likely to exhibit modifications' than others, and so create a bias (Table 8.8) (Madgwick, 2016:333).

Weathering = Mandible, long bones, pelvis, scapula

Gnawing = Long bones, pelvis, scapula, astragalus, calcaneum

Fracture Freshness Index = Femur, humerus (more likely to generate low scores indicating fresh fractures)

Table 8.8: Elements that are inherently more likely to be affected by modifications (Cattle and horse) – From Madgwick, 2011 and Madgwick, 2016:333.

Though there is undoubtedly some susceptibility difference between large mammal and human bone, skull/cranial bones make up just under 40% of the assemblage here (209/544)[34]. These bones are inherently less likely to exhibit natural taphonomic modifications like gnawing and weathering, owing to their unique shape; this in turn may have an effect on any patterns in the data. The *taphonomic paradox* will also be a factor – the situation whereby if a bone exhibits taphonomic modifications (especially natural ones), it must be both susceptible to them, and robust enough to have survived them where other elements may not (Madgwick and Mulville, 2012:511). This means that where bones in this assemblage appear severely modified, there were certainly others more seriously affected (*ibid*, 511). This must be borne in mind, but its role cannot be measured empirically.

[33] 53/204 primarily analysed bones (26%).
[34] Thirty of the 68 bones/fragments not subject to taphonomic analysis were bones of the skull, so of the remaining 460, 38.9% were cranial.

8.10. Natural modifications

8.10.1. Weathering

Figure 8.15: Right mandibular fragment from Station Road (Group 2), showing early Stage 1 weathering in the form of linear cracks to the outer bone surface (Behrensmeyer 1978). Source: Author. Scale = 1cm

Twenty bones/fragments exhibited some degree of weathering (20/460, 4.3%[35]). Nine were subject to primary analysis and exhibited stage 1-2 weathering (Behrensmeyer, 1978), with three more simply described as weathered (D.IDs 302-4, California Doline, Herts.) and the remaining bones given descriptions also consistent with Behrensmeyer's stage 1-2. The material comes from only nine sites, 7/20 bones are from Station Road, 4/20 from Godwin Ridge and 3/20 from California Doline. Overall this suggests that weathering is not representative of broader practices – both the Station Road and Godwin Ridge assemblages are far from typical, and there are suggestions that an excarnation platform or shrine were present at California Doline (Fitzpatrick-Matthews et al., 2007:113). The represented elements are consistent with the wider assemblage, with bones of the skull making up 35% (7/20). Where weathering was present, no other taphonomic markers were seen, except for a large fracture on D.ID 174 (Prickwillow Road, Cambs.), and cut marks on D.ID 445 (Thong Lane, Kent). Both of these are frontal bones, and in both cases the weathering takes the form of localised delamination. It is possible this occurred in a subterranean environment through waterlogging and subsequent freeze-thaw cycles but an experiment by Pokines et al. (2016)

[35] 9/204, 4.4% - primary analysis

using deer long bones suggested that freeze/thaw effects only alter the bone surface marginally. The general lack of other markers on weathered bone could be due to the destructive nature of weathering patterns on surface bone – taphonomic overprinting.

An additional eight elements from Godwin Ridge, Cambs. (D.IDs 89, 103-9) are described as 'very fragmentary and abraded' (Dodwell, 2016:Table 6.18). The latter seven all came from one surface layer. It seems reasonable that these are weathered like the others from this site (see also section 8.4.3 and Appendix 2), but differential preservation or treatment could be a factor too, and they are not specifically recorded as 'weathered' by the original osteologist. A range of elements are present here – scapula, clavicle, rib, vertebrae, skull; if these could be re-examined and confirmed as weathered, it would increase the total number (24/460), but not the total sites, or impact on the representation of weathering regionally or temporally.

8.10.2. Trampling

There was only one identifiably trampled bone in the assemblage. D.ID 313 (Station Road, Herts.) was recorded by the excavator as having been cut, matching common butchery marks (Croft, 1980:71). Multiple thin striations ran diagonally along the length of the proximal shaft, with a second area around the midshaft. They have the appearance of shallow cut/slice marks, as if defleshing the bone, however, the uniformity in size, depth and alignment, and the regularity of both the striations and their spacing is reminiscent of trampling by ungulates (Fernández-Jalvo and Andrews, 2016:49, 53).

Taphonomic overprinting, bone concretion and poor cortical bone survival will certainly be factors in the lack of trampling, owing to the shallow nature of such striations (Madgwick, 2014). The relative prevalence of human-caused taphonomy and low frequency of natural markers does suggest that these bones are not frequently being left in a place where livestock were present[36].

[36] Or they were, but the more trampled bones did not survive (taphonomic paradox).

Figure 3.16: D.ID 313, femur shaft exhibiting linear striations consistent with light trampling (arrow). Source: Author. Scale = 1cm.

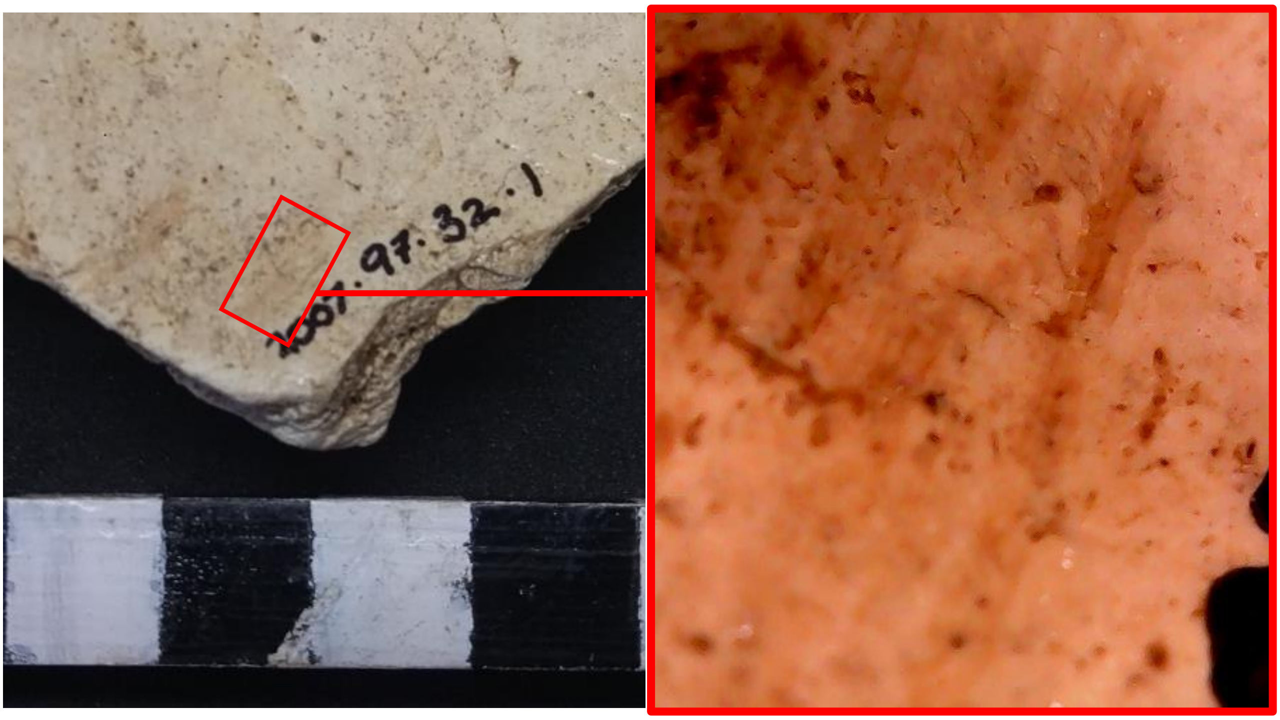


Figure 8.17: Disarticulated bone ID.357 (Station road), showing rodent gnawing on the exterior surface of the cranial vault. Source: Author. Scale 1cm for left photo.

8.10.3. Gnawing

Sixteen examples of gnawing were found from 13 sites (16/460, 3.5%[37]). Six were subject to primary analysis, the rest rely on published findings, so it is possible very subtly rodent gnawed bones may have been overlooked. Three were from the Trumpington Meadows assemblage (Evans et al., 2016a), another from Marshall 'Wing'; these are the only four for which the source of gnawing is unspecified[38]. D.ID 84 (Godwin Ridge, Cambs.) was actually one of two gnawed elements from the site, but the other (a tibia, canid gnawed) was part of what may have been a body bundle and so discussed in Chapter 8. A single frontal bone (D.ID 357, Station Road, Herts.) and a parietal (D.ID 9, Broom, Beds.) were the only cranial elements, the others were all long bones, with femora the most commonly affected (seven). This is consistent with the results of Madgwick (2016) (section 8.9), and the fact that crania are much less likely to exhibit gnawing due to their shape, as well as a low bone marrow content compared to long bones like femora. The frontal bone is also the only confirmed case of rodent gnawing – the endocranial surface has a small area of grooved linear striations consistent with rodent tooth marks (Fig. 8.17). In all other confirmed cases, the ends of long bone shafts exhibited punctures, chewing and gnawing all consistent with canids. D.ID 59 (femur, Colne Fen, Cambs.) had canid puncture marks on both ends, and was found in a well, with the partial remains of a dog in the same context; it is tempting to think that the gnawing and the dog are related (Evans, 2013a:212). The presence of canid gnawing on these bones suggests that the animals who had access to them were either domesticated (dogs) or could not carry the bones away from the site. The material must either have been sub-aerially exposed to allow carnivore access or placed in a midden/shallow pit so that elements could be dug out by the animals. It is also possible that these bones were given to the animals deliberately. The dog found with D.ID 59 though could suggest that the gnawing done to these bones was profane in some way – the responsible animal killed and cast into the well with the bone.

Six of the gnawed bones exhibited other taphonomic modifications. D.ID 249 (Trumpington Park and Ride, Cambs.) had a spiral fracture but it is unknown if this was peri-mortem, post-mortem while the one was fresh, or even antemortem and healing (Hinman, 2004). The other five all had modifications caused by human interaction with the bone. D.ID 215 appears to have been split axially, as if for marrow extraction or bone working, and D.ID 220 was chopped at one end. Both of these are from Trumpington Meadows, Cambs. and in both cases the

[37] 6/204, 2.9% - primary analysis

[38] In each case it is described as 'animal gnawing' on the end of long bone shafts. The use of 'animal' rather than rodent, coupled with the gnawing present on all other affected long bones makes it likely these are canid gnawed, but this cannot be proven and must remain ambiguous.

modifications may be related to bone working/object creation (Evans et al., 2016a:295). D.ID 453 (Weatherlees Pipeline, Kent) was cut/sawn transversely, to separate the fragment from the rest of the bone. This bone was also polished, as were D.IDs 167 (Marshall 'Wing', Cambs), 402 (Cliffs End, Kent) and 453, presumably prior to the gnawing event. It is likely in these cases that the bones were being processed in the open, the gnawing being the result of rodents or carnivores accessing the waste material or unfinished tools within the settlement.

8.11. Human modifications

8.11.1. Cut/saw marks

Twenty-seven elements had at least one cut mark (27/460, 5.9%[39]). Billingborough dominates the sample (8 instances), and the Trumpington sites contain four cut-marked bones, but there is evidence from 15 sites in total, from five counties (Fig. 8.18). Fifteen of 27 are cranial vault bones (55.6%), the rest long bones, including eight femora. The Billingborough assemblage drastically skews the represented elements though (8 of the 15 cranial bones); without this one site femora are the most commonly affected, and overall long bones see more cut marks than crania. Sixteen of the cut-marked bones have at least one other modification, nine have more than one. Polishing/abrasion occurs on 15 of the cut-marked bones, supporting the idea that it is caused by handling rather than natural sources. The cut marks appear to fall into two main categories:

- Cut as part of a bone-working process (for tools and other objects) = 19
- Defleshing / Processing of human remains = 4
- Unknown = 4

Five femoral shafts (D.IDs 14, 204, 207, 221 and 223) from two sites (Trumpington, Cambs. and Fairfield Park, Beds. (14)) appear to have been cut/sawn to separate them from the epiphyses, as part of a process transforming them into scrapers and blades (See 8.11.6 and Discussion). Two other femoral shafts may also represent discarded or unfinished attempts at the same process. D.ID 276 (Wardy Hill, Cambs.), an adult left femur shaft, was sawn partially at both ends and then snapped to remove the epiphyses (Dodwell, 2003:232). D.ID 453 (Weatherlees Pipeline, Kent) likewise, was a femur shaft fragment, cut transversely from the

[39] 12/204, 5.9% - primary analysis

rest of the bone, this time sawing all the way around the outside until snapping (McKinley, 2009:4). This bone, like the five used for leatherworking (see below), was also polished from handling. Removing both ends of a femur would not drastically help in breaking down the skeleton, so it is unlikely that the cuts on D.IDs 276 and 453 are for this purpose. Gaining access to bone marrow is a possibility but splitting the bone axially (as with D.IDs 7 and 218 below) would have been a much more effective way to do so. Though other possibilities exist, it is reasonable that D.IDs 223 and 453 represent unfinished human bone tools like the six other cut femora.

Eight skull fragments from Billingborough, Lincs. (D.IDs 481, 483-4, 489-91, 501-2), all appear to have been cut as part of the creation of bowls (Fig. 8.19). The fragments are those of the occipital, temporals, parietals, and frontal, either cut or sawn with fine blades, separating them from the rest of the calvarium (Bayley, 2001:73-8). Some of these are from the base of the bones, seemingly waste fragments, while others (D.IDs 481, 491, 502) may be the rims of the bowls themselves. D.ID 505 (Helpringham Fen, Lincs.) is likewise a frontal fragment, sawn through in much the same way, as waste (Bayley, 1999:17). D.ID 150 (Hurst Lane, Cambs.), a calvarium, could be the end result of a skull bowl process – two heavy blows separated most of the dome from the rest of the skull (7.11.2), with fine cuts finishing it off (Dodwell, 2007:66). D.IDs 481 and 502 (Billingborough) are also perforated. Suspending the bones with leather or thread through these perforations may have been a way to store and display them during and after the bone working process. D.ID 85 (Godwin Ridge, Cambs.) is represented by most of the parietals and occipital, and has fine cuts over the bone surface suggestive of defleshing practices (Evans, 2016:524), like the long bones (below). There are also four holes drilled through the parietals, in a square pattern (Fig. 8.25), and the bone surface is polished. This too is evidence of object creation, the perforations again for suspension, or for the passing of liquids (see Discussion). Another human skull object came from Earith (D.ID 63, Cambs.) – this time the cut/saw marks may be decorative, as the cranial fragment was sawn and broken from the rest of the skull, before several marks were cut into the fragment, transverse to the sawn edge, to resemble the teeth of a comb (Bayley, 1984). This bone comb, or decorated fragment was also perforated. D.ID 111 (Haddenham V, Cambs.), a frontal fragment, had at least one cut mark and was polished, so may have been an amulet or object, but there is no further detail about the cut mark (Evans and Hodder, 2006:246).

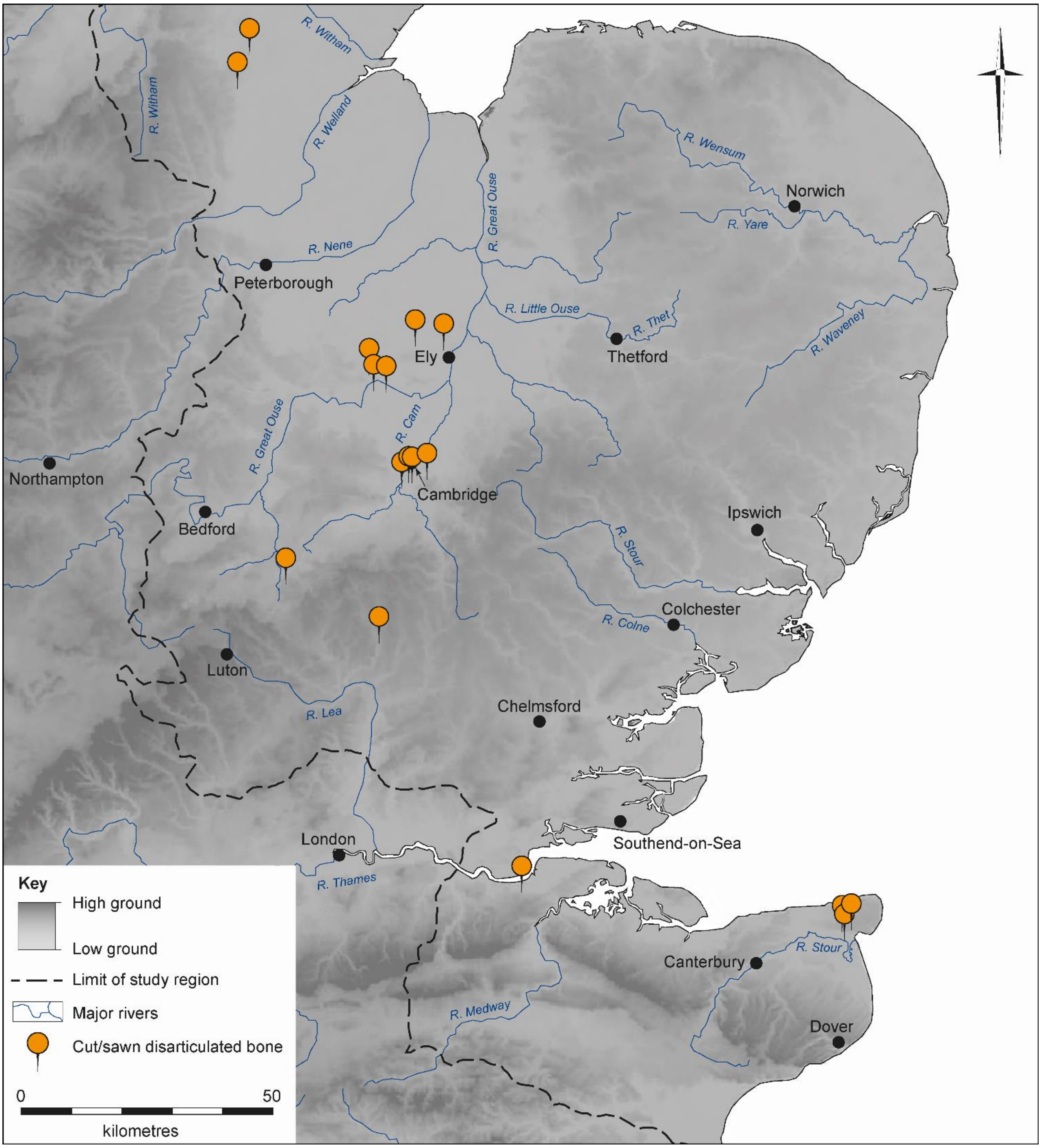


Figure 8.18: Map showing all sites containing cut/sawn disarticulated bone. Source: Author.

Figure 8.19: Two worked skull fragments from Billingborough, showing evidence of cut and chop marks (foreground), and chop marks and polishing (background). The frontal fragment in the foreground is the waste from bowl making. Source: Author.

Four long bones all share very similar cut marks – sets of shallow, fine cuts running transverse to the axis of the bone length. D.ID 53 (Clay Farm, Cambs.), a right femur shaft, has several of these cuts on the anterior surface of the bone, at the proximal end (Loe, 2012:168). D.ID 320 (Station Road, Herts.), another femur, likewise has an area of around 10 fine cuts, across the anterior surface of the distal shaft. D.ID 347, an ulna from the same site has 2-3 such cuts, transversely across the bone shaft, and five deeper cuts were identified on a humerus from Wardy Hill, Cambs. (D.ID 277), just above the lateral supracondylar ridge (Dodwell, 2003:232). In all cases the cuts are in groups, parallel to one another, at one end of a long bone shaft, and transverse to the bone length. The cuts from the Station Road bones range from *c.*8-12mm long. Whether the bones were eventually meant to be used for some other purpose or not, these cuts, like the thin cuts on the Godwin Ridge skull, appear to be for defleshing, severing muscle attachments, and/or dismemberment (Bello et al., 2016).

Limited detail could be identified for the final cut elements. An unspecified ‘skull fragment’ from EKA2 Zone 6, Kent was recovered from a cobbled surface and had more than one cut mark (D.ID 427, Andrews et al., 2015:187). A tibia from Cherry Hinton, Cambs. also had more than one cut mark (D.ID 272). The tibia was recovered from the fill of the ring ditch enclosing the site, a fill also containing other remains in various stages of articulation, some with signs of violence; the cut marks on this tibia may relate more to conflict than post-mortem processes (Pickstone and Mortimer, 2011, 2012). The remaining cut bone (D.ID 445) is a frontal fragment from Thong Lane, Kent which apparently had several small cut marks at each side of the bone, inflicted on fresh bone (French and Green, 1983:64), though they are not visible in the only published photo and there is no indication as to their size or depth. The same bone does have a large antemortem sharp-force trauma lesion to superior portion which would have also affected at least the left parietal (*ibid*, Plate 2), but this is unrelated to any bone taphonomy.

8.11.2. Chop marks

Eleven bones/fragments have at least one chop mark (11/460, 2.4%[40]. Of these, three were also cut/sawn - 150, 223 and 277 mentioned above. These three, and D.ID 43 (AstraZeneca South, Cambs.) were also all polished. The chopped bones originate from eight sites in only three counties, with 9/11 from Cambridgeshire. Four of the bones are from excavations at Trumpington, two from the Meadows excavations (D.IDs 218, 220) and two from the Park and Ride site (223, 246). The represented elements are varied, but long bones predominate (8 of 11), with three cranial bones also.

D.ID 223 has been previously interpreted as a scraper (Riddler, 2016:170). D.ID 43 (AstraZeneca South) is another femur shaft which appears to have been worked into a tool, similar to the scrapers from Trumpington and Fairfield Park. The shaft was chopped axially at the distal end, with use-wear polish present over the whole area (Tabor, 2015:67). ID 218 (Trumpington Meadows, Cambs.) a radius shaft, was also split/chopped axially by a blade (Evans et al., 2016a:295). No use-wear was recorded but it is from the same site as several other worked bones. D.ID 220 (Trumpington) also presents tentative evidence of butchery practices – an ulna with a *c.*40mm long, shallow chop mark on the distal end. This was achieved by holding the bone horizontally and cutting into it, and may represent butchery, or be part of the disarticulation process (*ibid*, 295). The same may be true of ID 277, the humerus from Wardy Hill, Cambs. with five cut marks, as it also has a 4mm deep, 22mm long chop mark to the anterior bone shaft, caused by a heavy blow from a sharp blade (Dodwell, 2003:232). All of these modifications could be explained by processing/breaking down the corpse for faster disarticulation. D.ID 99 (Godwin Ridge, Cambs.) may also be the product of the same processes – a humerus with three chop marks from a sharp metal blade, two of which are similar to the marks on D.ID 277 (Dodwell, 2016:521), and for ID 215 (also from Trumpington), mentioned above, which had 'tenuous evidence' of axial splitting, and so is not

[40] 3/204, 1.5% - Primary analysis

included in the statistics here (Dodwell and Neil, 2016:Table 4.8). For ID 99 Dodwell (2016:521) noted that the chop marks are consistent with single powerful blow, if the humerus was articulated then this action would have severed the forearm.

D.ID 150 (Hurst Lane, Cambs.) was chopped to separate the calvarium, possibly for a bowl (above). D.ID 145, a parietal fragment from a pit at Harston Mill (Cambs.) was chopped into a rectangular shape, and interpreted as an amulet or curated object (O'Brien, 2016:41). A frontal fragment from the same site was similarly shaped, and also perforated like the two from Billingborough, Lincs. (D.IDs 481, 502). The frontal (SF 52) was unstratified however, and cannot be included here without further dating, though it is very likely Iron Age (*ibid*, 41).

ID 504 (Fiskerton Causeway, Lincs) is an almost complete left parietal bone, with a 32mm long, 5mm wide chop mark on the postermedial quarter (Chamberlain, 2003:126) (Fig. 8.20). Caused by a blow from a bladed weapon like a sword, rather than an axe or cleaver, it may be the result of peri-mortem trauma – though it is only 1.5mm deep and would not have caused death (*ibid*, 126). In this instance it is impossible to say more due to the isolated nature of the remains, but it does not fit the pattern of the other cut or chopped cranial bones.

8.11.3. Fractures

There are 15 instances of peri-mortem bone fractures from the region (15/460, 3.3%[41]), from 13 sites. Again cranial bones dominate, with eight cranial vaults exhibiting fractures, and one mandible.

Six bones, all cranial, exhibit depressed fractures, at least three with secondary radiating fractures also. In all cases the fracture patterns are indicative of perimortem blunt force trauma (see Appendix 3; Figs 8.21-2). D.IDs 1 and 15 (Biddenham Loop and Fairfield Park, Beds.) both exhibited similar fractures, small elliptical depressed lesions which penetrated the inner table, causing V-shaped fractures on the endocranial surface. The small impact point could mean the injuries were caused by a projectile, like a sling stone (Appendix 3). These are the only two such fractures from the entire assemblage (including inhumation data), so it is notable that the sites that produced them are only 24km apart (*c.*15 miles).

Figure 8.20: D.ID. 504, a parietal bone from Fiskerton Causeway, with a c.32mm long chop mark to the ectocranial surface. Source: Chamberlain, 2003:Fig.7.2.

[41] 9/20

The fractures to the other four bones were larger, and most likely caused by blunt weapons either at or very shortly after the time of death (D. IDs 174, 251, 274, 428[42]). In the case of D.ID 274, an adolescent cranium from Cherry Hinton, Cambs., weapon trauma is the most obvious cause, as the human remains at the site have long been interpreted as victims of a massacre (Pickstone and Mortimer, 2011, 2012). Likewise D.ID 428 (EKA2 Zone 6, Kent) had suffered depressed fractures to both parietals – unlikely to be the result of a fall or other accidental injury (McKinley and Egging Dinwiddy, 2015:359). Post-mortem violence could be the cause of a circular depressed fracture on D.ID 376, from Station Road, Herts. The affected bone is the right ilium of an adult, and the fracture occurs on the medial surface, in such a position that it is hard to imagine how it could be inflicted on a living, or even fleshed and articulated individual (Fig. 8.23). This suggests that this person was defleshed and/or disarticulated fairly rapidly, for the fracture to still have the appearance of a fresh bone break (Ortner, 2003:121). The other fractures are less conclusive of any particular practices, though some may relate to disarticulation practices, breaking the bones and body down manually to speed up decay or disperse the remains. D.ID 35, a mandible fragment from A14, Girton (Cambs.), and ID 140, a humerus fragment from Harston Mill (Cambs.) both fit this interpretation, as they were 'snapped' from the rest of the bone. D.ID 503 also (Fiskerton Causeway, Lincs.), a distal tibia shaft had fresh bone fractures at each end, removing the epiphyses.

[42] Prickwillow Road (Cambs.), Trumpington Park and Ride (Cambs.), Cherry Hinton (Cambs.) and EKA2 Zone 6 (Kent), respectively.

Fig. 8.21 (Above): Photo showing the large, slightly depressed frontal fracture on disarticulated bone ID 174 (Prickwillow Road, Cambs.). The concentric fracture line is visible across the width of the frontal bone, as well as additional radiating fractures, spreading to the coronal suture. The bone has suffered from weathering and as such the fracture lines have concretion within, and the ectocranial surface has delaminated in places. This makes it very difficult to ascertain whether the radiating fractures are related to the original perimortem impact, or are dry bone fractures, occurring here as a result of the weakened bone structure (Madgwick, Pers. Comm. Source: Author).

Figure 8.22a-c (Above right, middle, and bottom): Photos showing the two blunt force weapon traumas suffered by disarticulated bone ID 428 (EKA2 Z6, Kent) – top photo shows both parietal lesions, the middle photo shows the right parietal, and the bottom shows the endocranial surface of the right parietal. Source: McKinley and Egging Dinwiddy, 2015:Plate 13.10

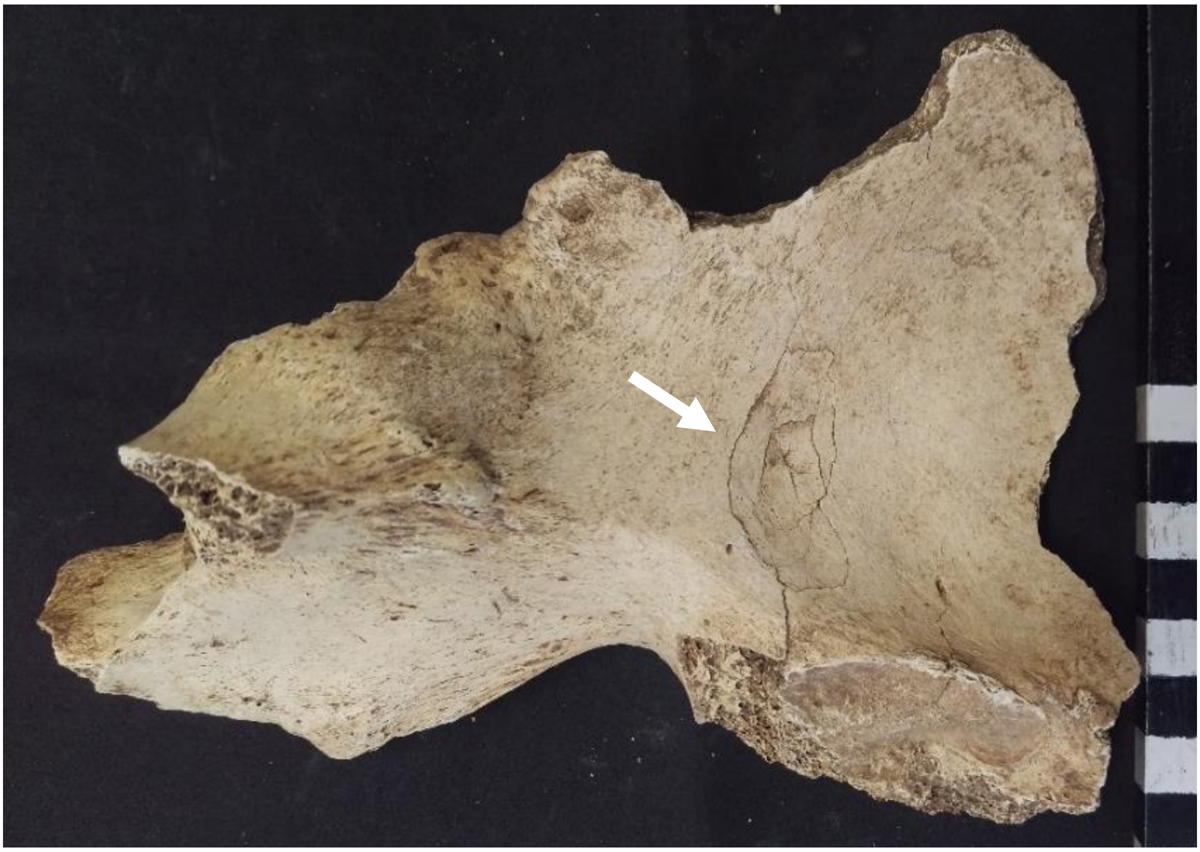


Figure 8.23: D.ID. 376 (Station road, Herts.), showing a large fresh-bone depressed fracture to the ilium (arrow). Source: Author. Scale = 1cm.

8.11.4. Abrasion / polish

Evidence of bone polishing was identified on 41 bones/fragments, by far the most common taphonomic marker (41/460, 8.9%[43]) (Figs. 8.24; 8.26-7, 8.28). Again the Billingborough remains feature heavily here (14/41), but polished bones were found on 18 sites in five counties, primarily from Lincolnshire (16 bones/fragments) and Cambridgeshire (19 bones/fragments). Bones of the skull are by far the most frequently polished elements (28/41, 68.3%), but there are also seven polished femora, four humeri and three tibiae. A broad age could be assigned to 30 of the polished bones, and all but one are adult. D.ID 274 (Cherry Hinton, Cambs.) was the only adolescent bone with evidence of polishing, and in this case the evidence is tentative, any polished sheen to the frontal portion may be falsely accentuated by the varied cortical survival of the other cranial bones (Fig. 8.24). It is not possible to say if there are parallels between the age of the individual and the selected polished element.

Twenty polished bones/fragments had other surviving taphonomic markers. In three cases the bone was also gnawed (D.IDs 167 (Marshall 'Wing', Cambs.), 402 (Cliffs End, Kent), 449

[43] 29/204, 14.2% - Primary analysis

(Waterstone Park, Kent)), all long bones, the latter also cut. Every other modification to a polished bone was caused by human action. Many are discussed above, but 15 were cut/sawn, four of which were also chopped and three perforated. At least 27 of the polished bones/fragments are likely to have been part of object creation processes. The prevalence of cranial bones, the extensive human manipulation on polished remains and the evidence for object creation all suggests that the polishing of these bones is the result of repeated handling and curation of the remains, rather than any natural process.

Figure 8.24: D.ID. 274 (Cherry Hinton, Cambs.) showing varied cortical survival, fresh and dry fractures, and charring to the frontal. The rest of the frontal appears very lightly abraded/ polished, though this may be accentuated by the survival of the other fragments. Source: Author. Scale = 1cm

8.11.5. Perforated bone

Perforations have been mentioned repeatedly above. They were identified on only four bones from the study region (4/460, 0.9%[44]), two from Billingborough, Lincs. (D.IDs 481 and 502), both fragments of the left parietal and occipital, one from Godwin Ridge, Cambs. (D.ID 85), the 'bowl' with four drilled holes in the parietals, and one from nearby Earith (D.ID 63), the perforated 'comb' made from a fragment of parietals and occipital. At least three are adults, all but the Earith 'comb' are also polished, all are cut/sawn and relate to object creation processes. The Earith skull may also be polished – it was examined in 1984 and has not been re-assessed but is included here due to its overt manipulation evidence.

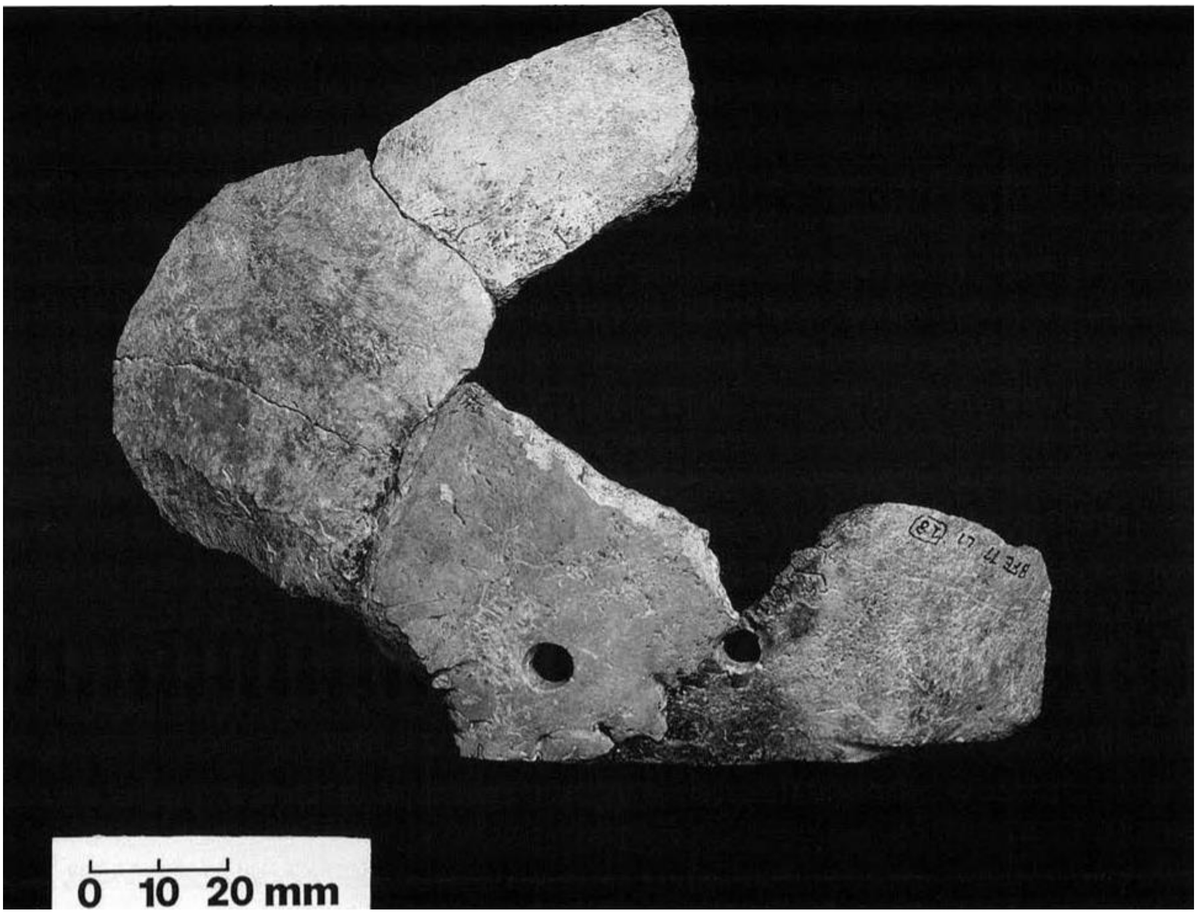
Figure 8.25: D.ID. 85 from Godwin Ridge, showing four bored/drilled holes through the bone, as well as shallow cut marks. Source: Evans, 2013b: Fig.6.

[44] 2/204, 1% - Primary analysis

The ‘comb’ has a single perforation, drilled through from both sides and meeting in the middle, with a biconical cross-section (Bayley, 1984:1). Drilling from both sides may have been a way to prevent the bone from cracking due to the one-sided pressure, or to prevent tearout of bone on the exiting surface. Reanalysis of the bone surface in this instance would give a greater idea of the tools used, and through what action the bone was drilled (Olsen, 2003:105). There is also no mention of any wear around the perforation giving an indication that it was suspended. Again this would benefit from re-examination.

D.ID 85 has four holes, arranged in a square (Fig. 8.25). All are of broadly equal size, 7.1-8.5mm in diameter, and all cut with a metal blade that was rotated as it moved through the bone, drilling the sub-circular shape (Dodwell and Riddler, 2016:524). These were examined under x200 magnification by the excavator, and it was noted that different methods were used to cut through the bone depending on its thickness. Two holes are similar to the Earith fragment, cut from both sides for a biconical cross-section, while one was cut from both sides but more cleanly, and is circular in cross-section, and the fourth was cut from the outside only (*ibid*, 524). There is also an indentation *c.*11mm from one of the holes, which is interpreted as an aborted drilling attempt – either they changed their mind on the positioning of the holes, or this was cut last and deemed unnecessary (*ibid*, 524).

D.ID 481 (Billingborough, Lincs.) had two perforations, 20mm apart and both 5-6mm in diameter, smaller than the Cambridgeshire examples, though here too the cross-sections are biconical, the cuts made from both sides of the bone (Chowne et al., 2001:73). D.ID 502 differs from all the others, in that the single perforation is broadly sub-rectangular, about 12x5mm, made by drilling two adjacent holes and presumably cutting or filing into shape (*ibid*, 73; Fig. 8.27). Here the holes seem to have been drilled from only one direction, exterior to interior (*ibid*, 73). There is little wear, especially on D.ID 481 (Fig. 8.26), so if these were suspension holes, as seems likely, they may not have been in use for long, or seen the movement/use that an amulet would.



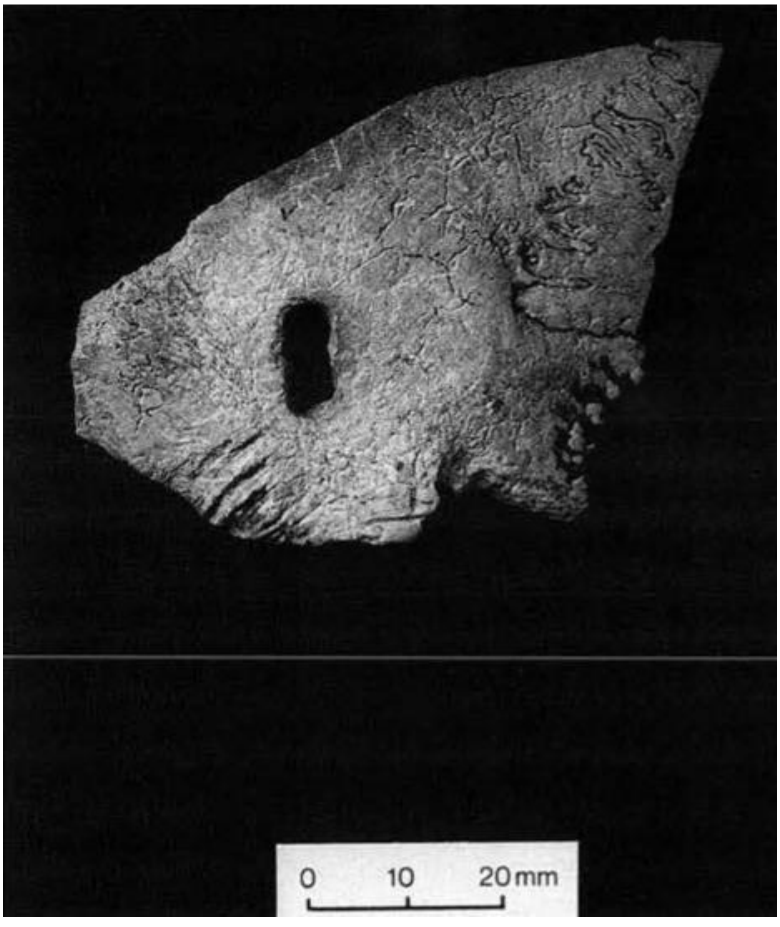


Fig. 8.26 (above): D.ID. 481 from Billingborough (originally no.5 / Topsoil 771, no.28; Layer 7797, Phase 4; Flood layer 7717, no. 311). These joining fragments have cut/saw marks, are polished inside and out, and have two perforations through the bone. Source: Chowne et al., 2001: Pl. XIII (Copyright English Heritage).

Fig. 8.27 (left): D.ID. 502 from Billingborough (originally no.6 / 787, enclosure ditch 78113, no.366). Fragment of parietal and occipital, polished, cut from the rest of the bone and perforated twice, the holes joining. Source: Chowne et al., 2001: Pl. XIV (Copyright English Heritage).

8.11.6. Worked bone objects

A total of 39 bones/fragments appear to have been worked for the purpose of tool-making or object creation (39/460, 8.5%[45]). As well as the cranial 'bowls', 'amulets' and 'comb' already discussed, there are 11 long bones that can be interpreted as digging tools, gouges or leatherworking implements. These bones come from seven sites in four counties, but eight are from Cambridgeshire and five of those are from Trumpington sites (D.IDs 204, 207, 221-3). All the bones are of adult size, 9/11 are femora, plus one humerus (D.ID 163, Marshall 'Wing', Cambs.) and one tibia (221). Three of these were subject to DNA testing (Section 8.6), all are male. Nine are polished, and at least eight have been cut/chopped/sawn either to separate the bone fragment from the rest of the element, or in shaping it. One (D.ID 306) femur from Jack's Hill, Herts. is described as having been 'worked to a rough point' but it is unspecified how, and the bone seems now to be lost so could not be re-examined (Tebbutt, 1932:371).

Two femora from Trumpington Meadows (D.IDs 204, 207), another from Trumpington Park and Ride (223) and a fourth from the nearby AstraZeneca South site (D.ID 43) have been shaped into tools that Riddler (2016:170,175) has described as scrapers for removing fat and sinew from animal (or human?) hides as part of the tanning/leatherworking process. They have all been chopped/cut at one end to create a blunt terminal, all of which show subsequent use-wear polish (Fig. 8.29). D.IDs 221-2 (Trumpington, Cambs.) were also shaped at one end, but this time into long pointed 'blades'. D.ID 222 shows use-wear polish on both sides of the blade, like the scrapers, but D.ID 221, the tibia, appears unfinished, the polish minimal. All four of the Trumpington Meadows implements were subject to microwear analysis by the excavators (Little, 2016:177-82). IDs 204, 207 and 222 all have varying degrees of use-wear polish, with transverse striations indicating use in a scraping motion (on a softish material like hide), while ID 221 has a sharper terminus with longitudinal striations consistent with more of a 'stabbing', piercing activity (*ibid*, 177-82). None have evidence of hafting and all have varying degrees of handling polish as well as use-wear.

D.ID 14 (Fairfield Park, Beds.) was not shaped as extensively as the Trumpington bones, but it does have a heavily rounded terminal which was likely chopped into shape prior to its extensive use, judging by the level of polish (Fig. 8.28). Likewise D.ID 163 (Marshall 'Wing', Cambs.) has no recorded cut/chop marks, but there is 'clear use-wear at the proximal end'

[45] 27/204, 13.2% = Primary analysis (23 are from Billingborough though)

(Neil, 2019:Table 26). Both of these are consistent with the Trumpington tools, and most likely also were used for hide processing, though would benefit from microwear analysis.

The final two examples may both be unfinished. D.ID 276 (Wardy Hill, Cambs.), a femur shaft, was sawn completely though at both ends to remove the epiphyses. This is not the only manipulated human bone from the site (or even this feature), but there is no evidence of use-wear on this bone. The fact that it is a femur shaft, like almost every other tool, suggests that this was an un-used blank, ready to be shaped, but never finished. D.ID 453 (Weatherlees Pipeline, Kent) was also cut from the rest of the bone, but this time does show handling polish across the bone surface. The bone is also gnawed (see above) so again it is possible that this was an unfinished (but used) tool, either discarded or lost, then gnawed by a canine.

Figure 8.28 (above): Femur D.ID. 014 (3068) from Fairfield Park, showing evidence of working. There are multiple small cut marks visible (centre of photo), and the distal end has been worked and polished into a rough point. Source: Author. Scale = 1cm.

Figure 8.29 (below): Femur D.ID. 204 <8850> from Trumpington Meadows. The end has been polished through use and there is rec staining to the area, possibly from hide-working. Source: Evans et al., 2016a:Fig.4.35.

8.12. Conclusion

This chapter sought to highlight the value of taphonomic analysis on disarticulated human bone, and to apply that analysis to the study region, in a bid to better understand mortuary practices and views regarding the dead.

The data has shown that there is no evidence of selection of skeletal elements based on sidedness, or sex, in contrast to previous studies from other regions (Woodward, 1993; Redfern 2008).

