A Social and Anthropological Analysis of Conversion Period and Later Anglo-Saxon Cemeteries in Lincolnshire and Yorkshire

Volume I

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Ph.D.

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January 2004

Abstract

The thesis will discuss the variety and types of cemeteries and burials used during the late Anglo-Saxon period. The survey of Anglo-Saxon cemeteries in Lincolnshire and Yorkshire will reveal that many early Anglo-Saxon burial sites have been successfully identified archaeologically, but that relatively few late Anglo-Saxon cemeteries have been identified or excavated. It will show, contrary to previous interpretations, that many late Anglo-Saxon cemeteries were not located under medieval cemeteries adjacent to extant churches and will show that execution cemeteries dating to the late Anglo-Saxon period and isolated barrow burials attributed to Scandinavian settlers have been identified archaeologically. The present research will highlight the importance of searching for late Anglo-Saxon burial sites in the large numbers of undated burials recorded at Sites and Monuments Record offices and in the relevant literature. It will present a series of identification criteria for late Anglo-Saxon cemeteries and will reveal the results of a radiocarbon dating project that successfully dated five previously undated burial sites to the 7th to 11th centuries.

The thesis will highlight the range and variation of burial rites used during the late Anglo-Saxon period, stressing that this was not, contrary to popular perception, a period of egalitarian burial practice. Indeed, it will show that high-status cemeteries contained a much wider variety of grave types and grave variations than lower-status cemeteries, and will reveal that there was more variation in the types and numbers of different funerary rites between cemeteries of different status than between rural and urban cemeteries. The thesis will stress the importance of comparing osteological and funerary evidence when investigating cemeteries, and will show that late Anglo-Saxon burial practice was not solely determined by the age or sex of the deceased. However, it will show that individuals were increasingly likely to be buried in more elaborate graves with increasing age, and will suggest that more elaborate burial practices were used for social display. This differs from the early Anglo-Saxon period, when sex and probably social status were considered when choosing burial rites. This reveals a fundamental change in the way in which social identity influenced the choice of burial practice throughout the Anglo-Saxon period.

Word Count: 91, 791.

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Acknowledgements

Firstly, I would like to thank Dawn Hadley for all her help and encouragement over the last four years. Your support has been invaluable. Thanks also to Andrew Chamberlain for his support and assistance, and to Pia Nystrom, who did a marvellous job as a stand-in supervisor when Dawn and Andrew were both on sabbatical. This research was funded by a White Rose Studentship awarded by the Universities of Sheffield, Leeds and York, and was supported by Trinity College Carmarthen. Radiocarbon dates were funded by NERC, and radiocarbon dates for Whitton and post-excavation work for Fillingham and Whitton were funded by a British Academy Small Grant, awarded to Dawn Hadley.

I am indebted to various archaeologists and curators for granting me access to collections and archives, and providing me with illustrations and unpublished reports throughout the last four years. They are (in no particular order): Martin Allfrey (English Heritage), Caroline Atkins (especially for the hours spent helping sorting out the cemetery plans), Warwick Rodwell, Kirsty Rodwell and the late Juliet Rogers for allowing me access to the material from St Peter's Barton-on-Humber in advance of publication; Richard Hall, Christine MacDonnell, Annie Jowett, Christine Kyriacou, Mark Whyman, Jane MacCormish, Bev and Caroline at York Archaeological Trust for granting me access to study the skeletal material and site archive from Swinegate, the St Andrew's Fishergate archive (again the days spent sorting out the plans and phasing need mentioning), allowing me to radiocarbon date material from Riccall (lets hope the Riccall project gets further funding!) and help researching many other York sites; Jen Mann at City of Lincoln Archaeology for providing me with a copy of the report for St Paul-in-the-Bail in advance of publication, and helping me sort out the St Mark's archive (as we now know from experience, I mean the church and cemetery site, not the other skeletons that had just been reburied...); Ian Tyers and Cathy Groves for information about dendro dates from Swinegate and St Peter's Barton-on-Humber; Tom Cadbury and Adam Dobney at Lincoln City and County Museum for their assistance (along with Jen) in sorting through the St Mark's archive and granting me access to radiocarbon date material from Great Hale; Martin Foreman and Rose Nicholson at Hull Museum for lending me material (and letting me date it) from Walkington Wold and Kilham; Kevin Leahy for invaluable help and advice, and for allowing me to study the skeletal material from Castledyke South and Barrow-on-Humber; Dave Evans at Humber Archaeology Partnership for hours spent untangling the Barrow-on-Humber archive and letting me radiocarbon date material from Kilham and Wold Newton; Elizabeth Hartley at York Museum for allowing me to radiocarbon date Riccall skeletons; Tony Wilmott at English Heritage and Ian Roberts at West Yorkshire Archaeology Service for their help concerning Pontefract Tanners Row; R Mackey for advice over Walkington Wold; Naomi Field at Lindsey Archaeological