Selection of specific elements (primarily skulls), for curation, modification, separation, or deposition certainly occurred, owing to their over-representation across the region, and the taphonomic markers exhibited on them as a result of human action. Cranial bones made up almost 40% of the overall total, but of the cut/sawn bones this percentage increased to 55.6%, and of the polished bones to 68.3%. The proportion of skulls that are handled, curated, and modified is notably greater than their overall proportions, which are already inflated above all other elements. It is clear that skulls held importance in disarticulated material, and to Iron Age communities, though long bones, especially femora, were also repeatedly utilised.

Over 1/5 of the bones/fragments displayed at least one taphonomic marker (100/460, 21.7%)[46]. Of the bone subject to primary analysis the total was 51 (25%), a consistent proportion, and this remained true for each marker category (Table 8.9). The only category where the proportion is notably different for the primary material is polished bone (5.3% increase). This is a much more subtle modification than some of the others, and the degree to which it is present on the material can vary strongly from the treatment it underwent. Polishing was also the most prevalent modification overall and there is certainly value in checking for it in future discoveries. The weathering percentage in Table 8.9 is with (6.1%) or without (4.3%) the 'abraded' Godwin Ridge bones. Overall the consistency between the primary data and the total data shows that the macroscopic methodology employed is indeed easy to learn, requires limited skill and is valid across researchers.

[46] Not including the eight 'fragmentary and abraded' bones from Godwin Ridge.

Taphonomic marker category	Percentage of bones with at least one modification	Percentage of bones with at least one modification (primary analysis only)	Difference
Weathered	4.3 - 6.1%	4.4%	0.1 - 1.7%
Gnawed	3.5%	2.9%	0.6%
Cut / Sawn	5.9%	5.9%	0%
Chopped	2.4%	1.5%	0.9%
Polished	8.9%	14.2%	5.3%
Perforated	0.9%	1.0%	0.1%
Fresh fractured	3.3%	4.4%	1.1%

Table 8.9: Comparison between taphonomic markers recorded in total data, and primary analysis only. Source: Author.

If each modification category present in a single bone is totalled, there are 136 discrete modifications on the 100 modified bones[47]. Of these 136 modifications, 37 (27.2%) are reliably not the result of deliberate post-mortem modification (the weathered, gnawed and trampled bones). A couple of the peri-mortem fractures are somewhat ambiguous but based on the rest, seem far more likely to be from human than natural processes. Arguments for sub-aerial exposure as the method of excarnation in the Iron Age are somewhat reliant on the presence of such modifications (Redfern, 2008b:281). That weathering is largely present only on bones from sites that do not fit the typical settlement pattern (Station Road, Godwin Ridge California Doline), suggests that for the majority of the region, a different method of excarnation was used. There is no consistent regional pattern of weathering in the surviving skeletal material. Gnawing of the remains was largely canine and may therefore relate to the bone being present among the community, where dogs could access it rather than wild animal and rodent scavenging.

Human modification is the cause of 72.8% of the taphonomic markers (99/136). There are clear cases of bone processing, and bone working, as well as multiple instances of curation, and evidence of the extended handling of human remains (41 bones/fragments). While sites like Billingborough, Station Road and Godwin Ridge dominate the data, none fitting the regular pattern of disarticulated human remains found on settlement sites, the human-modified material is not restricted geographically, despite a regional bias in Cambridgeshire, present throughout the data.

[47] Here meaning, if a bone has three cut marks, two chop marks and is polished, the total is three – one per modification category present.

9. Discussion

9.1. Introduction

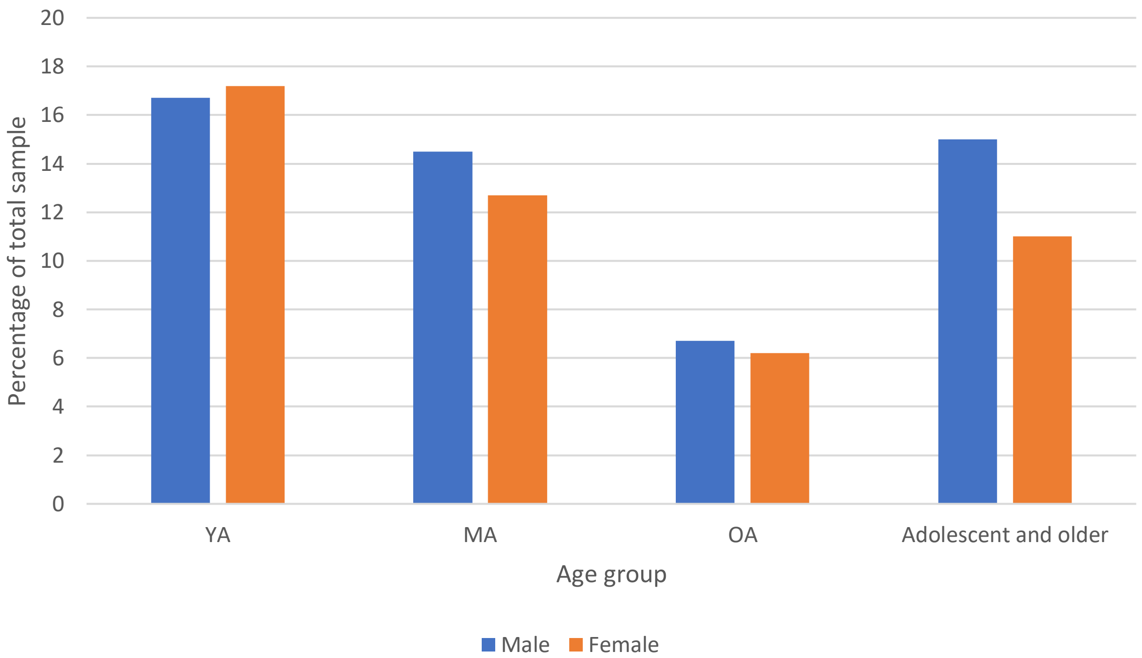
This discussion brings together key themes and results from the preceding chapters, in answering the research questions, outlining new data patterns and re-enforcing or refuting existing perspectives. The discussion begins with chronological change, the identified shifts in treatment running from the LBA-EIA transition, through to the Roman conquest. The demographic validity of the sample data is then outlined and supported, further interpretation hinging so much on its integrity. The demographic data is compared to material outside the region, societal views of the sick and injured are explored, as well as evidence within the data for violence, either isolated or widespread. The latter is also touched upon elsewhere in the discussion with pit burials as sacrifices, and the origin, and role of disarticulated remains.

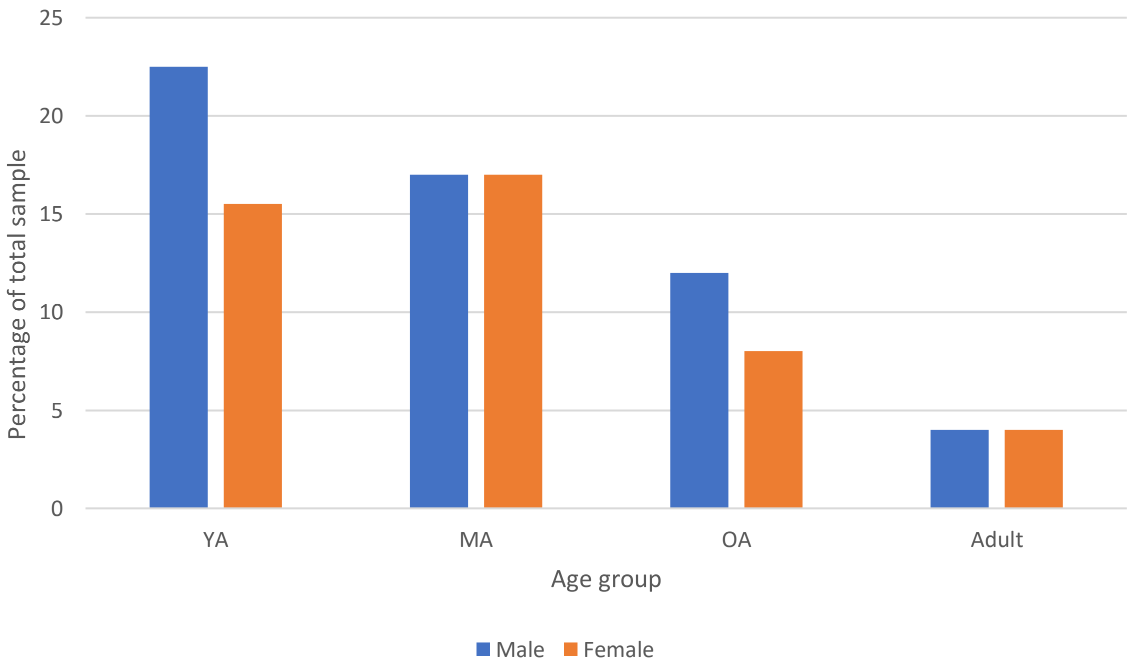
The main material divide and a major theme within the data is that of the complete (the inhumed) and the incomplete (the disarticulated). These are considered in turn, inhumations focusing on interpretation of settlement/pit burials, rites still contested among scholars of the period, as well as more minor rites and patterns identified in this research. Interpreting disarticulated remains, their meaning and the processes by which they came to be is also the focus here, tackling research question 1. Finally and relatedly, the importance of skulls and the head is discussed, relating back to previous topics – disarticulation, afterlife, identity, violence – but focused on whether or not the pattern of cranial remains is real, and if so, its meaning.

9.2. Population demography

Appendix 3 has shown that overall the data is demographically valid, with those that could be assigned an age (n=859) forming a broadly 'normal' demographic profile for pre-modern societies, and the sex distribution likewise broadly equal. The slight under-representation of the very young (neonates – infants) is indicative both of deliberate choice (especially in the LIA), and of the survivability, and identifiability of very small human remains. Redfern (2005) provides a useful demographic comparison from outside the study region. Redfern (2005:81) analysed 115 adult inhumations, of which 64 (55.7%) were male, a slightly greater proportion than with this data, but comparable. Redfern's age/sex demographics were also consistent with this study data (Figs 9.1-2) – the only notable differences being the much larger number of 'adult' remains here, owing to the disarticulated bone, and the comparatively high proportion of young adult males in Redfern's material.

Stature comparisons also equate– in this material the female stature average was *c.*10-14cm less than the male, compared to 13cm for Redfern’s (2005:86) sample, with her mean for females at 156.2cm, compared to 156.4cm here, and 169.2cm for males, compared to 166.7cm here. The tallest males in both datasets were also *c.*181cm tall (Redfern, 2005:Fig.8).





Figures 9.1 (above) and 9.2 (below): Charts showing the age-at-death of the sample population (top) and that of Redfern's (2005) sample from Wessex. Source: Author and Redfern, 2005:Fig.6.

Had the sample data been drastically skewed towards particular age groups or sexes, either the data itself would need re-assessment, or there would be evidence for a massive regional bias in post-mortem treatment based on basic demographic criteria (age/sex). That the sample is demographically balanced as a whole makes further demographic interpretations more convincingly valid.

The sample demography has provided value for interpreting post-mortem practices, as well as proving that overall, basic demographic criteria held little sway in post-mortem treatment, especially for adults. Males and females of all age groups are represented here, inhumation was not a rite designated from birth based on sex, nor was it dependent on your age at death, at least past a certain ‘adulthood’ threshold, perhaps puberty. Evidence for social stratification is minimal in the EIA-MIA, at least for parts of Britain (Sharples, 2010:241), so inherited status is also unlikely to have played a role. The demographic data presented in Appendix 3 therefore makes it possible to discuss further interpretations (e.g. the dangerous or unfortunate dead) with the knowledge that there are no wider regional rules identifiable.

9.3. Chronological change

9.3.1. The LBA-EIA transition

The problem of the ‘missing dead’ emerges in the LBA, one of the reasons identifying the LBA-EIA transition is so difficult with regard to funerary practices. Brück (1995:245-6) and others (Bradley, 1984:96; Cunliffe, 2005:543; O’Brien, 2014:26; Sharples, 2010:308) have noted that with the LBA the major landscape features shift; a focus on monuments, barrows and cremation cemeteries changing to one of settlements and demarcated fields. The dead too became increasingly invisible, and most cremation cemeteries are abandoned before the 1st millennium BC (Harding, 2016:2; Atkinson, 1972:115; Burgess, 1980:158-9; Sharples, 2014:142).

Brück’s (1995) examination of LBA-EIA human remains data encompassed the entire country and provides an excellent comparative study for continuity into the Iron Age. Of the disarticulated remains in Brück’s sample, 135 were bones of the skull (64.3%), and 53 were long bones (25.2%); of those that could be estimated, 72% were of adults (*ibid*, Fig.3, 249). They were placed most commonly in pits and ditches, but also within middens, post-holes and other settlement contexts, often among ‘domestic refuse’ (*ibid*, Fig.2, 249). Additionally, partial and complete skeletons were identified on 10 sites.

Over 2.5 times the number of disarticulated bones were recorded from this study than in Brück's sample of the entirety of Britain (528 vs 210). This data does have the virtue of over 20 years of more recent research to draw from but is much more geographically restricted. Skulls and long bones form a clear majority in this study data, as with Brück, though the ratios have shifted with the Iron Age – bones of the skull at 38.4%, long bones at 36.6% (Chapter 8). Adults represented at least 77.5% of the disarticulated remains in this study[48], comparable to Brück's findings, and were most commonly recovered from pits and ditches on settlement sites. Sixteen incomplete skeletons from this study data originate from the EIA or EIA-MIA, and again as with Brück's sample these and the more complete individuals were deposited most frequently within settlements, and largely unaccompanied (*ibid*, 249) (Chapter 7)

The LBA-EIA transition is difficult to ascertain through mortuary/funerary treatment, and issues with radiocarbon dating from 800 BC on only exacerbate this. What seems clear though is that practices occurring across this study region in the EIA, MIA and in some cases LIA have their origins in the Late Bronze Age, if anything becoming more widespread and complex into the Iron Age.

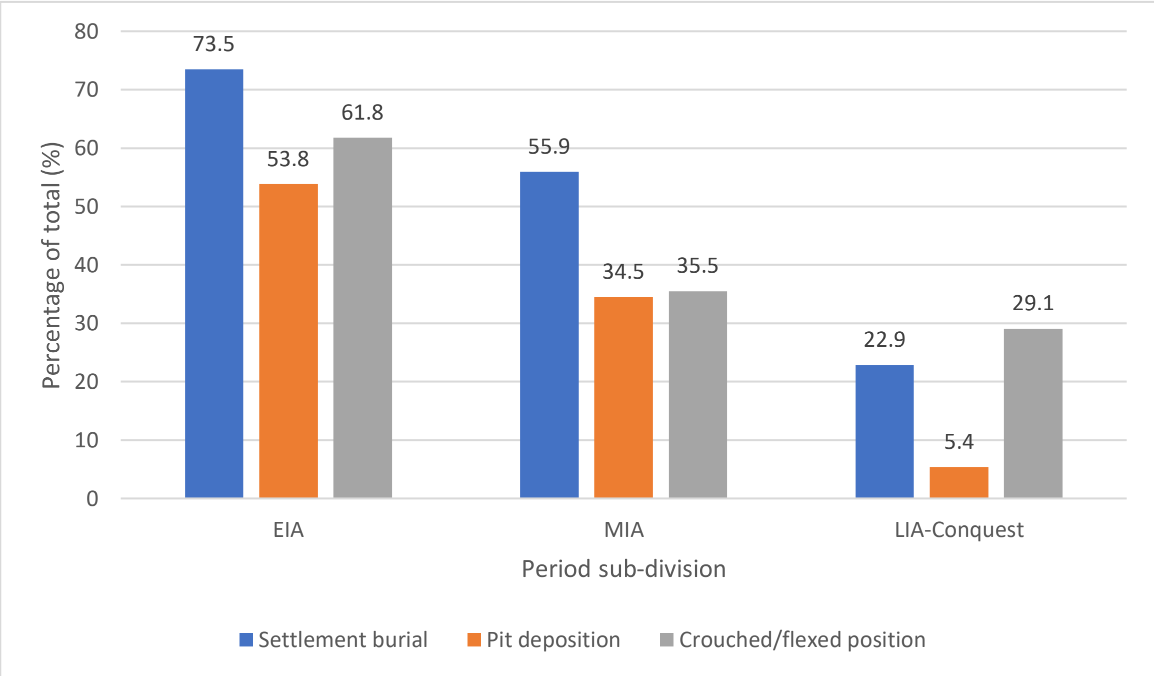
9.3.2. EIA-LIA consistencies and changes

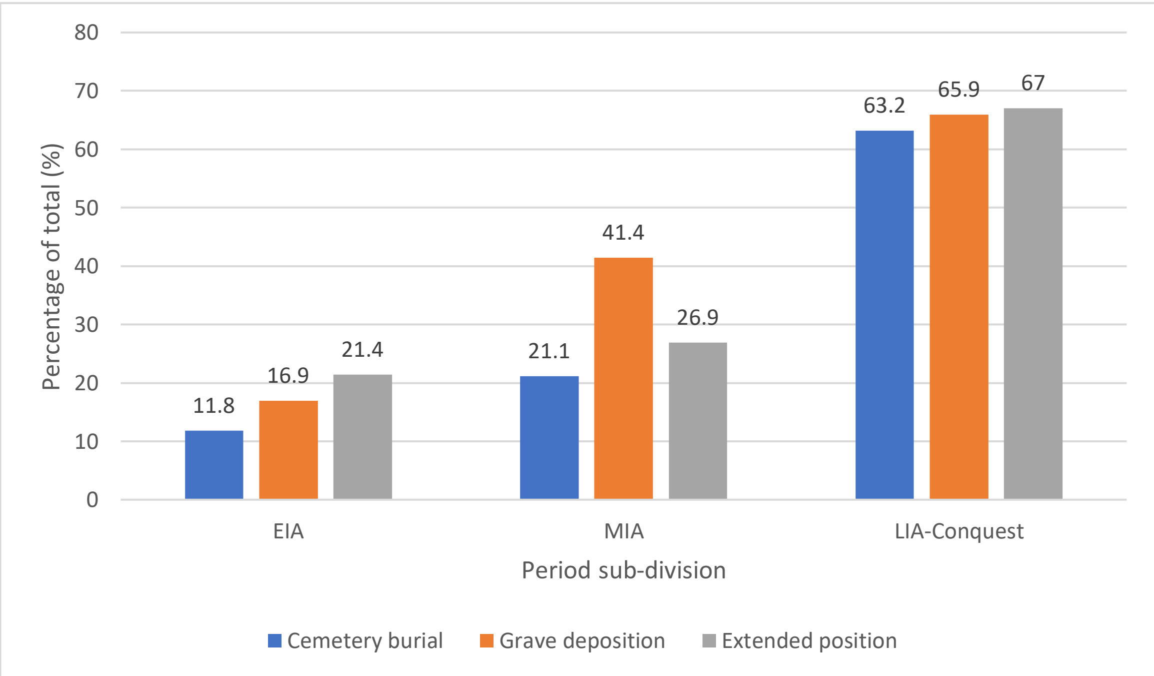
The inhumation results in Chapters 4-6 show a consistent shift in site type, depositional context and position coinciding with the LIA, but with roots emerging earlier. Settlement burials, pit depositions and crouched positions are a consistent majority in the EIA, declining in the MIA, and more drastically with the LIA-Conquest period (Fig. 9.3). Correlating negatively with this is the increase in cemetery inhumation, grave contexts, and extended positioning (Fig. 9.4). The sole ?EIA cemetery at Saltwood Tunnel skews the data for Fig. 9.4. In simple terms this shows a majority shift in practice with the LIA, but from traditions present in the MIA, and, if Saltwood Tunnel is correctly dated, a possible origin there.

These are not solely the result of two distinct rites though. While over half of all EIA burials were in pits, it is considerably less than the settlement total, other depositional contexts including house burial, quarries, ditches and graves. The latter context seems to indicate a flaw in the categorisation system, rather than any growing trend. The grave burials within settlements are sometimes anomalous, like multiple inhumation IDs 419-21 (Gunton's Close, Cambs.), but generally they do fit the pattern for the period – all but one are crouched/flexed. In the MIA too 15/24 sub-rectangular grave inhumations were from settlement sites, not cemeteries, and not one of these was buried extended supine (sections 5.4-5.5.). The

[48] 300/387 – deposits of known age

distinction between grave and pit in the EIA and MIA settlement inhumations appears imposed, rather than real. The burials share other features regardless of grave shape, and it seems that the shape was either dictated by other factors (e.g. surrounding features) or had little importance. Cemetery-based grave burial and later inhumation practices are unlike these earlier settlement graves.





Figures 9.3 (top) and 9.4 (above). Charts showing the chronological shift in burial practices through the Iron Age, with 9.3 evidencing a proportional decline in crouched pit burials within settlements in the LIA, and 9.4 showing a related proportional increase in extended grave inhumation in cemeteries at this time. Source: Author.

With the MIA settlement burial decreases proportionally (Fig.9.3), but not in terms of raw numbers – 50 in the EIA, 66 in the MIA. Even in the LIA 51 settlement burials were recorded, and this covers only *c*.160 years. The proportional shift is drastic but reflects a massive increase in one rite (cemetery inhumation), not at the expense of settlement inhumation. Settlement burials were identified in small numbers in the LIA across much of the study region (Fig. 9.3). There were still more settlement burial sites than cemeteries– this is consistently true across the whole IA, so while the overall numbers deposited in this way are low, settlement burial does not stop even up to AD60.

The depositional context does shift though, only 12 pit inhumations are dated to the LIA, while more grave burials were identified (all shapes) than the entire MIA assemblage (147). Cemeteries become much more widespread, from four sites in the MIA (in Lincolnshire and Kent), to *c.*19 in the LIA, across five counties. The only areas without inhumation cemeteries are Norfolk, Suffolk and Essex, consistently three regions largely devoid of inhumations (Sections 1.4 and 3.2.6). Sites like Fison Way (Appendix 4) strongly suggest inhumation cemetery traditions in this region, but they sadly lack surviving remains. The average number of individuals per cemetery rises in the LIA but still none contain sufficient numbers to represent population majorities; there are no sites here like Wetwang Slack (Yorkshire), which contained over 400 graves (Harding, 2016:72). The most noticeable change in the LIA-Conquest period is a significant increase in inhumation in the Hertfordshire region, cemetery burial especially. The latest Iron Age brings new settlements and large cremation cemetery traditions, as well as 61 recorded inhumations. These new cremation cemeteries have connections to Late La Tène traditions in continental Europe (*ibid*, 9), but also coincide with a wider societal shift related to increased continental contact and the spread of Roman influence leading up to the Conquest (Gregory, 1991:196). The new LIA cremation traditions appear across the 'Belgic Triangle' – an area covering Cambridgeshire, south Suffolk, Essex and north Kent (Whimster, 1981:Fig.2; *ibid*:196), with cemeteries of hundreds of individuals in some instances, but only in the very latest Iron Age (*c*.50 BC for Essex) (Sealey, 2016:32), not affecting much of the study region or inhumation practices throughout the period.

The orientation of the inhumed dead is more consistent across the entire period than perhaps any other characteristic. Fig. 9.5 combines the orientation data for the whole period and broadly, they show the same pattern, just with greater quantities in each successive division. N-S inhumation is a repeating majority, and while proportionally it decreases in the LIA (22.5%), there are more than twice the number as occurred in the EIA (42 vs.19) – in this way N-S orientation echoes the settlement inhumations, it does not diminish, but is expanded upon by greater variety and a larger dataset. In each period, regardless of burial type, position, site context, most individuals are placed either N-S, E-W, or somewhere in-between. Deviations are geographically spread, and in multiple cases on sites where others are aligned 'broadly N-S'.

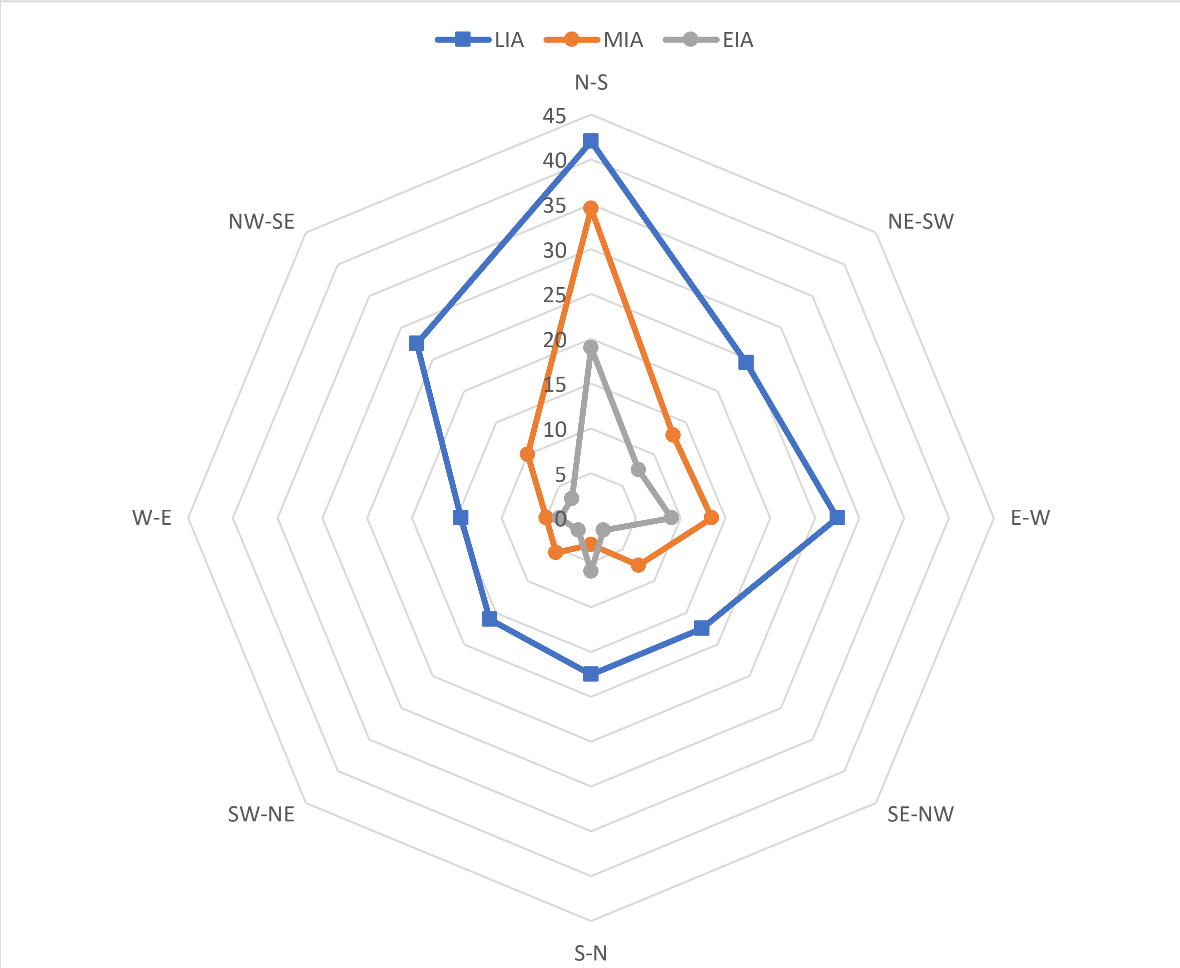


Figure 9.5: Radar chart showing the orientation of all EIA, MIA, and LIA inhumations together, with a consistent N-S trend, becoming more varied in the LIA. Source: Author.

Consistency of orientation throughout the period, in both pit burials and grave, settlement and cemetery, is evidence of structure where once was seen 'casual' disposal. The idea of there being no great care in pit burial has been extensively challenged before this thesis (Section 2.2.2.), and N-S aligned inhumation patterns have been noted before also (Whimster, 1981:194; O'Brien, 1999:1; Sharples, 2010:270), but with less consistency; O'Brien (1999:1) suggested N-S crouched burial emerged in the 4th century BC, but it is clear here that it occurs in the EIA, or LBA-EIA transition. Wilson (1981:136-8) recorded E-W as the prevailing orientation, while O'Brien (1999:5) states that E-W burials did not appear until the end of the period; here they are present throughout, albeit consistently and considerably less common than N-S burials. This consistency even into the latest Iron Age shows that there are patterns and rules of deposition; regional and not absolute, but consistently present; these depositions are purposeful and imbued with meaning.

9.3.3. The inhumation increase

The clearest chronological shift in this period is that the number of identified inhumations increases dramatically with each period sub-division. Sixty-eight EIA inhumed individuals were recorded, 118 in the MIA (an increase of 73.5%), and 223 in the LIA-Conquest period (an 89% increase on the MIA and 227.9% on the EIA). The relative paucity of EIA-dated inhumations is even more notable as it represents the largest single time period (*c.*400 years) – there is an inverse correlation between number of inhumed individuals identified, and the time encompassed.

The few C14-dated EIA inhumations highlight one explanation for the apparent lack of burials in this period. The 'Hallstatt plateau' meant that all of the C14 dates for EIA inhumations had a range of at least 300 years – twice that of the entire LIA period, making it more difficult to confidently ascribe a burial to an EIA date than it would be for the preceding Late Bronze Age and the succeeding MIA. As discussed, the LBA-EIA transition is a story of continuity with regard to post-mortem processes, making assigning a specifically EIA date to some deposits even more difficult. Of the 68 EIA inhumations in the study, at least 25 were completely unaccompanied (Section 4.9). Unaccompanied inhumations are difficult to date for obvious reasons, relying on contextually related features, absolute dating or on assumptions made about the skeletal position and burial context. Absolute dating in the EIA has been shown to be flawed, and related features are not always present – especially if a site has multiple phases, or burials occur outside the main site foci. Inhumations must, in these instances, be dated on the basis of their burial context, and skeletal position. However it has also been shown that there is consistency in burial context, skeletal position and alignment between the EIA and MIA, with continuation into the LIA at some level too. The EIA inhumations that do not fit the overall pattern are perhaps even more likely to be misdated; the cemetery at Saltwood Tunnel for example.

The other, most reasonable interpretation of this almost methodical increase in inhumation through the IA period, is that alongside a possible population increase, we are seeing a genuine shift in the proportion of Iron Age people being subject to primary inhumation. Population increase is difficult to measure but has previously been suggested by Cunliffe (1991a:238,533,541) as an explanation for the increased demarcation of land and development of hillforts during the Middle Iron Age – an ever-increasing population facing land pressures as they reach their ‘holding capacity’, and thus become more territorial. The increase in formal cemeteries, especially more elaborate burials, could be another way to cement land ownership, and if the population was increasing then not only would this support the increased cemetery evidence, but explain the rising proportion of inhumed dead in the LIA.

9.4. Health, sickness and violence

9.4.1. Nutrition, care and support

The osteological data in Appendix 3 also brings to light multiple instances of communal care, support and responsibility, while highlighting the often-difficult lives and stresses of Iron Age people. Evidence of OA, especially in the spine but found throughout the skeleton, was widespread[49]. Individuals like ID 42 (Addenbrooke’s Hutchinson, Cambs.) and ID 51 (Babraham, Cambs.) were extensively affected, in the former case their spine, left elbow, both hands and both hip joints, in the latter their spine, ribs, both ulnas, both knees, both feet and both hands. OA is progressive, can limit the movement and functionality of joints while causing discomfort, and can be exacerbated by physical activity, especially after joint injury. Cases of squatting facets and the enhanced muscle attachment sites on others (including ID 51) provide more evidence of physically demanding lives.

Evidence of stress (often nutritional) during childhood is seen through LEH lines on over 20% of the sample data, some with multiple periods of arrested growth between two and five years old. Nutritional issues in bone development are suggested also in IDs 104 and 107 (Harston Mill, Cambs.) – two children with dental age estimates at least three years older than their skeletal growth would suggest (O’Brien, 2016:30). LEH was identified with 107, and both may have died from nutrition-related issues. Forty individuals (16.3% of inhumations) had recorded cribra orbitalia, and at least 13 had porotic hyperostosis, one of which may have died from a vitamin C deficiency (scurvy) (ID 260, EKA2 Zone 13, Kent - Appendix 3). Coupled with the infant mortality, albeit seemingly under-represented in the data, it is clear that infancy and childhood could be times of great stress and uncertainty in terms of nutrition and survival.

While the greatest proportion of people died between 20 and 35 years old (young adult), many reached 50 and beyond, and there is no evidence that they were treated differently in death as a result of their age. Ankyloses identified in seven cases would have limited certain functions in these individuals more than OA – with at least three having difficulty moving their head (IDs 26 (Addenbrooke’s Hutchinson, Cambs.), 375-6 (Weatherlees Pipeline, Kent), as

[49] Degeneration of the vertebral bodies is recorded as OA here despite them not being synovial joints, see Appendix 3.

well as affected wrists, shoulders and a mandible (ID 347, North Foreland, Kent). As mentioned in Appendix 3, this latter individual would have had great issues opening their mouth – making eating difficult if not impossible, but also affecting their ability to communicate (Gardner and Moody, 2006:48). Indicators of poor dental hygiene - periodontal disease, calculus, caries and antemortem tooth loss - were widespread. AM loss was so extensive in cases like ID 80 (Colne Fen, Cambs.) that they had little to no teeth left at all by the time of death. Despite this, they survived any possible infections relating to the loss of their teeth, and we can assume that they had to eat softer, more processed foods, and may have needed help in preparing it, and perhaps even eating. Other more short-lived pathologies like fractures and acute infections again tell of communal care and support; the lower leg fractures suffered by at least six individuals would have made walking impossible for some time during the healing process (e.g. ID 209, Stane St., Herts. - Fig.14.23). The same is true of trauma more clearly caused by violence – antemortem blunt-force cranial trauma and healing sharp-force lesions were identified from multiple sites, and in all cases would have required a period of healing and convalescence, as well as further complications in some cases, even brain injury.

Falls, violence, disease and degeneration can befall anyone, but the presence of these pathologies, some healed at death, is evidence of the value of community members beyond physical abilities and contributions. Resource consumption by the sick, the old, the injured, and the related energy expenditure by other community members in caring for them could have been a strain on what were naturally demanding lives. That care and support occurred, and to the degree the skeletal evidence suggests, is a sign of the importance of communal integrity, and of the members therein, both in life and in death.

Karl (2005:258-60) uses linguistic histories to suggest a system of 'fosterage' may have been present in European Iron Age societies, largely for the education of nobles and craftspeople, but also for orphaned children. While applying this convincingly to much of IA Britain is difficult, it is reasonable that children will frequently have lost one or both parents, and such a system would have ensured the survival of the children, and by proxy the future of the group. In small settlements it is also possible that parenting and education was more communal anyway, and if so, a system that encouraged the fostering and care of the youngest in the group may also extend such a mentality to the old or injured. Sharples (2014:153) and others have argued that Iron Age society in Wessex was increasingly insular from the LBA, focusing on small communities instead of larger networks. If the same were true for eastern Britain then the related uncertainty those communities may have felt could have led not to stress and restriction over resources in the community, but an urge to ensure the overall success, health and survival of the group. By and large, those with notable degenerative pathologies, extensive tooth loss or healed fractures are treated in death no differently to anyone else in the dataset. For pit burials, if these dead are magically potent, either benevolent or not (see below), visible or disabling pathologies may well have been one of many criteria that determined their post-mortem treatment, but this seems a leap when many pit burials have no such evidence, and pathologies like minor OA would not be noticeably outstanding among the living population.

9.4.2. Violence in life and death

Violence is touched upon elsewhere in the discussion in relation to pit burials and disarticulated skulls (9.5; 9.9.), but overall the evidence for interpersonal violence is somewhat restricted. Sharp- and blunt-force trauma *is* recorded here (Appendix 9; 7.4.5; 8.11), but in minimal numbers over such an expanse of time. In some instances the sharp-force lesions may relate to post-mortem treatment rather than interpersonal violence (e.g. ID 154 (Wandlebury, Cambs.) or the Godwin Ridge bones). Where more overt trauma is recorded though one can reasonably extrapolate the circumstances of death to associated individuals.

Wandlebury contains the most remains with convincing evidence for interpersonal violence, as well as a mass burial deposit. The sword-wound to the mandible suffered by ID 147 (Wandlebury, see 6.8.1; Appendix 3), which appears to have been the eventual, but not immediate cause of death (French, 2004:15), may have been inflicted during an attack on the hillfort.

Redfern's (2005) thesis on inhumations from Dorset recorded a much greater prevalence of peri-mortem and ante-mortem trauma than this data (Table 9.1). Comparing the inhumed individuals from this study region, 41 had at least one fracture, of which only 12 were female, 23 male. Violence was the cause for 11/12 individuals with SFT injuries, 1/3 with BFT injuries and at least 12/30 with other fractures. Recidivism was also much lower – only 10/42 inhumed individuals has more than one fracture, and of these at least half were likely the result of single events (e.g. a hard fall onto one side). The location of much of the violent trauma is consistent with Redfern's findings; cranial trauma makes up an overwhelming majority of all SFT and

	Individuals with AM and PM fractures	More than two fractures	Fractures caused by violence	Fractures potentially caused by violence
Males	32/64 (50%)	9 individuals	15 individuals	14 individuals
Females	26/51 (50.9%)	6 individuals	17 individuals	5 individuals

Table 9.1: Table showing the fracture statistics from Redfern (2005), showing the number of individuals with fractures of all types, and the number with injuries of a violent origin. Source: Redfern, 2005:Tables 72,73,123,124.

BFT injuries (*ibid*, 200), though there was a much wider range of post-cranial fractures with Redfern's sample.

Mass burials at Wandlebury and Flixton park both contain instances of perimortem trauma, three of the four Stonea Camp individuals originate from a single violent event, and the Cherry Hinton ditch deposits also speak of a violent destructive episode. In each of these cases not all recorded individuals (complete or partial) contain signs of violence, but at least one at each does, and in each instance multiple individuals were deposited contemporaneously, making a violent death likely for all of them. Notably, three of these four sites are ringworks/hillforts/defensive enclosures, not open or enclosed domestic settlements. In addition, the excluded individuals from Maiden Bower (E.02-8) were all seemingly dumped/thrown into an enclosure ditch, and in three cases were headless, one of which had a cut cervical vertebra (E.03, Matthews, 1976:160-2). These were excluded due to a lack of data, but if located and confirmed would be convincing support for violent events at these sites, as with Maiden Castle, Cadbury Castle and possibly Danebury in Wessex (Sharples, 2014:150).

The young adult female, child and infant buried together at Gunton's Close, Cambs. (IDs 419-21) have no indications of violence, but all may be related (Anderson, 2016:30-1) and seem to have died at the same time. The two most reasonable explanations are therefore violence or disease. They were relatively isolated, a projected settlement nearby; if they were victims of disease this may have been a measure to protect the rest of the settlement, their prone positioning a very physical, literal reaction to direct any disease-related expulsions, even after death. Prone burial is often cited as a way to stop the soul escaping through the mouth after death or stop the dead from returning (Aspöck, 2008:18; Taylor, 2008:97; Tsaliki, 2008:2) – perhaps in this instance it was thought that whatever killed these three could escape the same way. Conversely they may have been killed, their prone positioning a mark of disrespect or even haste in burial.

The importance of martial prowess, real or ceremonial, can be seen through weapon burials found here at Mill Hill, Brisley Farm, Shouldham and Mildenhall. Both within and outside the study region, weapons have been deposited as votive offerings (e.g. Farley, 2011; Green, 1996; Treadway, 2021), and chariot burials have been identified in neighbouring Yorkshire (e.g. Dent, 1985), Scotland (e.g. Carter et al., 2010), and recently from Pembrokeshire (Adam Gwilt, pers. Comm). Redfern (2008:295) and Aldhouse-Green (2001:50-6) have previously argued for widespread ritualised violence in the Iron Age world, the latter suggesting that acts of violence inflicted upon people and animals enhanced their value as magical deposits. This ties into ideas of overkill (e.g. bog bodies), and the ‘killing’ of objects, and it can be seen in certain deposits within this dataset – the inhumations covered in rubble and rocks, the two from Wandlebury with legs chopped and snapped off at the femora (ID 154; ABG Pit 19), perhaps even disarticulated remains, especially those ‘transformed’ into objects. IDs 232 (A2 Pepperhill, Kent) and 15 (Harrold, Beds.), plus several individuals from Cherry Hinton were all covered by rubble, in all but one case backfill from the ramparts of the ditches they were placed in. ID 142 (Trumpington, Cambs.) is an infant whose skull *appears* have been crushed by an associated loomweight, and the incomplete individual from Pit 19 at Wandlebury had their pelvis ‘crushed by a large block of chalk’, as well as the snapped femora (Hartley, 1957:15). There are similar examples outside the region Hod Hill, Bredon Hill, and Danebury, some of which were also bound and contained other signs of trauma or post-mortem manipulation (Brown, 2009:6). All were also previously interpreted as sacrifices or foundation burials.

Redfern’s (2008) examination of disarticulated remains from Gussage All Saints and Maiden Castle highlighted a pattern between males and perimortem cranial trauma, mostly blunt-force. There are visible parallels here too - the disarticulated frontal from Thong Lane, Kent (D.ID.445), a possible male with not only a healed BFT lesion but also a healed blade trauma and possibly another perimortem BFT lesion (French and Green, 1983:63-5). IDs D.1 (Biddenham Loop, Beds.), D.15 (Fairfield Park, Beds.) and D.428 (EKA2 Zone 6, Kent) also fit the trauma criteria but not the sex, as may articulated bone deposit [2037] (HS1 – LSF), as although the remains are not disarticulated, they could represent an earlier stage in an incomplete process (see 9.7.2.1). It is certainly notable that of 12 individuals with blunt-force trauma in this dataset, eight are disarticulated bones and one is a partial skeleton. Perhaps it was the manner of their death or their violent lives that resulted in their post-mortem treatment. As with pit burial though, this seems a leap when so many other disarticulated bones have no signs of BFT.

Much of the violence visible in this data appears not to be from interpersonal conflict however; many of the SFT injuries could be post-mortem or execution-style trauma, some of the BFT could also be post-mortem, and the crushing of bodies and breaking of bones after death has little to do with interpersonal violence. Violent acts clearly occurred, both here and elsewhere, and there is plenty of evidence for dramatic single episodes of conflict, execution and ritualised, perhaps post-mortem violence. Clear evidence for interpersonal conflict appears more isolated and geographically and chronologically restricted though, not endemic within the population. This is especially clear when compared to Redfern’s (2005) findings for Wessex.

9.5. Interpreting pit burials

Pit inhumation on settlement sites constitutes an overwhelming majority of the non-cremated human bone during the EIA and MIA periods. The data showed little evidence of a demographically determined division in pit burial, the rite was afforded to males and females in equal number, and individuals of all ages. Redfern (2008:282 and Wait (1985:116) previously noted a prevalence for adult individuals, especially those in pits containing arguably 'structured deposits'. Conversely Craig et al (2005:71) noted that for Danebury, adolescents were the most commonly deposited. Bradley et al. (2016:254-5) though, agree with the data here in that while specific sites do have demographic preferences, broadly there are no repeated patterns of age and sex. Sharples (2010:270) identified similar patterns in Wessex also – crouched inhumations in storage pits, with no preference for left vs. right side or males vs. females, and orientations with the head between North and East. Pit inhumation here and elsewhere is not demographically selected in any consistent way. The only exception to this is with the prevalence of females in pits with quantities of domestic waste in the MIA (5.10.3).

Sub-regionally, pit burials occurred more in Cambridgeshire than anywhere else, in line with existing discussions of pit-cluster settlements being cited on 'solid' geologies – chalklands in southern Cambridgeshire and Bedfordshire (Evans, 2016:119) – as they are in Wessex and Oxfordshire, and common here also on Thanet (Kent), again made almost entirely of chalk. While pits do occur outside these geologies both within and outside the study region (Cunliffe, 1992:80), regionality of practice does seem somewhat dependent on geology here; extensive 'functional' pitting is less prevalent in wetlands due to the detrimental effect of high water tables on cut features. This in turn means less pits open or available for inhumations. This form-following-function argument for an absence of pit inhumations in regions like the fens does not equate to a functionalist interpretation for pit deposition though, the dead were not simply opportunistically placed in existing features. The data for the EIA and MIA pit inhumations has shown strong trends in position and orientation, and some patterns in depositional matrices/accompaniments. Regionality is sure to play a role here (Tracey, 2012), but where pit burials are discovered within the study area, they adhere to broad patterns, they are not casual, opportunistic, or functionalist.

9.5.1. Pit burial as a normative rite

Despite pit inhumations being common within the study area, elsewhere in southern Britain, and on the continent (e.g. northern France, western Germany), they are still not widely seen as a normative rite (see 2.2.3). Their very depositional context has previously discounted them; as the pit is seldom purpose-built, the inhumation is secondary in nature, seen as opportunistic and convenient (Cunliffe, 1973:423-4). This is compounded by the fact that many pits contain partial or disarticulated remains, and many others contain none; so the pit, on the face of it, does not have a constant association with inhumation as a grave would. However, while regularly distinct types of burial feature (graves) are widely considered normative now, this need not extend to the Iron Age. There is no reason that a pit re-used for an inhumation and one not containing human remains be mutually exclusively different; we categorise because it makes understanding patterns easier, but there will undoubtedly be cases where such categorisations are more of a hindrance than a help. Pit inhumations should not be considered 'non-normative' on the basis that some pits are inhumation-less (Harding, 2016:4-5).

Sharples (2014) has supported the idea of pit-based inhumation as a normative rite for the EIA-MIA in Wessex, but not for settlement burials. Sharples instead suggests that the burials from Suddern Farm (Hampshire) may be an example of a seldom-identified normative inhumation tradition; that of crouched inhumation in shallow pit graves, within a larger pit-feature. Here a quarry outside a settlement enclosure contained a large burial population of adults and children (Sharples, 2010:274; 2014:150). Cunliffe and Poole (2000b:201) estimated that the quarry may contain some 560 individuals, more than the entire inhumation dataset for this study. The re-use of a quarry (or similar natural feature) has been identified here at Cliffs End, Greenhithe, Welches' Farm and California Doline, plus the single individual from Tothill Street, Kent (ID 360). As well as these, excluded from the main body of data due to dating issues is the site of Hawbush Close, Hertfordshire. Here a large hole *c.*10m in diameter was uncovered during house construction, with nine inhumations placed around the edge, at the base (HER 12073). While on a smaller scale than Suddern Farm, and spanning much of the IA period, these sites all centre around the deposition of inhumed individuals in large natural or human-made features, outside of known settlements, the dead placed in cut graves/pits within the larger feature. In Wessex, other examples smaller than Suddern have been identified at Winnall Down (Fasham, 1985), New Buildings (Cunliffe and Poole, 2000a) and Spettisbury hillfort (Gresham, 1939), each with sizeable populations (Sharples, 2010:150). For the east though, these sites are a minority among inhumations, pit burials in settlements are much more frequent and widespread; much more viable to be considered as a normative, if minority, rite.