Services for help and advice about Fillingham and various other sites; and Hilary Healy for information about various sites in south Lincolnshire. I would like to thank Jo Mincher, Alex Norman and Olly Jessop for drawing plans for me, and Winchester Museums Service for allowing me to reproduce the illustration of the lead coffin from Staple Gardens Winchester. Thanks to ARCUS for allowing me to print captions on A3 pages with their flash printer.

I am also indebted to Andrew Reynolds for allowing me to read papers in advance of publication, sending me offprints, lending me his thesis, giving me information about Anglo-Saxon mutilations and amputations and helpful discussion about Walkington Wold; to Anthea Boyleston, Charlotte Roberts, Darlene Weston and people on the BABAO email discussion list for help and advice about pathologies; Maureen Carroll for references and information about Roman burial practices; Colin Merrony for help with geophysics at Fillingham; and Howard Williams, Julian D. Richards, Sam Lucy, Pam Graves, Sally Crawford and Nick Stoodley for help and advice. Than ks also to Annia Cherryson – you are incredibly generous with your time and data, and the last few years (and this thesis) would have been very different if you weren't around.

The compilation of the gazetteer of sites was a daunting task, which was made much simpler and far more enjoyable due to the assistance I received from various SMR and NMR officers, including: Mark Bennet, Sarah Grundy, Louise Jennings and Jill Stephenson (Lincoln SMR); Alison Williams and Mike Hemblade (Scunthorpe SMR); Ed Dickinson (Grimsby SMR); Jo Simpson and Susan Smith (Heckington Community Archaeologists); Ruth Atkinson and Elizabeth Chamberlin (Hull SMR); John Oxley (York SMR); Linda Smith and Nick Boldrini (Northallerton SMR); Graham Lee (Helmsley SMR); Robert White (Bainbridge SMR); Vince Devine (Wakefield SMR); Jim McNeill and Roy Sykes (Sheffield SMR); and Chris Chandler at the NMR. Thank you all (and anyone else I've forgotten)! I would also like to thank the staff at Lincoln Central library, Lincoln Archives and York Minster library, for helping me find obscure books, sometimes under trying conditions.

I would also like to thank the following people for their support, advice, help and sometimes useful information: Mum and Dad – you're always there when I need you; Michelle – ditto, plus you have a vary fine camera and a handy piece of floor in London; Dr Watson (Katy Holmes to others) and Liam Holmes; Hélène, Kay and Helen (for great coffee breaks); Donna Rogers, Patrick Mahoney, Mel Giles, Pam MacPherson and others in the Graduate School (past and present) for just understanding; Chris Drew; the gang from Newark; Becky Gowland, Tina Jakob, Anwen Caffell, Louise Loe Mary Lewis and Svenja Weise for bony conversations; Trevor Kirk, Gareth Longden and everyone at Trinity College Carmarthen from keeping me sane (or there abouts) in Wales; Rocky – how we got all those bones in all those

vans I'll never know (all I can say now is quote you and return the sentiments - "Thanks Jo!"); Shane, thanks for the photos and the laughs; Caroline and Bob Hamilton, Michelle Bosco and Brandi Carrier for help with geophysics at Fillingham; all the diggers at Fillingham, especially those who braved the torrential rain and especially Jen Hiller who went back for more; Richard and Phyllis Brown - you'll always be my Sheffield parents! Thanks for the help, food, support and time spent bone washing; also Heather and Mary for time spent washing and sorting bones.