Sharples (2014:151) points out that one of the main explanations for an absence of Iron Age burial sites in parts of Britain may be that they were located outside the settlement, and such extremities are seldom investigated by archaeologists. The mass grave at Wandlebury was located beyond the ring ditches and may be part of a larger cemetery (Denston and Taylor, 1977). Commercial fieldwork is extensive though, with thousands of interventions every year; if EIA-MIA cemetery sites (in quarries or flat ground) were a common and widespread feature here, more would surely have been identified.

9.5.2. Pit burials as sacrifices

Storage pit inhumations within settlements have previously been interpreted as sacrifices. Their association with ‘special deposits’, their domestic setting within grain pits, and the possibility of bound limbs are seen as support for this idea. Cunliffe (1983:164; 1992:77-8) has variably described them as victims of ritual killing or sacrifice, massacres, warfare, outcasts and the dangerous dead, though he includes disarticulated bone here too. Caesar wrote that the sacrifice of criminals, or failing that, innocent people, was a common practice for appeasing the gods in Gaul, as well as to combat illness or ensure good luck (dBG VI,19), though there are obvious issues with this (see 9.9.2). Bog bodies like Lindow man are cited as examples of these practices in Britain (Aldhouse-Green, 2001). They were certainly cases of ritual killing, and their connection to bodies of water echoes other votive deposits and post-mortem practices (see below). Cunliffe extends this interpretation to storage pit burials also, as offerings to chthonic deities. The relatively ‘normal’ age/sex demography for the EIA and MIA, both extensively featuring pit burials, suggests that if they *were* sacrificed, there was little selection factor based on age or sex. This does have ethnographic support, for example from slave sacrifice practices in the Northwest coast of America during the 19th century (Donald, 1997:165-177), as well as archaeological parallels in China (Zhang et al., 2011) and elsewhere (e.g. Smith et al., 2013, Wilson et al., 2007, Watts et al., 2016). While there are arguable instances of newborn sacrifice elsewhere (Smith et al., 2013), the presence of new-borns and infants among pit burial deposits could just as easily be due to high infant mortality and stillbirths.

In many cases the method of killing was intentionally violent, including dismemberment, beheading, burning, drowning, bludgeoning, or crushing (Watts et al., 2016:228; Green, 1998:177), and strangulation through heavy objects being placed on the neck (Donald, 1997:170). While some of these would leave no trace skeletally, they do echo the ‘overkill’ treatment seen in bog bodies like Lindow II, and the level of violence is often seen as key to the potency of sacrifice (Green, 1998:173, 177, 179). Evidence for ‘ritual violence’, and the general prevalence of violent injuries seen in the sample data is relatively low, not consistent or widespread enough to confirm a sacrifice interpretation, as O’Brien (2014:30) has previously also argued, though they by no means exclude it.

The implication of wrist/ankle binding has often been that the deceased were sacrificial/ritual killing victims, presumably tied to prevent escape. Twenty-six individuals from the study data may have been bound prior to burial (Appendix 1). Of these, four date to the LIA (IDs 58, 147, 221, 398[50]) and in each case do appear to be victims of judicial or ritual killing, or captured prisoners – all have their hands tied, in three cases behind the back, one has an arrowhead in the body area (ID 221, Verulam Hills Field, Herts.), one has been decapitated (ID 398, The Bridles, Lincs.), and one has sharp-force trauma to the mandible (ID 147, Wandlebury, Cambs.). If a case were to be made about bound burials and human sacrifice, these are the most compelling evidence, but they are not EIA-MIA storage pit inhumations, and three are from cemetery contexts. ID 99 (Glebe Farm, Cambs.) is though – C14 dated to the EIA, tightly crouched within a storage pit and with a single cut to the lambdoid suture, in the very early stages of healing (Dodwell, 2016:94).

Of the remaining 21 possibly bound individuals, only four others meet the criteria of storage pit burial from within a settlement context. Fourteen are settlement-related, if Trumpington Park and Ride is included, but most are from shallow graves/grave pits, at least six have their wrists and sometimes ankles tied, but many more were tightly crouched/flexed, their arms and legs brought into the torso, suggesting they were wrapped (Cunliffe and Poole, 2000b:167), or may even be curated body bundles. This places these individuals closer to ABGs 3052 and 5188 from Harston Mill – curated 'ancestors' or deceased individuals waiting for an open pit, not victims of ritual killing (O'Brien, 2016:209-10).

McKinley (2014:218) provides a more pragmatic explanation for hand and foot binding; to 'stop the arms flopping about'. By binding the arms and legs together, the corpse is much easier to maneuverer and place in the grave/pit, much the same as placing the dead in a shroud. This is more consistent with ideas of curation than with human sacrifice. Curation of the deceased has been identified, bone bundles and ABGs also attest to the manipulation of the dead and perhaps to their storage before final deposition. Binding of the hands and wrists or the whole body would ensure integrity of the body, prevent the loss of larger bones and maintain broad articulation while awaiting burial. The depositional context of these burials (the storage pits themselves) are clearly central to their interpretation, either as sacrifices or not, and it can be expected that the pits would not be available and decommissioned at all times. If those buried within were sacrificed as closure deposits they could be kept until appropriate, but if they died naturally, then they may need to be stored, bound, until a pit was available.

[50] Bob's Wood (Cambs.), Wandlebury (Cambs.), Verulam Hills Field (Herts.) and The Bridles (Lincs.) respectively

Harding (2016:167) goes one step further, suggesting that the particularly contracted burials could be dry, excarnated remains, re-assembled for burial. For this to occur so frequently, and without anatomical anomalies (as at Cladh Hallan), would require a great deal of skeletal knowledge, and seems unlikely; we would more often record small bones being absent. Even curation is not applicable for all individuals, many are complete or largely so, with no evidence that they are a secondary deposit, but as stated, if storage pits went out of commission at a certain time of year, then the more complete individuals within could be those that died at the 'correct' time, or could indeed have been killed deliberately.

9.5.3 Pit burials as social transgressors

Sharples (2014) suggests that the settlement storage pit inhumations on sites in Wessex are social transgressors; those whose actions in life or circumstances of death have separated them from the norm (buried elsewhere) and result in their burial away from their community. Supporting the idea of human sacrifice, he suggests that some of these people may have been 'socially dangerous' enough to be killed, also citing the binding of hands and feet (*ibid*, 152; Green, 1998; Hartridge, 1978; Cunliffe, 1984:444) and cases where the dead are covered in rubble (discussed above) (Cunliffe, 1993:12-13) or dumped into features.

There are certainly those among the storage pit inhumations here that evidence a 'lack of care' in their deposition, some do appear to have been thrown or dumped. However, only seven EIA-MIA pit inhumations from the study region appear to have been treated this way, either 'dumped' in the feature (IDs 111, 134, 137, 140[51]) or prone with arms and legs in inconsistent directions (IDs 59, 78, 132[52]). These come from only four sites, all in Cambridgeshire, and two are not from traditional settlement contexts (59, 140). Two (134, 137) are neonates. Such burials would suggest a lack of respect or care for the deceased, but these are subjective terms, and like the rubble-covered burials they are outweighed by those that are in more common crouched/flexed positions.

The inclusion of the dead within the domestic sphere, both in complete inhumations and disarticulated bone, is widespread throughout much of the Iron Age, but they are not a population majority. Wherever the majority of the dead are, they are not within settlements, so storage pit burials being in some way 'other', and therefore not a *majority* normative rite is a logical conclusion. It is possible that these people served a benevolent role – they are not cast away from the rest of the dead but retained around the living. The disarticulated bones with

[51] Harston Mill, Trumpington Meadows (IDs 134, 137), and Trumpington Park and Ride respectively.
[52] Bradley Fen, Clay Farm, and Trumpington Meadows respectively.

evidence of handling and curation, as well as the curated body bundles speak to a positive, interactive relationship with certain deceased community members. Both of these human remains types frequently found their way into storage pit assemblages, alongside complete pit inhumations. This does not discount the dead as transgressors though, or as outsiders to the community, as their identity may be multi-faceted and changing through their death and deposition.

Sharples (2014:153), discussing pit burials in Wessex, suggests that punishment of these social outcasts served to reinforce communal order at a time when larger networks of trade and exchange had broken down and communities became more insular. The increasing use of grain-storage pits and four-posters is evidence of localised long-term food storage employed to compensate for the breakdown of these networks (*ibid*, 153). With small communities relying on self-sufficiency instead of trade relations, and little evidence for social hierarchy, an event such as crop failure or diseased livestock could have a devastating effect, and in such instances the separation and sacrifice of certain 'dangerous' individuals provides a scapegoat for communal ills – analogous to witches, attacking the community through magical forces (Douglas, 1982:205-6; Sharples, 2010:299; 2014:154). Their placement within boundaries (ditches) or in pits close to settlement edges served as a warning to others or as reinforcement for the magical or figurative potency of the boundaries themselves (*ibid*, 154).

What we may have with these storage pit/settlement burials is the reinforcement of social order and purifying magic by sowing 'special' community members into the fabric of the settlement in a very real and permanent way – not repairing boundary issues they 'caused' but reinforcing them with their presence. Brück (1995:259-61) has previously suggested the same, that for both pit burials and disarticulated bone, the placement of 'ancestors' within the settlement could have given meaning to those locations, reinforcing community identity through the attachment of the living – to their 'ancestral dead' – to the land they inhabit. The placement of the dead in specific areas may also have served to demarcate ownership of the settlement itself, or parts therein, in much the same way that barrows have in other periods (*ibid*, 260). If the buried remains retained some form of identity, their placement within boundary locations could be a way to ensure the dead were frequently 'visited', placed within or on the edge of the settlement ensuring their interaction with the living on a regular basis (*ibid*, 259).

The decay of the physical form can be seen as a visual indicator of the souls'[53] transition into the afterlife, the more decayed a corpse is, the closer the deceased is to leaving the realm of

[53] For lack of a better word

the living (Taylor, 2002:27). This not only creates a 'dangerous' intermediary period where the soul may return but allows for processes to be taken that could prevent this return, or conversely trap the soul in the body (*ibid*, 27). Excarnation rites, like cremations, could be very visual, destructive processes that bring this transformation from flesh to bone to the public sphere – the rites and rituals associated with these processes being key to the safe transition of the soul. Inhumation though, is a slower, hidden process. If the majority are excarnated/disarticulated and dispersed, then those more complete inhumations, the settlement burials and the victims of interpersonal violence may be denied the transitional escape of the soul. The appropriate rites and treatments denied, their 'magic', benevolent or not, could be tied to their soul being trapped within the body, itself held within the settlement or buried without the necessary rites.

9.6. Other notable inhumation patterns

9.6.1. Interpreting ditch burials

Including those placed in graves cut into ditches, ditch-deposited inhumations amounted to 14.1% of the total (60/425). As well as these, excluded inhumations E.1-E.12 were also placed within the ditches at Puddlehill and Maiden Bower, Bedfordshire. For the EIA and MIA though, the numbers are limited. The apparent rules applied to pit inhumation, regarding position and orientation, do not occur with ditch burial – the EIA-MIA examples were on varied alignments[54] and in multiple positions. Only one contained any associated material (ID 1, A421, Beds.) with midden/domestic waste in the backfill and curated skull fragments also. Here, as with the pit burials, I would argue that these deposits relate to benevolent 'magic'– the curation of disarticulated bone suggests care and value, an attachment to the dead – their inclusion in contexts with more complete pit/ditch burials should therefore extend this value to the latter.

IDs 350, 355[55] and 356 (South Dumpton Down, Kent) were all headless ditch inhumations and may represent contrasting beliefs. No signs of decapitation are recorded, but in all cases survival is poor. The lack of teeth would suggest the heads were never originally in the graves though. Ditches are liminal spaces, they form boundaries and demarcate the land, as well as dividing the safe, communal space of the settlement from the world beyond. The placement of the dead in settlement boundary ditches provides a much more convincing example for social transgression than does pit burial in the EIA-MIA periods. These individuals are not

[54] While the alignment of the pre-existing ditch itself will be a determining factor, the body could still be placed in one of two linear directions, or elsewhere along the ditch circuit, if orientation was an important factor.
[55] ID 355 is recorded by the excavator as a ditch inhumation, but the plan drawing (Fig.4.8) appears to show the skeleton aligned perpendicular to the ditch cut

placed within the settlement, nor outside, but peripheral to both. The importance of boundaries in Iron Age society is unequivocal; fields are bounded, settlements increasingly so as the period progresses, hillforts and ringworks often consisted of multiple, monumental boundaries; as well as the obvious defensive purpose of some of these enclosures, the extensive use of boundaries speaks to an insular character, a perhaps unstable society focused inward, not outward (Sharples, 2014). If the dead, especially those deemed socially dangerous, could be used to supernaturally reinforce boundaries, then ditches are the most obvious place for them. The headless burials from South Dumpton Down are certainly atypical, and decapitation is often interpreted as inauspicious or denigrating treatment, where it occurs in the minority (e.g. Phillips et al., 2009:59, 62; Armit, 2012:11, 40, 166), though there is ethnographic evidence to the contrary, where 'taken' heads are curated, 'fed' and nurtured, as with the Berawan of Borneo (Armit, 2012:11; Metcalf, 1996:251). This is possible at South Dumpton Down, as the heads were not placed with the rest of the skeleton, and the importance of the head itself is discussed below (9.9). Ditch burials may also represent victims of unfortunate or inauspicious death – disease, accidents, death in childbirth (though there are convincing instances of this among the pit inhumations). The inauspicious or unlucky dead, like social transgressors, may be imbued with a supernatural power, becoming either dangerous, or controllable (O'Brien, 1999:55, Tsaliki, 2008:4, Ucko, 1969:271). Their placement in the ditch, whether sacrificed (see above) or not could indeed serve as beneficial magical support for the boundary, as well as clearly demarcating these people from the others in society, be they pit inhumations or the disarticulated dead.

Evidence for disrespect and social distance is more evident in the LIA ditch inhumations. They are more numerous (46, plus at least one of the excluded), representing 20% of the LIA total when 'graves in ditches' are included (46/225). They are also much more widespread, and while 19 are associated with settlements, an equal number are from cemeteries, specifically either additional to, or subordinate to cremation burials. The Hertfordshire examples from Folly Lane (Fig. 6.6) and Verulam Hills Field are the clearest examples of this (IDs 174-6, 214-221), but IDs 112 and 114 (Hinxton Rings, Cambs.) were cut through LIA Aylesford-Swarling-type cremation burial ditches, as were IDs 16-18 (Groveland Way, Beds.). The Hertfordshire examples suggest a societal division between the cremated, within the cemetery, and the inhumed, within its ditches. Some of these individuals were prone, some bound, and there is tentative evidence they may have been deliberately killed (see above, arrowhead). The latter cases post-date the cremations, but seek to associate with them, though again in a liminal, peripheral sense – they are not cut into the barrow, but the surrounding ditch. ID 258 (EKA2 Zone 12, Kent) and ID 398 (The Bridles, Lincs.) were both in ditches bounding inhumation cemeteries, similarly to the Hertfordshire examples, suggesting a division from the normative group burial rite - especially for ID 398, the headless female, again likely bound, her skull seemingly in a nearby pit (Allen and Rylatt, 2002:9). As with the Cherry Hinton MIA examples, there are more hillfort/ringwork ditch burials in the LIA too, from Stonea Camp, Wilbury Hill and Cherry Hinton again. The idea of the 'dangerous' or inauspicious dead can be argued for their placement within enclosure boundaries, as well as the inclusion of possible stillbirths or other infants (IDs 52, 71, 74, 432[56]), and the very old (IDs 36, 373, 375, 376, 380[57]), both of whom are disproportionately represented in ditches. Two of these older adults (IDs 375-6, Weatherlees-Margate-Broadstairs pipeline) may have had Klippel-Fliel syndrome, a genetic condition that can cause restricted movement of the upper spine and a 'short neck' (Egging-Dinwiddy and Schuster, 2009:10), though as stated above, there is also evidence from other burial types that genetic or pathological conditions seem not to have affected the mode of burial.

9.6.2. Barrow burials

A number of inhumations had evidence of barrow mounds. Fourteen were identified in the analysed material, plus six others that had to be excluded due to dating issues (E.28-33, Mount Green Avenue, Kent). The most convincing examples had surviving ring ditches (IDs 318 (Mill Hill, Kent), 427-8 (Thanet Earth, Kent)), or square-ditched enclosures (IDs 235-6, Brisley Farm, Kent) (Fig. 6.5), while E.28-33 supposedly had a single barrow mound covering them, surviving to *c.*1m in height (Kent HER TR36SW24). The others had no surviving mounds, but were spaced apart from surrounding features, the negative space between them suggesting a mound may once have been present (Clay. 2006; Lyons, 2011:10; Parfitt, 1995:25-6).

It is notable that of all of these, only one is EIA (ID 88, Duxford, Cambs.) and this is the only example not from either Kent or Lincolnshire. All the others dated to the MIA (13 examples) or LIA-Conquest period (six). Also of note here are the mounds from Chronicle Hills (Cambridgeshire) which contained multiple inhumations but are of questionable attribution and therefore not discussed further (Appendix 4).

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[56] Black Horse Farm (Cambs.), Clay Farm (IDs 71, 74, Cambs.), and Recreation Way, Mildenhall (Suffolk) respectively.

[57] Addenbrooke's Hutchinson (Cambs.), Weatherlees-Margate-Broadstairs Pipeline (IDs 373, 375, 376, Kent), and Hatton to Silk Willoughby Gas Pipeline (Kent) respectively.

The Arras burials of east Yorkshire are typified by N-S aligned crouched inhumations covered by small square barrows, in sometimes sizeable cemeteries (Sharples, 2014:144). These have previously been connected to rites in La Tène Europe, suggesting cultural exchange or immigration to Britain in this region (Davis, 2018:61; Harding, 2016:269; O'Brien, 1999:1; Cunliffe, 1991a:5,77; Clay, 2006:26; Stead, 1965,1979,1991). The Humber river separates Yorkshire from Lincolnshire, and it is highly likely that the barrow burials from Horkstow Road (IDs 381-3, 385-7) are expansions of Arras traditions on the periphery of their 'cultural zone', or the result of direct contact with Continental Europe via the river (Clay, 2006:26). All of the Horkstow Road burials are aligned N-S and are crouched like the Arras burials – the barrow shapes cannot be determined though as the mounds and ditches do not survive. If they did have barrows, they may have been made from turf stripped from the surrounding area, rather than the spoil from an enclosure ditch, or otherwise the ditches were shallow and ploughed away, as is posited for some Arras inhumations also (Stead, 1991:7).

The Kent examples are perhaps closely related to Aylesford-Swarling cremation traditions, which are often covered with mounds (Lyons, 2011:3). The Brisley Farm examples are both well accompanied, but not all the Kent barrow burials are 'rich', containing brooches or small amounts of pottery only. The most elaborate burials from Mill Hill (IDs 346 and 307) have no evidence for surrounding barrows. The Brisley Farm barrows are also the only ones with square-ditched enclosures, like the Arras-type barrows and relatedly, Continental La Tène barrow burials (O'Brien, 1999:1). They both also contained imported Gallo-Belgic pottery and were in extended supine positions, again common in Europe (Whimster, 1981:96-9; Stead, 1991:35) but unlike the crouched Lincolnshire/Arras examples. Their alignments have more in common with Arras/La Tène burials than the others in Kent also – one is buried N-S, the other S-N. The latter (ID 235) has previously been interpreted as a 'disrespectful' owing to the apparently rushed/haphazard barrow construction and the placement of the accompanying sword with the hilt towards the feet, not the head (Stevenson, 2012:92). For ID 235 not only is the sword reversed, but the body is also – a rare S-N aligned burial in a N-S dominant rite. This could lend support to the idea of disrespect, but ignorance to cultural nuance or an expedient burial seems more likely, given that the remains were still within a barrow, surrounded by feasting debris, and richly accompanied.

Swords, scabbards, shields, and brooches also occur among Arras burials, as with Brisley Farm, but not with any of the Horkstow Road individuals (Sharples, 2014:144). Weapons are known from Owlesbury (Hampshire), cist cemeteries in Cornwall, and Durotrigian cemeteries (Sharples, 2014; Collis 1973, 1977), but are rare in Aylesford-Swarling cremations and in the inhumations within this study region. The Lexden Tumulus barrow from Colchester (Essex) was associated with chainmail, as well as Italian amphorae and a silver medallion of Emperor Augustus, among other items, but no weapons (Foster, 1986). In this case there are apparent connections to the continent and to Roman influence, the latter aspect not present in other barrow burials or LIA weapon graves. The barrow inhumations in Kent, occurring at the end of the IA period, as with the Mill Hill warrior and the Folly Lane 'Chieftain' burial (Hertfordshire) seem to be overt, high-status expressions of non-Roman, native identity at a time of great cultural shift in the years preceding the Roman Conquest (see above).

IDs 309 and 322 (Mill Hill, Kent) have both been interpreted as a focal burials for subsequent inhumations, both some of the earliest in the cemetery (Parfitt, 1995:25). On the same site was a ?Bronze Age barrow around which a number of the Iron Age graves were cut (*ibid*, 17). The early barrow was evidently still present when the Iron Age inhumations were added, and rather than connecting to Aylesford-Swarling cremation traditions, the Mill Hill barrow burials could be an attempt to associate themselves with earlier peoples, to create a connection to the landscape or legitimise ownership of an area (*ibid*, 17; Saxe, 1970:234). The Brisley Farm barrow burials likewise formed the primary stage of a shift in usage for the site – from settlement to mortuary centre, with subsequent cremations and possible shrines all constructed after the first barrow burial (Stevenson, 2012:92). Tainter's (1978:125) concept of energy expenditure is also relevant here; barrows are both conspicuous in the landscape and represent a considerable commitment of time and energy by a community. The deceased, by association, are seen as important to that community, and/or of high social status, though this is not the only way such status could be expressed.

9.6.3. Animals and people

The importance of animals beyond their use as a source of food and materials has been examined extensively (e.g. Roberts, 2000:121-2; Grant, 1984; Madgwick, 2008, 2010). Horses, dogs and birds appear to have had special connotations, their inclusion in domestic assemblages is rare, but their association with human remains is repeated across the study area.

Complete animals directly deposited with inhumations were identified in seven instances (four horses, three dogs). Horses are often seen as prestige animals, associated with elite groups, wealth and status (Rebay-Salisbury, 2018). They are depicted on coins (Cunliffe, 1991a:112), and horse equipment has been found across Britain in burials and hoards (*ibid*, 78, 411-5). Horses themselves are found in high-status burials outside the study area (e.g. Pocklington), both alone and associated with chariot fittings. Within the study region only two horse deposits are overtly prestige-related though. ID 411 from Mildenhall, reportedly an adult laid extended between two horses, as well as weaponry and torcs (Fox, 1923:81); if accurate this is the only such burial from the region. The inclusion of a sword is rare, torcs are recorded (Snettisham, Ipswich, Ulceby, Bawsey and North Creek, Cunliffe, 1991a:483) but not with the dead, and two horses is an entirely unique inclusion, and in this case would seem to point to status and prestige. The same is likely true of ID 344 (Mill Hill, Kent), where the human and horse were in separate but adjacent and similarly aligned pits (Parfitt, 1995:26).

The other complete human/horse burials though give no such 'high status' indication. ID 25 (Stagsden Bypass, Beds.) was a neonate placed alongside a new-born foal, not in line with ideas of horses as status symbols, unless status in this instance is inherited. The burial also comes from a rural settlement, within a large pit-feature (Dawson, 2000:45). The very young are also seldom afforded grave accompaniments (Chapters 4-6), so this burial does stand out. The corresponding ages of the horse and the human are too similar to be coincidental. The value placed on horses, and the arguable lack of value placed on very young humans, suggests that in this case the foal should not be considered as an accessory to the human – not a grave good but a parallel entity. This is especially pertinent as very young horses are rare on Iron Age sites (Bendrey et al., 2009:141). It is possible one was killed to be placed with the other, but the sacrifice of a horse to be included with a human seems more appropriate in adult burials (the status inhumations). The Stagsden neonates (human and horse) that make up the sole burial from the site, are more satisfyingly interpreted as the result of cruel fate. Both born around the same time (summer, Roberts, 2000:120), both victims of infant mortality, their simultaneous deaths seen as a challenge to the social order, a connected ill omen. Such interpretations of pit and ditch burials are discussed above and though arguably not applicable in all cases, the Stagsden deposit could fit. The final example also has no overt connection to prestige; ID 95 from Duxford (Cambs.), a perinatal infant placed in the bottom of a pit that also contained a vast range of animal bone including voles, birds, a horse skull and a complete stallion (Lyons, 2011:18). In this case the horse was in a later fill, part of a complex depositional sequence, and either placed because it died of disease or natural causes, or more likely, was a votive deposit within a pit that contained many other 'special' characteristics (*ibid*, 18).

The three dogs may all be pets, though like IDs 344 and 411 (above) there may also be a status element. ID 32 (Addenbrooke's, Cambs.) and ID 337 (Mill Hill, Kent) are both LIA cemetery burials of young-middle adult females buried with dogs. ID 354 (South Dumpton Down, Kent) was an EIA settlement burial of a child. For ID 32 the dog was placed in a separate cut by the lower legs with a spherical flint nodule behind its head. Dogs placed by the feet occur elsewhere in the EIA too - at Dibbles Farm, Somerset (Morris, 1988:44). For ID 354 the child's head was placed on the dog, as if using the animal as a pillow (Minter et al., 1973:15). For 337 though, the dog was seemingly thrown in during the backfilling process, not carefully arranged. The meaning of these inclusions may be the same, the favoured companion animal brought with the deceased into the afterlife, but the manner or attitude of deposition for 337 could not seem more different. In all cases it is likely the animal was killed to be deposited, this may be because they were so intrinsically tied to the deceased, or more pragmatically, it could be that looking after the dog was a burden the community did not want. This is especially relevant for ID 337 as the dog was described as a small lap-dog, a type increasingly common as a status symbol in the LIA and RB periods (Creighton, 2000:214; Smith, 2005:35). Dogs are often thought to be liminal animals, occupying domestic space as a co-operative part of a community, warning of danger and chasing pests, but still an animal. Dogs also traditionally guard the threshold of the house, itself a liminal space (Smith, 2005:41). Perhaps their inclusion with the deceased here relates to their liminal status.

There were two instances of bones from 'special animals' having been turned into pendants – the eagle claw pendant found with the child burial ID 421 (Gunton's Close, Cambs.) (Section 4.9.2; Fig.4.12), and the dog tooth pendant in the same pit (not fill) as ID 260 . In this case it is tempting to make an argument that this may be a memento of a deceased pet/companion animal, but it could also be a talisman of sorts, or entirely unrelated to the dead.

Partial animals and single bones were more common than complete skeletons. The majority of these can be interpreted either as 'special deposits' (Hill, 1995) or domestic waste inclusions– IDs 88, 134, 260, D.IDs 399-400 (dog)[58], IDs 95, 101, 103, 116, 132, 134, E.17, D.IDs 220-1[59] (bird), D.IDs 441-2 (dog and horse). In some cases these were highly complex, like the pit containing disarticulated bones D.ID 441-2 (Seven Stones Estate, Kent) which included bones from a horse, fish, dogs, whale and domestic species (Minter and Herbert, 1973; Bristow, 2001), or D.IDs 399-400 (A2 Pepperhill, Kent) which contained almost 20kg of pottery and pig skeletons alongside the dog bones (Allen et al., 2012:139-142). The bird species found with human remains included sparrow, duck, goose, crow, and chicken. F.2706 (Harston Mill) contained a complete dog, but not deposited like the inhumations above – it too was part of a complex pit deposition sequence including a partial perinate, piglets, other partial animals and a human cranial fragment (D.ID 129, Harston Mill) (O'Brien, 2016:71).

[58] Duxford (Cambs.), Trumpington Meadows (Cambs.), EKA2 Zone 13 (Kent), and A2 Pepperhill to Cobham respectively.
[59] Duxford (Cambs.), Harston Mill (Cambs. – IDs 101, 103), Marshall 'Wing' (Cambs.), Trumpington Meadows (Cambs. - IDs 132, 134, E.17, D.IDs 220-221).

More deliberate, placed associations were more common with horse remains. Three disarticulated human bone deposits were found with horse remains, as was partial skeleton [980]. In all cases the horse remains were incomplete but had articulating elements – a torso, a spine, a skull and vertebrae respectively (Hinman, 2004:26-9). Notably again here, the disarticulated human remains were those of an infant and a neonate, as with Stagsden Bypass. Deposit [980] is the most clearly 'arranged', the partial horse and human bones placed to give the appearance of someone 'bent double with human legs and a horse's head' (*ibid*, 26). Horse skulls were found with four further inhumations, over/next to the legs in all instances (IDs 20, 182, 269, 270[60]). Mandibles were found with three others. ID 88 (Duxford, Cambs.) had sheep, horse and dog mandibles in the grave fill, as well as other animal bone, though this too may be a waste deposit. ID 242 (Cliffs End, Kent) was placed on top of the headless right half of a horse, aligned together (Leivers and McKinley, 2014:61).

The dogs do appear to hold 'companion' status in at least two or three instances, but this is not fixed – they occur complete and fragmented, and in varied associations. In one instance (D.ID 59, Colne Fen, Cambs.) dog remains are directly associated with a gnawed femur; these two depositional elements must be related, one likely interpretation being that the dog was killed and deposited for gnawing a human bone, perhaps one reserved for curation or modification. Dogs have been connected to water though (another liminal environment) and this deposit does come from a well (Smith, 2005:203-5). The horses would seem to be 'status' animals in two cases, but not exclusively. There are ten total deposits of horse remains securely associated with humans, of which five were individuals under nine years old and three were neonates; a pattern that should certainly be explored further. It is likewise notable that of the three most secure dog-human burials, two are female and one is a child[61]. Smith's (2005) larger survey of dogs in IA and RB Britain notes that males are more commonly found with dogs overall, but caveats that the numbers are too small to draw any significant conclusions.

For the birds, some species may simply represent food waste. The corvids though, are different, and there is evidence for their placement in 'special deposits' elsewhere. At Danebury over 70% of the *c.*1200 identified bird bones belonged to crows and rooks (Serjeanston and Morris, 2011:87), with the wings/feathers removed from several of these

[60] Puddlehill (Beds.), King Harry Lane (Herts.), EKA2 Zone 6 (Kent – IDs 269-70).

[61] Smith (2005:28) records this individual as an adult male, but Moody (2008:123) and Minter et al. (1973:15) describe the skeleton as that of a 'young girl'. Whimster (1981:300) gives no indication of age or sex, citing Tim Champion (*pers. Comm*.) as his source.

birds. They were frequently found with complete mammals, including young pigs and cattle, as well as disarticulated human bone, and dog remains (*ibid*, Table 3). Serjeanston and Morris identified 18 other deposits of crows and ravens from 11 sites in southern Britain, of which horse remains also occurred in two, dog in three and human in three – none of these overlapped though, and more domestic species also occurred in association (*ibid*, Table 4). Ravens and crows are intelligent, social animals well adapted to human settlement, feeding on carrion and waste (*ibid*, 99). Their presence on Iron Age sites would not be unusual, and their carrion-feeding nature has often been tied to their association with the dead; something that could be especially pertinent if some human dead were placed in middens, in open pits, or exposed (see below). While the horses may be status animals, and the dogs appear to occupy a liminal but benign role between the household and nature and a close connection to certain individuals, birds, especially corvids, are much more convincingly associated with the end of life, rather than the life itself.

9.6.4. Burials with stones

There are seven inhumed individuals in the region who are deliberately associated with stones or chalk blocks. Both ID 20 (Puddlehill, Beds.) and ID 403 (Grime's Graves, Norfolk) are EIA young adult females, buried crouched with squared chalk blocks/plaques. The former block was shaped into a rectangle with visible tool marks, while the latter was etched with a 'simple abstract criss-cross' design (Mercer, 1981:16). At Garton slack (Yorkshire) one individual was placed with a chalk slab, there interpreted as a headless figurine, as there are examples of these from other Arras cemeteries (Stead, 1988; Harding, 2016:232).

Pillow-stones were identified in three cases – IDs 88, 204 and 404. The latter two were both females, flexed on their left sides, but here the similarities end. ID 204 (Lee Valley Pipeline, Herts.) is from a V.LIA-Conquest period cemetery, while 404 (Sedgeford) is an MIA settlement burial, and ID 88 (Duxford, Cambs.) is dated to the EIA and isolated, this time a male, flexed on his right side. ID 404 was placed with two large flint nodules beneath the head, as well as a cow scapula, seven beads and the base of a vessel (McKinnon and Hatton, 2011:30-2), while 204 was otherwise unaccompanied. Two smooth red stones were placed behind the head of ID 88, with animal mandibles and pottery in the grave fill, and another large deposit of animal remains sealing the pit. There is a chance the stone with ID 204 is not deliberately placed, as the only information about it comes from the grave plan (Fig. 6.14). While pillow-stones are a known phenomenon from many periods, so few examples from the region here shows they were not an established accompaniment for the Iron Age. Whimster (1981:323) lists only one further example from the Isle of White, but from the Roman period onward they appear more often. The dog placed under the head of ID 354 (above), provides another case of a 'pillow' accompaniment though.

The final two examples were both associated with imported pebbles. Both IDs 100 and 372 are MIA settlement burials of young adults, crouched on their right side. ID 100 (Harston Mill, Cambs.) is recorded has having a 'cache of imported pebbles' and pot sherds in the grave fill, but the size, number, origin, and colour of the pebbles is unrecorded (O'Brien, 2016:37). ID 372 (Waterstone Park, Kent) was more elaborately accompanied, with a large (68x64x46cm), used pounder or rubbing stone made from quartzitic sandstone directly with the skeleton, as well as large quantities of pebbles, some up to 1kg in weight in the base of the backfill, above the skeleton (Haslam 2005:29). The excavator noted that of these, one was an orange flint, another flint was burnt red, and one stone was black. The inclusion of these visually striking stones may be of no significance, but that seems unlikely. The large pounder/rubbing stone somewhat echoes the more common quern-stones and quern fragments placed in IA burials, though in the five cases where these are recorded in the study region (IDs 2, 116, 120, 169, 351[62]), at least four are part of midden/domestic waste deposits.

There are four further inhumations who were covered by stone layers, ID 131 and double burial IDs 136-7 (Trumpington Meadows, Cambs.), and ID 234 (A228, Kent). In all cases, the deceased were deposited within pits, and then a layer of stones placed over the skeletons, as part of the backfill process. ID 131 was also placed on a gravel layer, as well as covered by a 'mound' of it (Evans et al., 2016a:154). For the pit burials these stone layers may have served as a barrier for scavenging animals, a strong possibility considering the canid-gnawed disarticulated material. The stones for ID 372 (Waterstone Park, Kent) appear carefully chosen though, and IDs 131 and 136-7 (Trumpington Meadows, Cambs.) were in re-used storage pits, large deep features not easily accessible by scavengers. As well as this, if stones were needed to deter animals you might expect to see them more commonly. It is also possible that the stones served as a marker for exhumation. It has been established that primary burial and subsequent exhumation is a valid interpretation for the source of some of the disarticulated human remains (see below), but logistically, it would be beneficial for those exhuming the remains to know where they were located. A layer of stones above the remains would serve as advanced warning and avoid accidental damage to the bones. This too is somewhat unsatisfactory as, if more pit burials are to be interpreted as 'disarticulations in waiting' then more stone layers serving as markers could be expected. These stone layers may therefore

[62] A421 Great Barford Bypass (Beds.), Marshall 'Wing' (Cambs. – IDs 116, 120), Aldwick Field (Herts.), and South Dumpton Down (Kent) respectively.

serve as a barrier *for* the deceased, not *from* them, more in-keeping with Sharples' (2014) view of settlement/pit inhumations as social outcasts, for sites in Wessex (above). For good or ill, if the settlement-deposited dead served as supernatural reinforcement for the settlement, perhaps in these cases the stone layers were an additional way to ensure the dead, or their spirit, stayed in place. In the section on violence (9.4.2.), the dead covered or crushed by rubble were discussed, with connotations of disrespect, ritual overkill or at the least, expedient burial. These carefully selected stone layers suggest something else, the other side to the same coin.

9.7. Discerning excarnation/disarticulation sequences

The results outlined in Chapter 8 showed restricted evidence for the sub-aerial exposure of human remains. Weathering was identified on only 4.3% of the assessable total (20/460), 14 of which were from only three sites. Gnawing and trampling were similarly rare, though gnawing was present on bones from at least 12 sites. Access to the bones by canids may have been from the communal, accessible nature of the remains post-decay.

The composition of elements showed clear evidence of selection on the part of Iron Age communities. The highly disproportionate quantity of cranial bones/fragments is especially telling (see 9.9.), but so too is the large proportion of long bones compared to other elements. The flesh surrounding smaller extremities is some of the first to decay, and this coupled with their size could easily explain their absence in disarticulated material (Redfern, 2008b:283). Andrews and Cook (1985:677) conducting experiments on cows found that within six months of exposure of the remains, some lighter elements had disappeared completely. However, they also found evidence of scavenging and trampling among the surviving remains, which as discussed are rare in the Iron Age material (*ibid*, 676; Carr 2006:448). Even so, the selection of cranial elements and long bones (especially femora) seems clear. This is compounded by the evidence for human manipulation. The worked long bones, with two exceptions, are femora. The proportion of manipulated, handled, curated and worked cranial bones is far greater than their overall proportion, which in itself is already inflated. Element selection is present, and the contexts in which they are deposited are also repeated chronologically and geographically – pits on settlement sites are by far the most common, followed by ditches.

A lack of weathering, gnawing and other natural damage to the bones could have been a factor in element selection in the first place, especially in bones that would be used as tools or curated. The articulated bone groups and bone bundles discussed in Chapter 7 showed proportionally more evidence of natural taphonomic modification. Seven deposits were either gnawed (6) or weathered (1), (15.9%, 7/44), with three deposits also described as ‘eroded’ or ‘fragmentary’ to some degree, though it is unclear if this is due to weathering, human manipulation and/or acidic geologies. However, as with the disarticulated material, this is geographically restricted – two partial deposits from EKA2 Zone 6 were gnawed, as were three from Trumpington Park and Ride and one from Godwin Ridge, the same site as the only weathered partial deposit. All three of these sites already featured among the weathered and/or gnawed disarticulated bone.

At Cliffs End multiple deposits of human remains in various stages of articulation were identified within the fills of F.2018, a large, irregular feature of uncertain origin (McKinley, 2014b:210). Nineteen disarticulated bone deposits dated to the Iron Age, plus three more complete bone spreads (Chapters 7-8). Here there was one instance of weathering (D.ID 403 Cliffs End, Kent) and one of gnawing (D.ID 402, Cliffs End). Bone Group 243204, representing around 30% of an adolescent ?female, contained elements from all parts of the body except the hand bones, the femora, and tibiae; the limb bones must have been deliberately removed, the hand bones may easily have been scavenged (*ibid*, 218). Some of the deceased were seemingly laid out on the surface and allowed to decay, eventually dispersing within the feature. The process was sped up by limited carnivore action and probably access by birds like corvids and buzzards, plus human manipulation through retrieval of selected elements. California/Sale Drive doline (Herts.) is much less secure but may be the setting for similar processes, with disarticulated remains found in a lower fill, subsequent inhumations in later fills (IDs 172-3) showing re-use of the feature as at Cliffs End, and a possible mortuary structure (Fitzpatrick-Matthews et al., 2007:113)

Both of these sites, Cliffs End especially, have parallels to Godwin Ridge (see below), in that there is evidence for sub-aerial exposure. However, at Godwin Ridge this seems to have occurred on the ground surface, and at Cliffs End and California Doline the dead were laid out on the floor surface of a subterranean, but open, feature. In this way the latter are similar to pit deposits but are also sub-aerial. As the features at Cliffs End and California Doline are large and would require effort to control, McKinley (2014:218) suggests barriers made of vegetation could have served to deter predators, or even a child used as a sentry. This would be ineffective against rodents however, and there was little sign of rodent gnawing in the data (Chapters 7-8).

There is still an argument that some four-posters may have served as excarnation platforms. Hinman (2004) suggested this for structures at Trumpington Park and Ride (Cambs.), citing at least one case of weathering (D.ID 209), and also pointing out that ‘small slivers of possible human bone' were recovered from the fills of three of the four-posters (*ibid*, 32). However, the fills also contained burnt daub and animal bone, and none of these slivers have been positively identified or included in the literature for the site. This also overlooks the fact that as many as 23 four-posters were identified in total (Hinman, 2004:Fig.10), and the site was occupied extensively – it seems that there is nothing convincing to separate the posthole fill deposits from 'standard' domestic material. Harding (2016:41-2) argues for the use of four-posters as excarnation platforms but suggests that a lack of gnawing on remains is evidence that the dead were carefully monitored, removed from the platforms once defleshed and dried, and deposited elsewhere, even suggesting fences were used to keep away predators. This is difficult to support without extensive histological analysis, and it would not reduce the effect of weathering, plus the commonality of four-posters on sites across Britain makes their interpretation as raised granaries much more reasonable than as platforms for the dead.

9.7.1. Exposure in hillforts

Harding (2016:29-30, 272-4) has suggested that exposure/excarnation of the dead was a main purpose of hillforts. He argues that they served as communal excarnation centres, and posits that evidence of attacks on hillfort sites, especially by Roman soldiers, was a way of stopping or oppressing funerary practices seen as profane or abnormal. This would seem to ignore larger bodies of evidence on many hillfort sites for extensive occupation phases, and the argument does not hold up in this study region certainly. There are only a few sites in the region that could be considered as hillforts, and generally they lack the monumentality of sites like Danebury or Maiden Castle. Disarticulated human remains were identified at Wandlebury, Cherry Hinton, Wilbury, Puddlehill/Maiden Bower and Stonea Camp though, and there are differences between these and the overall patterns of treatment.

At Maiden Bower the only disarticulated material that could be concretely identified were three leg bones placed in a cist (Smith, 1915:Fig.7)[63], while at Puddlehill parts of a skull and a single tooth were found in a hearth (Matthews, 1989:35). Only four disarticulated bones were identified at Wandlebury, but the presence of scapulae and a pelvis do suggest different treatment here to most sites. Wardy Hill (Cambs.) produced the most disarticulated bone (IDs 276-286) and as with Wandlebury the presence of less common bones (calcaneus, talus, pelvis, rib) would suggest different practices here to most settlements. The material from Cherry Hinton is also numerous and varied, but all seemingly relates to a single violent event

[63] A deposit of disarticulated remains from 'at least 50' people was apparently beneath the cist (Smith, 1915), but little detail is available, and the remains could not be located during primary data collection. If they could be found and confirmed as Iron Age this would represent a wholly unique and immensely important deposit.

in the Middle Iron Age (Pickstone and Mortimer, 2011, 2012), as with the bone from Stonea Camp (Malim, 1992). There are also hillfort/ringwork sites that produced complete or largely complete inhumations but no disarticulated material, as at Wilbury Hill (Hertfordshire). There is certainly a case to be made that these sites are different to the majority of domestic settlements, and there appears to be increased instances of violence associated with them (see above), but there is little to no evidence here of hillforts/ringworks as centres for excarnation, aside from perhaps less selective deposition of disarticulated elements.

Redfern's analysis of the material from Maiden Castle and Gussage All Saints (Dorset) identified gnawing on two elements as well as dry and peri-mortem fractures and a preponderance of cranial bones, though the sample size was much smaller (2008:Tables 1-2). McKinley's (2008:73-5) analysis of bones from Battlesbury Bowl showed canid gnawing on 28% of the human bone, some degree of weathering on 56%, trampling on 25% and extensive fracturing. However, McKinley (*ibid*, 76) caveats these findings by pointing out that the animal bone assemblage is more severely affected by every taphonomic process and the sample is small, suggesting that the human remains were not exposed for a substantial period of time.

Conversely on other sites in western Britain, findings have mimicked the results from the study region – Madgwick's (2008:99, 107) work at Danebury and Winnall down highlighted a lack of taphonomic modifications when compared to the animal bone. These findings, like those presented in Chapter 8, do not support the idea of widespread subaerial exposure of the dead, though there are sites where the evidence is much more compelling, both here and in Wessex.

9.7.2. Alternative disarticulation pathways

If the dead were not subject to widespread sub-aerial exposure, then other explanations must be sought. Redfern's data does not fit with this region, and there is little support for Harding's idea of hillforts as mortuary centres, or for widespread exposure on four-poster platforms. Looking at Wessex, Madgwick (2008), Booth and Madgwick (2016) and Sharples (2014:150) suggested that the remains were given primary burial and subsequently exhumed, while for Cambridgeshire, Evans et al. (2016a) put forth middens as a viable depositional environment.

9.7.2.1. Primary burial and covered subterranean excarnation

Primary burial and exhumation is by definition almost impossible to identify, because if rites were completed the remains would no longer be in the primary context. However there is evidential support for this practice. The general lack of exposure evidence suggests a covered, protected and/or controlled decomposition environment. Cut marks thought to be part of defleshing processes were only identified in four or five disarticulated bones, plus the single cuts to the first lumbar vertebrae of articulated bone deposit 292076 from EKA2 Zone 6, and to the scapula and rib of the bone group from test pits at Godwin Ridge.

The fine cut marks on the four disarticulated long bones were likely caused by an attempt to sever surviving ligaments around the joints of the shoulder, elbow and knee. In these cases the individual in question was assumedly not fully 'dried' when the next stage of the disarticulation process took place. These are statistical anomalies however, as the vast majority of bones have no such marks (though skulls make up almost 40% of all the bones). If manual defleshing rarely took place, then the decomposition process must have been allowed to run its course.

Primary burial or placement in a pit with a removeable cover would allow this to occur in a controlled environment, the latter also allowing for the level of decomposition to be checked as needed. Covered pits would prevent the action of animals and the weather and ensure that any bones to be retrieved post-decomposition would be accessible. Pit inhumations are prevalent across Iron Age Britain so there is a great deal of precedent for the deposition of human remains in a subterranean pit context. That pits also make up the final depositional context of over 40% of the disarticulated human bone could be evidence of a cyclical process – returning the selected bones to the same context they were pulled from. Hinman (2004:58) has gone as far as to argue that some 'storage' pits were actually dug for the express purpose of housing deposits of animal, human, and artefactual material. It is reasonable that some large pits may have been purpose-dug, though the re-use of a storage pit is equally likely. If the remains were cleaned out post-decomposition then the pit could be used repeatedly and there would be no trace in the final fills.

The body bundles and articulated body parts discussed in Chapter 7 could be evidence of an intermediary stage in the disarticulation process (Sharples, 2010:271, 280). The middle adult from EKA2 (Kent - 292076), While largely articulated, is missing the cranium and C1-3, the right humerus and the left lower leg. As already discussed, the most commonly identified disarticulated bones by far are bones of the skull, followed by long bones. It is possible that these elements were removed from 292076 prior to deposition, to be circulated among the community, or the pit in which the deceased lay was open (resulting in the canid gnawing), and elements were selectively retrieved from it during/after decay. This is one of at least four such deposits identified among the articulated bone data, like the remains from pit [2308] at Trumpington Park and Ride (Cambs.), where the legs are missing, and one arm was articulated but in a different fill to the rest of the skeleton. Similar finds from Danebury are interpreted as bodies left in open pits, the missing limbs carried off by scavengers (Cunliffe, 1991b:421). Several individuals in the inhumation dataset may also be body bundles (e.g. IDs 64-5, 70, 103, 109, 144, 340[64]), see above (9.8.2.)

Eight deposits of articulated limbs and extremities recorded in Chapter 7 were primarily of hands and feet (six, from five deposits), elements rarely recovered as disarticulated elements (28 bones from 26 deposits, out of 528). The selective deposition of hands and feet could be related to the decomposition process (Hill, 1979:Table 1; Fernández-Jalvo and Andrews, 2016:312), the elements removed/collected from the rest of the corpse once they had separated, for deposition elsewhere. Any decay process could facilitate this, but it would require access to the remains throughout decomposition, not just once it had finished – primary burial and exhumation would be less likely, but the use of mortuary houses, or covered pits, or open (protected) environments would all make access possible.

9.7.2.2. Decay in middens

Middens are analogous to primary pit burial in many ways – both involve interring the deceased, hiding them from view during the decay process, before disinterring them and/or removing selected elements. The differences lie in ease of retrieval, and the simultaneously subterranean and surface nature of a midden; the remains would be 'buried' in the midden matrix, but the entire feature would be above ground, ever present in the community and presumably visited and added to regularly. If the deceased were in a covered pit then skeletal retrieval would be straightforward, but if the pit had been backfilled they would need to be fully exhumed in order to collect elements or remove the entire skeleton. A midden sits somewhere between these contexts, skeletal retrieval would be easier than from a backfilled pit, but targeted retrieval would require keen memory of the exact placement within the midden and would depend on the size/density of the midden itself.

At Trumpington Meadows many of the pits throughout the main settlement zone contained fills consisting of a 'midden matrix' of pottery, animal bone, worked flint and burnt clay, in varying quantities (Evans et al., 2016a:145), the sort of domestic waste material found in pit contexts across Iron Age Britain. Evans et al. (2016a:148) suggested that these deposits are often not the result of singular waste dumping or 'structured deposition' events (*contra*. Hill, 1995), but are fills of pre-mixed midden material. This means that the pits themselves were merely a receptacle for midden material containing all the same constituent parts. Middens containing

[64] Cat's Water (Cambs. – IDs 64-5), Clay Farm (Cambs.), Harston Mill (Cambs. – 103, 109), Trumpington Park and Ride (Cambs.), and Mill Hill (Kent) respectively.

mixtures of pottery, animal and human bone, loomweights, charcoal and clay, if deposited into the fills of multiple pits, would present as a pattern of repeated deposition – the same materials found in pits across the site, as if prescribed. Evans et al. (2016a:211) therefore argue that the middens themselves are the focus for any 'ritual activity'. If this is the case for the study region and the midden material was deposited in pits, then the human remains placed within these middens would need to be disarticulated prior to deposition, for if the dead were placed in the midden complete and articulated then you would expect the eventual pit deposits to be much more indiscriminate than they appear to be.

Riddler (2016:174-5) cited the human bone tools from Trumpington and elsewhere as support for midden-based decay, as for bones to be transformed into effective tools they need to be defleshed, but their mineral structure needs to remain undamaged. Boiling the remains would therefore not work and exposing/excarnating them also causes damage to the cortical surface (MacGregor, 1985:63-5). Riddler (2016:174-5) cites the use of middens within the Irish Triads to store bone, horn and antler (Meyer, 1906:16), which does provide a literary parallel, though of uncertain origin and not contemporary to the British Iron Age. Placement for decay in a covered pit would also work for tool creation, however.

Supporting evidence

At least thirty EIA and MIA pit inhumations were associated with fills rich in 'domestic waste' (Chapters 4-5). A small number of these were complex, quite probably structured deposits, like ID 77 from Clay Farm (Cambs.) (Phillips and Mortimer, 2012:28), but the majority had small quantities of domestic material that could be consistent with middening deposits. They were also primarily from sites in Cambridgeshire, so it is possible this is a regional tradition (see 9.8). The LIA inhumation data produced no examples with complex 'structured depositions', and only two individuals with possible midden material in the backfill (IDs 2-3, Great Barford Bypass, Beds.). In which case, *IF* there are associations between the dead (whole or fragmented) and middens, the acceptance of this seems to have shifted with the LIA, at the same time as the increase in cemetery burial – another step in dividing the dead and the living.

A much larger proportion of the disarticulated bone from pit contexts contained some quantity of domestic material. Of 210 with available data, 149 bones/fragments (71%) were within a fill matrix also containing at least two other categories of material – pottery, animal bone, flint etc. The quantity varied drastically from 1-2 small sherds to many kilos of material, and in some cases the assemblage may indeed be 'special' – such as the horse and corvid deposits (see 9.6.3). As with the inhumations, these combinations of material are much more common in Cambridgeshire, and Trumpington and Harston Mill make up an overwhelming majority (87/149). Also consistent with the inhumations, this pattern appears to change with the LIA transition; only 11 of the 149 deposits were securely dated to the LIA, with five more dated sometime between the MIA and LIA (Table 9.2).

Date of deposit	EIA	EIA-MIA	MIA	MIA-LIA	LIA
No. of deposits	68	21	44	5	11

Table 9.2: Table highlighting a chronological decline in the presence of disarticulated material in the LIA. Source: Author.

Forty-seven of these bones were cranial (including two of just teeth), 71 were long bones (28 femora), but the majority of the skeleton was represented, including a sternum (manubrium), three scapulae and eight ribs. In the total disarticulated bone assemblage, cranial bones and teeth together made up 41.2% of the deposited material (224/544[65]). In this sample the proportion is lower (31.8%, 47/148 identified bones), while the proportion of long bones has risen from 36.6% (199/544) to 48% (71/148). Selection practices have still had an effect here, but the possibly midden-derived material is a slightly more proportionally representative sample of the whole skeleton, even including vertebrae (5) and hand/foot bones (7). A fully representative sample of the skeleton would be excellent evidence of these deposits as a source of indiscriminate human bone, and therefore make middens a more likely environment for the decay/disarticulation process. Skulls and long bones do still seem selected though, suggesting post-disarticulation deposition in the context that made up the pit fill (i.e. a midden), not the actual primary decay context. While surviving middens are rare, examples are known from outside the study region (e.g. Whitchurch (Waddington and Sharples, 2011) and East Chisenbury (McOmish et al., 2010)) and some, like Potterne (Wiltshire) contain sizeable quantities of human bone (139 fragments in this instance) (McKinley, 2000:100; Harding, 2016:119).

[65] Loose teeth not counted individually, but by deposit.

Meaning within middens

Evans et al. (2016a:148) see the presence of human remains within these matrices as an indication that they may have held meaning. Human remains *are* treated differently to animal remains taphonomically (Madgwick, 2008), and the general absence of butchery, the selection of elements and object creation show that the human remains were (in some cases at least) known to be 'different', retaining their 'humanness', if not identity. This is especially applicable to the cranial elements, as worked femora and humeri seem to be turned into tools, not more esoteric objects like the perforated bowls. Riddler (2016:171-4) points out though that even these tools may be 'special' – human femora would not be as effective as cattle due to their shape, so their choice was either due to an absence of better material, or *because* of their 'human qualities'.

However most of this applies to its post-disarticulation, pre-depositional use. Once in the midden for the final time, the bone need not be special, but lose its specialness conspicuously by intermixture with the domestic waste. This could also be true of bones not selected for further curation/manipulation, perhaps their specialness was partially attached to their removal from the midden and from the rest of the skeleton – their separation from the waste, to the living sphere.

Midden disposal would presumably result in the dispersal of many human bones over fields, providing all the midden material was not dumped into pits. In this case the remains of the deceased become part of the landscape, aiding in the growth of crops and by association, the survival of the community (Lelong and Macgregor, 2007:195-6). The transformative nature of the disarticulated dead is again central here, as with object creation. The physical identity of the person has been deconstructed by the midden decay process, sometimes mementos are removed and kept, to be curated or further transformed, but the majority of the remains are interspersed with communal waste, transformed along with it into a substance that, far from being a collection of rubbish and decaying matter, becomes the catalyst in new growth. There is no reason that the 'rubbish' in middens would have been seen negatively; its potential as fertiliser, its ability to accelerate change could have been greatly valued, 'a source of symbolic fertility and regeneration' (Brück, 1995:255). In this way the bones within may have meaning, or they may simply be an anonymous part of something bigger – the individual could become the dividual through dispersal within and outside the settlement; socially embedded in the cycle of renewal (Smith, 2012:53).

9.8. The 'invisible dead' – where are they?

Regardless of the method of disarticulation, none give a universally reliable answer to the question of the 'invisible dead'. Midden material spread over fields is a viable explanation for a great deal of the missing human bone, but it has been shown that element selection occurred with the surviving material. If the human remains in 'domestic waste' filled contexts within pits are the product of dumping from middens, then pre-selection of the material entering the midden must have occurred. It would be impossible to scatter specific elements but deposit others if they were pre-mixed into the midden matrix. Fire and water may provide answers here.

9.8.1. Cremation after excarnation

Cremation and excarnation have parallels, as noted by Carr (2007:Table 1). They are both dramatically transformative processes, altering the deceased from their complete, recognisable state to an anonymous, fragmented assemblage. Both cremation and disarticulated bone deposits often consist of token depositions also (*ibid*, Table 1). Cremation was relatively rare in the region until the LIA, becoming a well-established rite with Aylesford-Swarling traditions; in this way it may have been an indirect successor to existing disarticulation practices. Carr (2007:445) has suggested that some LIA-ERB cremations were subject to a period of exposure, or a protracted lying-in-state period prior to burning. While cremation in the Iron Age would not be enough to fully destroy even defleshed bones, they would certainly lose their structural integrity, become more fragmentary, and easily pulverised or scattered.

Burning was recorded on five disarticulated bones in the study assemblage, all skull fragments. D.IDs 6, 33, 100, 169 and 274[66] all presented with some degree of burning, four described as having turned black, not totally calcined. D.ID 33 (Puddlehill, Beds.) was found in a hearth, so this may be staining of the bone rather than direct heat contact. D.ID 274 (Cherry Hinton, Cambs.) was part of a wider assemblage associated with a burning/destruction event, and the blackening on D.ID 100 (Godwin Ridge, Cambs.) is likely related to the bone processing activities at the site rather than cremation processes. An absence of burning here need not discount cremation as a source of bone destruction though, as the elements that survive could have been selected prior to a burning event.

[66] Broom (Beds.), Puddlehill (Beds.), Godwin Ridge (Cambs.), Marshall 'Wing' (Cambs.), and Cherry Hinton (Cambs.) respectively.

9.8.2. Deposition in water

Deposition in water is another possibility, though still difficult to prove. There are established associations between the dead and watery contexts in the Iron Age, most obviously the bog bodies from Britain and Europe, commonly interpreted as sacrificial victims or executed criminals (Harding, 2016:215; Buckland, 1995:47; Joy, 2009:45; Giles, 2020). Over 250 skulls dating from the Neolithic to the 9th century AD have been found in the Thames and its tributary river the Walbrook (Redfern and Bonney, 2014:216; Bradley and Gordon, 1988:508), with a sizeable quantity of the dated material falling from the LBA to ERB periods (Schulting and Bradley, 2013:30). Here though the demography of these deposits skews strongly to young adult males, with repeated signs of violence (Harding, 2016:53), while the material found within this study region is much more varied. There is also extensive evidence for votive deposition of artefacts in wetland contexts, occurring across much of Britain and not restricted in artefact type (Sharples, 2014:149; Treadway, 2021; Pryor, 1984). It is possible that human remains were deposited in the same way, or perhaps came to replace the majority of material offerings (Harding, 2016:53); the 'value' placed on curated human remains, their agency, their connection to a group or living individual making them a suitable offering.

The societal relationship with water in the Iron Age can also be seen through dietary choices and the apparent isolationism from the continent. Despite myriad wetlands, lakes, rivers and coastal areas, fish appear to have made up very little of the diet for most people; their bones are rarely identified among domestic assemblages (Cunliffe, 2005:418; Dobney and Ervynck, 2007), and dietary isotope analysis has shown consistently little utilisation of marine resources (Jay and Richards, 2007:169; Jay et al., 2013:483). While there are identified fish bones in this region (e.g. Wardy Hill (Evans, 2003:137), Godwin Ridge (Rajkovača, 2016:505)), they never represent any substantial contribution.

Most recently Rainsford and Roberts (2013:36) reviewed the evidence for fish consumption, noting instances across Britain but conceding that aquatic resources may have been 'low value'. Perhaps some sources of water had associations beyond subsistence; otherworldly, possibly taboo associations that stopped people from exploiting marine resources (Hill, 1995:104; Sharples, 2010:273). The deposition of the dead in watery places could certainly result in a connection between the dead, the body of water, and the aquatic life within (Simoons, 1994). However this is something difficult to elucidate from the archaeology (or absence of) alone, and Rainsford and Roberts (2013:42) assert that the importance of domestic livestock for sustenance, trade, and maintaining social relationships could have done more to push aquatic foods into the realm of undesirability than any water-related taboos.

While Webley (2015:225) and others (e.g. Moore and Armada, 2012) have recently suggested that continental contact was greater than is traditionally thought, and trade and contact were well established in the Bronze Age (Williams and Le Carlier de Veslud, 2019), there is still a widespread position that Iron Age Britain was largely isolated (see for example, Sharples, 2010:115, 311). This isolation may be related to attitudes to water, or vice versa. Britain is isolated innately by large bodies of water on every side, which coupled with any general societal insularity could relate to beliefs about the liminality or 'otherness' of larger bodies of water. The liminality of wet places could be religious, social, economic, political, or all of these (Brück, 1995:260). Water often demarcates boundaries, it is the source of votive depositions, sites interpreted as shrines are often found near rivers (Wait 1985; *ibid* 260). Even constructed water sources may have been seen this way, wells may serve as sources of drinking water, but also as liminal places and subterranean/chthonic contexts, much like storage pits (see above).

The study region is criss-crossed with major waterways, like the rivers Thames, Cam, Humber, Medway and Great Ouse, as well as large fenlands in Lincolnshire, Cambridgeshire and Norfolk covering over a thousand square miles. Five of the counties in the study area are coastal, and there are multitudes of lakes, small rivers and springs also. Their impact on the lives and routines of Iron Age people even beyond the basic need for fresh water, cannot be understated. There are several identified sites among the wetland landscapes within the study region that contain disarticulated bone (Godwin and Marlow Ridges, Colne Fen, Fengate, Helpringham, Washingborough). Disarticulated bone D.IDs 24, 43, 48, 59 and 83[67] were all recovered from water-holes and wells on settlement sites. D.ID 481, one of the Billingborough skull fragments, came from a 'flood layer' of the ground surface (Chowne et al., 2001:73). Also from Lincolnshire, D.IDs 516-8 were all found within an LBA-EIA fen layer at Washingborough fen, deposited with artefacts that could be votive deposits (Field and Parker Pearson, 2003:158), and D.IDs 503-4 were recovered from watery deposits at Fiskerton Causeway. These latter two are certainly votive depositions, as the Washingborough Fen bones may be also. At Odell (Bedfordshire), in the late 1st century AD (just outside the bounds of this project) a human head was recovered from the base of a well within the farmstead (Dix, 1981:22), suggesting associations between the dead (and heads) and watery places did not cease with the conquest.

All of the Godwin and Marlow Ridge material has a close association to water, as the sites are on a low narrow ridge within the Great Ouse, inside the Cambridgeshire Fens (Evans,

[67] Marsh Leys Farm (Beds.), AstraZeneca South (Cambs.), Bell Language School (Cambs.), Colne Fen (Cambs.) and Glebe Farm (Cambs.) respectively.

2016:Fig.1.1), and much of the material was found on the surface levels, suggesting it was either laid out along the waters' edge, or deposited within and subsequently washed ashore (Dodwell, 2016:520). Colne Fen likewise is within the fenland and only *c*.2-3km from Godwin Ridge, while Barleycroft Farm is even closer. The Fengate sites are wetland landscapes, Stonea Camp too was demarcated on the SW side by fenland (Malim, 1992:Fig.2). For Godwin Ridge, Evans (2016:558) suggested the dead were brought there, pre-disarticulated, for further rites/transformation, but the water itself may have aided in these processes – the loose scatters of bone on the ground surface evidence of watery deposition at the site.

Disarticulated bone D.ID 298 (A505 Baldock Bypass, Beds.), the skull and vertebrae fragments of a young adult male, were found in a lower fill of a large solution hollow or pond (31m x 21m) (Phillips et al., 2009:63). Animal bones including a dog tibia were also recovered, as well as cremated bone from an adolescent or adult and 45 LIA pottery sherds, from a 10m long machine slot in the feature (*ibid*, 63). The rest was unexcavated so there may be more human remains within the feature. This, while within a settlement, seems to be another case of deposition in a watery environment, albeit on a smaller, more focused scale than in a fen or riverine context.

The Reach Road, Burwell deposit, excluded from detailed analysis (Appendix 2) is another watery find – 19 bones from at least two individuals, described as partially articulated and found within the silts of a paleochannel (Allen, 2007:7). The nature of the find means that it is uncertain whether these are disturbed inhumations or may in fact be the result of a 'water-burial' rite – the deposition of disarticulated and partially articulated human remains in the water as a final treatment, as with Flag Fen and perhaps the Thames.

Truly significant evidence for 'water-burial' is unlikely to ever be forthcoming, but there are ethnographic parallels (Ballock 1950: 175; Eck, 1982:215; Perry, 1914: 282; Wessman et al., 2018) as well as the arguments above, and it is the most convincing answer to the question of the 'invisible dead' of the Iron Age in Britain.

9.9. The importance of skulls

Skulls and their importance in Iron Age society have been discussed in multiple sources (Boylston et al., 2000:249-50; Brown, 2009:156; Harding, 2016; Armit, 2006, 2010, 2012, 2017; Shapland and Armit, 2012). Armit (2012) has written extensively on ideas of a 'head cult' in Iron Age Europe, and how such beliefs may have been present on both sides of the channel, as well as the myriad ways skulls are treated or depicted.

Chapter 8 showed that overwhelmingly, the disarticulated human remains recovered from Iron Age sites in the study region are bones of the skull, and long bones. Seventy-four of 91 sites containing disarticulated human remains had at least one skull bone (or tooth) within the assemblage. Bones of the skull have been found across the region, across the entire period, and in a variety of contexts – they are ubiquitous on Iron Age sites. Brück (1995:257) has previously noted the same prevalence of skulls among disarticulated Bronze Age bone (above).

There are factors at play that could create false patterns in the data though. While the vast majority of the data here is from more recent discoveries, there are identified skulls from much earlier excavations (e.g. D.IDs 305 (Jack's Hill, Herts.), 440 (Mill Hill, Kent)) which may suffer from the antiquarian preference for collecting skulls over other elements (Harding, 2016:96). Skull bones are certainly more likely to fragment than long bones, so their recovery may be a result of the widespread dispersal of fragments, more than their deliberate depositional selection by Iron Age people. Dispersed fragmented bones are more likely to be recovered if they were deposited in discrete features (e.g. pits and post-holes) than in linear ones, as seldom are linear features fully excavated in modern commercial circumstances. Discrete features represented over 60% of the unique depositional contexts (61.7%, 185/300; section 8.3.) in which disarticulated bone was found. However, the importance of pits in Iron Age sites has been discussed (above), and the sheer numbers of skull fragments here are hard to ignore; it seems more likely that the pattern of pit deposition is real (either via middens or not), and therefore that the abundance of skull fragments is not solely due to fragmentation. Wider bone survival issues have been discussed in Section 1.4.

Analysis of taphonomic modifications was undertaken to learn more about disarticulation/excarnation practices, but what was uncovered in the process was a repeated pattern of the modification, curation and transformation of human remains; and once again cranial material stood out. Almost 70% of the polished bones/fragments were cranial, over 75% of the bones related to object creation were also cranial, and all of the perforated bones. While bones of the skull made up 38.4% of the overall total, they made up around 70% of the bone that had been consciously interacted with. Curation of cranial bones was recorded at Great Barford Bypass, Beds. (D.ID 17) (Webley, 2007:19) and A2 Pepperhill, Kent (D.ID 400) (Allen et al., 2012:139-42), with curation of more complete individuals also noted elsewhere (see Chapter 7). Though the C14 dated examples are few, it would be unsurprising if the polished bones were not curated for some time also, their sheen created through repeated handling over years or generations.

9.9.1. Bone working – amulets and bowls

Among the worked bones there are commonalities – the femora appear to be scrapers/hide preparation tools (Riddler, 2016:170), and the skull bones can be grouped also.

Cunliffe has suggested fragments of the dead were kept as 'individual good luck charms' (1978:316), owing to the special significance of skulls. O'Brien (2014:29) too interprets the smaller fragments as 'charms or mementos'. The right parietal fragment from pit F.5885 at Harston Mill, Cambs. (D.ID 145) was chopped and shaped into a rectangle, similar to an unstratified (and undated) frontal fragment from the same site that had been shaped into a square and perforated (Phillips and O'Brien, 2016:65) – in both cases these bones may be amulets, the parietal unfinished, or utilised differently without a need for perforation (*ibid*, 65). The unstratified bone was even decorated with incised lines, and the perforation had signs of wear from the thong with which it was suspended (*ibid*, 65). There are continental parallels also – at Inzersdorf-Walpersdorf, Austria, where a 'pendant' was found made from a skull fragment shaped into a circle and perforated three times (Ramsl, 1998:Cat. No. 15; Phillips and O'Brien 2016:65).

Skull 'bowls' are recorded from Billingborough and Godwin ridge. The skulls from Billingborough are convincing evidence for human bone working on an almost industrial scale, in this case the creation of bowls is suggested as the majority of recovered fragments are parts of the frontal, occipital and parietals cut from the remaining cranial vault (Figs. 8.26-7) (Chowne et al., 2001), which would leave the dome or calvarium remaining. They are frequently highly polished inside and out, and in two instances are perforated (IDs 481, 502), perhaps for suspension before or during the transformation process. At Godwin Ridge, Cambs., a cranial vault (D.ID 85) had four holes drilled into the occipital (Fig. 8.25), in a square pattern (section 8.11.5.). Here they are not waste fragments, but some or all of the object itself, with evidence of repeated handling. Other more tentative examples of bowl-creation were recorded at Helpringham Fen (Lincs.), *c.*6km from Billingborough (D.ID 505) (Bayley, 1999:17) and Hurst Lane (Cambs.), (D.ID 150), where a calvarium was recovered from a pit, separated from the rest of the skull by violent chops and small cuts (Evans et al., 2007:51; Dodwell, 2007:66). A similar calvarium was recorded from EKA2 Zone 13 (Kent), cut from the eye sockets to occipital when the bone was fresh (Andrews et al., 2015:42; McKinley and Egging Dinwiddy, 2015:345), but in this case was C14 dated to the early Bronze Age[68]. Its recovery

[68] 1880-1680 cal BC (3445±30 BP: SUERC-40292)

from an Iron Age feature though suggests either it was curated for an exceptionally long time or unearthed and redeposited.

The holes in the Godwin Ridge skull could also be for suspension, or they may have more to do with the water-associated site context. It has been determined that the quantity of recorded bone represents more individuals than could have reasonably occupied the site, and the land area available could not have supported full-time occupation (Evans, 2013b:61). This in turn suggests the site had a non-domestic purpose, and that the dead were brought there from outside (*ibid*, 76), via the river. The ridge is bounded on all sides by water and many of the remains came from surface layers at the water's edge; Evans (2016:558) believes that the skeletal remains brought to Godwin Ridge for deposition were pre-selected – skulls were 'delivered to the river's waters'. It is possible that the holes in the skull here were for water to drain through as part of post-mortem rituals at the site, though this is speculation. A similar hole-bored skull was also recovered from nearby Earith (Cambs.), also a fenland site (Bayley, 1984 (D.ID 63), and Helpringham Fen too has a wetland connection (see above).

Perforated skull fragments have been identified outside the study region also. Possible amulets are recorded at All Canning's Cross, Lidbury, and Glastonbury Lake Village (Wiltshire and Somerset) (Phillips and O'Brien, 2016:65; Cunnington and Cunnington 1917; Cunliffe 1974:316; Bulleid and Gray, 1917:673-82), the former shaped into a disk. Perforated skulls thought to be for suspension and display are recorded from Hunsbury Hillfort (Parry, 1930:96; Marsh and West, 1981:98) and Hillhead broch, Caithness (Parry, 1930:96), as well as Rispain (Aldhouse-Green, 2001:104). Yet more examples from Scotland include fragments from Cnip and Fiskavig on the Western Isles, and a frontal fragment from Lower Dounreay (Caithness) that was recovered from a context containing an inhumation (Shapland and Armit, 2012:105). Features interpreted as cult buildings from Roissy-en-France and Gournay-sur-Aronde have both produced perforated skull fragments, thought to have been hung from/outside the structures (O'Brien, 2014:30; Phillips and O'Brien, 2016:65). The practice of perforating and displaying bones of the skull, either personally or publicly, is widespread in the Iron Age.

9.9.2. Complete skulls – display and denigration

Several complete or largely complete skulls were recorded without the mandibles (D.IDs 41,186, 294, 465[69]), three of these from ditches. D.ID 526 (Burgh, Suffolk) is much the same,

[69] Ashwell, Ely (Cambs.), Trumpington Meadows (Cambs.), Maltings Lane, Witham (Essex), and Whitfield-Eastry Bypass (Kent) respectively.

though in a poorer state of survival, as are four skulls from Wheelsby Avenue, Lincolnshire (D.IDs 519-522), all recovered from sections of the same enclosure ditch. All the above are adolescent or older, but they span the full range of adult ages, and both males and females are represented. They are geographically and chronologically varied also, but all are from settlement sites and most were associated with enclosure ditches. The lack of mandibles with all of these skulls suggests they were not deposited fleshed, but as dry, or somewhat dry bone. This in turn means they were being curated, displayed or otherwise kept for some length of time during decay, as with the worked and fragmented bone. For Wheelsby Avenue the evidence is compelling for these skulls/heads to have been displayed outside the settlement as they decayed. However none are perforated for suspension, and there is no mention of any damage caused by stakes, as there is with the defleshed skull from Roman-period Folly lane, displayed on a pole at a temple site (Mays and Steele, 1996:160). The mandibles would have become detached first, and eventually the rest of the skull would have fallen or been placed into the enclosure ditch. This could be the case for the skulls from Burgh and Maltings Lane too, though it is equally likely they are placed deposits. Evidence of decapitation is rare among the inhumations (see Chapters 4-6, Appendix 3) so if these are the result of decapitation and display practices, they are either from people killed outside the site area (as with predatory headhunting in ethnographic cases like the Nagas (Armit, 2017:169), or the body was disarticulated, and the skull kept.

There are instances of skulls having been recovered from hillfort ditches outside the study region. These are often interpreted as an overt display of the defeated, to either humiliate or inspire fear, as at Bredon Hill (Worcestershire) where 'mutilated…limbs and torsos' were found near the inner entrance and a separate collection of skulls near the burnt gate (Hencken, 1938:21; Harding, 2016:195), and Stanwick in Yorkshire (Aldhouse-Green 2001:104) just north of the study region, as well as deposits from Danebury (see above) and other Wessex sites.

Skulls found with the mandibles still in place suggest different post-mortem treatment – they were deposited as 'heads' while still fleshed (fresh or preserved) or were perhaps bound to ensure the bones were not lost. D.ID 446 (Tothill Street, Kent) is the clearest example of this, as the skull (a young child aged 3.5-5) was found in a pit with the first three cervical vertebrae, which would certainly have been otherwise been lost during the decay process. Skulls with articulated mandibles were also found at Harston Mill, Cambs. (D.ID 123), Wallace Lands, Herts. (D.ID 396) and Mill Hill, Kent (1947 excavations, D.ID 440). Burial of a head away from the body is convincingly seen with headless inhumation ID 398 (The Bridles, mentioned above). Some 3.5m from her grave was a shallow pit containing the skull of an adult female, of an age consistent with the headless body (Start, 2002:14). It would be hard to argue against the treatment of ID 398 as a punishment, the fleshed head having been buried, separate but close, suggests a deliberate and conspicuous attempt to divide the individual, to deny their completeness. The head has power here, even in death; though while negative associations are overt for ID 398, this need not be universal.

Convincing arguments can be made that these skulls/heads were trophies, or warnings to those who may wish to harm the enclosed community. Classical sources referencing 'Celtic headhunting' would support such ideas (for example Polybius, Histories, 2.28.10; Diodorus Siculus, Bibliotheca Historica, 14.115.5; Livy, History of Rome, 23:34). However, reliance on classical sources is flawed within the context of Iron Age Britain (Harding, 2016:22-4), Armit (2012:21) even arguing that the 'treacherous, headhunting Celt' may have been an established literary trope. Of the many Roman authors who make mention of such practices, not one relates directly to Britain and in some instances they refer to events hundreds of years before the time of writing (*ibid*, 24). Caesar makes no mention of headhunting in his *Gallic War*, despite eight years of campaigns against the Gauls (*ibid*, 25), and even if such practices were identified on the continent, it has already been mentioned that contact appears limited for much of the period (see above).

For the skulls from boundary contexts (the displayed) to have power as warnings/trophies, they must be those of outsiders. They may therefore also be seen and interacted with differently to the disarticulated dead within settlements, with taboo associations not present in other skeletal remains. This was confirmed for fragments from Broxmouth, East Lothian, which evidenced differential dietary isotope signatures from inhumed individuals at the same site (Armit, 2017:167). The inhumed (insiders) cemetery group were much more homogenous, while the disarticulated (outsiders) were varied, with no consistent dietary signal (*ibid*, 167.) Without further extensive isotope/DNA analysis though, the evidence for headhunting practices is ambiguous; the majority of the dead appear wholly integrated into the communities, through settlement burial, through disarticulation practices, and through the curation of human remains.

9.9.3. Bone or flesh

The skulls/fragments not intended for overt display – the amulets, the polished pieces, the bowls, the unaltered fragments - suggest a much more complex view of these dead than as trophies or warnings. They are curated, used, and transformed; they are embedded in the lives of the people of the community. Through their transformation from human to object, the dead can remain active in society, the shaped and polished skull fragments serve as a way of keeping a part of the deceased beyond the time of final deposition. These attributes do not appear to fit with violence, denigration, and headhunting, but with care and attachment to the dead. Boylston et al. (2000:249) point out that in the Mabinogion, the legend of Bran includes a passage where his head is cut off and carried by his followers, continuing to talk and be an active player in the group; Boylston et al. suggest this is evidence of veneration of the head, or the person, not trophy hunting. There are still issues with using sources like the Mabinogion as any kind of direct connection to the Iron Age, just as there are with classical authors. Webley (2007:64-5), when looking at human bone from the south-east Midlands, noted that the wide demographic profile of the disarticulated bone found has little in common with ideas of defeated warriors or headhunting practices – as this research has shown too, adults and children, men and women, all are represented in fragmented forms. The qualities of the bone itself too may have held special significance. Perhaps it is the transformative nature of decay that made the skulls so powerful – changing the 'head' from a recognisable individual, imbued with shared experiences and memories, to a uniform artefact, a blank canvas for further modification (section 2.10). The human face is expressive, it is emotive, whereas the blank skull loses all those unique features; post-decay, all are the same. The skull from Godwin Ridge had evidence of knife incisions indicative of cleaning/defleshing processes, meaning the object creation process was pre-determined (Evans, 2016:524), the individual to be 'transformed' selected before or shortly after death, not once they had already become a more generic defleshed entity. If this was the case elsewhere it adds another dimension to the planning around post-mortem processes, and the rules governing the selection of remains. Even among those that may have been displayed, the lack of mandibles, signs of defleshing, and perforations drilled from both sides of skull fragments make it apparent that it is the bone, not the flesh, that held power.

9.10. Summary

This research has brought to light a vast array of human remains data from an overlooked region. A visible population of hundreds of individuals has been analysed and compared, their treatment in death a reflection of the complexity of Iron Age society. While the remains here show a greater prevalence of archaeologically visible dead than previous estimations (see Section 3.2.6), is it apparent that many more are still 'invisible'. Water may hold the answers here; the associations between the dead and wetland contexts are tangible, extending outside the study region and to the deposition of artefacts as well as human remains (Treadway, 2021).

Inhumation traditions are widespread, they are structured and repeated; they show variety (barrows, graves, pits, settlements, cemeteries) but consistency; with EIA-MIA traditions being expanded upon by newer rites in the LIA, but not replaced. There is sub-regionality also, with clusters of barrow burials suggesting continental contact, and the varied adoption of cemetery traditions across the study area. Isolationism and the importance of the community are repeated themes in the treatment of the dead, both whole and fragmented. The ‘individual’ is expressed more repeatedly and convincingly in the LIA cemeteries than in any other treatment, with disarticulated and partial remains evidencing a ‘subversion of personal identity into the community’ (Sharples, 2010:289-90). Disarticulation practices may have been complex, protracted rites, involving decay in a covered environment and the selected retrieval of pre-chosen elements. These practices are visible in some of the partial skeletons, and the prevalence for bones of the skull and limbs among the disarticulated remains. Sub-aerial exposure as a means of excarnation has only very restricted support here but does hint at dedicated regional sites for the treatment of the dead. The skull held value foremost amongst human remains; this is a consistent pattern here, elsewhere in Britain and on the continent, whether the remains were those of the dead from within the community, or outside.

10. Conclusion

10.1. Introduction

This research had two main aims – to make the overall mortuary record for this part of the country clearer and more accessible, and to bring to light forgotten and outdated assemblages through the integrated, holistic methodologies employed here. As well as advancing knowledge and furthering debates of process and meaning surrounding the dead, this research and the resultant thesis had to be useful, both in its findings and its capacity as a resource. The interpretations here do not represent a paradigm shift in the understanding of Iron Age dead, but they further the discourse and expand it geographically. The study region was under-researched and overlooked in favour of larger assemblages from Southern Britain; this research will help to balance the research bias, and where the data here differs from elsewhere, then our understanding of Iron Age post-mortem processes becomes more nuanced, more regionally representative. Where the data here coalesces with findings from other regions then it lends support to existing interpretations.

10.2. Findings and contribution

In achieving the wider aims, more focused objectives were set for this research, and each has been met in turn through the preceding chapters.

Identifying regional traditions in inhumation practice was the first objective. It would be wrong to suggest a single ‘normative’ rite for the Iron Age, as doing so forces an unnecessary dichotomy upon the period that has no place within the evidence. There are patterns and consistencies throughout the region and the period, but no one rite is universal. Crouched, broadly N-S aligned settlement burial, most often in pits, is extensive across the region in the EIA and MIA. It has its roots in the LBA and continues into the LIA alongside newer burial types. Such findings are not novel, settlement burial is well established for the period, but little focus has been paid on the region and there are consistencies in position and orientation here that show there is nothing ‘casual’ about this mode of deposition. A major shift came with the LIA-Conquest period, extended inhumation cemeteries emerging across the region, but with sub-regional variability; Hertfordshire produced large numbers of V.LIA cemetery burials, as did Kent, but Cambridgeshire was much less changed from the preceding periods; settlement burial was not replaced by cemetery burial but existed alongside it.

Minor regional patterns include the association between females and 'domestic waste' deposits, between children and horses, a growing number of individuals buried beneath or atop stone layers, and the regionally distinct barrow traditions that appear to have links to continental La Tène burials; in each instance further expanded study would be greatly beneficial in assessing the significance of these patterns.

Identifying disarticulation practices and furthering the debate over excarnation through the study of disarticulated and partial human remains formed the second major objective. Chapter 8 presented the results of a dataset containing more disarticulated bone deposits than for any previous study of the region, a viable resource for approaching the research objective, and a comparative source for existing studies in other regions. Macroscopic taphonomy on the bone surface of these disarticulated remains supported earlier findings by Madgwick (2008) and Booth and Madgwick (2016) in suggesting that largely, excarnation in the form of subaerial exposure was not supported here. Where markers indicative of exposure occurred they were geographically and temporally restricted to a handful of sites, suggesting dedicated locations for the decay, or deposition of human skeletal material. The evidence from the bones gave a much greater indication of the human manipulation and transformation of these remains than any natural decay processes. The evidence against exposure contradicts arguments by Hinman (2004), Harding (2016:29-30, 272-4) and Ellison and Drewett (1971:183) of four-posters as exposure platforms, in favour of interpretations by Evans et al. (2016a), Sharples (2014), Booth and Madgwick (2016) and others, that these remains were much more likely to have been buried or covered during decay. Section 9.7 of the discussion outlined three main contexts for this to have occurred – primary pit burial, covered but unburied pit placement, and midden deposition. The taphonomic findings cannot narrow down these choices further, and the idea of one universal constant method of controlling decay seems unlikely. Evans et al.'s (2016) middening arguments have support in Cambridgeshire pit settlements, where the majority of the material was found, but less so elsewhere. Element selection is abundantly clear in this material, as it has been for other studies elsewhere. To successfully facilitate element selection, it is argued here that access to the remains during decomposition would have been greatly beneficial, if not essential. Deposition in a pit, covered but not buried, would allow for easy retrieval of selected elements during and after decomposition, as well as preventing animal access and the effects of weather. Some of the incomplete articulated individuals in Chapter 7 can be seen as the result of these processes, the selective removal of 'important' elements after deposition and decay. They are anomalies though, argued here as the mid-stage of a longer sequence that was, for whatever reason, not completed. For the majority, this process ended with the dispersal of the whole skeleton, leading to the 'invisible dead' of the Iron Age.

It is apparent that a sizeable portion of the Iron Age population is archaeologically missing. How much is impossible to quantify, but previous assessments of only 6% being identified seem much too low (Wait, 1985:90; Section 3.2.6). The extensive use of grey literature, HERs and published material here has shown that there is a great deal more data available for the Iron Age than it may first seem, much as Davis (2018) has done for Wales. However, even factoring this in, in addition to widespread cremations in the LIA, the remains lost to soil conditions and truncation, and those undiscovered due to variable excavation histories, there is still a sizeable portion unaccounted for. Section 9.8.2 in the discussion, as well as data from Chapters 7-8 here argue that deposition in water is the most likely final treatment for disarticulated remains, though dispersal among fields (via middens) is certainly probable for parts of the region.

The data in Chapters 4-8 allowed for the identification of traditions that undoubtedly extend outside the region, especially with pit burial. There appear to have been rules governing the treatment of the dead beyond those that are visible archaeologically; social circumstances of a person's life or death that factored into their post-mortem treatment. Those placed within settlements have previously been seen as the 'atypical', the punished, the 'dangerous dead'; their burial invoking either a kind of magical protection or restoring social imbalance. As stated though, signs of violence are minimal, and instances of 'disrespectful' treatment (like binding) can have alternative explanations. Curation of the dead, whole and fragmented, the polishing and objectification of skulls, and the inclusion of the dead within the domestic sphere speak more to the power of the dead for benevolent ends than malevolent. The settlement burials are not sacrifices to appease social injustice, they bolster social cohesion through integration within the observable world – they become part of the settlement, strengthening it through their presence. The fragmented dead appear in many cases to be similarly amuletic - worked bone tools are not as efficient as animal equivalents, and yet they were created; the selection, curation, and transformation of skulls into bowls or suspended objects, polished and handled and interacted with shows a connection to these remains beyond denigration of the dead. These individuals were made object, but their very nature gave them importance, potency.

It would seem that if Iron Age Britons had afterlife beliefs as we understand them, then the physical form was unimportant in death. Through disarticulation (and cremation) the body loses the physical characteristics that form personal identity, the corporeal structure. If people are fragmented after death then the 'soul' must be freed before, or by the process; and yet the treatment here shows the bones are not valueless, they are still imbued with meaning. Conversely, if this is how afterlife beliefs functioned then complete individuals are arguably ‘trapped’ in death by their physical form – this providing their potency in the social sphere; however this is a dichotomy enforced upon the period that may not apply, and if it does then it need not be negative. Perhaps there was even a time limit on ‘trapping’ the dead; it is abundantly clear that Iron Age people had a thorough understanding of the decay process, so if the ‘soul’ was trapped in a physical body in settlement inhumation, it may be that this only lasted as long as the body was thought to be decaying. Armit (2006:11) has previously suggested that the curation of disarticulated bones could have acted to hinder spiritual transition by the appropriation of the body part; this too is made more complex by the extensive disarticulation evidence. It may be that the final dispersal or deposition of any fragments was needed for spiritual closure. Alternately still, the individual may become dividual in death; not bound by a single physicality (the body), they may have been present as skeletal remains, embedded in the landscape, part of the community and more, simultaneously (Smith, 2012).

In addition to the interpretive contribution this thesis makes, it serves as a resource for further development and utilisation by future researchers. The creation of this thesis required an extensive amount of resourcing and research, collaboration with commercial units, museums and local authorities, and chasing ‘forgotten’ material. The heritage sector is suffering under austerity measures and has been for some time. Access to data and material is getting harder; archives are overstretched and understaffed, with some having to charge access fees far beyond the means of most students and researchers. The weight of new discoveries to be archived and uploaded to HERs far outstrips the funding and capacity to do it. This was my experience, and by collating this data into a series of accessible datasheets it is hoped that others will be saved a great deal of investigation.

10.3. Limitations

The results of this research are limited primarily by the nature of archaeological material. Working with secondary material means encountering missing information, incompatible data, outdated sources and conclusions. It was hoped that the methodologies employed here would allow all analysed material to be statistically comparable, but that was not always the case, and there were circumstances where original findings had to be ignored, or more often trusted.

In collecting data, all accessible sources were exhausted in creating as complete a picture as possible of the available material. However, it would be unsurprising if sites have been missed, especially those under excavation while the thesis was being written. Commercial units were approached for detail of ongoing and past projects, but not all responded. The Norwich Castle Museum was undergoing extensive renovations during the course of this research, and the material at Cambridge Archaeology and Anthropology Museum was being relocated, so no access to their collections and archives was possible. Due largely to funding issues in the sector, some storage locations did not have facilities that allowed for skeletons to be fully laid out for analysis in lab conditions; fortunately this only affected a small portion of primary analysed material.

The use of Microsoft Excel to create datasheets versus dedicated database software is certainly a limitation; it meant that the data had to be restructured often to compare variables, and all statistical calculations were conducted manually, as were all data checks. A significant portion of time was spent editing and re-organising data due to the software used. However, Excel was chosen as I am far more familiar with it than packages like R, and it is more accessible to most people. The data as it sits can be utilised by more future researchers as a series of basic Excel tables than by using better, more dedicated software. The related coding system and ID numbers for burials were an unfortunate necessity – Excel data of this scale is much easier to quantify with a categorised coding system, and though this one aimed to be organic in its categories, the data does not always fit into neat boxes, and there is a danger of miscategorising or creating categories for the ‘wrong’ type of data. The ID system is unfortunately clunky, not the most accessible way to read the burials, but it does serve a purpose.

10.4. Further research directions

A study like this is somewhat outdated by the time it is written as so many new discoveries are being made – sites like Fordham Bypass and Linton (Mortimer and Connor; Clarke and Gilmour, both forthcoming) that were discovered too late to be included in the data. It is hoped that the datasheets can be made available online and updated periodically for future projects and other researchers to utilise. Arguably the greatest benefit of this research is that it should save other people a lot of time in identifying material relevant to their own aims, much as Whimster (1981) has done for the last 40 years.

If the project were expanded, it would be of great value to introduce more data about population health and diet. Carbon and nitrogen isotope data from sites in this region, coupled with site animal bone assemblages could provide valuable comparative material to previously published studies, especially regarding the utilisation of aquatic resources (see 9.17.2). An expanded program of primary analysis would allow for greater depth in recording dental and skeletal pathologies also, allowing for true prevalence rate analysis and a greater understanding of overall nutrition, health and lifestyles.

Further study into population movement from outside Britain could have a dramatic impact on the perceived isolationism of the period, and patterns may be visible in the post-mortem treatment of these individuals. There are a growing number of individuals in the region that have been subject to oxygen and strontium isotope analysis, and signatures from Cliffs End and EKA2 Z12 suggest non-local, continental origins. DNA analysis of both articulated and disarticulated remains would be useful in identifying family groups in the later cemeteries and among the disarticulated material. Isotopic and DNA analysis of human remains from different areas or contexts within the same sites could shed more light on the idea of insiders vs outsiders (Armit, 2017:Fig.14.6) within the archaeological record. This in turn would lend support for, or dispute headhunting theories.

A more detailed study of site placements in relation to water sources would allow for richer analysis of the disposal of disarticulated material, and identification of intervisibility networks therein could also be beneficial, as sites may have shared depositional locations (e.g. Godwin Ridge).

Further discussion into the differential treatment between human and animal remains (Madgwick, 2008) would be possible by the more widespread use of a zonation method to record disarticulated human remains (e.g. Knüsel and Outram, 2004). This would make it possible to see, for example, if the cranial bones present have any animal bone parallels suggestive of taphonomic factors rather than deliberate selection. The use of the zonation method also addresses equifinality in the assemblages with regard to bone survival/taphonomy. This was not possible for the current study as the material under discussion was not all re-analysed by the author, and the zonation method is seldom utilised for human remains in existing literature (though this is changing, for example Neil, 2019:55). Similarly, estimation of fracture freshness and the presence of ancient fractures was almost never recorded in secondary literature, so could not be fully recorded here. An expanded re-analysis of bone fracturing alongside the zonation method would allow for greater understanding of bone manipulation and pre-depositional processes.