Finally, and by no means least, I would like to thank Eddy Faber. For everything. You make me laugh when I don't want to, cope when I can't, pick up the pieces when I don't, and are just fabulous. This thesis wouldn't be what it is now without your support and help. You're not far behind me, so just keep going. Most of all, thank you for coping with my idiosyncrasies.

Thank you to everyone who helped me write this thesis. I'm sure I've missed many names of my long list, so this last thank you is for you. Discussions with many people have helped shape this research, however it is my own, and errors are mine.

Chapter 1: Introduction

1.1 Introduction

It has been frequently assumed that, following the foundation of Minster churches in the 7th and 8th centuries (Blair 1988b), churchyard burial rapidly became the norm, and that all late Anglo-Saxon[1] cemeteries were consequently located next to churches. Since most of these cemeteries remained in use through the Middle Ages, it has been widely thought that later Anglo-Saxon burials are largely hidden beneath later medieval churchyards (Meaney and Hawkes 1970: 51; Biddle 1976: 69). This interpretation has been challenged recently, following the excavation and publication of several late Anglo-Saxon cemeteries that were not located adjacent to a church, or were adjacent to a church that went out of use during the Anglo-Saxon or medieval period (Boddington 1996; Hadley 2000a; Lucy and Reynolds 2002). In addition, an increasing number of late Anglo-Saxon execution cemeteries, isolated Scandinavian burials and other, often short-lived, burial grounds have been identified which were not adjacent to known churches (Reynolds 1997; Hadley 2000a; Richards 2002). This thesis will challenge the traditional view that all late Anglo-Saxon cemeteries were located next to churches in a tradition that persisted into the later Middle Ages by examining the burial evidence from Lincolnshire and Yorkshire, revealing that a wide variety of cemetery types were in use in the late Anglo-Saxon period.

It has also been frequently assumed that late Anglo-Saxon burial practice was egalitarian (Hodder 1980: 168; Geake 1997: 127; Tarlow 1997: 139; Carver 1999: 8). However, recent research has suggested that during the late Anglo-Saxon period funerary practice was used for social display (Hadley 2000a;

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[1] Before proceeding, it must be noted that the term Anglo-Saxon used throughout this thesis describes the period and the people inhabiting the study area from the 5th to 11th centuries, and is not meant to denote a particular ethnicity or race.

2001; forthcoming), although little systematic work has been undertaken to investigate and quantify the forms and variety of late Anglo-Saxon burial rites (but see Daniell 1997; Hadley 2001a). Even less work has been undertaken on the comparison of these different funerary rites with osteological evidence for the late Anglo-Saxon period, a methodology that has proved successful in the interpretation of early and mid Anglo-Saxon cemeteries (Lucy 1998; Stoodley 1999b). The present research will quantify the range and variation of burial rites within late Anglo-Saxon cemeteries, and will investigate the relationship between osteological and funerary evidence within a sample of cemeteries, incorporating analysis of previously unstudied skeletal material, proving that burial practice was not egalitarian in the late Anglo-Saxon period, and revealing that aspects of social identity influenced the choice of burial practice accorded to the deceased.