The extent to which the dead were curated, both for the articulated and disarticulated deposits, should be a key focus for future research. More extensive C14 dating would be immensely valuable in this respect, as would microscopic histological analysis of the bones. Though destructive, this would add a further dimension in understanding the decay and curation processes and is already being undertaken in similar projects in other regions (Bricking, forthcoming).

Davis' (2018) analysis of burials in Wales, Bricking's (forthcoming) work in the southwest, Lamb's (2018) thesis for the south-east and Europe, and this project together form a massive corpus of quantitative data, and future projects in other regions further north could build on these and ensure that all parts of Britain are equally well covered and better understood. Consistently the area around Cambridge produced the most data, but it sits on the western edge of the study region; expansion of the research into neighbouring Buckinghamshire, Northamptonshire and Oxfordshire would test the spread of this data richness in the region, provide comparative material and form a research bridge between the east and Wessex.

10.5. Final Summary

This research has provided an opportunity to examine the treatment of the dead over a span of almost a thousand years, and throughout a part of Britain that is often overlooked in discussions of the period. The large-scale approach has allowed for chronological and regional trends to become more apparent; the treatment of the dead here was not uniform but myriad, with evidence of continental influence, local traditions and participation in wider national changes. The dead in the Iron Age were complex; their meaning and role shifting between individual, group and region. They were sometimes vessels for the maintenance of social order, sometimes transformed into simultaneously personal and anonymous objects; the dead had power here, they could be active in society and their effect on the living is tangible. Through examination of the human remains and the ways in which they were treated, this research has reinforced some existing debates, challenged others, and provided an insight into the lives, beliefs, and deaths of Iron Age people.

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APPENDICES

12. Appendix 1 – Raw datasheets for all data

This appendix would be presented on a disk if the thesis were in print format. As the thesis is being submitted digitally, the Excel files have been submitted alongside this document and should be given to you to assess.

13. Appendix 2 - Data summary for bone groups and bundles

Cambridgeshire

At Clay Farm, pit 10832 contained partially articulated human remains alongside animal bones including part of a cattle cranium (Phillips and Mortimer, 2012:32). Shaft fragments and small splinters of human femur, tibia, fibula and a humerus were recovered, as well as possible pelvis fragments (Loe, 2012:174). All the bone was badly eroded and fragmentary, so sexing and ageing was not possible (*ibid, 174*). The remains were provisionally dated to the MIA due to the proximity of pit 10832 to MIA features (Phillips and Mortimer, 2012:32).

At Harston Mill, two adjacent storage pits (F2601 and 2603) both contained human remains. In one fill of F.2601 was a large quantity of MIA pottery, animal bones including articulated cattle bones, and both arms and the left leg of a child, plus some ribs, in an unknown position (SK2602)(O'Brien, 2016:39; Table 3.8). The child was around 10 years old at death (*ibid*, 39). Pit F.2603 only contained a single bone, but it was another rib, also from a *c.*10-year-old child – it was assumed by the excavators to originate from the same individual, as the rib is not a duplicate element (*ibid*, 39). However, as the pits were adjacent, not intercutting, the rib has been given a disarticulated bone ID and is considered further there (D.ID 124). The cattle bones included articulated vertebrae and ribs, plus a pelvis and femur (*ibid*, 71).

MIA Pit F3056 from Harston Mill has been mentioned already (Chapter 5), as it contained ID 104 (originally SK3058), the child inhumation, plus other deposits including 716 sheep/goat bones. Also in this pit was SK3057b, the largely complete but partially articulated remains of an infant *c*.9 months old (± 3 months), in an unknown position (*ibid*, 30; Table 3.8). SK3057b is represented by elements of the skull, ribs, vertebrae, hands, both legs and feet, but no arm bones were recorded (*ibid*, Table 3.26). The animal bones in this pit represent a careful and deliberate series of deposits. There are patterns in their alignments (vertebral column often NE-SW), and many animals are represented by skulls, vertebral columns and rib cages (at least 10), some with limb bones also (*ibid*, 32,37). Butchery evidence was very minimal, only 6 of 716 bones exhibited cut marks (*ibid*, 37). It is likely that the human remains in this pit form part of the same deliberate depositional process.

Pit F3052 contained MIA adult inhumation ID 103 in an upper fill. Lower down in the same pit were 3kg of EIA pottery, struck flint, daub, 3kg of animal bone including bird bones, and human remains (*ibid*, 38). In this case, the remains were the articulated left femur and tibia of an infant (SK3053), once again in an unknown position (*ibid*, 38; Table 3.8). ID 103 (originally recorded as SK3097) was C14 dated and found to be older than the material in the fills below. A sheep bone in the fill containing the infant remains produced a date of 400-210 cal BC (2 sigma, Beta-243504,2270±40BP), while ID 65 dates to 750-400 cal BC (2 sigma, Beta-243506, 2410±40BP) (*ibid*, 38). This, and the tightly flexed nature of ID 65, suggests that it may be a curated body bundle (*ibid*, 209). The same may be true of the infant leg bones, and perhaps others from the site, including inhumation ID 109, which was complete except for the skull, shoulder girdle and some small foot bones (O'Brien, 2016:38). It is highly likely this individual is a body bundle, but they are included in the inhumations section as they are largely complete and articulated, and the missing elements may also be the result of truncation (*ibid*, 38). Likewise ID 102 from Harston Mill had disarticulated elements, and the lower legs, hands and feet were missing, but they appear to have been disturbed post-depositionally (*ibid*, 37).

MIA Pit F2706 contained a child's frontal in an upper fill (D.ID 44). Lower down in the pit were an incomplete but articulating foetus (34.41-39 weeks gestation), as well as over 1kg of pottery, animal remains, burnt flint, daub and fired clay, plus a bead made from jet or shale, and a worked bone polishing tool (*ibid*, 23; 41; 70). The remains included skull fragments and a humerus, but are described as having articulating elements (*ibid*, 70). The animal bones included articulating elements from foetal/neonatal pigs and ovicaprids, plus a complete dog (*ibid*, 41).

MIA Pit F5885 contained four disarticulated bones (D.IDs 286-90), three of which may be from the same adult. As well as these, within the pit were MIA pottery, charcoal, daub, worked flint, a large quantity of animal bone (some burnt), and articulated human remains from a third individual, a *c.*6-month-old infant (SK5886a) (*ibid*, 41). The infant is largely complete, with no recorded hand or foot bones (*ibid*, Table 3.26).

More new-born remains were found at Duxford, again in a storage pit, this time LIA. One of three pits in a line (pit group 8 – Pit 3903), it contained a partial perinate, while another had large quantities of animal bone and pottery, interpreted as feasting waste (Lyons, 2011:30). No more detail is recorded regarding the position or completeness of the remains.

At Stonea Camp, as well as the adult inhumation (ID 128 – originally sk4) and the child with perimortem blade trauma (127 – originally sk1), parts of two others were recovered from the boundary ditch (Fig. 6.7). One adult (sk2) was represented by parts of the left radius and ulna, hand bones and three ribs (Duhig, 1992:ii). The other, an infant aged 2-3 (sk3) was represented by the right radius and ulna, plus the left radius, a hand bone (unspecified) and part of one clavicle (*ibid*, ii). The remains were dated to 186-55 cal BC (2070±65BP OxA 3260).

The Godwin Ridge site contained large quantities of disarticulated human bone, but three groupings of bone each have a MNI of one, and so are included here as they could be the result of bone bundle deposition, or represent a mid-stage of a disarticulation process, owing to the complex bone-related practices at the site. TP101,TP32,J,XY,TP102 is a collection of bones all consistent with a single adult male - mandible fragments, C7, 11 thoracic and one lumbar vertebra, seven ribs, both scapulae, the left radius and ulna, four hand bones, a sacrum fragment, right tibia, both fibulae, and the right calcaneus and talus. The skull and larger long bones are notably absent. Cut marks on the right scapula and a rib are consistent with a perimortem blade injury to the back, and there is canid gnawing on one tibia (Dodwell, 2016:520). These bones were recovered from the ground surface, so the gnawing is unsurprising.

[2195] was also recovered from the Iron Age ground surface, and is represented by the right temporal, mandible, scapula fragments, the right humerus, radius and clavicle, nine hand bones, left tibia and one fifth metatarsal (*ibid*, 521). All the bones are consistent with a young adult (25-35) ?male. There is evidence of weathering on the long bones, their epiphyses lost – this again is consistent with their placement on the ground surface. The third deposit, F.436 appears to be an articulated left foot – left calcaneus, navicular, cuneiforms, five metatarsals and five phalanges. It was found in a hollow, close to [2195] and could reasonably be from the same individual, but this cannot be proven without DNA testing.

Another collection of 'loose' elements was found at Colne Fen, within pit F.1045. No articulation evidence was recorded, but the remains comprise 137 fragments of right humerus, radius and ulna, metacarpals, the pelvis, ribs and thoracic vertebrae. All are consistent with an adult ??female (Evans, 2013a:223). While this may be a poorly surviving and/or disturbed inhumation, the deposition of a bundle of curated/disarticulated remains seems more plausible.

Two deposits came from the Marshall 'Wing' site at Greenhouse farm – the first, F.500 was another articulated foot like Godwin Ridge. This time four right tarsals and five metatarsals were recovered from the fill of a pit. Within a second pit (F.254) were the articulated left arm bones of an adult ??female, including the scapula, plus a single rib and parietal fragment. This appears to have been part of a larger deposit also including 1kg of pottery and over 7kg of animal bones (Tabor, 2019:17).

Yet another possible articulated foot was recovered from the ditch of a sub-rectangular structure at Wardy Hill. Metatarsals 1-4 and the 1st proximal phalange of an adult were found in this instance, but the ditch (F.25/6) contained other disarticulated elements also, a right calcaneus and talus (D.ID 279), a right rib fragment (ID 278) and left parietal fragments (ID 280), all adult but not found together, so not considered a 'bone bundle' or curated single deposit. All the loose human bone from Wardy Hill does have an MNI of one though and was found in a small section of the site.

The 'War Ditches', Cherry Hinton, contained multiple human bone deposits that could be considered as ABGs or bone bundles. However, the many excavations of the site over the last *c.*150 years and the complex site history (Pickstone and Mortimer, 2012:31-4), makes confirming articulated assemblages very difficult. Excavations by Lethbridge in the 1940s uncovered a 'charred trunk', with the head and limbs 'charred off' (Lethbridge, 1949:120). The sacrum, lumbar vertebrae and some possible ribs appear identifiable in Fig 13.1, as well as what may be part of the right arm, but no more detail was recorded. It has been posited that those buried in the ditch here were thrown on top of a still-hot burning layer (*ibid*, 120; Pickstone and Mortimer, 2012:55; White, 1964:18). This could explain patchy or differential charring on human skeletal remains, but it would be unlikely for the ashes/fire to reach a temperature that would completely cremate away the limbs and head, especially while leaving the spine intact. It is more likely, therefore, that this individual was partially decayed or had elements removed prior to deposition, and that the 'charred' bones were all that was deposited.

Pit 19 at Wandlebury contained the remains of a 25–35-year-old female, dated MIA-LIA (Longton, 1957:27). According to Hartley (1957:15) both femora were 'snapped off' perimortem, at the proximal shaft, as well as the pelvis having been crushed by a large block of chalk, and many other bones fractured. The cranium and mandible were separate upon excavation, and other bones scattered but the ribs and vertebrae in articulation (*ibid*, 15; Figs 13.2-3).

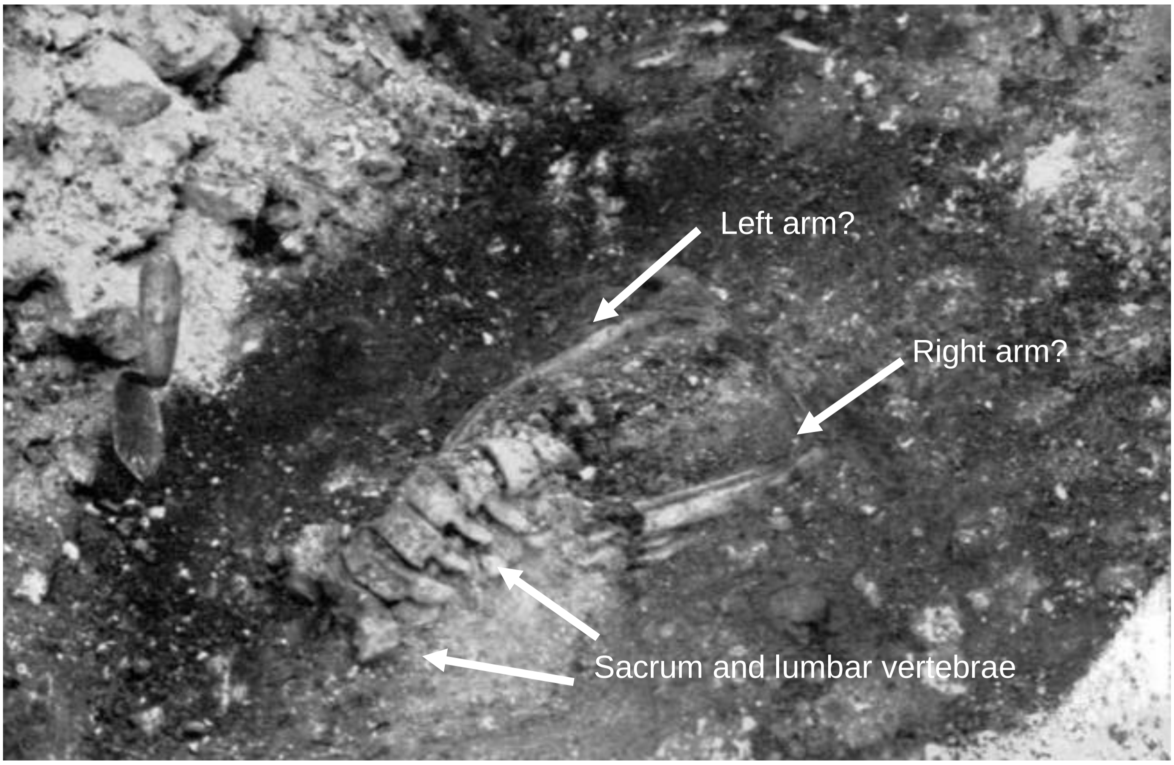


Figure 13.1: Skeleton No. 6 - the 'charred trunk' from T.C. Lethbridge's excavations at 'War Ditches', Cherry Hinton, Cambridgeshire. Source: Lethbridge, 1949:Plate XI(b).

Figures 13.2-3: Mid-ex and largely excavated photos of the skeleton from Pit 19 at Wandlebury, Cambridgeshire, showing the block over the pelvis, the disarticulated skull and disturbed axial bones. Duckworth Laboratory unpublished photos.

By far the most frequent deposits of articulated bone and bone bundles came from Trumpington. Eight deposits have been identified, seven from the Park and Ride site, and one from Trumpington Meadows. The latter deposit is part of a single hand – two carpals, two metacarpals and two distal phalanges, all from an adult, placed in pit F.335.

One of the Park and Ride deposits may represent a poorly surviving neonate inhumation – [1182] was a post-hole/small pit containing the right femur, tibia and fibula, all seemingly consistent in age. The same may be true of disarticulated bone D.IDs 240-243 from the same site [2549] - a pit containing cranial fragments, a rib, fibula and left femur of another neonate (Billington, pers.comm).

Two other deposits are clearly arranged groups of disarticulated bones from a single individual. Pit [980] contained the mandible, right scapula and clavicle, 14 vertebrae, sacrum, pelvis, right arm left ulna, right leg and left femur, plus one metatarsal of a middle – older adult male. Animal gnawing was identified on four bones, with punctures on three also. The bones were placed in stages, with the mandible and some other bones placed in first, before being 'trampled or pushed deeper', and then covered by the pelvis, leg bones and remaining material, including a horse skull (Hinman, 2004:26). One arm was articulated when deposited, more bones may also have been, but it is unclear. Pit [996] contained a bone bundle, whereby the long bones (right radius and ulna, left ulna, both legs (no patellae)) were paired and propped onto a quern fragment. At one end of this bundle was placed the skull, and at the other end the mandible. The pelvis, sacrum, both calcanea and tali, six ribs, the C1-2 and all lumbar vertebrae were also present, as well as animal bone and a circle of stones. Again here canid tooth punctures were present on both femora and the left calcaneus.

Another possibly arranged deposit was identified in pit [5125]. There is some confusion over these remains, as the excavator (Hinman, 2004:29) records that an adult male skull and a subadult mandible were found, but the osteologist for the site (Duhig, 2004:52) records that the occipital, parietals, left scapula, two vertebrae, three ribs, ulnae, four metatarsals and one metacarpal of a child were placed with an adult ??female mandible (D.ID 258). An iron dagger fragment and cow phalanx were also associated. In this instance the osteologist's report has been taken as the most accurate assessment of the remains.

Pit [999] contained another collection of disarticulated bones, this time both femora, the right tibia and fibula, five ribs, one lumbar vertebra and a right scapula fragment, all consistent with an adult individual. Several of these bones survived as shafts only, and ancient fractures were present, but it is unknown if they were fresh or dry bone breaks (Billington, pers.comm).

The adult placed in pit [2308] (Fig.7.5) was in a much more complete state of articulation, and comprised the right half of the torso, plus the head, positioned prone against the edge of the shallow pit. The articulated left arm of presumably the same individual was located above the rest, in the second of two fills (Hinman, 2004:29). The fact that the arm was still articulated suggests this was not a case of redeposition, but the excavation photo shows the top of the skull has been truncated and the remains are very close to the surface. It is possible that more of the skeleton was present, but has been disturbed, especially as they were deposited articulated (and somewhat fleshed probably), but there were no recorded cut marks on the areas where parts would have been removed.

Bedfordshire

The Fairfield Park excavations uncovered three articulated bone deposits, all dated to the EIA. Pit 5110 (another storage pit) contained articulated neonatal human bone in the second of four fills. All four contained pottery, animal bone, charcoal and fired clay, and fills one and three also contained articulated ovicaprid bones (Webley et al., 2007:36). The left ulna, radius, ilium, femur, tibia and fibula were all present and complete, but there was no evidence of other bones (Witkin, 2007:100, Table 4.2).

Storage pit 3011 contained five fills, three of which were dumps of artefact-rich material, the second one including the leg bones of an older child (Webley et al., 2007:36). The proximal 2/3 of the left femur, left tibia and fibula shafts were present, plus a single metatarsal shaft and the 1st sacral vertebra (Witkin, 2007:Table 4.2).

Pit 2143 is described as containing a partial neonate (Webley et al, 2007:50). Again only the left sided elements are present – the humerus, radius, femur and the proximal end of the tibia (Witkin, 2007:Table 4.2).

At farmstead 5 from Biddenham Loop, a LIA boundary ditch (deposit G384) contained a partial foetus, small amounts of pottery including two fragments of a lid-seated shell-tempered jar, plus animal bone (Luke, 2008:55). The position and completeness of the foetus is not recorded.

Norfolk

Two examples were identified from Norfolk, both from Ford Place. The first consisted of the articulated C1-7 cervical vertebrae of an adult. It was found in the same ditch fill as disarticulated bone D.ID 523, an adult mandible, and the same ditch (but in a lower fill) as disarticulated bone D.ID 524, an adult occipital fragment (NAU, 2009:10). The cervical vertebrae and mandible likely represent one depositional event, but they were certainly not articulated, and it is not recorded that they were deposited directly together. The neck vertebrae were placed within 'a very shallow scoop' in the natural chalk and sealed by a layer of stones (*ibid*, 10), but the mandible was not apparently with them. The occipital too could be part of the same process, and the overall MNI for these bones is one, but it came from a stratigraphically later fill, above the stone layer covering the vertebrae. For these reasons the mandible and occipital are considered with the other disarticulated remains.

At the base of pit 84 at Ford place was a deposit of multiple bones all consistent with a young adult (25-30). A right parietal fragment, a mandibular body with five teeth present, two lumbar vertebrae fragments, parts of four ribs and the right humerus were contained within the deposit (McKinley, 1992:27). The position of the remains is unrecorded, but none of these bones articulate. It is certainly possible that this represents a poorly preserved inhumation, owing to the overall bone survival in this part of the study region, but it may also be a bone bundle/curated deposit, like the vertebrae above.

Suffolk

The first of three examples from Suffolk came from within a double-ditched trapezoidal enclosure at Barnham. Shallow pit F.0065 contained an articulated human leg and foot in the highest of two fills (Martin, 1993:8). A left leg, it was on its left side and in a crouched position, aligned in such a way that if the rest of the skeleton were present, they would be broadly N-S (*ibid*, 10-12, Fig.13.4). It was thus interpreted as a possibly truncated inhumation. The pit was clay-lined, with small amounts of IA pottery and charcoal, some of which was dated to 100 cal BC (± 80 cal BC (HAR-2902)). The femur, patella, tibia, fibula and foot were all present, and a stature estimation from the tibia, based on Trotter and Gleser (1952), came to 178.4 cm (Denston, 1993:16).

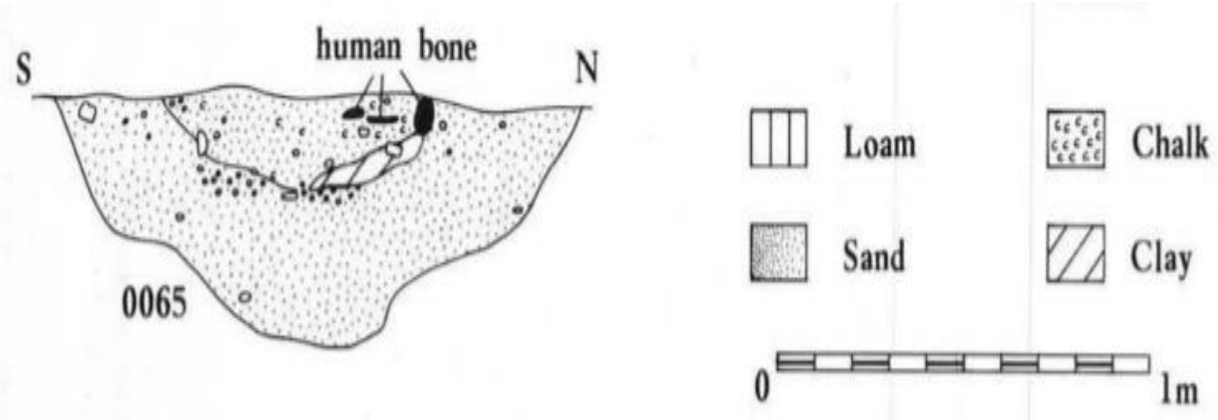


Figure 13.4: Section through the pit containing the human leg bones at Barnham, showing how close to the surface the remains were. Source: Martin, 1999:Fig.7. Scale 1:20.

The latter two Suffolk deposits were both from Recreation Way, Mildenhall. Both were 'partially articulated' skeletons placed in graves cut into the fills of a ditch. Truncation of the burials is not recorded in either instance, and the bone preservation is described as 'exceptionally good', both of these limiting the possibility that these deposits are poorly preserved complete inhumations. MIA pottery and animal bone was found in the backfill of one (SK21386), the other seemingly unaccompanied but could be assigned a broad adult age (SK21921).

Kent

Three concentrations of human bone from the extensive and complex mortuary feature 2018 at Cliffs End Farm (Kent), are interpreted by the excavators as dispersed, semi-articulated individuals. EIA group 202807, an adult male (18-45), is represented by both patellae (they feature the same morphological variation), and skull, axial, upper and lower limb fragments (McKinley, 2014a:Table 4.3). Elements from the right foot are present, and the inclusion of the patellae also could suggest some level of articulation remaining when originally deposited, as these small bones are often lost. EIA group 203003/7, an adult female, is represented by 'at least 11%' of the total skeleton, with skull, axial and limb elements represented, including teeth and a single finger phalanx (*ibid*, Table 4.3). MIA group 243204 is more complete, an adolescent female represented by 'over 29%' of the total skeleton, again with skull, axial and limb elements, as well as teeth present (*ibid*, Table 4.3). A fourth grouping, 3614, is listed as a possible semi-articulation, but it may also be several bones from more than one individual, and only 2% of a total skeleton is recorded as present (*ibid*, Table 4.3). It is therefore not discussed further here. These completeness quantifications are from the original author and specific elements were not recorded unless mentioned above.

In Zone 6 of EKA2 (MIA-LIA), well 263052 contained a partial human skeleton, in the upper fill. Burial 263050 was 'mostly disarticulated' and around 28% present, but could be identified as a probable female, age 40-55 (Andrews et al, 2015:132). Canid gnawing was present on the pelvis, perhaps suggesting that the remains were redeposited here.

Burial 292076 (also Zone 6), an adult male (30-40 years old), was recovered from the base of pit 292075 (*ibid*, 133). The skeleton was tightly crouched, on the right side, and had been subject to post-mortem disarticulation (*ibid*, 133). The skull and C1-3 were missing, as were the right humerus and left lower leg – the limbs at least may have been removed after deposition in the pit (*ibid*, 133; McKinley and Egging Dinwiddy, 2015:pl13.11). The sacrum was rotated at least 90 degrees distally, and the lumbar vertebrae may have been moved also, though this was not recorded during excavation (McKinley and Egging Dinwiddy, 2015:362). Two horn cores were found in the same fill, with MIA-LIA pottery in the upper fill (Andrews et al., 2015, 133). Like 263050, canid gnawing was present, this time on lower limbs and the axial skeleton (McKinley and Egging Dinwiddy, 2015:360). There was one perimortem sharp force cut to the L1 vertebra, which severed the spinal and inferior articular processes (*ibid*, 360-1; pl 13.13). McKinley and Egging Dinwiddy (2015:360-1) describe the cut as a 'precision operation' as neither the T12 or L2 appear damaged, and it is possible it occurred post-mortem, while the bone was still green, up to 14 days after death. As well as this, the individual had suffered several healed antemortem fractures. A compression fracture of the T12 and four anterior rib fractures (two left, two right) may be from falls, though the latter could also be from a direct blow to the abdomen (*ibid*, 362-3; Adams, 1987:100-3). They also suffered a transverse fracture to the distal end of the left tibia, which healed with 'slight dorsal displacement….and damage to the interosseous ligament demonstrating severe abduction to the ankle joint' (*ibid*, 363; Adams, 1987:fig. 267). While it is possible that one event caused all these injuries, McKinley and Egging Dinwiddy believe it more likely that they occurred separately, suggesting the individual had a 'stressful' life (*ibid*, 363).

Two further individuals were found within the backfill of a large quarry pit at EKA2 Zone 13. The pit contained 30 fills within a surviving depth of only 1.2m, two of them containing groups of human remains. Sk.159119 was within a layer of chalk rubble at the sides of the pit and was represented by *c.*10% of the skeleton, the bones in a poor state of survival but all thought to belong to a middle adult (35-45) female (EKA2:165). SK.159124 was a neonate, around 21% complete.

At HS1's White Horse Stone site, pit 8012 contained a human bone group in the primary fill. A skull, mandible, and several long bones were present, with at least one femur, one tibia and a rib visible from the site photos (Hayden, 2006:Pl. 30; 159). According to Hayden (2006:159) – 'the long bones had been positioned so as to form three sides of a trapeze within which the skull had been placed', with the mandible outside. Also within the trapeze was a flint hammerstone, and outside of it, within the pit were a slingstone, pottery sherds, animal bone, and an organic deposit which may have been a food offering (*ibid*, 159). This deposit was not included in the disarticulated bone dataset as the MNI is 1, and they appear to be a bone bundle, rather than dispersed fragmented remains. Witkin (2006) records the cranium, mandible, left tibia, fibula shaft and rib fragments in the primary fill (8016), but a left femur higher still (8020) and right tibia higher still (8029). All bones are consistent with an adult male, over 18, likely between 25 and 36 years old (Witkin, 2006: Table 3).

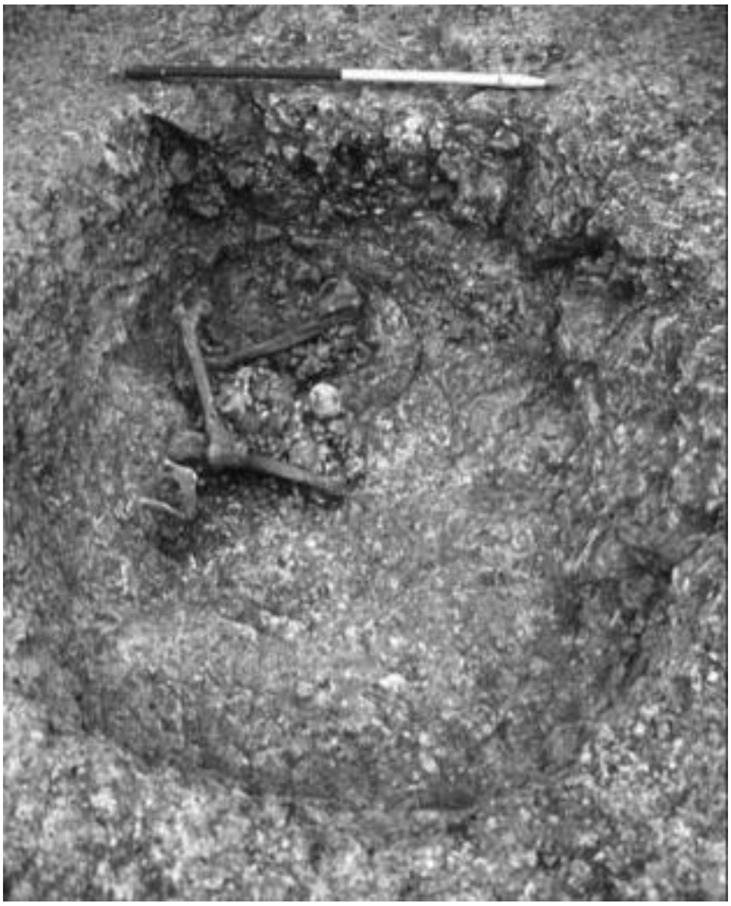


Figure 13.5: The bone assemblage from Pit 8012, with the femur and mandible at the highest level. Source: Hayden, 2006:Fig.30.

At the Little Stock Farm site, two intercutting pits both contained human remains. Pit 2037 contained the partial skeleton of a 20-30-year-old female, C14 dated to 380-170 cal BC (NZA19915: 2447±35BP)(Booth et al., 2011:237; Ritchie, 2006:9). This was cut by pit 2031, which also contained elements from the same female (*ibid*, 237). The pit also produced a single radius (D.ID 430) in the upper fill, which was C14 dated to 770-400 cal BC (NZA-19987;

2203±35 BP), considerably earlier than the stratigraphically lower female (Booth et al., 2011:237; Ritchie, 2006:9). The adult female had suffered perimortem blunt force trauma to her left disto-parietal bone, likely the cause of death (Ritchie, 2006:9).

Finally, what appears to be a pair of feet were recovered from pit [4109] at the A2 Pepperhill site. The pit was shallow, and within were the left 1st and 4th metatarsal, the right 1st and 3rd metatarsal, and the right 1st proximal phalanx (Allen et al., 2012:259). While the majority of the bones of the feet are missing, it is highly unusual to find this many in a disarticulated bone deposit. These may have been articulated when deposited, with other bones not surviving, or they could have been placed as a loose bundle of foot bones from a disarticulated individual.

Figure 13.6: The child from Pit 2184 at White Horse Stone, showing the displaced femur and cranium – the mandible still in correct anatomical position. Hayden, 2006:Pl.29 (OA Human Journey, separate file).

Unusable examples

There are other deposits that cannot be included under this, or any category, due to a lack of detail and/or ambiguity regarding the elements present, the context, or the interpretation. There are also others that have been included as inhumations, or as disarticulated bone, but may likewise actually be articulated bone deposits or bone bundles.

MIA burial 2291 (Pit 2184) from White Horse Stone has been included elsewhere in the inhumation datasheet (ID 302). It was interpreted as a seated or squatting inhumation, which, during decay, slumped, causing several elements to lose articulation (Hayden, 2006:158). The individual, a 9–11-year-old child, was largely complete, with the majority of bones still in correct anatomical position, but the skull, legs and lower left arm have displaced (*ibid*, 158-9) (Fig.13.6). The cranium is over the pelvis/lumbar spine, the right femur is placed diagonally across the body (*ibid*, 158-9). The deposit does have the appearance of a body bundle, but its completeness, and the articulation of the majority of elements, coupled with the original interpretation, places it with the inhumation data.

A neonate from Clay Farm (sk.6550, Inhumation ID 77) was described by Phillips and Mortimer (2012:27) as a partial neonate in an EIA pit, among other disarticulated human bone. However, the bones present include skull fragments, torso elements, and both upper and lower limbs, all in good condition (*ibid*, 28). It seems more likely that this neonate was inhumed complete, and small bones/bone fragments have not survived. Three partial neonates from Trumpington Meadows cannot be included here (E.ID 16-18), as they were all found during post-excavation analysis. They were not recognised as human until post-excavation, and so their articulation, completeness and position remain unknown (Evans et al., 2016a:154).

At Waterstone Park, Stone Castle (Kent), one of a series of storage pits (Pit 547, fill 544) contained two humeri and two tibiae from at least one neonate (36-7 weeks gestation) (Haslam, 2009:245). Also within this pit was a further tibia fragment from another neonate (fill 546), cereal grains, violet, charcoal and half a beaker (the latter also from 544) (*ibid*, 24). The other half of the beaker was found in another feature – the placement of split/broken pottery with neonates has parallels at other sites (e.g. Stagsden Bypass). These have been included in the disarticulated bone data (D.IDs 447-452), as more than one individual is present. The four limb bones in the lower fill, however, may once have been a more complete, poorly preserved neonate.

Excavations at Reach Road, Burwell (Cambridgeshire) uncovered bones from at least two individuals, on the edge of a water channel (Allen, 2007:5). Nineteen bones in total were recovered, some juvenile, some young adult, possibly female (*ibid*, 5). The remains were C14 dated to the LIA (2^{nd}-1^{st} century BC), and are described as partially articulated, however their placement on the edge of the paleochannel means it is possible they were deposited whole, but subject to post-depositional movement by water (*ibid*, 7). The alluvial silts are described as 'heavily disturbed', and animal trampling is also posited as an explanation for the nature of the remains (Kitch, 2007:31). The nature of the find means that they cannot be included among inhumation burials, but likewise cannot be considered among the semi-articulated remains – their context is too insecure. Fig.13.7 shows the remains mid-excavation – it is not mentioned whether the more modern pipe may have cut through further bones.

Figure 13.7: Plan of the Iron Age human remains found in/adjacent to the water channel at Reach Road, Burwell. The modern pipe/land drain may have cut through further bones. Source: Allen, 2007:Pl.7.

At Dumpton Gap (Kent), several shallow graves were recorded, each containing 'portions of skeletons' (HER TR 36 NE 14). While it is likely these are Iron Age, given the complex occupation of the area, there is no dateable evidence included. It is also unknown what is meant by 'portions' – these could be truncated or poorly preserved inhumations. The same entry likewise records two inhumations and 'a series of apparently votive burials of skulls, arms and leg bones' – this is reminiscent of pit 8012 from White Horse Stone (above), but it is also the case with disarticulated material that skull and limb bones are the most common (Chapter 8). Hurd (1909:428), describes ‘about five or six’ skulls found in shallow circular depressions, with arm and leg bones also buried separately, in more rectilinear cuts. It seems that each element had its own cut, but all were close together. A complete skeleton in a grave is also mentioned, with coffin fittings near the head and feet (*ibid*, 428). No dateable material was found with any remains, but the coffin fittings suggest the inhumation at least was not Iron Age (or possibly V.LIA). All of these descriptions appear to concern the same deposit, but their age cannot be confirmed. If they are Iron Age, these would be unlike any disarticulated bone deposits in the assemblage – multiple related single bones deposited in their own shallow cuts.

Pit F.262 from Trumpington Meadows contained parts of a single radius, clavicle, metacarpal and two ribs (Dodwell, 2016:167 – disarticulated bone IDs 187-191). They may all be from one individual and do not originate from nearby inhumations, but they are not articulating bones either, and so may be a ‘bundle’, or loose disarticulated material from one or more body.

14. Appendix 3 - Demography, health and Trauma

Introduction

This Appendix outlines the demographic data for the entire dataset, to assess whether the sample material is representative of a wider population, to support the findings in the main body of the thesis, and to provide valuable data on the Iron Age population for this and for future research. Age profiles, sex divisions and overall stature are recorded, alongside data regarding the health of the sample population. Instances of trauma, age-related pathology, disease, dietary and oral health are outlined and compared with demographic profiles. The data available consists of:

466 total inhumations[70]
529 disarticulated bone deposits[71]
47 articulated bone group deposits[72]

Totalling 1042 individuals/deposits, with varying degrees of available data.

As discussed in Chapter 8, calculating an MNI for the disarticulated material would not necessarily be more accurate than the raw data, as the processes leading to the deposition of the bones could involve deliberate dispersal in multiple features, or selection of single bones from many individuals, as well as long periods of curation. The disarticulated material also so rarely contained useful demographic data beyond the bones being 'adult sized', that they do not cause a great impact on the wider proportions. Excluding Station Road, Table 14.1 shows all instances of multiple bones consistent to one individual, recovered from the same or adjacent fills of discrete features. Each of these has an MNI of one, but could easily be from more than one individual, especially the Godwin Ridge, Cliffs' End and Harston Mill deposits. Eight of these are neonates, arguably more likely to be from slightly more complete, single individuals than the adult material, while the rest are largely 'adult', a broad and over-represented category overall due to the disarticulated material. The data in Table 14.1 has not been factored into any totals, but it is discussed in-text.

[70] This includes 41 individuals excluded from wider analysis due to lack of data (E.1-41, see Appendix 4)
[71] This includes one deposit excluded from wider analysis (leg bones from Caley Mill, Heacham, Norfolk)
[72] This includes three deposits excluded from wider analysis (Reach Road, Burwell (MNI=2), and Cliffs End bone group 3659).

ID No.s	Site	Feature	Feature type	Fragments present
30-1	Odell	'Small grave'	Grave / pit	Adult cranial fragments and teeth
39-40	Addenbrooke's Hutchinson	F.668	Pit	Neonate humerus and tibia
44-5	Babraham Research Campus	[1418] F.208	Pit	Adult left humerus fragment and rib
70-1	Fengate, Cats Water	F207/242, Layer 1	Ditch	Adult ??male femur and radius shafts. Both 'large and heavy'
79-80	Fengate, Cats Water	Structure 40	Roundhouse	Adult ??male clavicle and radius shafts. Both have 'pronounced muscle markings'
ID 86-8	Godwin Ridge	F.214	Midden	Adult radius, tibia, and femur shafts. All similarly weathered
118-9	Harston Mill	F.2160 (2161)	Hollow	Adolescent (under 15) fibula and pelvis
131-2	Harston Mill	F.3052 (2053)	Pit	Infant femur and tibia
142-3	Harston Mill	F.5290 (5291)	Pit	Adult tibia and lumbar vertebra
145-7	Harston Mill	F.5885 (sk5886c)	Pit	Adult cranial vault fragments, humerus and hand phalange
160-1	Marshall 'Wing'	F.108	Pit	Neonate femora
168-9	Marshall 'Wing'	F.303	Pit	Child clavicle and cranial vault fragments
187-91	Trumpington Meadows	F.262 (839.26 / 839.27)	Pit	Young adult / adult radius, clavicle, metacarpal, two ribs
216-8	Trumpington Meadows	F.646 (1385.1)	Pit	Adult occipital, radius shaft and femur shaft
224-5	Trumpington Park and Ride	[1229] (1228)	Pit	Adult third metacarpal and proximal hand phalange
227-9	Trumpington Park and Ride	[1318] (1315, 1316, 1459)	Pit	Neonate cranial vault fragments, right ilium, and fibula
240-3	Trumpington Park and Ride	[2547] (2549)	Pit	Neonate cranial vault fragments, femur, fibula, and rib
254-6	Trumpington Park and Ride	[5037] (5038)	Pit	Neonate occipital, radius and tibia
259-60	Trumpington Park and Ride	[5244] (5243)	Pit	Adult radius and ulna shafts
276-80	Wardy Hill	F.25/6 (310, 316, 334, 355)	Structure	Adult parietal, humerus, rib, femur, calcaneus, and talus fragments
412-4	Cliff's End	F.2018 (223204 – 282, 282) (223403 – 528)	Mortuary feature	Adolescent – Young adult skull fragments and unidentified human bone
418-9	Cliff's End	F.2018 (3610 – 437, 442)	Mortuary feature	Adolescent or older skull and axial fragments
432-4	HS1 - WHS	[6110] (6126, 6127)	Pit	Adult clavicle, tibia, vault frags
443-4	St. Stephen's College	[4228] (1227, 4269)	Pit	Neonate tibia and unidentified human bone
448-451	Waterstone Park, Stone castle	[547] (544)	Pit	Neonate tibiae and humeri
513-4	Tallington	Working hollow 2	Pit	Neonate femur and tibia shafts

Table 14.1: Table showing the number of disarticulated bones/bone fragments grouped together by MNI.

Age

Forty-two inhumations, three articulated bone deposits and 138 disarticulated bone deposits had no recorded age, leaving 859. Of these, 70 inhumations, 15 bone groups and 265 disarticulated bone deposits (350/859, 40.7%) could be assigned nothing more accurate than ‘adolescent or older’ or ‘adult’.

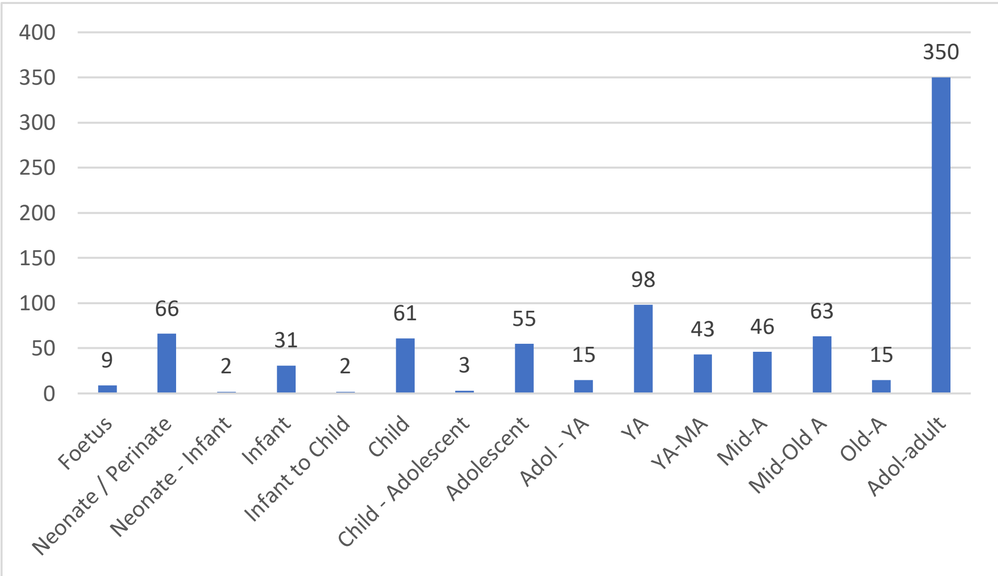


Figure 14.1 (above) and 14.2 (below): Charts showing the overall age profile for all available data (n=859). Source: Author

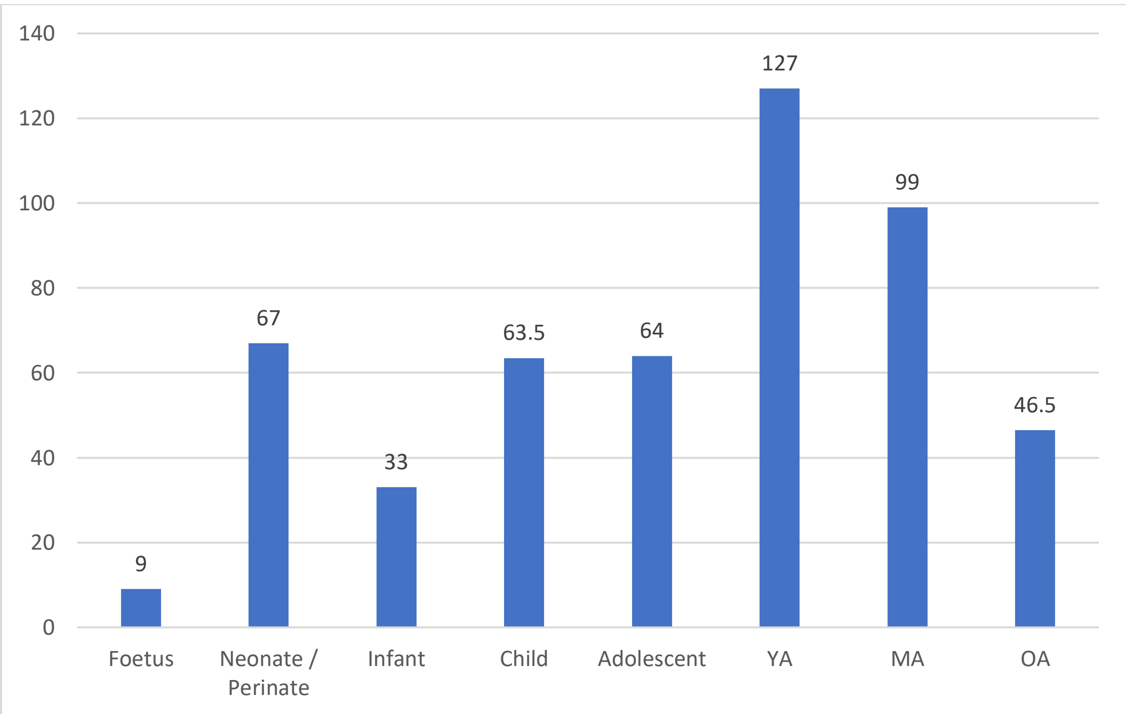


Figure 14.1 shows the age profile for all 859 individuals/deposits. As with the inhumation data in chapters 4-6, the inability to ascribe some individuals to one age category has created false declines in the overall profile. To rectify this, Fig. 14.2 divides all the individuals/deposits straddling two age categories equally between each, removing the 'Adolescent – adults' and resulting in 509 individuals/deposits of known age. While simplified, this chart presents a largely normal demographic profile for age at death. There are more foetal-neonatal deaths than for any one period (14.9%, 76/509), with the mortality profile dropping through infancy, steady through childhood, rising up through young and middle adult groups, and dropping again for older adults (50+). The number of foetuses is almost certainly overrepresented here, as four of the 9 are bones from one pit fill (D.IDs 448-451, Waterstone Park, Kent). Likewise, the data from Table 14.1 notes eight deposits of disarticulated neonatal bone where more than one element is present. If indeed these are from single individuals, then the total neonates drop to 57 (MNI) and the foetuses to five. The youngest individual in the dataset is inhumation ID 315 (EKA2 Zone 13, Kent) – a foetus at 21-36 weeks gestation, likely a premature stillbirth. The oldest individual is not possible to identify, but there are several with age-at-death recorded as 'over 50'.