This thesis examines the evidence for late Anglo-Saxon cemeteries in Lincolnshire and Yorkshire. The study area was chosen because it covers a wide geographical area containing a variety of landscape types; historical evidence suggests that different regions of the study area underwent a variety of forms of political development during the Anglo-Saxon period, but that by the latter part of the Anglo-Saxon period the region was probably united politically; the study area allows for the investigation of the impact of Scandinavian settlement on funerary practice; a large number of late Anglo-Saxon cemeteries have been identified archaeologically and have been well excavated to modern standards within the study area; many of these excavated cemeteries contained a large number of excavated graves and the archives and material from these cemeteries are available for study and/or have been published recently. The area and period of study will now be discussed in more detail.

1.2 Area and period of study

The area included in this research comprises the modern counties of Lincolnshire (including North Lincolnshire and North East Lincolnshire, formerly known as South Humberside) and all of Yorkshire (currently the counties of North, South, East and West Yorkshire, including the southern area of East Yorkshire formerly called North Humberside). Modern boundaries rather than historic or archaeological ones were chosen to define the study area due to the changing nature of historical kingdoms and territories during the early Middle Ages, and to facilitate data collection from local government archaeological records. The present study area roughly comprises the Anglo-Saxon kingdoms of Deira (later joined with Bernicia to form Northumbria) (Dumville 1989b: 213; Yorke 1990: 74), Lindsey (which was fought over by Northumbria and Mercia throughout the 7th century and eventually became incorporated into Mercia) (Hill 1981: 31; Yorke 1990: 81; Foot 1993: 133) and various Middle Anglian provinces now located in South Lincolnshire, which were also later incorporated into Mercia (Yorke 1990: 106). The West Riding of Yorkshire (now South and West Yorkshire) and the western part of North Yorkshire comprised the 'British' kingdoms of Elmet and Craven in the 6th century, and were reportedly incorporated into Northumbria during the 7th century (Nennius HB 63[2]; Faull 1981a: 171). All of the study area was probably later included in the so-called Danelaw (Holman 2001: 5), providing opportunity to examine the impact of Scandinavian settlement on burial practices.

While the main focus of this thesis is the period between 650 and 1100 AD, cemetery data from throughout the Anglo-Saxon period (the 5th to 11th centuries) was collected, allowing for some assessment of the changing nature of burial location and practice throughout the Anglo-Saxon period.

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[2] All historical texts referred to in this chapter are given in full in Appendix II.

This will also enable the relative quantities of cemeteries and burials located and excavated within the study area to be established.

Modern researchers use a plethora of terms to sub-divide the Anglo-Saxon period into shorter time periods. To avoid confusion it is important to clarify the terminology that will be used in this thesis. The 5th to 11th centuries AD can be broadly divided into three shorter time periods, which also reflect the changes observed in Anglo-Saxon burial practice, described below. The 5th to early 7th centuries are usually referred to as early Anglo-Saxon (also referred to by some modern authors as the 'migration' or the 'pagan' period), during which accompanied inhumation and cremation were the dominant forms of burial practice (Geake 1997: 1; Lucy 2000: 1). From the 9th century, many (but not all) burials were in 'Christian' cemeteries, often (but not always) associated with a church (Hadley 2000a: 199). This period is often referred to as the late Anglo-Saxon period, the Anglo-Scandinavian period or the 'Christian' period. The Viking presence in the north and east of England from the 9th century is also used to date and categorise archaeological evidence for the later Anglo-Saxon period. Thus 'pre-Viking' and 'post-Viking' are used to describe the periods either side of c.850 AD. In addition the term Anglo-Scandinavian is increasingly used to describe the post-Viking period. The intervening period of the 7th to 8th centuries is commonly called the mid Anglo-Saxon period. The 7th and 8th centuries (or the Conversion period) saw a transitional form of burial practice, which shared characteristics with both early and late Anglo-Saxon funerary rites (Geake 1997: 1). These are also often known as 'final phase' burials, and are discussed further below. During the later 8th and 9th centuries people were beginning to be buried in churchyards, although many others were buried in other cemeteries, also discussed below. Naturally these periods and corresponding burial styles overlap, and cemeteries could have been in use for more than one of these subdivisions of time. To reflect this fact, cemeteries are also frequently described in this thesis as being 'early to mid'

or 'mid to late' Anglo-Saxon in date. The following section briefly describes the different cemetery and burial types, along with the traditional models that account for these changes in funerary rites, during the early medieval period in Lincolnshire and Yorkshire.

1.3 Early Anglo-Saxon burial practice

From the mid 5th century distinctive 'Anglo-Saxon' cemeteries were founded across eastern and southern England. These differed from the preceding late Roman cemeteries, which were largely Christian in character. The cremation rite was reintroduced, along with the deposition of grave goods in both inhumations and cremations, and pyre goods (items burnt on the pyre with the body) with some cremations. The cemeteries could contain solely inhumations, solely cremations or a mixture of both rites, although inhumation was more widely practiced, especially by the 6th century (Lucy 2000: 1). Several large cremation cemeteries containing thousands of burials have been excavated, for example at Spong Hill (Norf.), Lovedon Hill and Cleatham (Lincs.) and Sancton (E. Yorks.), although smaller cremation cemeteries also existed. Inhumation and mixed-rite cemeteries tend to be smaller in size, containing tens or hundreds of burials, however these are much more numerous and account for the vast majority of Anglo-Saxon burials (Welch 1992: 71).

Most early Anglo-Saxon burials were aligned approximately west-east, with the head to the west, although all orientations were used occasionally. The majority of bodies were extended or slightly flexed, and either supine (laid on the back) or placed on the side (Faull 1979: 78). Other burial positions including crouched and prone were also used. Margaret Faull (1979: 87) and Bruce Eagles (1979: 45-6) have suggested that crouched burial was a continuation of Iron Age and Romano-British burial rites, and that individuals buried in this position during the Anglo-Saxon period were of British descent. In addition, unaccompanied burial, the use of cists, and

burial in cemeteries associated with Roman features all have been suggested as forms of burial practice displaying British influence or as the graves of the indigenous population (Miket 1980: 299-300; Cramp 1983: 270; Cramp 1988: 73). However, the symbolic meaning of burial rites is difficult to determine, and may not directly reflect aspects of social identity, including ethnicity. Indeed an 'Anglo-Saxon' identity may not have been solely adopted by the direct descendants of Germanic migrants (Lucy 1998: 18), leaving such interpretations open to question. In fact, few graves dating to the early Anglo-Saxon period, other than those within 'Anglo-Saxon' cemeteries, have been discovered, and fewer still have been convincingly identified as both early medieval and 'British' (Lucy 1998: 22).

Probably the most studied aspect of early Anglo-Saxon mortuary practice is the deposition of grave goods. The presence of buckles, knives and other dress fittings indicate that many individuals were buried fully clothed (Samson 1999: 133). In addition, a smaller proportion of the community were also buried with more elaborate sets of jewellery and other items of personal adornment (including brooches, beads, wrist clasps, girdle hangers and latch lifters), or with weaponry (including spears, shields, occasionally swords, seaxes and arrowheads and very rarely helmets or chain mail) (Lucy 1998: 2). Further items included amulets and offerings of food, usually represented in the archaeological record by animal bones or small pots, although more perishable items including eggs, hazelnuts and oysters have also been discovered (Meaney 1964: 18). Despite the abundance of grave goods present in Anglo-Saxon cemeteries, a large proportion of most cemetery populations were either buried without grave goods, or only with organic items that did not survive the burial environment. Yet, although unaccompanied burials represent a large proportion of Anglo-Saxon society, these graves have received far less attention than accompanied burials in cemetery studies, and are frequently dismissed as the graves of poor people or slaves (as discussed by Arnold 1997: 156 and Lucy 1997a: 163).