Considering all the individuals/deposits of known age, approximately 117 died at or before age five[73] – 13.6% of the aged total (117/859). The highest infant mortality rates across the world in 2016 were between 10.4 and 13.3% (Ortiz-Ospina and Roser, 2020), though this does not count stillbirths. Ortner (2003:95) has suggested a figure of 40-60% infant mortality for some prehistoric populations. Compared to this, the sample here is dramatically lacking in represented infants. Conversely, Duhig (2004:52) records that in prehistoric and early historic cemetery populations, a figure of 30% is common for immature individuals (<*c.*18 years old), she records the early Medieval period average at 32%, and modern third world countries at 30% (*ibid*, 68). The total proportion of sub-adults (<20 years old) in this dataset provides a slightly liberal comparison of 27.5% (236.5/859)[74]. Compared to these figures, and the modern data, the subadult mortality rate of the dataset may be considered to be broadly appropriate (as no direct parallels can be drawn from 2016 to the Iron Age).

There are certainly instances within the inhumation data, especially in the LIA cemeteries, where the very young are proportionally lacking, and the disarticulated material is largely adult,

[73] The total number of foetal to infant individuals/deposits, plus all children with a confirmed age at death of 5 or less. There are others simply recorded as 'child' age so this figure cannot be more exact. The reduced MNI figures for foetal and neonatal deposits are not used here.

[74] All individuals from foetus to adolescent inclusive, plus half the value of the 'adolescent – young adult' individuals. If the latter is excluded the figure falls to 26.7% (229/859). The reduced MNI for foetal and neonatal remains are not used here, but would not drastically affect the result.

with multiple foetal/neonatal deposits likely representing single individuals. However, they are not absent on this large regional scale. If Ortner's (2003:95) figures are applicable to the Iron Age, then infants are severely under-represented, but not universally so. Overall the results present a generally normal mortality profile, albeit with the inherent issues of secondary data, and it should be considered valid for comparison with other regions and periods.

Sex

Sex estimation was possible for 338[75] individuals/deposits. This figure includes very tentative estimations from single disarticulated bones. Of the total 1042, 229 were subadults (foetus to adolescent inclusive – 22%). Figure 14.3 illustrates this data.

Of the 338 sexed individuals, 46 were aged between *c*.13 and *c*.20 years old[76], and of these six were given *tentative* sex estimations. The remaining 292 were all adults. Figs. 14.4-5 show only the sexed individuals, and illustrate that overall, the dataset contains slightly more 'male' remains than 'female' (52.3% male (177/338). The discrepancy is not large, and there are several factors that may affect this beyond a real sex-based difference in the data. Of these, 139 are either 'possible' or 'probable' sex estimations – these were removed for Figs. 14.6-7, but the male/female ratios did not drastically alter – males still represented negligibly more of the population (51.3%, 102/199). The issue of calculating an MNI from disarticulated remains is again a factor here, albeit a small one. Two features from Fengate, Cambs. both contained pairs of bones all very tentatively thought to be male (D.IDs 70-1, 79-80), and D.IDs 311 and 363 from Station Road, Herts. could both reasonably be from the same skull (??female), but neither can be confirmed and they would make little difference to the wider statistics.

Figures 14.4-5 show the percentage of 'possible' and 'probable' sex identifications for both sexes. The proportion of ??males is 7% greater than ??females (24.8% versus 17.4%), this divide becoming less pronounced for 'probable' and securely sexed individuals (*c*.5% and 2% respectively – both greater for females).

[75] 251 inhumations, 16 articulated/grouped bone deposits, 71 disarticulated bones.
[76] The one tentatively sexed child (Inhum ID 14) and the adolescents.

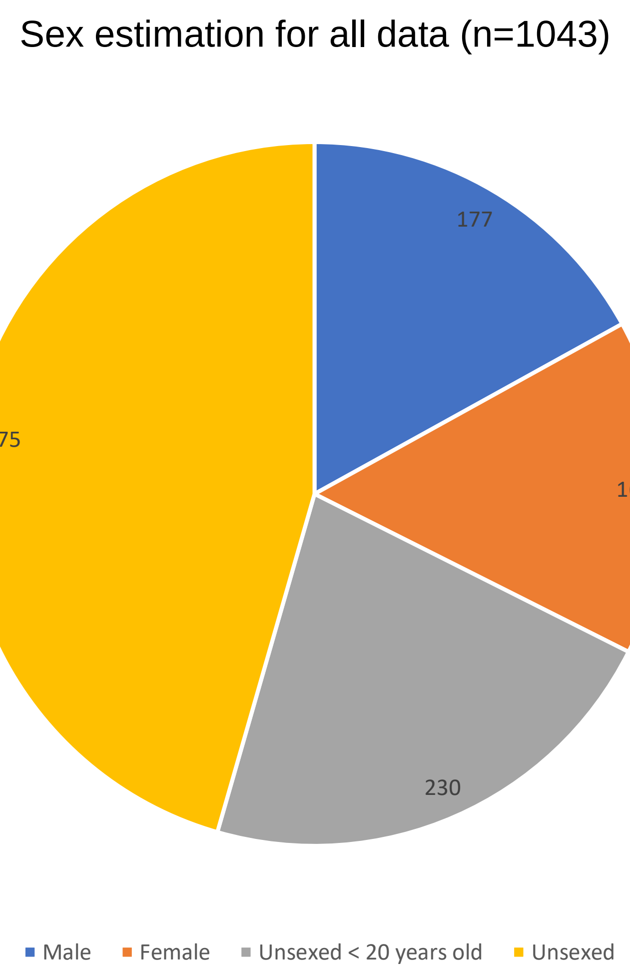
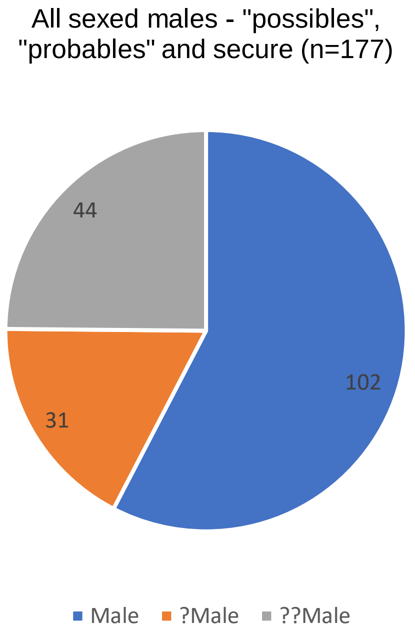
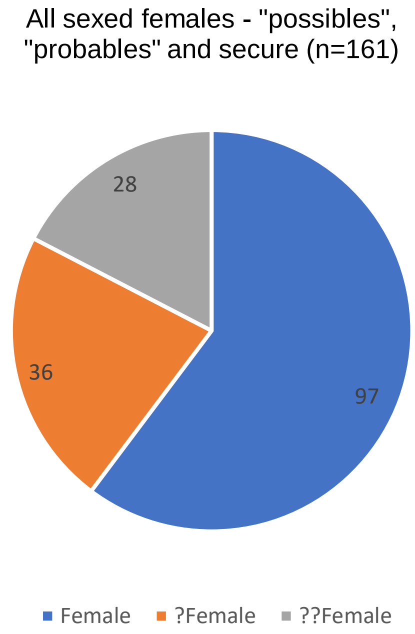
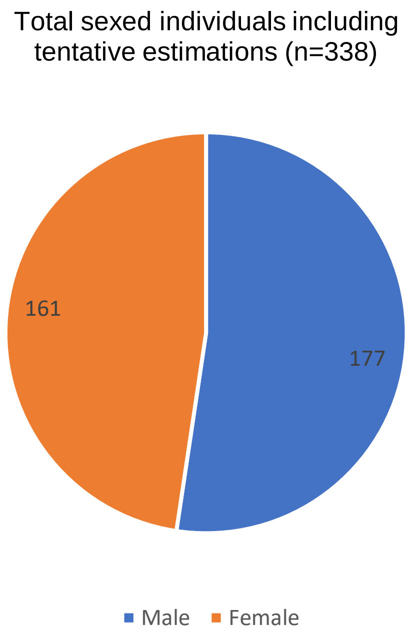


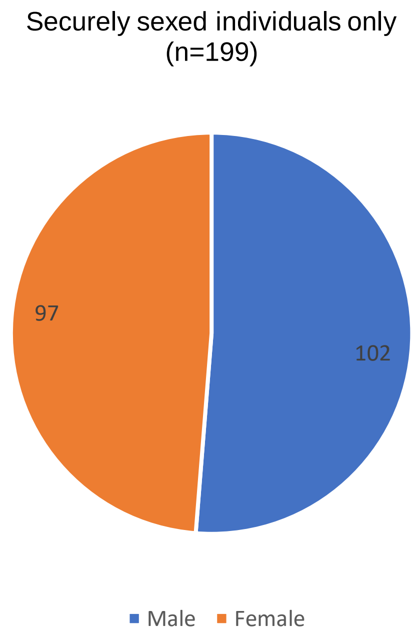
Figure 14.3: Pie chart showing the total number of individuals for which biological sex could be estimated (n=338), and their relative proportions in the data. Source: Author





Figures 14.4 and 14.5: Pie charts showing the number of sexed males and females, subdivided by degree of accuracy – either securely sexed, probable males/females, or possible males/females. Source: Author.





Figures 14.6 and 14.7: Pie charts showing the relative proportion of males and females, both for all data (left) and for securely sexed individuals only (right). In both cases there are slightly, but not dramatically more males than females. Source: Author.

Chapters 4-6 showed that there were very few sex-based divisions in inhumation rites, but the same was not true for the limited available disarticulation data (8.6.). Male remains *can* be larger and more robust, but this an unreliable indicator, and disarticulated or poorly preserved remains may have been given a 'possible male' signifier by their original excavators, based on these somewhat unreliable criteria. This is evidenced by Fig. 14.8 below – comparing those of known age and sex. The number of individuals too poorly preserved to be ascribed an age beyond 'adolescent and older', is considerably more 'male' than 'female'. Only 34 females were recorded, but 46 males. Discounting the most tentative identifications of sex undoubtedly creates a more accurate, albeit more restricted result. In either case though the results evidence a slightly, but not significantly greater proportion of male remains. The data is broadly representative of a normal population in terms of sex division.

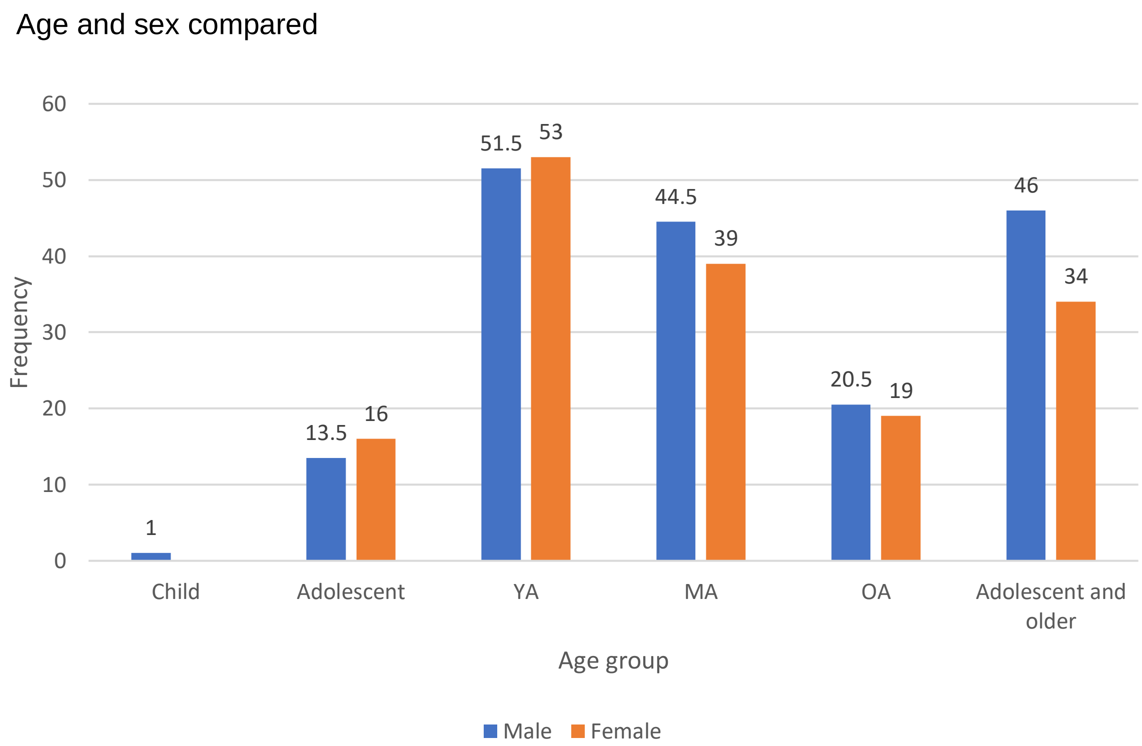


Figure 14.8: Bar chart comparing age-at-death for males and females of known age, as well as those only identifiable as 'adolescent and older' (n=338). All sexed individuals are included here, not just securely sexed adults. Source: Author.

Fig. 14.8 shows the age-at-death groupings for all individuals of known sex. The one child in this chart is discussed in section 4.11. The number of sexed males and females is broadly equal for all age categories, with a maximum difference of only 5.5 (middle adults). As females typically live longer (UN, 2017:10; WHO, 2019:2-3), it might be expected to see a few more females in the 'older adult' category, though estimating age becomes less accurate at this point and there are undoubtedly cultural factors. The slightly increased number of females dying between 20 and 35 (young adult) may be related to childbirth, and the stress, trauma and infection risks inherent therein. Excluding those only identifiable to ‘adolescent or older’, the total number of males is 131, and females 127 (258 total, 50.8% male), an almost equal sex distribution.

Stature

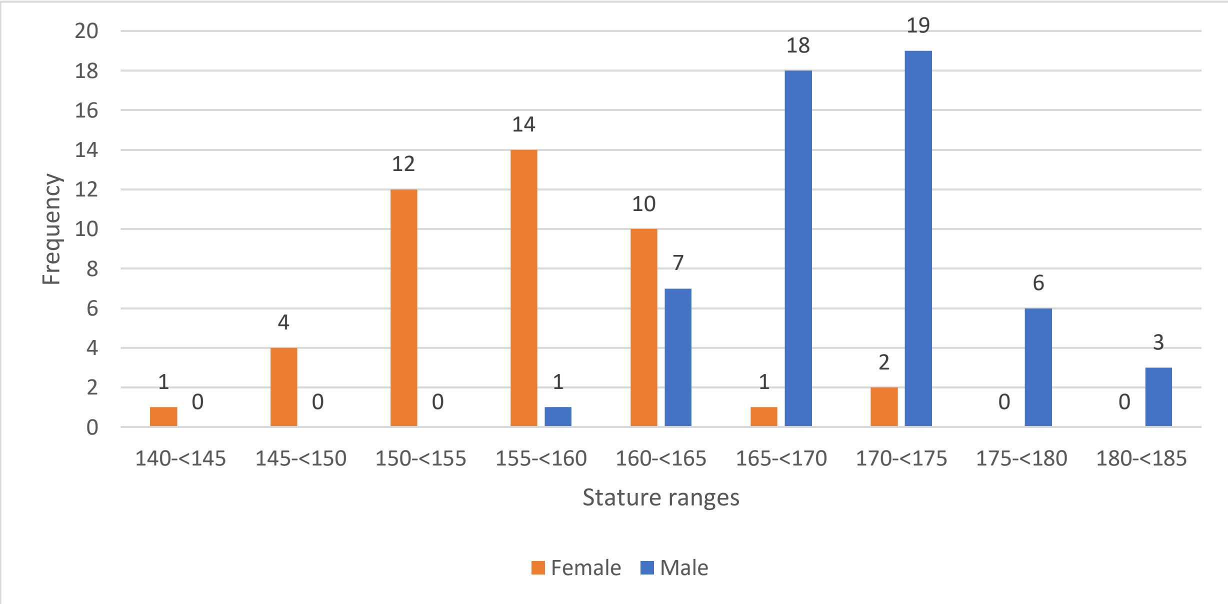


Figure 14.9 : Chart showing the stature profiles for males and females, in 5cm increments. Source: Author.

Stature estimation was available for 100 inhumations and one articulated bone deposit (Barnham, Suffolk). Of those, all but two could be sexed. The remaining individuals consisted of 44 females and 55 males. Figure 14.9 shows the differences in stature distribution for the male and female data.

There are clear separations at the lower and higher ends of the range – seven of the shortest males (160-<165cm) are grouped with 10 of the tallest females. The tallest female though (172cm) is taller than 63.6% of the male sample (35/55).

Shortest female = 142cm (ID 136)
Tallest female = 172cm (ID 423)
Mean stature = 156.3cm
Median stature = 156cm
Range = 30cm

Shortest male = 156cm (ID 117)
Tallest male = 180cm (Three individuals)
Mean stature = 166.6cm
Median stature = 170cm
Range = 24cm

The range of statures for males is 6cm less than that for females, with almost 70% (38/55, 69.1%) of males falling in the 165-<175cm range. The average female stature was *c.*10-14cm below that of the male.

The two unsexed individuals have stature estimations of 153cm (Inhumation ID 45, Addenbrooke's Hutchinson, Cambs.) and 178cm (Barnham leg bones, Suffolk). Based on the data in Fig 14.9, it is highly likely that the leg bones from Barnham are those of a male, as this individuals' estimated stature is 6cm taller than the tallest female, and *c.*22cm taller than the average (as well as *c.*9-11cm taller than the male average). Conversely ID 45 is likely to be a female, being *c.*3cm shorter than the shortest male and *c.*14-17cm shorter than the average male, as well as *c.*3cm shorter than the average female. Four of the male sample are only tentatively sexed, but three are within one of the most common brackets for males (165-<170cm), and one is 1.8m tall, 8cm taller than the tallest female.

Seven further inhumations from the Verulam Hills Field cemetery (Herts.) were given stature estimations by their original excavator (Ilid, 1968), but the figures are not included here as they pre-date all Trotter/Trotter and Gleser formulae. IDs 214-9, 221 are six males with statures originally estimated between 1.68 and 1.7m, and a single female estimated at 1.5m. While the remains are in need of re-examination, these male estimates at least are consistent with the more modern data, as female ID 215 would be, but at the lower end of the range.

Pathology

The available data pool for this section is much smaller than for sex/age data. This is due in part to preservation issues across the study area, as well as variable recording standards, especially for smaller, or less obvious pathologies (Schmorl's nodes for example). Nevertheless, it still represents a large sample for the period and region, providing valuable comparative data and insight into population health.

Trauma

Instances of trauma have been divided into sub-categories, outlined in 3.5.5. Examples of sharp-force trauma thought to have been inflicted as part of post-mortem disarticulation/defleshing processes on fresh bone are not included here, see Chapters 7-8.

Sharp

Instances of sharp-force trauma were identified in 16 total individuals – 12 inhumations, two articulated bone deposits and two disarticulated bones. Of these, 10 exhibited a single observable perimortem injury, one has two perimortem wounds, and five have single antemortem injuries. They originate from 11 sites in five counties – with multiple individuals from Wandlebury and Flixton Park Quarry (see also 6.5.3, 9.4.2). Half are from Cambridgeshire, though 1/4 of the total are from just one site.

Eight of 16 are male, two more are tentatively male, but only three female, and three unsexed, of which two are children (aged four and six). A range of adult ages are represented, but at least half the total are over 30 years old. As well as the two children, there is one 'adolescent to young adult' (15-20), all the others are of adult age. Statistical analysis was possible for the inhumations only – of these 6/89 males and 3/77 females had sharp force trauma injuries. This is not statistically significant (χ^2=0.5732, df=1, p=.449008).

Cranial and vertebral trauma make up an overwhelming majority of the injuries – ten wounds (nine individuals) were blows to the skull, five to vertebrae, one to the right scapula and ribs, and one to an ilium. In all but four individuals, the trauma centres around the head. Mitigating this, sharp-force trauma to other parts of the body, especially the torso, may be less likely to leave an archaeological trace, owing to the comparatively large amount of soft tissue present.

In addition to the identified trauma to their T5 vertebra, inhumation ID 168 (A505, Herts.) had their head removed and placed in the grave. Their C1-2 vertebrae were beneath the skull, C3-5 were not found, and C6-7 were in correct anatomical position (Philips et al., 2009:59). There is no evidence for perimortem decapitation, but their skull appears carefully placed beneath the left arm, and the articulated mandible and C1-2 vertebrae suggest the remains were fleshed when deposited. The articulated bone group from EKA2 Zone 6, Kent (Sk.292076), as well as a cut to the L1 vertebra, was also decapitated either at or after death, but the skull and C1-3 are missing (McKinley and Egging Dinwiddy, 2015:360). This individual has evidence of extensive post-mortem manipulation, and the L1 trauma may be related to this. ID 153 (Wandlebury, Cambs.) suffered a cut to the rear of their C5, ID 408 (Flixton Park, Suffolk) to their C4 and ID 409 (Flixton Park) to their C3. In all three cases their skulls were still in anatomical position, the blows perhaps not enough to cause decapitation.

Cranial trauma is present on the parietals in two instances and the frontal in two instances – in both the latter cases the victim survived. Two individuals from the same site suffered sharp force mandible injuries, IDs 147 and 149 (Wandlebury, Cambs.). ID 149 did not survive, but ID 147 did, though the wound had not fully healed, with a resultant infection still active at death (Dodwell, 2004:58) (Fig. 14.4). Both the cuts present on the skull of ID 127 (Stonea Camp, Cambs.) occurred to the superior aspect of the vault, one at the coronal suture (Fig. 14.5) (Malim, 1992:Fig.5a). ID 367 (Tothill Street, Kent) also received an injury to the top of the head, which had healed at death, and ID 99 (Glebe Farm, Cambs.) had an injury to the lambdoid suture, indicative of a strike from behind, or above if they were kneeling/prone).

Three of the four Wandlebury individuals were pit burials, the fourth part of a mass grave. If all of these five died contemporaneously, then it is also possible that the others suffered violent deaths - the skeletons are described as 'mutilated' (Denston and Taylor, 1977:1) but they could be disturbed post-depositionally or curated ABGs. ID 147 (Wandlebury, Cambs.) may have had their hands bound, but this is not conclusive (Dodwell, 2004:58). There is no evidence at Wandlebury of any great destructive episode, unlike nearby Cherry Hinton (Pickstone and Mortimer, 2012:31), but interpersonal violence clearly occurred here. Perhaps these were victims of an attack on the site, though ID 147 has previously been interpreted as a closure deposit (French, 2004:15). In addition to all these, three excluded inhumations (E.03-5, Maiden Bower, Beds.) were reportedly decapitated, one vertebra sliced completely through (E.03) (Matthews, 1989:40), but no trauma is recorded for the others and in all three cases the skulls were lost.

The sharp force injuries seem to take three forms. Firstly, 'execution-style' blows to the back of the head and neck – identified in at least four individuals. Secondly, face-on cranial blows, identified in at least four individuals, and likely more indicative of mutual violence. Finally, possibly post-mortem injuries, inflicted on very fresh bone, and relating to funerary practices rather than interpersonal violence. These are present for the articulated bone deposit from EKA2, Kent, the spinal cut to the deposit from Godwin Ridge, Cambs. (TP101-2) and perhaps for ID 154 (Wandlebury, Cambs.). The former suffered a single visible cut, a precise slice to the rear of the L1 vertebra, interpreted by the excavator as a post-mortem cut to speed up the disarticulation process (McKinley and Egging Dinwiddy, 2015:362). The same is most likely true of the Godwin Ridge remains, but the perimortem cut to the spine may also be the cause of death. ID 154 was placed in a pit, in a bag tied with a bronze needle, and is in near perfect condition (Hartley, 1957:14), except for the fact that their legs were never found. They appear to have been inhumed without them, and a cut to the ilia could indicate the method by which the legs were removed (*ibid*, 26). Though this would require a great deal of care and precision, it is not impossible.

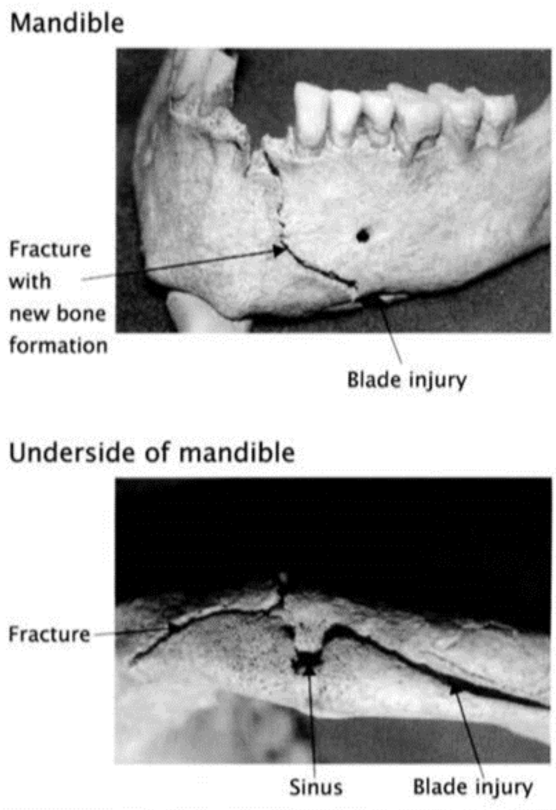
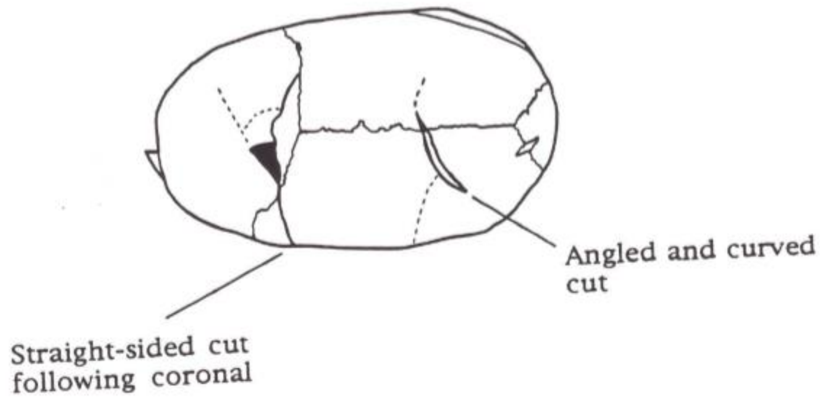
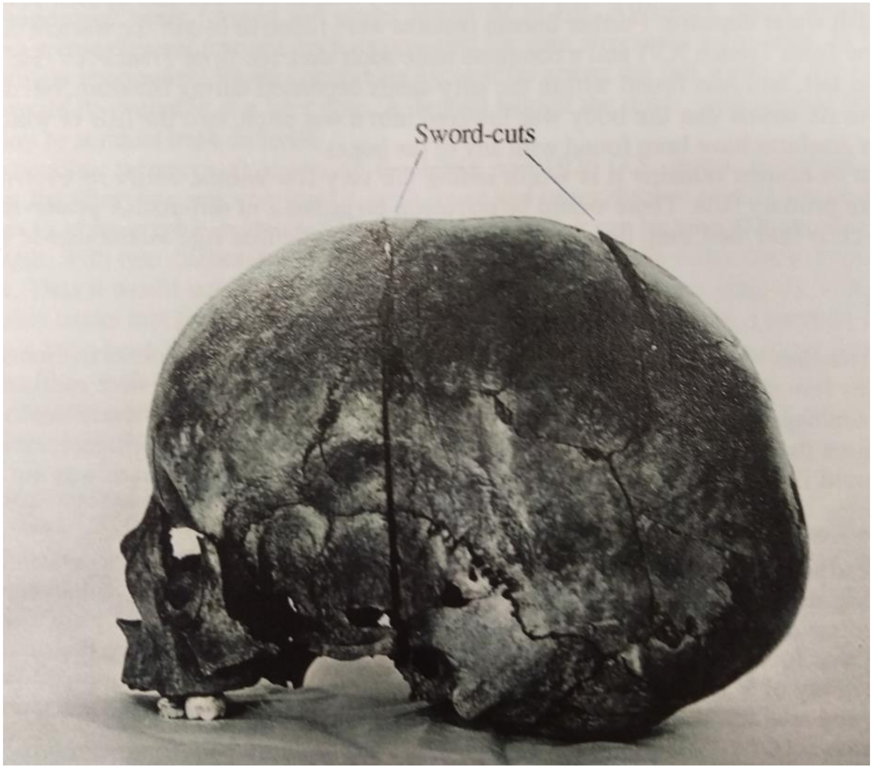


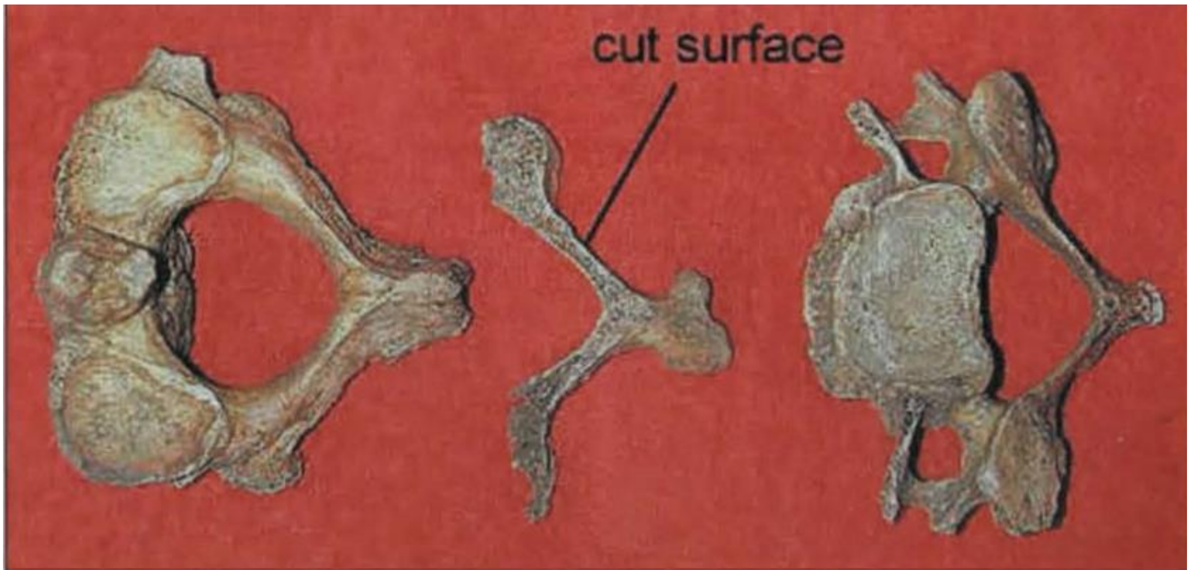
Figure 14.10: Photographs showing the healing antemortem blade trauma to the mandible of inhumation ID 147 from Wandlebury, Cambridgeshire, with related sinus (infection) and fracture. Source: French, 2004: Fig.25

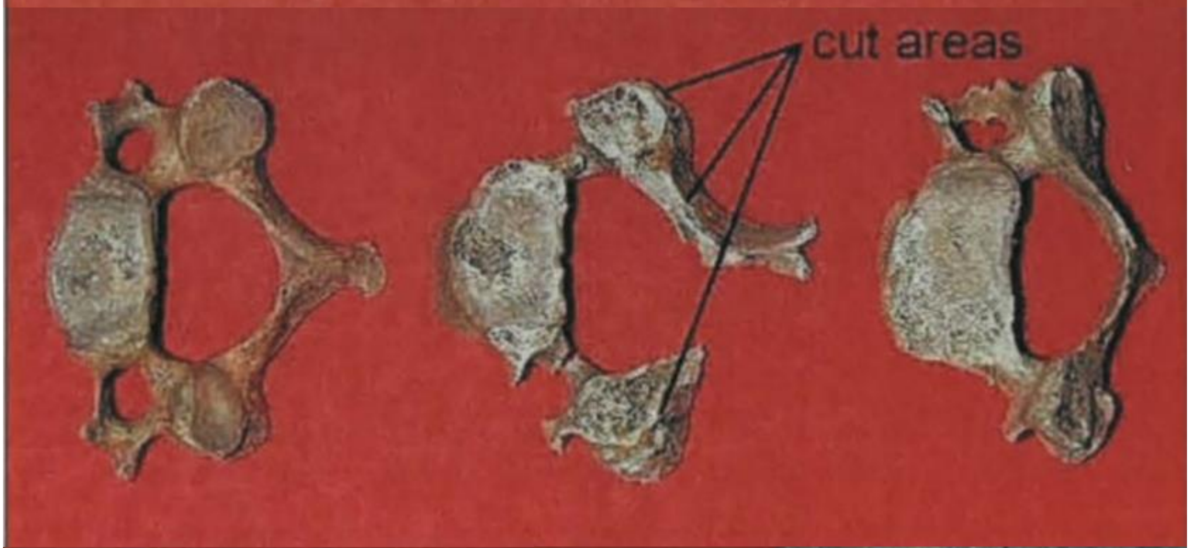




Figures 14.11-12 (Above right and middle): The two blade injuries present on the skull of inhumation ID 127, from Stonea Camp, Cambridgeshire. Source: Malim, 1992: Appendix 1 and Fig.5a

Figure 14.13 (right): Photograph showing the sharp force trauma to the C5 vertebra of inhumation ID 153 from Wandlebury, the blade having cut completely through the vertebral body. Source: Author.





Figures 14.14 to 14.17: Figure 14.14 (top) – Image showing the C2 to C4 vertebrae of ID 409, with SFT to the C3. Figure 14.15 (middle) – Image showing the C3 to C5 vertebrae of ID 408, with SFT to the C4. Figures 14.16 and 14.17 (bottom) – Images showing the SFT slicing blow to the left parietal of ID 410. All are from Flixton Park Quarry, Suffolk. Source for all: Boulter, 2008:Plates 10-13.

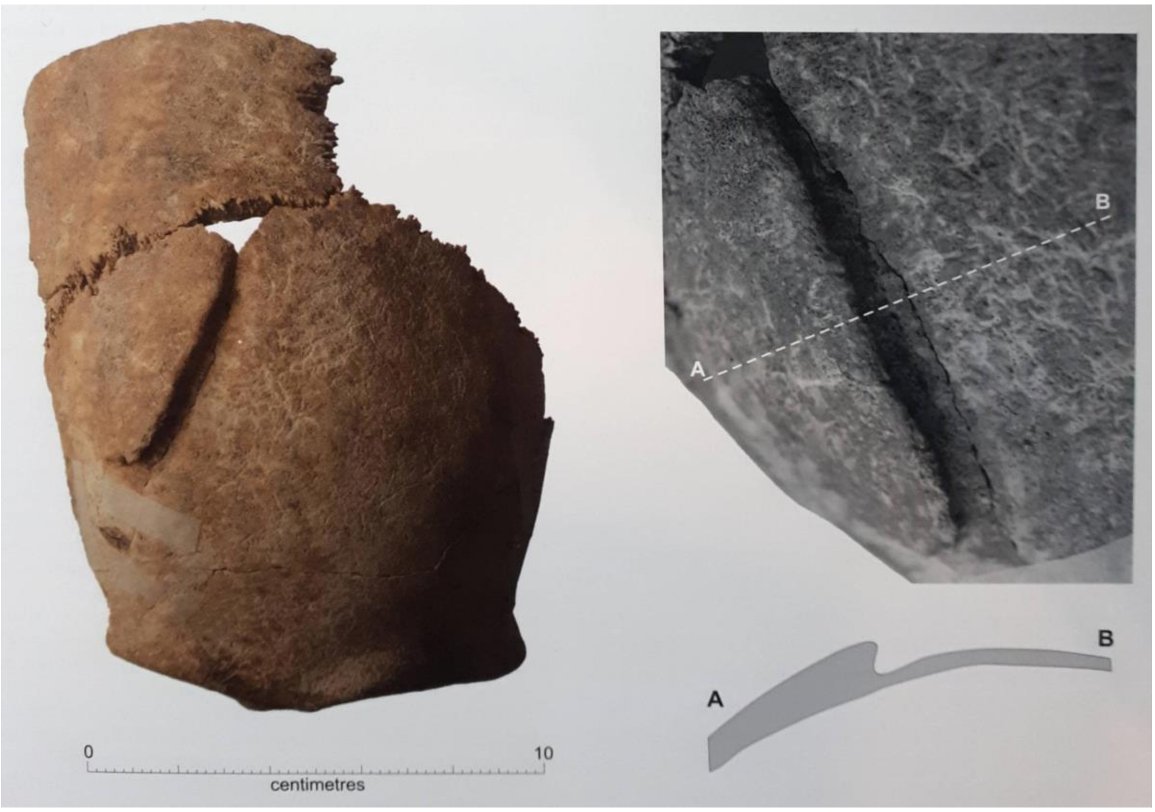


Figure 14.8: ID 133 (Burial 5/F.310) from Trumpington Meadows, Cambridgeshire, showing healing SFT injury to frontal. Source: Evans et al., 2016a:Fig.4.33.

Blunt

Instances of blunt-force trauma were identified in three inhumations, one articulated bone deposit and eight disarticulated bones. Eight presented with a single instance of perimortem trauma, one with two perimortem lesions, and three with a single antemortem injury.

These individuals originate from 12 sites in three counties – two sites in Bedfordshire, three in Cambridgeshire, one in Hertfordshire and six in Kent. Of the latter six, three are from various sites along the East Kent Access 2 excavations (Andrews et al., 2015).

As with the sharp force trauma, adults were overwhelmingly affected. There were two adolescents (aged *c.*14-16) and one individual aged *c.*15-20, the rest were adults. Five were male, five female and two unsexed, though four of these are very tentative estimations. Once again these numbers are too small to be of statistical significance, but it does provide a contrast to the sharp force injuries.

Ten of 13 total lesions (77%) were cranial fractures, two to the knee joint and one to the pelvis. All cranial injuries presented as circular or sub-circular depressed fractures of varying sizes, in some cases penetrating through to the endocranial surface, and in one case ‘punching out’ the impact point completely. Five parietal bones were affected, and two frontals. For ID 364 (Tothill Street, Kent), all that is known is that the anterior portion of the skull was affected. Likewise for D.ID 251 (Trumpington Park and Ride, Cambs.) any part of the cranial vault may have been affected.

The two knee traumas both occurred to individuals from the EKA2 excavations – one in the Zone 12 cemetery, one in the Zone 13 settlement. Both are described as extensive depressed plateau fractures, caused by a violent blow to the lateral side of the knee while the victim was standing. It is of note that the only two such recorded injuries in the dataset come from the same site area and are broadly contemporary. No further interpretation is given for the aetiology of the trauma, though one individual survived long enough for partial healing to occur, the other died much sooner (McKinley and Egging Dinwiddy, 2015:363). While interpersonal violence is possible, it may also be that such an injury could be caused by a livestock accident – perhaps a kick from a horse or cattle.

Some of the disarticulated bone fractures have the potential to be post-mortem, fresh bone trauma, unrelated to interpersonal violence - owing to the nature of the treatment of these bones. This is unlikely in the case of disarticulated bone D.ID 428 (EKA2 Zone 6, Kent - Fig. 8.22) though, which exhibits two blunt weapon lesions, one very distinct and causing a 27.5mm diameter endocranial lesion also (McKinley and Egging Dinwiddy, 2015:359). The healed blunt force cranial trauma suffered by D.IDs 364 (Station Road, Herts.) and 445 (Thong Lane, Kent) and the perimortem lesion suffered by articulated bone deposit [2037] from HS1-LSF (Kent) reinforces that such injuries are not solely part of the post-mortem process, but clear cases of interpersonal violence.

ID 364 (Tothill Street, Kent) also comes from the same site as ID 367, who had suffered an antemortem sharp force cranial injury. That both of these individuals survived such attacks for some time, is an indicator of a level of communal care afforded to them (Discussion 9.4). In all five of 11 individuals from this site (Tothill Street) reportedly suffered some form of trauma, but further detail is not available for the remaining three and so they have been excluded from any data analysis (Bailey, 2010:69). D.ID 445, the adult frontal bone from Thong Lane, Kent, had a healed antemortem blade injury, a small healed antemortem blunt-force injury, and possibly a second BFT, though re-examination would be needed to confirm (Fig.14.9). Both the BFT and SFT suffered by this individual could have occurred at the same time, otherwise they were subject to at least two instances of violent assault, both of which they survived. It is possible this treatment, and the marks it will have left on them in life, was a factor in the selection of their skull after death.

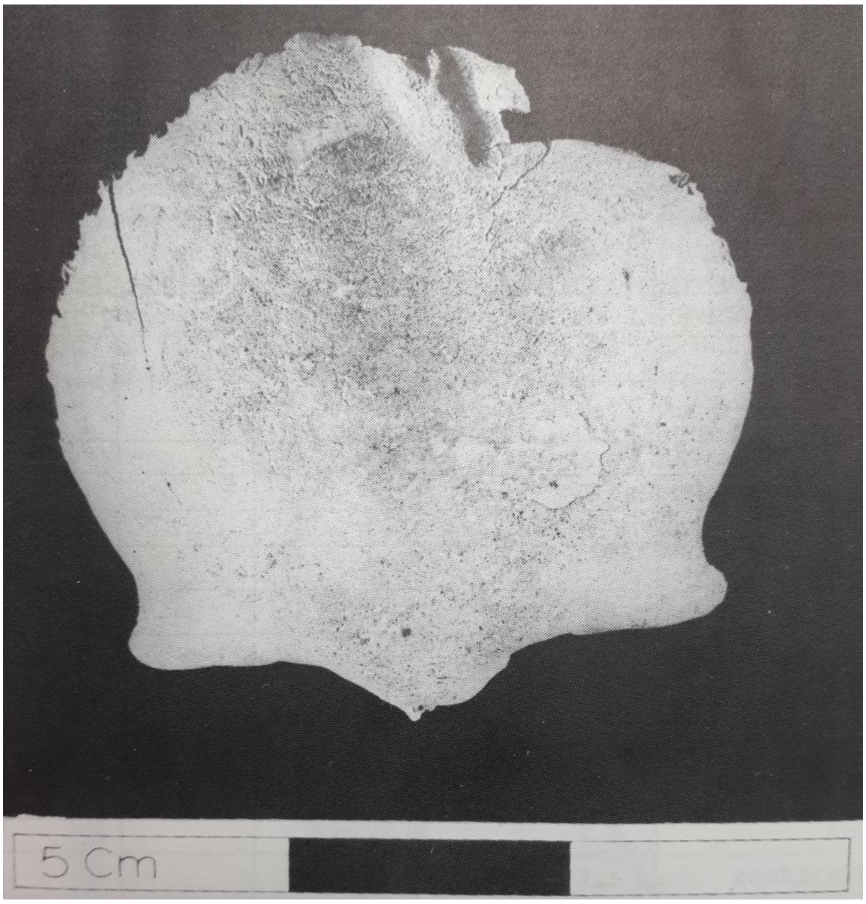
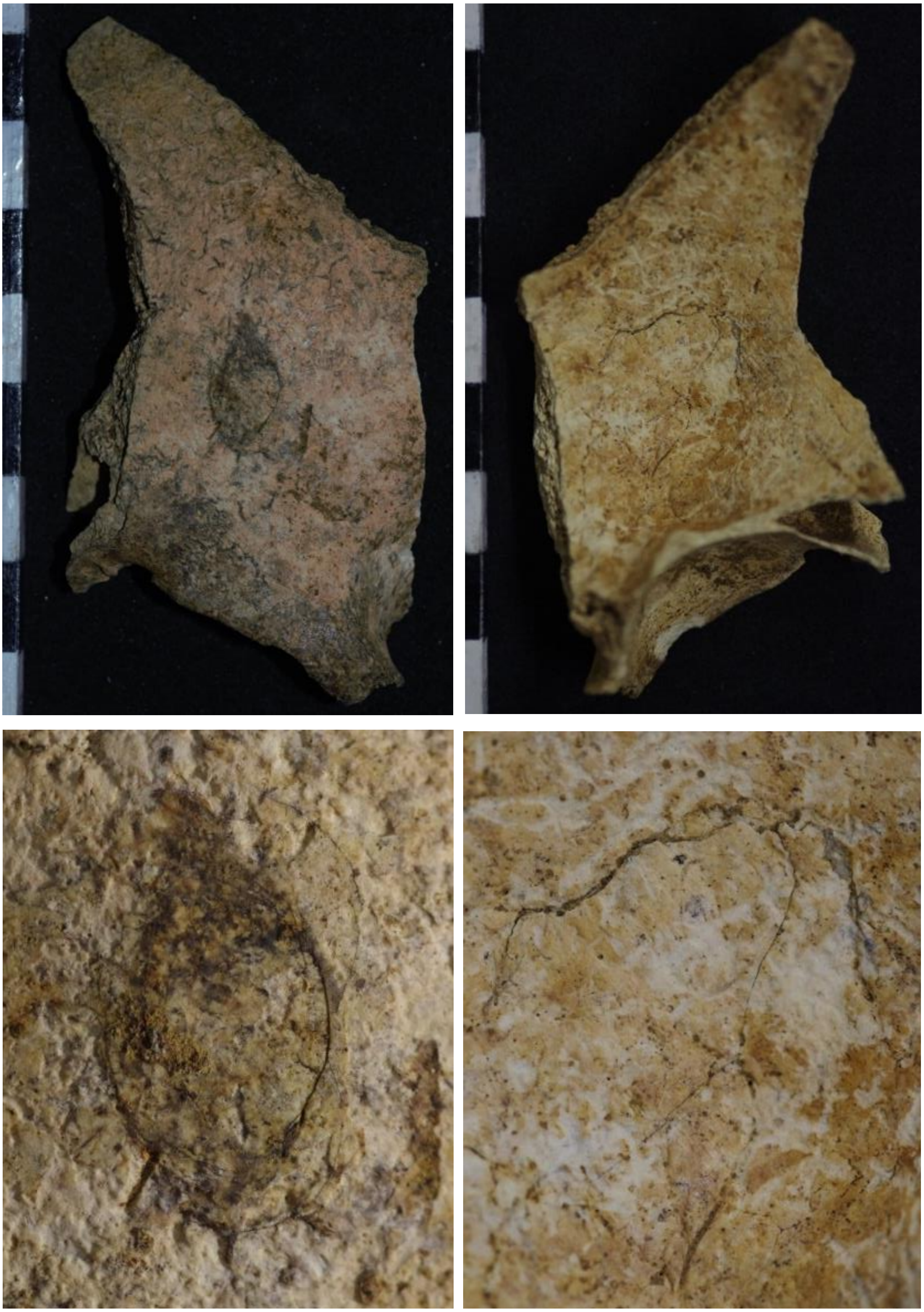


Figure 14.19: Photo of Disarticulated bone ID 445 (Thong Lane, Kent) with several possible and more distinct traumatic lesions. This is the only known photo, re-examination of the remains would be greatly beneficial. Source: French and Green, 1983: Plate 2.