Cremated bones were usually placed in ceramic urns, although some were placed directly in the ground (or in perishable containers). Others were placed in bronze bowls (Meaney 1964: 15). The shape and decoration of cremation urns varies greatly and both have been studied in detail, in terms of both their appearance and symbolism (Myres 1977; Richards 1987). Grave goods were also present in cremated burials. These were either burned with the body on the pyre or placed in the funerary urn after cremation had taken place. Whilst jewellery, knives and toilet sets (tweezers, ear scoops and miniature shears) are frequently found in cremations, other grave goods (notably weaponry) are much more unusual (Meaney 1964: 16).

Most interpretations of Anglo-Saxon cemeteries have focused on grave goods and also on urns in cremation cemeteries. For the first half of the 20th century, researchers concentrated on the production of corpuses and typologies of Anglo-Saxon artefacts, which were then used to trace the historically attested migrations of Angles, Saxons and Jutes (Leeds 1913; Baldwin Brown 1915; Åberg 1926). Whilst these studies successfully identified regional variation in cemetery types and grave goods, these patterns are only apparent from the 6th century onwards. Thus they appear to represent the deliberate creation of regional identities following the formation of Anglo-Saxon kingdoms, rather than identities brought from the Germanic homelands of the initial settlers (Hills 1979: 316). Indeed some scholars now argue that large-scale migration may not have occurred during the 5th century, but rather that the influence of a Germanic elite combined with indigenous change caused the alteration in material culture previously attributed to migrations (Hamerow 1994: 164).

Grave good assemblages have also been used to infer the wealth, status, ethnicity and occupation of individuals and entire cemetery populations (Arnold 1980; Härke 1990). More recently, post-processual studies of Anglo-

Saxon cemeteries have sought to investigate the symbolism of mortuary practice. Grave orientation, body position, the positioning and types of grave goods and the shape and decoration of funerary urns have been shown to be related to the identity of the deceased (see, for example, Pader 1982; Richards 1987). Relationships between burial rite and the age and sex of the deceased have been identified, and the assumption that richly furnished graves belong to wealthy and important people has been questioned. These studies are discussed below in more detail in Chapter 5.

Whilst these characteristically 'Anglo-Saxon' cemeteries have undergone much scrutiny, they were not present across the whole of what is now England. The cemeteries to the West were not influenced by the 'Anglo-Saxon' material culture, and retained characteristics of the earlier Romano-British burial. This has led to debate about the extent of the Anglo-Saxon migrations by the end of the 6th century (Alcock 1981: 179), or whether the populations in these areas chose to bury their dead using 'British' funerary practice (Cramp 1983: 270-1; 1988: 73; Lucy 1999: 15). In the West riding of Yorkshire, the western part of North Yorkshire (and possibly the Isle of Axholme), characteristically 'Anglo-Saxon' cemeteries have not been located. However, burial evidence of any sort dating to the 5th to 7th centuries is rare in this area (see Section 3.5).

1.4 Conversion period cemeteries and the 'final phase' model

During the 1920s T. C. Lethbridge excavated a cemetery at Burwell (Cambs.) (Lethbridge 1926; 1927; 1929; 1931). This cemetery differed substantially from the early or 'pagan' Anglo-Saxon cemeteries, which date to the 5th, 6th and early 7th centuries and was the first middle Anglo-Saxon cemetery identified in England. In 1931 Lethbridge came to the conclusion that the Burwell cemetery was early Christian in date, despite the inclusion of grave goods (Lethbridge 1931: 48, 83). After excavating another cemetery at Shudy Camps, Cambridgeshire, he concluded once again that these early Christian

cemeteries dated to the period when pagan cemeteries were going out of use (Lethbridge 1936: 27-29). A few years later E. T. Leeds interpreted these cemeteries as the 'final phase' of pagan burial (thus coining the phrase 'final phase cemetery'), rather than early Christian (Leeds 1936: 102).