The lesions seen on the frontal from Biddenham Loop, Beds. (D.ID 1) (Figs.14.20 a-d) and the parietal from Fairfield Park, Beds. (D.ID 15) are almost identical and may have been caused by similar implements. In both cases the area of impact is small, and enough force was used to cause endocranial fracturing, and possibly kill the individual (both are perimortem), but not enough to cause large depressions, as with disarticulated bone D.ID 428 (EKA2 Zone 6, Kent) or D.ID 274 (Cherry Hinton, Cambs.). A slingstone could cause such an injury, as their velocity would be low enough to present as blunt force trauma and they would cause a relatively small impact point. Tung (2008:109, 114) identifies possible slingstone trauma in 11th century AD crania from Peru, though in these cases the crania were complete, and each exhibited more than one round depressed fracture, impacts from multiple stones. Such support cannot be gathered here with fragmented remains. Knüsel et al., (2019:71) highlight multiple cases of blunt force depressed cranial fractures from the Neolithic in Western Asia, interpreting them as the result of assault rather than accident, and often caused by stones or other projectiles. Juengst et al., (2015:4,7), investigating trauma patterns in skeletal remains from Bolivia (1000-1450 AD), interpreted a 2cm, antemortem depressed fracture on the frontal bone of an adult male as having been caused by a slingstone – very similar to these lesions. Buckley (2000:139) likewise identified a healed, depressed frontal fracture as a slingstone injury, though this time the depression is much larger, but the endocranial bone surface showed two V-shaped, *c.*1cm fractures similar to that from Biddenham Loop. Slingstones are attested on multiple Iron Age sites, though predominately in Wessex (e.g. Maiden Castle (Wheeler, 1943:47; Harding, 2012:194, Sharples, 1991:, 83-5, 261), Danebury (Poole, 1984:398) and Glastonbury (Gray, 1917). Redfern (2009) has previously identified multiple cases of antemortem and peri-mortem projectile trauma to the crania of individuals from sites in Wessex, with victims of both sexes and all ages.



14.20a-d: Photos showing the small (c.16mm diameter) sub-circular depressed fracture on the left frontal bone of disarticulated bone ID 1 from Biddenham Loop, Bedfordshire. The trauma penetrated through to the endocranial surface, causing a fracture, broadly V-shaped. Source: Author. Scale = 1cm

Indirect trauma / other fractures

Fractures with no clear evidence for blunt- or sharp-force trauma were much more common. These may be caused by indirect trauma (e.g. a fall), rotational forces, or even interpersonal violence. Again here, disarticulated bones with fractures seemingly related to post-mortem processes are excluded. In all, two disarticulated bones, one articulated deposit and 30 inhumed individuals presented with fractures - twenty-five had a single antemortem fracture, six had two, one (inhumation ID 408, Flixton Park, Suffolk) had three and one had six (ABG - SK292076, EKA2 Zone 6, Kent). Antemortem lesions are much more common here than with sharp- and blunt-force trauma.

The material came from 27 sites in seven counties. Indirect fractures are therefore much more widespread than the previous trauma, though 13 individuals are from Cambridgeshire and 10 from Kent. Again Wandlebury features heavily (three individuals), as does Cherry Hinton (two) and Tothill Street (at least one).

Five inhumed individuals also had other traumatic lesions (sharp- and/or blunt-force). ID 133 (Trumpington Meadows, Cambs.) had suffered a blade trauma to the right side of their frontal (Fig. 14.18), some time before death, and also had a healed antemortem fracture to their right clavicle (Dodwell and Neil, 2016:167). It is possible these both occurred at the same time, the fall caused by the cranial trauma (*ibid*, 167). ID 147 (Wandlebury, Cambs.) had likewise suffered a blade injury, this time to the mandible and still healing at death, as well as an antemortem rib fracture (Dodwell, 2004:58). Like ID 133 these two traumas are probably related. ID 153 (Wandlebury) had a perimortem sharp-force cut to their C5 (above), as well as two antemortem rib fractures. ID 408 (Flixton Park Quarry, Suffolk) had a perimortem C4 cut (Fig.14.15), as well as multiple antemortem fractures (see below). Finally, ID 364 (Tothill Street, Kent) had a single antemortem rib fracture, as well as healed blunt force cranial trauma – once again these likely occurred at the same time, though in this instance the degree to which each injury had healed was not specified (Bailey, 2010:69). Articulated bone deposit SK.292076 also suffered perimortem SFT (above) but this appears to have occurred post-mortem while the bone was fresh.

Age estimation was possible for all 33, though for the disarticulated bones it could only be ascertained that they were all broadly 'adult'. As with the preceding trauma types, subadults are poorly represented; only one child (ID 194, *c*.8 years old (King Harry Lane, Herts.)) was identified and the next youngest individual was *c.*17-20 years old (ID 406, Bridge House Dairies, Suffolk). Though a range of adult ages were again present, older individuals were more common than normal; at least 10 were over 45 years old, and at least 17 were over 35. That all of these are antemortem, and in some cases the individual lived on for many years again speaks to a level of communal care and support for those affected (Discussion).

The most commonly fractured element (antemortem) were ribs (11/44, 25% of the total), affecting seven individuals (Fig. 14.21). The rib bones are fragile and often do not survive well, so it is reasonable that more such injuries occurred, but could not be identified. Lower leg (tibia and fibula) fractures are collectively the second most common (eight instances, six individuals), followed by vertebral fractures (six instances, five individuals), which affected the T10-L5 vertebra only. Clavicle fractures also appear frequently (five instances, five individuals), as well as lower arm and hand fractures. Unsurprisingly, femur shaft fractures are rare, owing to the density of the bone they are often caused only by 'severe violence' (Hamblen and Simpson, 2007:239). The only femur fracture occurred to a child and had healed at death.

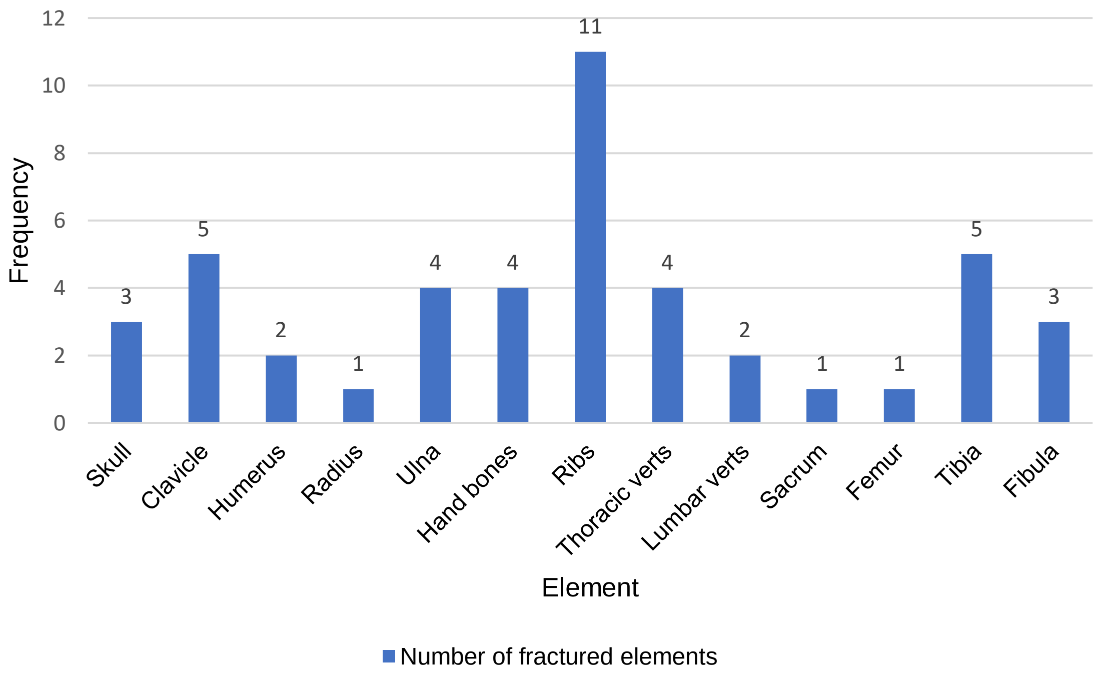


Figure 14.21: Bar chart showing the most frequently fractured elements which had been subject to some degree of healing prior to death (antemortem fractures). Source: Author.

Twelve females and 19 males had at least one antemortem fracture (61.3% male). Females and males had the same average of fractures per individual (1.42)[77]; there is no indication here that one sex was more likely to suffer accidental or deliberate traumatic injuries, though within these figures is one male with six healed fractures. There are some notable sex

[77] 17 fractures/12 for females, 27 fractures/19 for males

differences in the affected elements though - clavicle fractures (four female, one male), arm and rib fractures (five male, two female each) and hand bone fractures (three male, one female). The numbers are too small to be statistically significant.

Fracture causes and common fracture types

All of the antemortem vertebral lesions are compression fractures. In three cases trauma is posited as a cause (IDs 31, 402, SK.292076[78]), perhaps as both of these individuals are relatively young and therefore less likely to have suffered from osteoporosis, another common cause (Hamblen and Simpson, 2007:112).

Four individuals had healed metacarpal fractures. All were shaft fractures to the 4th and 5th metacarpal bone, and fully healed, though one (ID 11, Broom, Beds.) was poorly aligned. In two instances interpersonal violence is given as a possible cause (IDs 124 (Prickwillow Road, Cambs.), 301 (HS1-WHS, Kent), the lesion described as one common to boxers (Adams, 1987:188; McKinley, 2006:20). This is likely true for the others too, and if so may hint at handedness (left 4th metacarpal – ID 148 (Wandlebury, Cambs. - Fig. 14.22)). Falls onto the hand are also possible causes for all of these injuries, as it is for some of the lower arm fractures (Anderson, 2003:36).

Figure 14.22. Three views of the left 4th metacarpal of inhumation ID 98 (Glebe Farm, Cambs.), showing increased bone thickness, possibly as a result of a well healed antemortem fracture (Source: Author).

[78] Addenbrooke's Hutchinson (Cambs.), Grime's Graves (Norfolk), and EKA2 Zone 6 (Kent) respectively.

Violence is also likely the cause of the nasal fracture suffered by ID 375 (Weatherlees Pipeline, Kent)– a blow to the left side of the face – as well as the possible mandibular fracture suffered by ID 383 (Horkstow Road, Lincs.). In this case though the individual had also suffered severe antemortem tooth loss, some of which may have been caused by a blow to the face, or, perhaps the extensive tooth loss caused the loss of alveolar bone first, making a subsequent fracture more likely (Hillson, 2008:321). ID 1 (A421 Great Barford Bypass, Beds.) had a healed spiral fracture to the left ulna (Gerber, 2007:306). Here too violence is a likely cause – a defensive wound, or again, a fall is possible (*ibid*, 306; Koval and Zuckerman 2002:129).

Articulated bone deposit SK.292076 (EKA2 Zone 6, Kent) had an antemortem T12 compression fracture, four rib fractures and a left tibial fracture. In this case all may have occurred at once, or not, but either way they could be from a hard fall, or a sustained assault (McKinley and Egging Dinwiddy, 2015:363).

Five individuals suffered clavicle fractures, four to the midshaft, one to both ends (ID 406, Bridge House Dairies, Suffolk), often the result of falls onto the shoulder or hand (Hamblen and Simpson, 2007:132). One of the three radial fractures (ID 214, Verulam Hills Field, Herts.) is a Colle's fracture (Wells, 1968:18), a defect associated with osteoporosis, and the most commonly seen fracture in adults over 40 (Hamblen and Simpson, 2007:177). These, as well as the ulna fractures, are again most commonly caused by a fall (onto the hand), or by a direct blow to the arm (*ibid*, 172). Displacement of the bones is common during breaks, making proper union and healing difficult (*ibid*, 172-4). One radius fracture (ID 220, Verulam Hills Field) is described as badly aligned, and the ulna fracture suffered by ID 1 (A421, Beds.) caused a 10mm bone shortening (Gerber, 2007:305-6). In none of these cases were both forearm bones affected – perhaps their relatively successful healing was due in part to the other, undamaged bone acting to support the fractured one.

Two individuals had fractures of both the tibia and fibula of one leg (IDs 207, 408). ID 207 (Lee Valley Pipeline, Herts.) suffered a spiral fracture to the right leg, the fracture occurring in the lower third of the tibial shaft and upper third of the fibula. The bone healed with a malunion, shortening the tibia by *c.*20mm (Fig. 14.23). This would undoubtedly have resulted in a limp, though clinical practitioners consider 20mm to be the 'tolerable' limit in shortening a weight-bearing limb bone, so the injury may not have caused too much discomfort (Lovell, 1997:148). The most common cause for such an injury is rotational, rather than direct trauma (Hamblen and Simpson, 2007:273). The fracture suffered by ID 408 (Flixton Park, Suffolk) is described as 'spiral or transverse' (Anderson, 2008:218), so its cause is unknown.

Three individuals had tibial shaft fractures without the fibulae being broken, something uncommon in modern cases (Hamblen and Simpson, 2007:281). In two (IDs 135 (Trumpington Meadows, Cambs.), 220 (Verulam Hills Field, Herts.)) the bones are described as in poor condition, damaged or fragmentary (Wells, 1968:18; Dodwell and Neil, 2016:162). It is possible that the fibulae were also fractured but did not survive well enough to identify any antemortem lesions. All are transverse fractures, more indicative of direct trauma than rotational, so again falls are reasonable causes – especially for ID 135, who suffered fractures to bones all on the right side. For ID 241 (Cliffs End, Kent) only the left fibula is recorded as having been fractured, this does appear to have been rotational (spiral fracture) and held in place somewhat by the unbroken tibia (McKinley, 2014a:125).

Figure 14.23a-b: Photos showing the tibiae and fibulae of ID 209 (Lee Valley Pipeline, Herts.) – who had suffered a spiral fracture to the right lower leg bones, causing a shortening of both elements, more noticeable in the tibia. Source: Author.

The articulated bone deposit from Pit 19 (Wandlebury, Cambs.) also suffered several fractures. They more closely match the post-mortem treatment seen in the disarticulated remains, but as the individual was more complete and the fractures occurred perimortem, they are worth mentioning here. This young adult female had oblique fresh bone fractures to both proximal femora, ‘snapping them off’ from the rest of the legs (fig. 14.24) and her pelvis had supposedly been crushed by a chalk block. Once again is it more than likely that this happened post-mortem, as other bones were out of articulation, and the rest of the leg bones were not recovered (Hartley, 1957:14-15). The bones were probably at least partly defleshed but had not completely dried when the fractures occurred. There are parallels here to inhumation ID 154 (see above and 9.4.2), the *c.*6-year-old child, also from Wandlebury, whose legs appear to have been removed around the time of death.

Figure 14.24: The left and right femora of articulated bone deposit ID 11 from Wandlebury, Cambs., showing the fresh bone breaks at both proximal shafts. Source: Author.

Schmorl’s Nodes

Schmorl’s nodes were recorded in 37 inhumations, two articulated bone deposits and one disarticulated bone (D.ID 192, Trumpington, Cambs.). Of the inhumed individuals, 132 adults had available data, meaning Schmorl’s nodes occurred in 28% of the adult population

(37/132). Four individuals had a single affected vertebra, six had two, six individuals had 3-5 affected vertebrae, 11 had six or more affected, and for the remaining 12, only the presence of Schmorl's nodes could be established. Disarticulated bone D.ID 192 was a single lumbar vertebra, so the prevalence in this person could not be established.

Fourteen of 39 sexed were female, 25 male (64.1% male), all adult age brackets were affected for both sexes, and there were also two adolescents. The proportion of males and females varied for different numbers of affected vertebrae, but the small sample size precludes any further analysis. Of those with six or more affected vertebrae, one was an adolescent (ID 265 – EKA2 Zone 13, Kent), with Schmorl's nodes present in the T6-12 vertebrae, as well as other pathologies, but two young adults were similarly severely affected. Overall the T6-L4 vertebrae were affected, most commonly the T9 (at least 13 individuals), T8 (at least 11 individuals) and T10-12 (at least 11 individuals), as is often the case (Waldron, 2009:45). Schmorl's nodes may be caused by indirect trauma to the head, or a fall onto the feet, with the force carried through the spine; it cannot be determined definitively in excavated material however (Katzenberg and Saunders, 2008:355; Waldron, 2009:45).

Spondylolysis

Sixteen individuals had recorded evidence of spondylolysis. The actual number of affected individuals will likely be larger, but due to the relatively fragile, often poorly preserved vertebrae, spondylolysis could be missed, or the affected elements may not survive. However, between 4-8% of most modern populations exhibit spondylolysis (Aufderheide and Rodriguez-Martin, 1998:63), and of the 282 recorded adult inhumations[79], these 16 would represent 5.7% (16/282). The lumbar vertebrae, in particular the L5, were most frequently affected, as is typical (*ibid*, 64; Katzenberg and Saunders, 2008:355; Waldron, 2009:151). Three males and nine females are recorded (three unsexed), with all adult ages represented, though at least 11/16 were under 45 years of age. Spondylolysis does have a slight predilection for males, but the reverse is true with this sample (*ibid*, 63; Waldron, 2009:152). An injury/acute trauma is posited as the cause in two cases (IDs 31 (Addenbrooke's Hutchinson, Cambs.), 78 (Clay Farm, Cambs.)), though the most common aetiology is a stress fracture caused by low grade lower back stress – chronic trauma (Katzenberg and Saunders, 2008: 355; Ortner, 2003:148). Spondylolysis may also have a genetic component, leading some individuals to be more predisposed to the pathology than others (Katzenberg and Saunders, 2008:355; Merbs,

[79] All inhumed individuals subject to detailed analysis, of 'young adult' or older age, including the 'adults/adolescent or older' individuals

1996:212). Three of the 16 were from one site (Tothill Street), and may be related, though DNA testing would be necessary to confirm (Bailey, 2010:69). Spondylolisthesis was recorded in three inhumed individuals, one also had spondylolysis (ID 78) caused by lower spinal trauma, though spondylolisthesis has numerous causes including trauma, vertebral degeneration and pathology (Tenny and Gillis, 2020).

Degenerative pathologies

To discuss and analyse the numerous degenerative pathologies present in a sample such as this, with any great detail, would be beyond the remit of this thesis and require a devotion of space that is simply not possible. However, the crude prevalence of more common pathologies has been discussed to better understand population heath, as well as highlighting specific individuals, especially where their pathologies may have impacted upon their treatment in life and in death.

Osteoarthritis

Osteoarthritis is the most commonly observed degenerative pathology in in human skeletal material (Aufderheide and Rodriguez-Martin, 1998:95), with prevalence rates differing between populations, but present in all. Most individuals over 50 years old exhibit some degree of arthritis, increasing to 90% of people over 80 years old (Mann and Hunt, 2005:15). Primary osteoarthritis has multiple contributing factors – sex, age, genetics, trauma, movement – it cannot be assigned to a single cause, and its exact aetiology is still debated (*ibid*, 15; Waldron, 2009:29; White and Folkens, 2005:325). The most commonly affected joints may also differ by population – modern cases rarely involve the elbow (Waldron, 2009:33), but archaeologically the elbow, hip, knee and foot are frequently affected areas (Aufderheide and Rodriguez-Martin, 2006:95; Ortner, 2003:551).

In the sample population, 154 adult inhumed individuals were of acceptable preservation and completeness for the presence of osteoarthritis to be assessed. Of these, 107 has at least one joint affected by osteoarthritis. Four individuals buried as articulated done deposits, and three disarticulated bones (vertebrae) also had osteoarthritis, bringing the total to 118 overall. Over 2/3 of the of the inhumed adults therefore had signs of osteoarthritis in at least one joint (69.5%, 107/154). A further 2 inhumed individuals, one bone group and one disarticulated bone (D.ID 249, Trumpington Park and Ride, Cambs.) had osteophytes, but without any pitting or eburnation needed to confirm a diagnosis of osteoarthritis (Waldron, 2009:33).

In many instances involving the spine, only osteophytes were recorded, however this is the most common indicator of spinal osteoarthritis (Ortner, 2003:550), present in most people over 40 years old (Dieppe and Lim, 1998:3.9), and eburnation seldom occurs on vertebral bodies, so osteoarthritis has been recorded as present in these cases. For other elements at least two osteoarthritis criteria are needed. Multiple individuals with osteoarthritis also had osteophytes on other elements, which are likely related, but cannot be confirmed as osteoarthritis – for example ID 292 (HS1 – Saltwood Tunnel, Kent) had osteoarthritis on their cervical and lumbar vertebrae, as well as two interphalangeal joints, plus osteophytes on their proximal ulnae, right glenoid, left hip and both knees. A middle–older adult (45+), the osteophytes are most likely related to osteoarthritis.

Of those that could be sexed, males make up 55.2% (58/105) of the affected inhumed individuals. Waldron has stated that osteoarthritis is often slightly more common in females than males (2009:28), though Ortner showed the opposite is often true for spinal osteoarthritis (2003:550). In either case the discrepancy here is small and males do make up slightly over half of the total population. Fig. 14.25 shows that the number and proportion of inhumed individuals with at least one instance of osteoarthritis increases broadly with age, as is expected in a representative population. While there are a large number of young adults here, this is a 47.8% prevalence rate for the age group (22/46).

Figure 14.25: Chart showing the number of individuals with recorded OA in at least one joint. Source: Author.

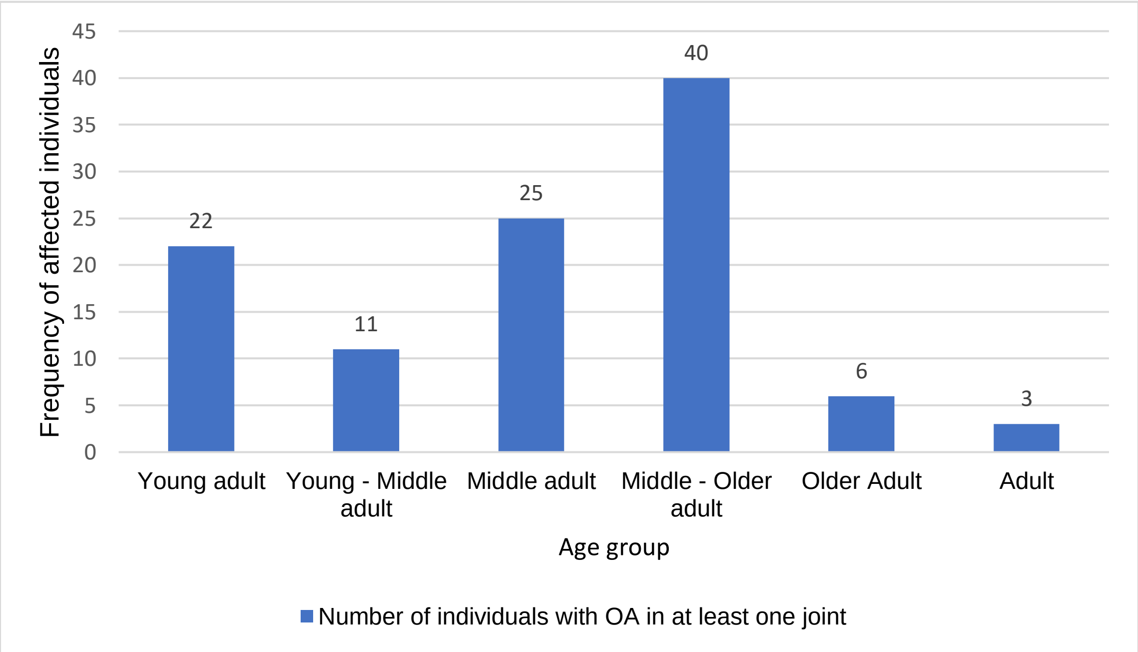


Fig. 14.26 shows the number of elements/joints affected by osteoarthritis for each age group for the 107 inhumations[80]. As age increases, so does the number of individuals with multiple affected joints (yellow bar). This is consistent with a normal pattern for osteoarthritis owing to its progressive nature, the sample population appears representative.

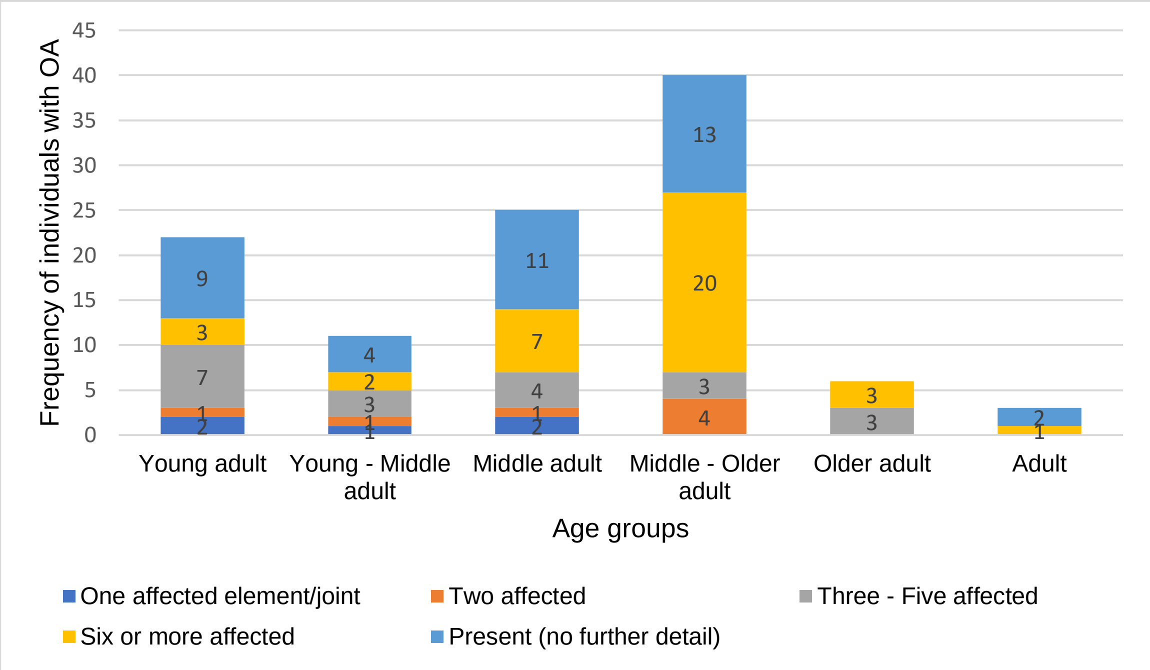


Figure 14.26: Chart showing the number of individuals with recorded OA, divided by age group and the number of recorded affected joints. Source Author.

Variable recording standards make ascertaining the most commonly affected joints difficult. For three individuals, no detail could be ascertained beyond the presence of osteoarthritis, and for many others the affected element is recorded, but not the joint. However, some patterns could be ascertained. Unspecified vertebrae were affected in 35 individuals; cervical vertebrae for 29, thoracic for 31 and lumbar for 39[81]. The spine was by far the most commonly affected area, but it is made up of multiple bones/joints. Hand bones were affected for 11 individuals, and wrist bones for nine – together the second most commonly affected area. Six individuals had affected elbows, 10 had affected shoulders, nine had osteoarthritis in their hip joints and two others had osteoarthritis in the pelvis (joint unspecified). Seven had affected knees, eight had affected feet. Other elements and joints were also affected, but in smaller numbers. The high incidence of spinal osteoarthritis, even discounting those mentioned above (with osteophytes but no other indicators) is unsurprising. There are additionally further

[80] The four ABGs all had varying degrees of spinal osteoarthritis, two male, one female, one unsexed.
[81] Some of these will be the same individual with multiple affected vertebrae.

inhumations with recorded ‘spinal degeneration’ (e.g. ID 320, Mill Hill, Kent) which likely refers to osteoarthritis changes, but this cannot be confirmed without reanalysis.

Ankylosis

Ankylosis (fusion of one or more bones) was identified in seven inhumed individuals. Six of seven were from Kent, two from the EKA2 Zone 12 cemetery (IDs 255 and 257), and two from the Weatherlees-Margate-Broadstairs pipeline (IDs 375-6). There is no reason this should be the case; it would appear to be the result of different recording standards rather than a true pattern. Four males and three females were affected, and none were below 35 years old, five were 45+. All additionally had osteoarthritis, and in three cases (IDs 26 (Addenbrooke’s Hutchinson, Cambs.), 375-6) the cervical spine was affected, limiting neck movement, as well as the L5-S1 in ID 255. ID 26 also had a fused shoulder joint, ID 266 the left wrist, ID 257 a tarsal bone and ID 347 (North Foreland, Kent) had unilateral ankylosis of the mandible to the skull. The latter individual would have been unable to open their mouth much, if at all, and would have been unable to eat properly as a result (Boast et al., 2006:48). It is unclear how long they survived with this condition, but they were not treated in an atypical way in death (crouched storage pit burial, with a bone pin and beads), suggesting their condition did not impact their status within the community (see Discussion). ID 266 (EKA2 Zone 19, Kent), in addition to the ankylosis of the wrist, also had osteoarthritis in both lower arms, osteophytes in both shoulders, arms, wrists and hands, enthesophytes in both humeri and one metacarpal, and multiple other affected bones in the spine and legs (McKinley and Egging Dinwiddy, 2015:364-7). The extensive degenerative changes in the shoulders, arms and hands suggest repeated habitual activity involving the hands and a strong grip (*ibid*, 364). This individual also had plastic changes to the parietals, ‘flattening’ associated with carrying heavy loads from a head strap (*ibid*, 367). These suggest ID 255 conducted habitual, hard manual labour, possibly involving carrying water or grain from the head strap.

Nutrition/health-related conditions

Cribra Orbitalia

Cribra orbitalia was identified in 33 inhumations, one ABG and six disarticulated bones. In total, 202 inhumations were sufficiently preserved and recorded to ascertain the presence/absence of cribra, making a prevalence rate of 16.3% (33/202). While long thought to relate to childhood anaemia, cribra orbitalia has been shown to have a much more varied aetiology – as such the prevalence rates within a population are likely to be very variable. Other recent studies have identified cribra orbitalia at frequencies of *c.*30% (Medieval Europe, Pre-Columbian Peru), 50% (Prehistoric) and 25% (17th century Europe) (Jatautis et al., 2011:57; Zarifa et al., 2016:131; Blom et al., 2005:158). All these are considerably higher than this Iron Age sample. Cole and Waldron (2019:615) however used six late 19th and early 20th century studies to calculate an average prevalence of only 8.16%.

Only 10 of the 40 total affected individuals were female, six unsexed and 23 were male (69.7% of sexed adults). Other sample populations (Medieval Vilnius and Pre-Columbian Peru) exhibited no sex-based difference in the prevalence of cribra (Jatautus et al., 2011:57; Blom et al., 2005:158). Here the proportionally high instance of males could be indicative of differential treatment in childhood, perhaps related to access to nutrition, or societal stresses imposed on males over females. Five of 40 were children and a further 10 were adolescents (plus two more adolescent–young adults) – in these cases the lesions may have still been active at death.

Porotic hyperostosis / Cranial porosity

Increased porosity on cranial bones other than the orbits was recorded in 13 individuals (six inhumed, six disarticulated bones, one ABG). Porotic hyperostosis was not given as diagnosis in all cases, but all are likely indicative of anaemia, vitamin deficiencies or perhaps infection. The youngest was a foetus (inhumation ID 260, EKA2 Zone 13, Kent) which may have suffered, and died, from scurvy – the porous lesions affected not only the cranium and mandible, but 13 areas of the body (McKinley and Egging Dinwiddy, 2015:359). There was also a single adolescent, the rest were all of adult age. Contrary to the Cribra Orbitalia results, five females and only two males had cranial porosity (six unsexed). At least five individuals had affected occipitals, and parietals were affected in at least four, but other major cranial bones were also. Inhumation ID 100 (Harston Mill, Cambs.) was a young adult female with porosity in her left orbit (cribra orbitalia) as well as right parietal, occipital and endocranium – thought by the excavators to be either anaemia or meningitis (Phillips and Waldron, 2016:73; Roberts and Manchester 2005:179).

DISH

Five individuals are thought to have suffered from DISH (Diffuse Idiopathic Skeletal Hyperostosis). DISH typically affects those above middle age and presents with the excessive production of new bone and ossification of extra-spinal ligaments and other surrounding soft tissues (Waldron, 2009:74). It is related to obesity, vitamin A metabolism issues and other hormonal disorders (*ibid*, 74-5; Egging Dinwiddy and Schuster, 2009:15). In modern cases around 4% of men and 2.5% of women over 40 years old suffer from DISH (*ibid*, 75), and while percentage within this population cannot accurately be assessed, four of the five are male, and all the males are between 35 and 50+ years old. The only female (ID 175, Folly Lane, Herts.) was a young adult, with DISH identified from a bone growth on her 1st sacral vertebra; in this case the cause may be hormonal, due to her age, or possibly a misidentification of the single growth.

Infection and Disease

Tuberculosis and other chronic infections

Possible tuberculosis lesions were identified in 11 inhumed individuals. In many cases these lesions may be indicative of other pulmonary infections or other chronic infections, like bronchitis, pleurisy, or brucellosis (Dodwell, 2016:95; McKinley, 2008:77), but in all cases TB is posited by the original osteologists as the probable source of the lesions. Six of 11 were female, five male (54.5% female). In modern cases males are significantly more likely to contract TB than females (Horton et al., 2016), but this is more likely a cultural effect than a natural difference. They died at a range of ages from 16-50+, with an average age-at-death of 31.7 years, similar to the overall data (Fig.14.2). In five individuals the lumbar vertebrae were affected, in five the ribs and in two the thoracic (ID 44 (Addenbrooke's Hutchinson, Cambs.) has lesions in lower thoracic and lumbar verts). Those with affected ribs presented with extensive periosteal bone growth, primarily on the visceral surfaces of the ribs, while those with affected vertebrae presented with destructive, erosive lesions of the vertebral bodies, in at least one case with a weeping cloaca (Dodwell, 2016:94). In one instance (ID 267, EKA2 Zone 4, Kent – 16–17-year-old female), the lesions had healed at death, three cases (IDs 99, 177, 259[82]) they are recorded as active at death (though not categorically the cause), and in the other individuals the state of infection is not recorded. Though the lesions are all similar, the cause cannot be definitely identified for any, as several chronic infections could be responsible. That ID 267 survived their infection (long enough for bone healing, at least) shows a level of care given to the younger members of the community. Currently, the earliest confirmed case of tuberculosis in Britain is burial 7 from Tarrant Hinton, Dorset, dated to the MIA (400-230 cal BC). TB was confirmed in this individual through aDNA analysis in 2005 (Taylor et al., 2005:2239-40). Of the 11 possible cases here, only one is older than the Tarran Hinton case – ID 99 from Glebe Farm, Addenbrooke's, which has been C14 dated to 753-404

[82] Glebe Farm (Cambs.), Hill Cottage, Royston Road, Baldock (Herts.), and EKA2 Zone 13 (Kent) respectively.

cal BC (Evans et al., 2016a:92). If this could be confirmed through further analysis it could push the origin of TB in Britain back *c.*300 hundred years.

Septic arthritis

Two instances of septic arthritis were recorded, both likely the result of trauma. ID 379 (Hatton to Silk Willoughby, Kent) had septic arthritis affecting the first left metatarsal and first proximal phalange of the left foot, with proliferative lesions around the joint margins and eburnation on the joint surface (Brayne, 2001:X). ID 434 (Sale Drive Doline, Herts.) had an affected right proximal and medial hand phalange. In this case there is evidence of an infection, with healing sinus, and complete ankylosis of the joint has occurred, fusing the bones at a *c.*110-degree angle (Fig. 14.27a-b, Ortner, 2003:222). It is also possible this is a case of a Boutonnière Deformity, again commonly caused by trauma and resulting from the tearing of the central slip which balances the forces of the tendons in the finger (BSSH, 2016).

Figure 14.27a-b: Two views of the right proximal and medial hand phalange of inhumation ID 434 (Sale Drive Doline, Herts.), showing the complete fusion of the joint at a c.110 degree angle, likely as a result of trauma. (Source: Author).

Other infections

The effects of infections were identified in a further 21 individuals (19 inhumations, one ABG, one disarticulated bone)[83]. All areas of the body were affected, but at least five had changes to the bones of the skull, and at least four to the spine, with tibiae also frequently recorded. Sinusitis was identified in four instances (IDs 126, 237, 373, 407[84]), most likely from inhaling smoke within the home over a long period of time (Anderson, 2008:218; Burrow and Mudd, 2008:10-11). Systemic infections were identified in three individuals (IDs 244, 254, 265[85]), all had multiple affected bones, most notably ID 244 (Cliffs End, Kent) who presented with periosteal new bone formation on the clavicles, humeri, right ulna, sacrum, femoral necks, left tibia and fibula (McKinley, 2014a:132). This individual died in adolescence. In at least three cases the lesions (lamellar bone, periosteal new bone formation) were healed long before death, but in others (e.g. ID 265 (EKA2 Zone 13, Kent), D.ID 58 (Colne Fen, Cambs.)) the lesions were active at death and possibly the cause. Trauma is posited as the source of the infection in at least four cases, as well as the instances of sinusitis, but non-specific infections can originate from numerous circumstances.

Other pathologies

As well as the more commonly occurring pathologies above, there are small numbers or single instances of less common pathologies within the dataset. These are recorded in the datasheets where they occur but are not discussed further as they are not significant on a large scale and to discuss each would be a lengthy process. Briefly though, inhumation ID 404 (Sedgeford, Norfolk) has a lesion on one toe indicative of gout, supported by C14 and N15 isotope values rich in animal protein (McKinnon and Hatton, 2011:31). This individual also lost their fifth toe phalange on one foot, with subsequent remodelling of the metacarpal (*ibid*, 31). ID 365 (Tothill Street, Kent) had a meningioma, which while often benign could have caused death through increased pressure on the brain (Bailey, 2010:69-70). ID 259 (EKA2 Zone 13, Kent) had endocranial depressions in both parietals, which could be the result of a tumour (McKinley and Egging Dinwiddy, 2015:367).

Squatting facets were recorded in at least 10 inhumations and one disarticulated tibia (ID 246, EKA2 Zone 12, Kent). The cemetery of 11 individuals from Tothill Street, Kent included a 'high frequency' of squatting facets, but exact details were not recorded as the site was never fully

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[83] Infections related to oral health are discussed below
[84] Rectory Road, Bluntisham (Cambs.), Cliffs End (Kent), Weatherlees-Margate-Broadstairs Pipeline (Kent), and Flixton Park Quarry (Suffolk) respectively.
[85] Cliffs End (Kent), EKA2 Zone 12 (Kent), and EKA2 Zone 13 (Kent) respectively.

published (Bailey, 2010). A restricted number of sites are represented, though it may be expected that squatting activities were more widespread. Three individuals came from the ditch burials at Verulam Hills Field, previously interpreted as slaves or low-status community members (Ilid, 1968:18).

IDs 124, 216, 244[86] and an unknown number of individuals from Tothill Street had Spina Bifida Occulta as well as squatting facets. Three others (125, 147, 417[87]) also had Spina Bifida, in all cases apparently asymptomatic. Both IDs 124 and 125 are from Prickwillow Road, Cambs. and likely related, as are the Tothill Street individuals.

Osteochondritis Dissecans was recorded in six individuals. The fragmentation of joint cartilage and sometimes the underlying bone, Osteochondritis Dissecans can heal naturally as the bone grows, and is often the result of trauma, or a defect in bone development (Ortner, 2003, 351; Resnick et al., 1995:2613). It most frequently affects the knee joint at the femoral condyles, as was the case for IDs 125, 221 and 302[88], but the axis (ID 263, EKA2 Zone 13, Kent), both humeri (265, EKA2 Zone 13) and first toe phalange (217, Verulam Hills Field, Herts.) were also recorded here. ID 302 (HS1-WHS, Kent) also had an osteochondroma on the left tibia also, a benign bone tumour that most frequently occurs during childhood as the bones are developing (Ortner, 2003: 508).

A number of lytic lesions were present on the endocranial surface of the right parietal of ID 434 (Sale Drive Doline, Herts.), from the arachnoid cells of the dura matter (Ortner, 2003:514). These arachnoid (pacchonian) granulations had in places penetrated completely through the cranial vault, and may indicate a meningioma, but postmortem taphonomic damage makes the extent of the lesions difficult to assess (Fig. 14.28).

[86] Prickwillow Road (Cambs.), Verulam Hills Field (Herts.), and Cliffs End (Kent) respectively.
[87] Prickwillow Road (Cambs.), Wandlebury (Cambs.), and RAF Mildenhall – Washington Square (Suffolk) respectively.
[88] Prickwillow Road (Cambs.), Verulam Hills Field (Herts.), and HS1-WHS (Kent) respectively.

Figure 14.28: Photo of the endocranial surface of the parietal of ID 434 (Sale Drive Doline, Herts.), showing erosive lytic lesions, active at death, as well as taphonomic damage to the affected area. Source: Author.

Oral health

Calculating and presenting true prevalence rates (TPRs) for oral pathologies would require a primary re-analysis of almost every individual with surviving dentition and would be far beyond the possibilities of this study. Nevertheless, crude, large scale data can still be valuable, as with the skeletal pathology. Issues occur with instances like IDs 87, 90 and 93 (Duxford, Cambs.), all of which are recorded as having 'poor dental health', but with no further detail.

Antemortem tooth loss

Antemortem loss was unsurprisingly common across the data. Of 165 inhumations[89] with sufficiently surviving dentition to assess antemortem loss, 70 had lost at least one tooth in life (42.4%). AM tooth loss was also noted on four disarticulated bone deposits and one ABG. Only three individuals lost a single tooth, ten lost two teeth, 16 individuals lost 3-5 teeth and eight lost six or more teeth before death. AM loss was extensive in some individuals, like ID 80 (Colne Fen) (Fig.14.29).

Figure 14.29: Mandible of ID 80 (Colne Fen, Cambs.) showing extensive antemortem tooth loss. Source: Author.

The remaining 33 are all recorded as having AM tooth loss, but the severity is unknown. Of the 95 individuals with no evidence for AM loss, at least 59 are under 35 years old, thereby decreasing the chances of AM loss through natural wear and tooth decay. Fig. 14.30 presents the AM loss data, showing an overall increase in AM tooth loss as age also increased, as would be expected. AM loss can result from multiple causes– caries, periodontal disease, periapical cavities, trauma. Where these were recorded they are discussed.

[89] Adolescent and older

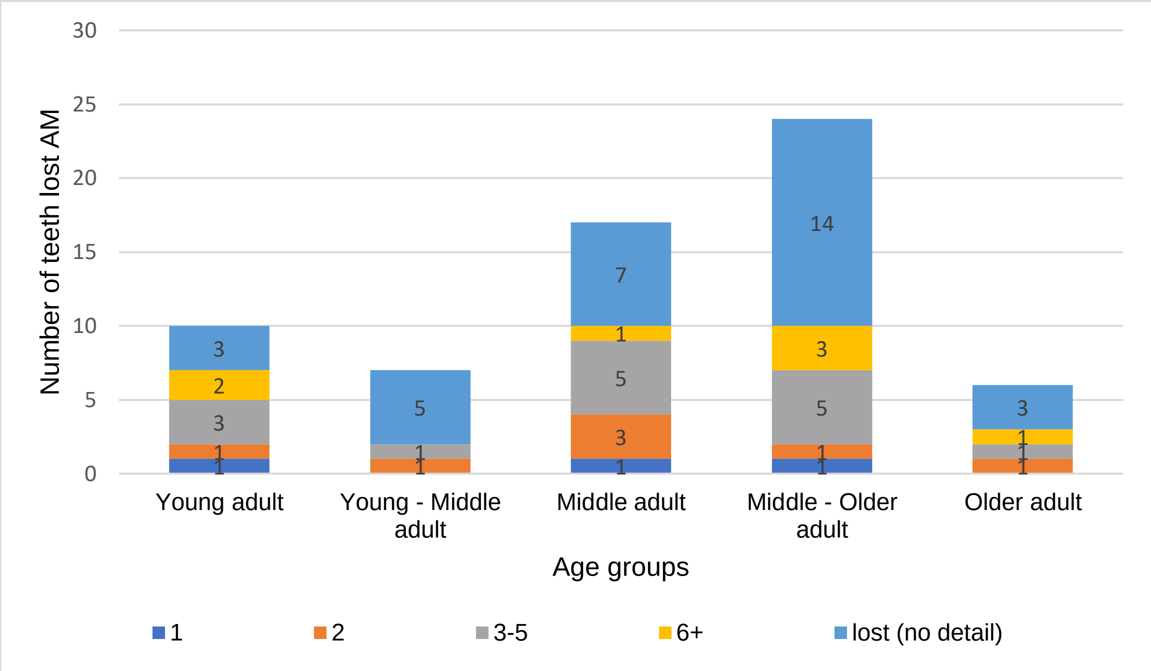

Figure 14.30: Chart showing the prevalence of antemortem tooth loss by age group – AM loss increasing through to Middle-Older adults. Source: Author.

Calculus

Dental calculus was similarly common. Of 178 individuals (*c*.4 and older) with sufficiently surviving dentition, a degree of dental calculus was present in 105 (59%). Six disarticulated bone deposits and three ABGs also had recorded calculus. It is very likely that more than 59% of individuals had some degree of calculus build-up in life – the prevalence in modern populations can be over 85% in older adults (Smith et al., 2007:604). The survival of calculus will be a factor here, as it is fragile and can easily separate from the teeth, unlike erosive lesions (See 3.6.1). For 77 of the inhumations the severity of the calculus or number of teeth affected was unrecorded. Calculus has been proven to be directly related to age, becoming more prevalent the older a person becomes (Beiswanger et al., 1989:55), so it is unusual that more young adults had recorded calculus than any other age group. It should be noted though that there were 40 middle-older adults with sufficiently surviving dentition and 49 young adults, so the calculus prevalence rate for the former group was 65%, compared to 65.3% for the young adults (32/49).

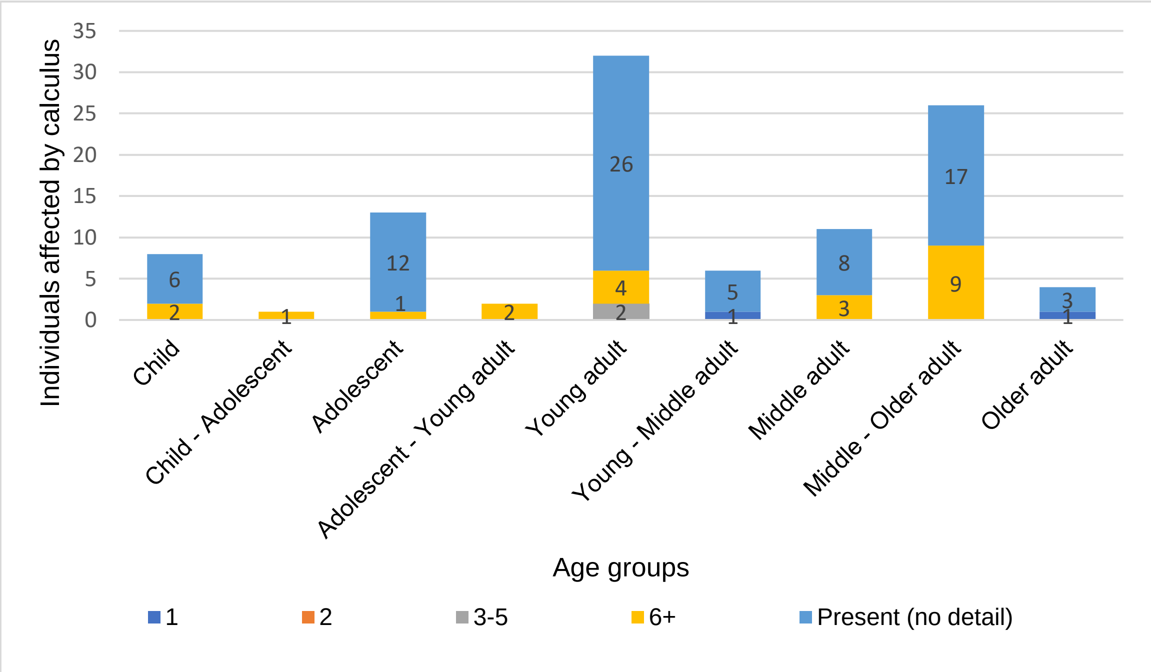

Figure 14.31: Chart showing the prevalence of dental calculus by age group. Calculus was common across all ages. Source: Author.

Caries

Caries were identified in 72/173 inhumations with sufficiently surviving dentition (41.6%, Fig. 14.31). Two disarticulated bones and one ABG also had recorded caries. Of the 101 individuals with no recorded caries (4 years old and above), at least 41 were under 25 years old, and therefore subject to less overall tooth wear/use than older individuals[90]. As with the calculus results, young adults are the most common age group, though proportionally this was not the case; 70.8% of middle adults with sufficiently surviving dentition had at least one carious lesion (17/24), but only 45.9% of middle–older adults (17/37) and 47.8% of young adults (22/46). There was no significant indication of a sex-based division in caries prevalence; there were 36 males, 30 females and six unsexed. Multiple, highly destructive caries were recorded frequently (e.g. ID 331 (Mill Hill, Kent), eight caries, three had destroyed the entire crown), and will have led to further dental pathologies like AM loss, infections, and abscesses/periapical cavities (see below).

[90] Ten children, one child-adolescent and 19 adolescents.

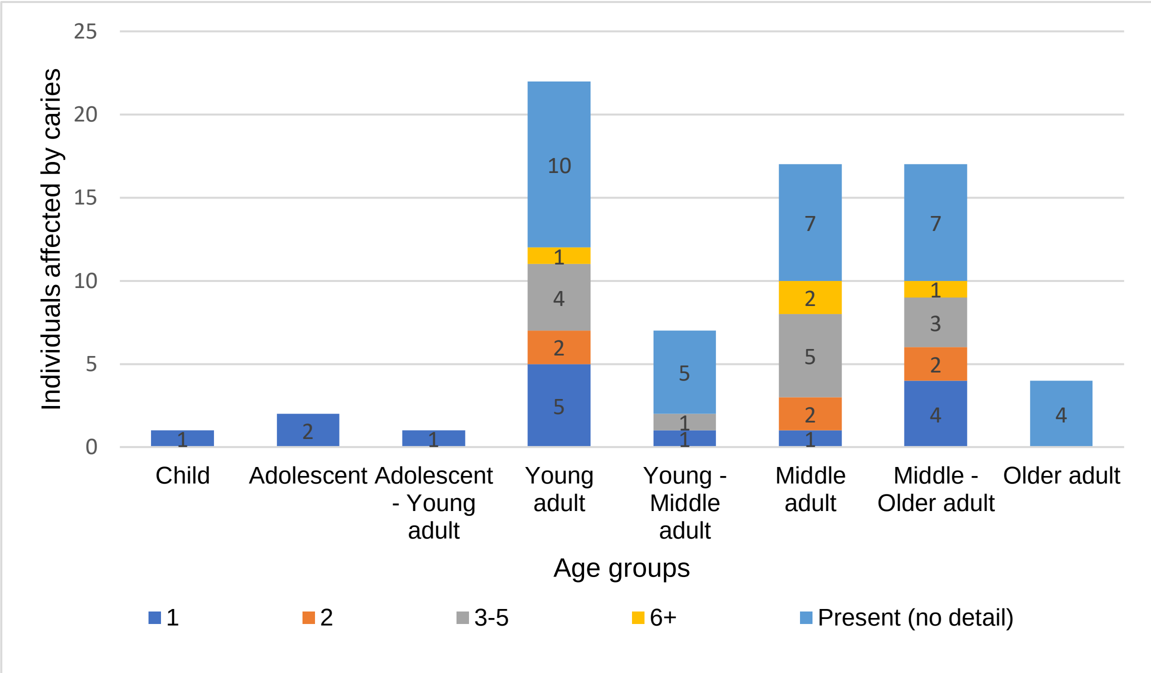

Figure 14.32: Chart showing the number of individuals affected by at least one carious lesion. Source: Author.

Linear Enamel Hypoplasia

LEH was recorded in 42/197 individuals with sufficiently surviving dentition[91] (21.3%). For 25 of these, LEH was recorded as present, with no further detail regarding which teeth were affected, or how many lines were visible. Two or more lines were recorded in at least six cases (IDs 126, 128, 157, 179, 267, 386[92]), indicating repeated periods of stress during the short period of enamel formation for the affected teeth. ID 184 (King Harry Lane, Herts.) reportedly had at least one LEH line on every surviving tooth, and ID 336 (Mill Hill, Kent) had 14 of 25 affected teeth. Where specific teeth were recorded (13 individuals), 29 incisors were affected, as well as 22 canines, six premolars and two second molars. Incisors are the earliest to mineralise and lines within these teeth can indicate periods of stress at around 2-4 years old (Burrow and Mudd, 2008:10-11; Gerber, 2007:306), and around 3-5 years old for canines (Duhig, 1992:ii; Start, 2002:9). Some individuals had periods of stress up to *c.*8 years old (IDs 381, 385, 386); notably all three are from the Horkstow Road cemetery. There is debate as to the accuracy of macroscopic methods for estimating ages of LEH formation (see Ritzman et al., 2008), so no attempts have been made to narrow down the study data, but it is fair to say that the majority of stress periods occurred in late infancy to early childhood, broadly between

[91] Aged *c.*4 and older.

[92] Rectory Road (Cambs.), Stonea Camp (Cambs.), Chery Hinton (Cambs.), Icknield Way (Herts.), EKA2 Zone 4 (Kent), and Horstow Road (Lincs.) respectively.

ages two and five years old. Again there appears to be no sex-based differentiation here (17 males, 16 females). Three disarticulated bones also had recorded LEH lines (D.IDs 258, 333, 455[93]).

Periodontal Disease

Periodontal disease was recorded in only 45/170 inhumations with available data (26.5%), of individuals aged *c.*13 and older (adolescent+). One disarticulated skull (D.ID 526, Burgh, Suffolk) also had periodontal disease on all maxillary sockets. There was a slight bias towards male individuals (25/43, 58.1%), but not significantly so, and not much greater than the overall male/female proportions. Almost one third of young adults had some degree of periodontal disease (16/49), compared to 46.2% of middle adults (12/26). Periodontal disease, like dental calculus and caries, is most frequently the result of poor dental hygiene, and is a leading cause of antemortem tooth loss (see 3.6.3). It is therefore surprising that while 42.4% of individuals had lost at least one tooth AM, 41.6% had at least one carious lesion, and at least 59% had a degree of dental calculus, only *c.*1 in 4 had signs of periodontal disease. It is likely that again this an issue with variable recording standards, as well as the fact that extensive AM loss would reshape the alveolar bone more extensively than the earlier stages of periodontal disease, affecting identification. Variable bone preservation may also be a factor here.

Periapical cavities / Abscesses

Periapical cavities and/or abscesses were recorded in 34/160 inhumations with available data (21.3%)[94]. Three disarticulated bones also had recorded lesions, including D.ID 526 with lesions affecting three teeth. Once again there was a slightly greater proportion of affected males than females (18/32, 56.3% male), but not significantly so. There does appear to be a more expected age progression in the proportion of affected individuals here than with some preceding pathologies (Fig. 14.33), with one-third of middle–older adults presenting with at least one instance (13/39), compared to 30.4% of middle adults (7/23) and 18.2% of young adults. (8/44). Despite this, there are more extreme cases with multiple affected teeth/sockets, across all age groups. The largest recorded number of lesions was eight, in ID 402.

[93] Trumpington Park and Ride (Cambs.), Station Road (Herts.), and Weatherlees-Margate-Broadstairs Pipeline (Kent) respectively.
[94] Adolescent and older

In multiple cases the lesions will have been active at death, and subsequent infection may have been a cause of death itself (e.g. ID 110, Harston Mill, Cambs.). Existing carious lesions are given as the cause of abscesses/cavities in at least 16 instances, in some cases one carious tooth caused an abscess that affected multiple roots (e.g. ID 168, A505 Baldock Bypass, Herts.). In at least 10 individuals the tooth related to the abscess was lost AM, undoubtedly relatedly. Individuals with periapical cavities/abscesses in almost all cases also suffered other oral health pathologies. In at least two instances (IDs 245 (EKA2 Zone 12, Kent) and 410 (Flixton Park Quarry, Suffolk)) maxillary abscesses led to secondary sinusitis.

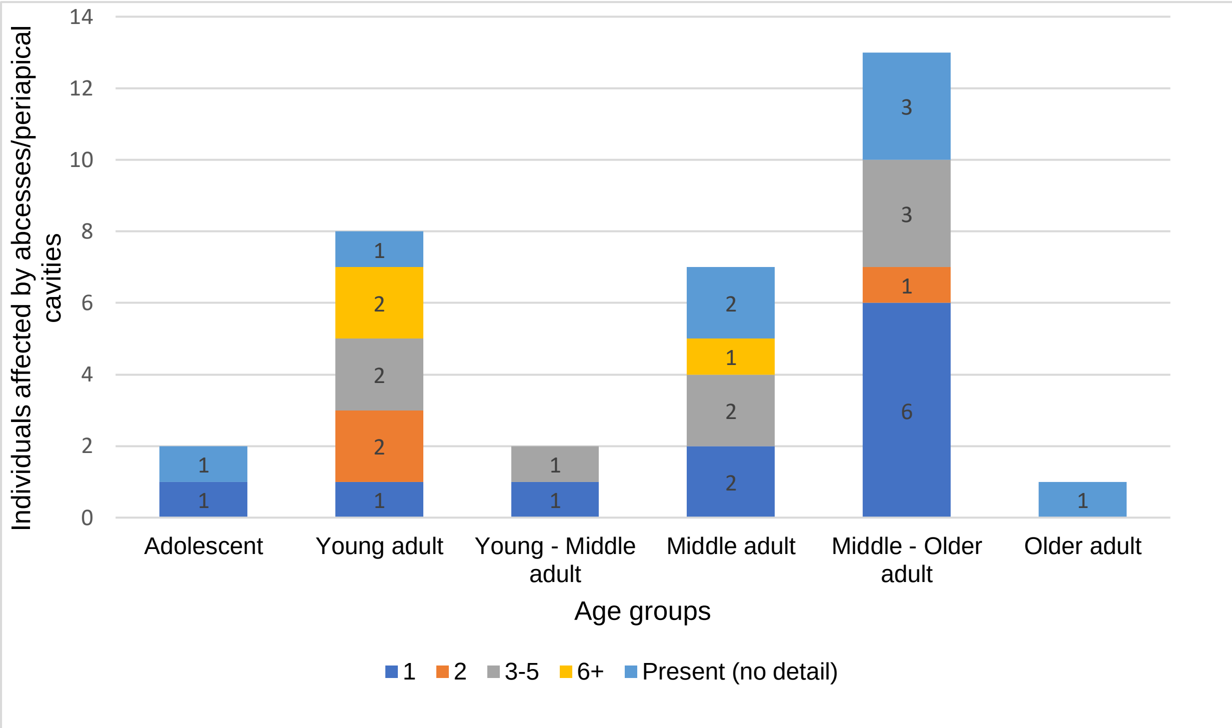

Figure 14.33: Chart showing the number of inhumed individuals with recorded abscesses/periapical cavities, divided by age group. The coloured sub-groupings refer to the number of teeth/roots affected. Source: Author.

Third hand use

Behavioural ‘third hand’ use was recorded in six instances (Table 14.2). In five cases the anterior teeth were excessively worn, all consistent with activities involving holding, gripping or pulling leather, sinew or thread between the teeth. ID 140 (Trumpington Park and Ride, Cambs.) may be the result of post-mortem damage. ID 65 (Cat’s Water, Cambs.) also has extreme attrition on the three surviving teeth, which could also relate to similar practices (Powell, 1984), but is less convincing. ID 148 (Wandlebury, Cambs.) has teeth more worn on the right side than the left, which again could relate to habitual extra-masticatory practice, or perhaps they found it uncomfortable to use the left side of their mouth, though no abscesses or caries were noted. Use of the teeth as a third hand is identified through additional wear patterns, meaning that as individuals age and teeth wear, these patterns are less likely to be noticed; especially with increasing AM loss and caries. It is notable that 5/6 individuals here and ID 65 are young individuals with less worn dentition overall, and use of the mouth as a ‘third hand’ was undoubtedly more ubiquitous than is visible in the data.

ID	Site name	Age / Sex	Affected teeth
67	Cat’s Water	Young adult Male	Mandibular canines and incisors excessively worn, consistent with pulling/chewing leather
140	Trumpington P&R	Middle – Older adult Female	Chipped enamel on surviving teeth, possibly from third hand use, could be PM damage
238	Cliff’s End	Adolescent ??F	Right maxillary I2, wear pattern suggestive of running thread/sinew between the teeth
244	Cliff’s End	Adolescent ??M	Right maxillary I2, wear pattern suggestive of running thread/sinew between the teeth
372	Waterstone Park	Young adult Male	Incisors and canines excessively worn, led to an edge-to-edge bite
406	Bridge House Dairies	Adolescent Female	Incisors excessively worn, suggestive of use as third hand for gripping/processing leather or sinew

Table 14.2: Table of the identified inhumations with evidence of ‘third hand’ use on their dentition. Source: Author.

Other

Peg teeth were recorded in two cases, a maxillary incisor (ID 406, Bridge House Dairies, Suffolk) and a maxillary molar (ID 67, Cat’s Water, Cambs.). ID 406 had also retained a deciduous canine (right maxillary), and was congenitally missing their right maxillary I2, with the permanent canine in its place, anterior to the deciduous tooth (Leach, 2010:82).

Hypercementosis was recorded in three individuals. ID 402 (Grime’s Graves, Norfolk) had an affected right mandibular PM2 root, among many other teeth with pathologies (extensive periapical cavities, AM loss and caries). Both IDs 255 and 257 (EKA2 Zone 12, Kent) had hypercementosis, but with no further recorded detail. Hypercementosis is the excessive deposition of non-neoplastic cementum over the normal tooth root, and is asymptomatic (Shoor et al., 2014:1). It has a varied, largely unknown aetiology but has previously been linked to Paget’s disease, acromegaly, vitamin A deficiency and more recently, lupus (*ibid*, 1). Possible cases of both Paget’s and acromegaly have been noted in the disarticulated material

(D.IDs 53 (Clay Farm, Cambs.) and 65 (Cat's Water, Cambs.)) but were not suggested for inhumation IDs 255 and 257. ID 253 from the same site had an impacted tooth also.

In addition to that already mentioned, ID 402 (Grime's Graves, Norfolk) had pericoronitis in the area of the left maxillary M2-3 teeth, an inflammatory condition resulting from bacteria and debris trapped beneath the operculum covering an erupting or impacted tooth (often the M3) (Laskaris, 2004:141). Pericoronitis is not serious in itself but can lead to abscesses and subsequent infections (*ibid*, 141).

Conclusion

The primary purpose of this chapter was to assess the overall validity and representativeness of the sample data to a 'normal' population. It appears clear that this is the case; the sample data has a broadly expected mortality profile, with an appropriate, though perhaps low level of infant mortality for a pre-modern society. Subadults are as visible in death as adults are, though with chronological and regional variation, as well as differences in treatment. There is a consistent, very slight sex bias towards males, visible in the overall data and in certain pathologies, but it is never significant. The poorly preserved burials and single disarticulated bones that could not be aged beyond 'adult' but were given tentative sex estimations showed a much stronger male bias, highlighting a possible tendency by excavators to assign remains to male sex over female based on limited data. While preservation issues will always be a factor in determining prevalence of skeletal pathologies, nothing in this sample was atypical, with widespread osteoarthritis lesions and oral pathologies typical for pre-modern societies. The data showed a degree of sexual dimorphism with regard to stature, there was little overlap in the statures of sexed individuals (Fig.14.9), though this is mitigated somewhat by the margin of error for all stature estimate formulae.

This chapter also served to highlight demographic patterns in the data indicative of cultural phenomena. The evidence for interpersonal violence centred more around the Cambridgeshire region and its hillfort sites than anywhere else, with a clear and repeating pattern towards head trauma over other parts of the body. Cranial and upper vertebral trauma was an overwhelming focus for SFT lesions, and for 10/13 BFT injuries also. While there is certainly an argument to be made for the likelihood of visible cranial trauma versus other parts of the body (e.g. the abdomen or legs), this pattern is consistent with other evidence from the data of the importance of the head (section 9.9). The instances of AM trauma, especially to the head and legs speaks to a level of communal care throughout the population. There are individuals who suffered chronic conditions, severe infections, extensive tooth loss, traumas that would have made them immobile for extended periods, and in one case unable to eat solid food. All survived, they were cared for, supported, and fed, all while there is also widespread evidence of childhood stress (LEH), anaemia and other nutritional issues. The importance of the community, arguable expressed in post-mortem treatment (Discussion), is also visible in the care of the sick and injured.

15. Appendix 4 - Excluded inhumations

Introduction

This appendix concerns inhumation burials that could not be included in any in-text analysis, owing to insufficient or questionable data. Some of these burials have been discussed in the text, but none were included in any statistical analysis. The excluded material has been broken down into three main categories:

1. Securely Iron Age inhumation burials with insufficient recorded information
2. Inhumation burials that may be Roman, or Iron Age, and those that may not be inhumations
3. Empty graves

These divisions were put in place as there are different degrees of validity inherent in them, and the data they encompass – for example the three neonates from Trumpington Meadows (E.16-18), placed in category 1, are securely EIA, and most likely to be complete inhumations– but their completeness, position and orientation cannot be confirmed. They are, however, of greater interpretive value than any individual in category 2, and certainly more than the sites in category 3.

This appendix serves as a record of this data, with explanations as to why each one was excluded from the overall analysis.

Securely Iron Age inhumations with insufficient recording

Sixty-five individuals were identified as Iron Age inhumations, but were not subject to more detailed analysis, owing to a lack of data. These 65 were given ID numbers so that they could be easily discussed in-text. They are numbered E.1 to E.65, E. meaning 'excluded individual'. In almost all cases the remains were unpublished, some un-excavated, and some excavated many years ago and never re-analysed. In multiple cases the human remains have been lost since excavation.

IDs E.1-8 were from Maiden Bower and 9-12 from Puddlehill, both hillforts in Bedfordshire. Those from Puddlehill are excluded as all that is known about them is that they are all under 13 years old and were placed in the enclosure ditch during a silting phase (Matthews, 1976). There is no hard evidence to date them beyond the overall hillfort age, and no contacted storage locations have any record of the remains. The same is largely true of Maiden Bower – there are several excavations, many under rushed conditions in the early 20th century. As a result, dating is restricted to the EIA-MIA (LIA for ID E.1), and the circumstances of the excavation make this tentative. All were from the enclosure ditch, as with Puddlehill, and at least three may have been decapitated (Matthews, 1989:40). IDs E.2-5 were adults, the rest children/infants. The remains are largely lost, there are no photos or site plans, the only report was published some 30 years after the excavation, and not by the original excavator (Matthews, 1976). The number of individuals found is also unclear and conflicting. However, the similarities between the descriptions of these burials and those found at Wandlebury and Cherry Hinton (see above) are strong, suggesting that at least some are Iron Age, probably Middle or Late, owing to the hillfort context.

IDs E.16-18 (Trumpington Meadows, Cambs.) are mentioned above – all were excluded as they were only identified post-excavation, and so have lost any contextual data. The same is true of ID E.13, an infant from a pit at Glebe Farm, Addenbrooke's, Cambridgeshire (Evans et al., 2016a:96). E.38 (Ford Place, Norfolk) also lacks necessary contextual data. A young adult (*c.*25-30), from the base of a pit, E.38 was described variably as an inhumation and as 'human skeletal material', their position, orientation and degree of articulation unrecorded (Davies, 1992; McKinley, 1992). McKinley (1992) does note every element present, but poor survival or secondary deposition could account for the missing material. This could be a primary inhumation, a secondary bundle or a collection of loose bones.

ID E.19 (Wintringham Park, St. Neots, Cambridgeshire) was excluded as only a broadly Iron Age date and a burial position (crouched), could be ascertained, the remains unexcavated as they were discovered during an evaluation (Philips and Hinman, 2009:52). ID E.37 (nr. Kettleby Quarry, Lincolnshire) was likewise found during an evaluation, a single inhumation in an unspecified grave, but disturbed by ploughing (Bell, 2013; Mann and Adcock, 2013). The remains were unexcavated. Inhumation ID 97 (Glebe Farm, Cambs.) was also only partially exposed and left in place (eval), but their grave type, position and orientation could be established, and their broad age (adult), so they have been included in the overall data.

ID E.27 (Lullingstone Park, Kent) was excluded due to an overall lack of data – a LIA infant burial, one of two from the site, but with no other information recorded (Horner, 1969:241). E. 41 (Icklingham, Suffolk) is much the same, recorded by Clarke (1960:100) as a child with a 'ribbed bronze bracelet' and referenced by Whimster (1981:28) but with no further detail.

IDs E.28-33 were six adults, buried E-W in a line on a beach surface at Mount Green Avenue, Kent. They were covered by a mound, which still survived to *c.*1m tall when excavated in 1959. Associated pottery dated the remains to 300-200 BC (MIA) – one large pot was reportedly found with them (HER TR 36 SW 24). Besides this, nothing else is known – the remains were once in Ramsgate Public Library but are not there anymore (pers. comm), the library having no record of them. The site was never published, and so the data remains unusable.

Similarly E.15, an apparently very rich inhumation from Soham, Cambridgeshire, was excluded due to a lack of published data, as well as missing human remains. Sometime before 1923 a 'warrior burial' was uncovered, a single inhumed individual with a La Tène II or III spear and supposedly, two dog skeletons (Fox, 1923:81). This has some similarities to the Newnham Croft burial (ID 123), also from Cambridgeshire.

ID E.36 (Hemswell, Lincolnshire) was also lost sometime after excavation. A single inhumed individual was found in 1931, 'with a sherd of thick black pottery with much shell, decorated with string impression and fingertips', which was dated at the time to the EIA (Lincolnshire HER record 50980). The remains were missing by 1964, and never analysed.

IDs E.20-22 (Thorley Common, Bishop's Stortford, Herts.) were also never published[95]. Three inhumations and three cremations, dated to the LIA, were placed within two rectangular enclosures. It is possible these were enclosures like those of the Arras burials from Yorkshire, or perhaps larger enclosures acting as cemetery boundaries, like King Harry Lane and Folly Lane (see Discussion), but no further detail could be ascertained (HER 9274).

IDs E.23-6 and E.34-5 were all from various stages of the Dumpton Excavations (Kent). All likely EIA, at least three were in pits (E.24-5, 35), and one was buried with a fibula brooch (E.26). Besides this, nothing more precise could be ascertained. The excavations are complex, and in the process of wider publication, but at present cannot be included (Moody, pers. comm).

IDs E.39-40 (Roudham, Norfolk) were a double burial of an adult and a child. The adult was recorded as female, but the excavation occurred in 1956 and the remains have not been re-analysed, so this cannot be confirmed (HER 5997). The material is held by Norwich Castle Museum but could not be examined as part of the wider thesis as the building was undergoing extensive renovations during the entire data collection period.

Thanet Earth, Kent is perhaps the most important site in the list of excluded material. Excavated by the Canterbury Archaeological Trust in 2007-8, an assessment report was

[95] A publication was planned, by Johnathan Last, but it never transpired.

produced in 2010 (Rady, 2010) but the final publication is still forthcoming. The multi-phase, multi-area site included eight ditch burials which may be Iron Age or Roman – one contained two halves of an Iron Age pot, but another was C14 dated to the R-B period (Rady, 2010:24). None of these can be included until further dating occurs (Category 2). As well as these, a cemetery of 24 inhumations (E.42-65) was identified and though bone preservation was very poor, a single C14 test returned an MIA date (390-200 cal BC), with associated finds suggesting MIA-LIA also (*ibid*, 24). However, the only additional information currently available for this cemetery is what can be ascertained from Figs. 15.1-2 (Pl.26-7 in Rady 2010). They show the inhumation graves on broadly the same alignment, N-S, in loose rows. There is no demographic data available, or anything relating to body position or associated goods, except that many were unaccompanied (*ibid*, 24). Rady states that the cemetery needs further dating to confirm an MIA-LIA date (2010:209), so, at this stage, while the site is worth noting, the cemetery burials cannot be included in wider analysis.

Finally ID E.14 (Love's Farm, Cambridgeshire) is excluded as it was not identified until after data collection and analysis had been undertaken, and access to the publication was not possible at this point (due to COVID-19). It is known that the site contained an MIA crouched inhumation in or near a settlement context (Hinman and Zant, 2018).

Figure 15.1 (left) and 15.2 (right). Photos showing a single grave from the Thanet Earth cemetery (scale 0.5m) and the cemetery in plan, during excavation (South is at the top). The graves are visible in the top of the photo. Source: Rady, 2010:Pl.26-7.

Questionably dated inhumations, and those with poorer recorded information than category 1.

The inhumations in category 2 were excluded as they may be Roman/Romano-British, and could erroneously skew the data if included, or if it could not be ascertained how many individuals were present, let alone any more complex contextual data.

Chronicle Hills, Whittlesford (Cambridgeshire) is a site which has undergone multiple examinations and re-examinations since the original excavation in 1818. Most recently in 2007 (Taylor and Arbon), but there is still no great consensus over whether the four inhumations from the site are Iron Age, Roman or even Saxon. The site was discovered during landscaping, with the landowner levelling three 'ancient tumuli' and two other mounds (Taylor and Arbon, 2007:24). Within the central of the three barrows were four inhumed skeletons, in supine positions, possibly secondary inhumations as they were over half a metre from the base of the barrow (*ibid*, 26). The other two barrows were apparently empty of human remains. Also within the central barrow was pottery described as 'broken pieces of terracotta with red and black glazes' (*ibid*, 26), which is more indicative of early Roman than Iron Age material. Within both of the two other mounds were square chambers lined with flint and stones, each containing two inhumations. In one chamber, the two individuals were on a wooden platform, the larger of the two skeletons on top of the smaller (*ibid*, 26). A bronze vessel and a knife were also included. Within the second chamber, one individual was 'seated' and was again covered by a second skeleton, this time with a spearhead associated (*ibid*, 26). The burials were originally thought to be 'Celtic' due to a lack of Roman coins.

Fox (1923:76-81, 136) supported the idea that they were Iron Age, specifically EIA, citing continental parallels and other barrows in the Cambridgeshire region. Clark though disagreed, saying that the two with vaults were Iron Age, but the other three Roman (Salzman, 1938:289; Taylor and Arbon, 2007:28). In 1958 the site was re-examined again by Jessup, who ascribed all five to the Romano-British period but admitted that none was 'typically Roman' (Jessup, 1958:21). Again in 1977 Liversidge suggested the three barrows with the red and black pottery were Roman (1977:29), but Whimster (1981:33) and Taylor (1981:116-7) both argued that they were Iron Age. In 1997 Taylor reassessed the site and posited that the four inhumations in the central barrow may actually be Saxon additions to an Iron Age barrow (1997:109). However, most of these authors were unaware that a Roman villa was also discovered in the vicinity in the 1800's, and other Roman period structures also (Taylor and Arbon, 2007:32). Taylor and Arbon's summary of the site and its history is far more thorough than is presented here, but even they were unable to refine the date of the barrows, though they make a compelling argument for at least some being early Roman, and related to the nearby villa site (*ibid*, 35-9).

At Lime Kiln Hill, Cherry Hinton, Cambridgeshire, up to nine skeletons 'of large size' were discovered in 1854, either related to, or adjacent to the 'War Ditches' Cherry Hinton site (Pickstone and Mortimer, 2012:33; Filby, 1995). These are likely to be Iron Age but cannot be proven without C14 dating. Primary analysis of two of these individuals was undertaken at the storage location (The Duckworth Laboratory, accession numbers EU.1.3.372-3), and it was noted that in the original accession paperwork, they are recorded as Roman, but in the current Duckworth Laboratory database, they are recorded as Iron Age. The excavations were never published.

At Aston, Hertfordshire, a LIA-RB enclosure was excavated in the 1990's, with two concentric ditches and no identifiable entrance. The remains of 'two whole cows' were found in one of the ditches, covering two human infants. This information was gathered from the Hertfordshire HER (7971), with no clarification as to whether the infants were Iron Age or Roman. Bryant, in their Ph.D. thesis (1999:305) records them as Iron Age, but the only source they give is the same HER record.

Also in Hertfordshire, at Pirton, EIA pottery, hearths and an unknown number of skeletons were found in the early 1900's. The skeletons were found within a gravel quarry pit, but no more detail is known, except that the pit appears on an 1884 OS map. Hertfordshire HER (record 4516) is the only source for this – I spoke to Keith Fitzpatrick-Matthews, Archaeology Officer at North Hertfordshire Council, but no further information, nor the human remains, could be found.

At Hawbush Close, Welwyn, Hertfordshire, nine inhumed individuals were recovered over several years, with LIA and Samian pottery associated. All nine seem to have been placed either around the edge of, or in the base of a large hole, *c*.3.5m deep and 10m in diameter. One may have been bound at the hands and feet, while two were prone and several were 'pinned down by large flint nodules'. None of the nine had any grave goods, all were adults, both males and females. The burials seem to have occurred over some time, as one was buried on top of, and at right angles to an earlier individual. The earliest grave cut through a layer containing the partial remains of a horse, which was radiocarbon dated to *c.*45 cal BC, and a series of C14 dates of the remains themselves place them at AD 140 at the latest. Roman cremations were subsequently placed over the inhumations. All the above information came from the Hertfordshire HER (record 12073). The flint covering the remains has parallels here (discussion), and the association with human remains and natural or human made holes or fissures can be seen at Cliffs End (Kent), California and Sale Drive dolines (Baldock, Herts.), and Greenhithe (Kent, see below) so it is possible these are Iron Age. The placement of Roman cremations over the inhumed remains could suggest the site was a known place of burial, though this too could be before, or after the conquest. It is unlike the majority of LIA sites in Hertfordshire, but the sites that are known are arguably 'Romanised'. It is unfortunate that the site was never fully published, as it is likely that at least some of these individuals are pre-conquest, but there is insufficient detail to include them in the thesis.

Also from Hertfordshire, excavations at Welches Farm, Datchworth uncovered another inhumation, prone, with rocks on their back, like those from Hawbush close. Here too a 10m diameter pit was identified, as well as another inhumation and more than one cremation. The second inhumation, an adult female, was thought to be of LIA or early RB date (HER 2739). Welches Farm and Hawbush close are *c.*3.7km apart, but the presence of LIA-RB inhumations, and cremations, around a 10m wide pit/hole, and with individuals from both sites covered in rocks, seems too much to be coincidental. No date is given for the first individual, and no secure date exists for the second; the site was published (Rook, 1974), but with no great detail provided, and so the site must be excluded.

Again similar to the above two sites are the inhumations from Greenhithe in Kent. Found in 1879 by chalk-diggers, the site consisted of a bell-shaped pit or Dene hole, *c*.7m in diameter at the base, narrowing to the top, with a smaller shaft to ground level, and reportedly 10m deep (Gatrill, 1880:193) The entire pit was filled with sands and gravels, plus large amounts of animal bone, iron, bone and stone artefacts, and some Romano-British period pottery including Samian ware (*ibid*, 194). Below all of this were three inhumations, laid side-by-side on the floor. One skull was kept by the author of the only published report, Rev. Gatrill, the other remains scattered and lost by the workmen (*ibid*, 193-5). Gatrill posited that the remains were pre-Roman, with the subsequent fills representing waste dumps by Romano-British people living nearby (*ibid*, 194-5). As the remains are lost, no plans or further details survive, and the date cannot be confirmed, the site must be excluded.

Dover Road, Walmer, also in Kent, was excavated much more recently (1997). An unspecified quantity of human bone was discovered by workmen and identified by Canterbury Archaeological Trust as belonging to a child and a juvenile (Parfitt and Parfitt, 1998:20). CAT visited the site and identified four large Iron Age pits, with pottery dating from 600-200 BC (*ibid*, 20). The only other human remains found were a possible toe bone in the spoil heap, and by the time CAT arrived on site the majority of the excavated material had been removed (*ibid*, 20). Therefore, despite a firm Iron Age date, there is no way to tell whether these individuals came from one of the four pits or another, destroyed feature. While it is likely that they were pit inhumations, there is also no way to assess their completeness – they may not have been inhumation burials at all, but collections of disarticulated bone or semi-articulated bone groups.

Sea Road, Westgate, Margate is an unpublished site (Kent HER TR 37 SW 8) – three broadly E-W inhumations in shallow graves were uncovered during building work in 1959 – with 'Iron Age B' pottery recovered from some of the features. No further information could be found, the location of the remains is unknown, and there is no confirmed Iron Age date. Similarly at Long Melford, Suffolk, human skeletons were uncovered during construction work in a garden, as well as two 'Iron Age C' bowls, also reported as pedestal urns (Hawkes and Dunning, 1930:329; Clarke, 1939:109). It is unclear exactly how many individuals were present in all, but around 1904 two skeletons were uncovered alongside Roman pottery also, by a landowner digging in his field – at least one was re-interred within the field (Holden, 1915:267). In 1914 three further individuals were unearthed, all E-W aligned – and determined to be of Iron Age date based solely on the skull shape (*ibid*, 267-8). Fox (1923:103) recorded that Aylesford-type pottery was found at Long Melford, as did Bushe-Fox (1925:29), but these may be from elsewhere in the area. There is no way to confirm if the inhumations were Iron Age or Roman.

Another Suffolk site, Waldringfield, is mentioned briefly by Clarke (1939:45, 98) – all that is known about the burial is that a supposedly isolated grave inhumation burial was excavated *c.*1886, with a bronze bracelet on one wrist and a baked clay 'brick'. The bracelet was lost by 1939 and there is no mention of where the remains ended up, but Clarke suggested the burial may be 'Iron Age B' (*ibid*, 45). The brick was held by Ipswich Museum (R.1920.50.106), at the time of Clarke's publication. Similarly, at Sandy Plantation, Lakenheath, a bronze Dragonesque fibula brooch was supposedly found with an inhumation burial in the 19th century, The brooch is now in the Ashmolean Museum (Briscoe, 1949:93) and has been referenced in multiple sources (e.g. Feachem, 1951:Fig.2.7; Clarke, 1939:108) but with no information about the associated human remains. Also at Lakenheath (Lords Walk), a single extended inhumation was found, surviving only as a body stain, but possibly on its right side, and oriented S-N (West, 1982:2; Fig.15.3). There were no grave goods, but Iron Age and Roman finds have been recovered nearby. The inhumation must therefore be excluded as its Iron Age status cannot be confirmed.

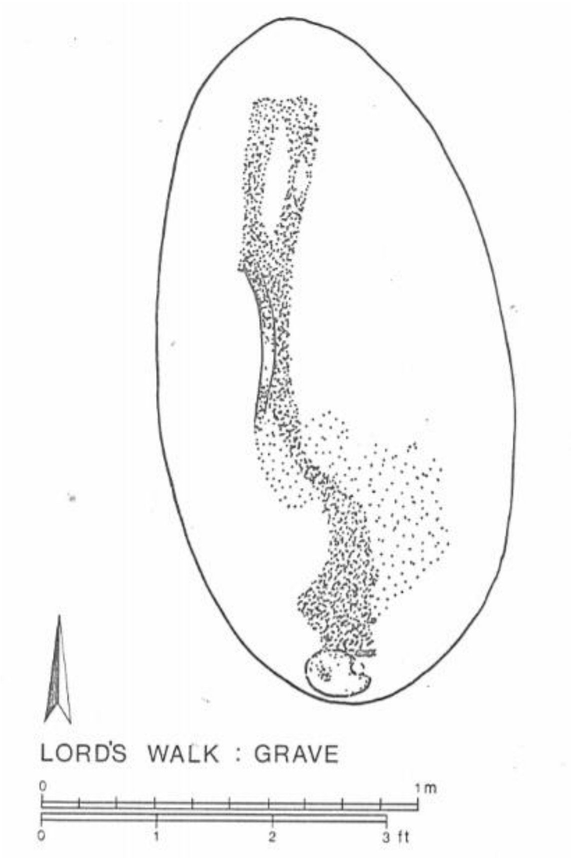

Figure 15.3: Inhumation from Lord's Walk, Lakenheath, surviving as a body stain. Reproduced from West, 1982:Fig.3.

At South Shoebury, the ‘Danish Camp’ settlement excavations uncovered an Iron Age burial according to the Essex HER (SMR 11056), but there is no record as to whether it was a cremation or inhumation, and the report (Wightman and Benfield, 2013) gives no mention of any human bone. Another Essex site only identifiable through the HER is an area south of the Railway line, near the station at Burnham-On-Crouch, Maldon (SMR 11235). Iron Age burials with pottery were uncovered in 1930 – a butt-beaker, a red ware jug a Gallo-Belgic platter and a pedestal urn were reported, and the site listed on OS maps, but again it is uncertain if the remains were inhumed or cremated (the latter seems much more likely), or where they are now. A similar lack of clarity excludes the material from Crundale Limeworks, Kent. Here small-scale excavations uncovered LIA and RB features, including a LIA ‘rubbish pit’ with ‘the disarticulated remains of an inhumation burial’ within (Anderson, 1986:13). No further reports on the site were published, and it is unclear whether the human remains here represent a disarticulated bone deposit, an incomplete human skeleton, or a disturbed/truncated inhumation.

Empty graves

Category 3 concerns sites with features that have been interpreted as, or appear very like, graves, but with no surviving human bone. Graves with sand bodies have been included in the main body of data, but below are those that had no such surviving impressions, and so cannot be confirmed as graves. It is of note though, that they come from Norfolk, Suffolk and Essex– all areas of the study region with the fewest inhumations, and regions with commonly acidic soils. There will of course be many more sites in the study region and beyond with features that could be graves, or contexts that could have contained human bone, now completely degraded, but the examples below pose strong arguments for their use as graves.

The site with the most potential to shift interpretation of the region is Fison Way, Thetford, Norfolk. A Roman treasure hoard was found here in 1979, and excavations in 1980 uncovered a multi-phase site in use from the MIA to RB periods, including multiple enclosures, a possible Roman temple, and an Iron Age mint (Gregory, 1991). Bronze Age cremations were also found during the investigations (*ibid*, 10). Phase 1 dated from approximately the 4th century BC to the 1st century AD, and included enclosures, two pit groups, a ring ditch and a possible building, as well as evidence of copper-alloy working, but no substantial signs of domestic occupation (*ibid,* 189-91).

Phase 2 dated to 40-50 AD, the decade of the Roman Conquest, though the excavator largely discusses the phase as Roman (*ibid*, 189, 193). In this period a large square enclosure was constructed, with a circular building inside, as well as a series of further enclosures to the north-west (ibid*,* 193-4). More metalworking debris was found, with pellet moulds indicative of Icenean silver coinage (*ibid*, 196). All of the other enclosures, as well as some contemporary ring ditches, contained a total of at least 60 graves (*ibid*, 53). The enclosures varied in size, and many of the graves were in groups of similar alignments, but there was no universal consistency in orientation. Not one single grave contained any human bone, teeth, or grave goods (*ibid*, 53). There was phosphate enhancement in the lowest fills of some of these features, but no evidence of a body shadow (*ibid*, 53).

Phase 3 post-dated the conquest slightly (AD 50-60s) and consisted of the expansion of the main enclosure (with the building), and the construction of five structures within (*ibid*, 189; 196-7). There is evidence of timber corridors and gateways within the enclosure also. The site was apparently abandoned for some time before the RB temple and treasure hoard (*ibid*, 197). It seems very likely that the features were graves, arranged as they were in groups, and most being *c.*2m long, under 1m wide, and with vertical sides, not to mention the phosphate signatures (*ibid*, 53). The site at Fison Way is complex and important, it may have served as a major regional funerary centre during the LIA-RB transition, however, the lack of any definitive evidence for human remains, and the lack of direct dating evidence from within the features themselves (no grave goods), means that they cannot be included. If they were, and the *c.*60 graves from the site were added to the total for the LIA period, then this one assemblage alone would take LIA Norfolk from being totally absent in the data, to the county with the third largest number of inhumations for the period (section 6.1).

At West Stow, Suffolk, a multi-period site included an Iron Age settlement with at least three phases from the third century BC to the Roman conquest (West, 1990:VIII, 9). A total of 101 pits were assigned to the IA settlement, with a further 92 additional undated pits, some of which are likely to be Iron Age (*ibid*, Table 3, 22). Throughout all three site phases, but increasingly so in the LIA, a large proportion of these pits were sub-rectangular – seven in phase 1, 11 in phase 2 and 18 in phase 3 (*ibid*, Table 3). The majority of the total pits also had vertical sides and flat bases, and most were 1-1.8m long, with several longer[96], and averaging 30-75cm deep (*ibid*, 12, 22-3). In all phases some had stratified fills, but the majority had one single homogenous fill (62% in phase 1, 77.5% in phase 2 and 75% in phase 3) (*ibid*, 12, 22-3).

Many of these 'pits' therefore meet all major criteria by which one would describe a grave and have little in common with the storage pits seen across Britain. No human bone was found in any of these features, nor anywhere else on the Iron Age site, but the geology is sand (*ibid*, 1), so the bone may not have survived. There were two Anglo-Saxon inhumations on the same site, and both survived poorly, the bones fragile and extensively root etched (West, 1985:58). One of these two survived only as skull fragments, long bones and feet (*ibid*, 58). There was also disarticulated human bone in the Saxon settlement features, some of which may be residual, from the Iron Age or even the Roman site (*ibid*, 58).

However, arguing against these features as graves is that 7574 animal bones and fragments were identified in Iron Age features (West, 1990:101), so bone could survive in the soil. Also, while the majority of pits did only have one fill, many had multiple, with typical deposits of domestic waste (*ibid*, 12, 22-3). Many were also circular or oval, not sub-rectangular (*ibid*, 12, 22). Some are also much longer than may be expected for graves (up to 3m), though these are not the norm. The complete absence of human bone (except perhaps that found in the Saxon features), suggests these were not graves – but they are not typical pits, and if they

[96] in some cases up to 2.5-3m long (ibid, 22).

were laid out in a more regulated manner then they would of course be interpreted as graves – as with Fison Way. It may be that some of these pits were used for primary burial and exhumation of human remains, hence a lack of surviving bone, but this cannot be proven.

The Kelvedon 'Warrior burial' is the name given to a collection of goods dated *c*.75-25 BC, buried in a *c.*2m x 2m pit on a high point overlooking a contemporary LIA village in Essex. A 'ritually killed' iron sword, bent and wrapped in cloth, an iron shield boss, two spearheads, a bronze sword and bowl, a scabbard, the bronze fittings from a tankard, two pedestal urns and fragments from a third were all found within this pit, as well as a possible wooden structure (Sealey, 2007). It is interpreted as an inhumation based on the size of the grave pit, but no human remains survived (acidic soil), and no excavation records were kept when it was found in 1988 (Sealey, 2007). If it was an inhumation burial, then it would have parallels to Mill Hill and Brisley Farm in Kent, but it cannot be confirmed.

A final case of empty graves comes from Ardale School, also in Essex. An enclosure complex was found, with settlement features in multiple phases from the MIA-LIA periods (Wilkinson, 1988:24,28). In Phase K (LIA) eight 'grave-like pits' were identified outside one of the enclosures, five aligned E-W and parallel to the enclosure ditch, and six of eight large enough to be graves, but not one had any surviving bone, the excavator ascribing this to the sandy soil conditions (*ibid*, 37-8). LIA cremations were also identified on the same site (*ibid*, 37-8).