'Final phase' cemeteries appear to be more highly organised than earlier cemeteries, with burials arranged more neatly, sometimes in rows, and the bodies themselves arranged in a much more uniform manner, usually supine and extended, and west-east aligned. There was a visible decrease in both the amounts of grave goods deposited with the deceased and also in the range of artefacts deposited. However many of the artefacts were of a superior quality compared with those commonly deposited during the 6th century, and cruciform artefacts became more common (Lethbridge 1936: 47-49; Evison 1956; Hyslop 1963: 162, 166; Meaney and Hawkes 1970; Boddington 1990: 181; Geake 1992: 84-85).

In the decades since Leeds coined the phrase 'final phase' the model was expanded, with the 'final phase' burials seen as being located closer to settlements than pagan cemeteries, a process ending with churchyard burial within the settlement itself (Faull 1976: 232). Burial in 'final phase' cemeteries was thought to cease with the foundation of Minster churches and churchyards in the 8th century (Meaney and Hawkes 1970; Biddle 1976: 69). The Church was seen as the instigator of these changes, insisting on burial in churchyards, and suppressing the use of grave goods (Hyslop 1963: 192).

This model has received wide criticism in the past, most notably from Richard Morris in 1983 and Andy Boddington in 1990. The main problem was that if the Church did, indeed, try to suppress burial with grave goods, then why do we have no written evidence indicating this? All of the contemporary references to burial during this period are essentially incidental in character and there is a lack of direct references to graveyards.

If changing the predominant burial rites across the whole of England was one of the Church's primary aims, it would be likely that there would be some reference to this, either directly or indirectly. Instead what we appear to have evidence of is a general indifference on the part of the Church regarding burial practice (Bullough 1983: 186; Morris 1983: 49; Effros 1997). This lack of documentary evidence, and the fact that burial with grave goods did, indeed, continue after the Conversion in the form of 'final phase' cemeteries, indicates that instead of an enforced elimination of burial with grave goods, there instead appears to have been a slow decline in the practice (Boddington 1990: 188). It would be unlikely that the Church would be content with this slow decline seen in the deposition of grave goods, if it was actively trying to suppress the practice. Presumably, grave goods would either be acceptable or unacceptable to the Church (Hadley 2000a: 151). Graves containing a small number of 'grave goods' are probably those of individuals buried wearing normal clothes held together with metal fasteners, a variation in funerary rite that may have been equally acceptable as being buried undressed in shrouds (Samson 1999: 133). Thus, these objects should not be interpreted in the same way as deliberately placed items ('grave goods' in the proper sense). It is probable that factors other than (or additional to) the influence of the Church led to the observed decline in the deposition of grave goods and more organised cemetery layouts.

It is possible that the primary reason for deposition of grave goods during the early Anglo-Saxon period may not have been religious belief, but rather they may have been used as an indicator of the social identity of the deceased, or as a convenient way to dispose of personal items belonging to the deceased. Thus the deposition of grave goods may not have been inherently un-Christian and therefore would not be a material concern to the Christian Church. If the reasons for burial with grave goods were much more varied than just religion, then the decline of the practice could also have been due to a number of different factors, for example a change in

hereditary law, economic pressure, or changes in burial costume (Arnold 1982: 126; Boddington 1990: 190). Many of the characteristics of Christian burials may have been due to underlying changes in burial practice, which were adopted (rather than dictated) by the Christian Church. Indeed, Richard Morris has suggested that the change in funerary practice may have been due to a process where existing burial practices that were seen to accord well with the new Christian religion were used in preference over those that did not accord so well, leading to the gradual elimination of some burial practices, including the deposition of grave goods (Morris 1983: 49). Thus 'Christian style' burials should not be used to identify religious belief.

Another flaw in the 'final phase' model was the idea that early cemeteries were located far away from settlements, with 'final phase' cemeteries located nearer to them, and ending with burial around a church within the settlement (Faull 1976: 232). This hypothesis does not take into account the shifting nature of Anglo-Saxon settlements (Hamerow 1991). Whilst the cemeteries may appear to get closer to existing villages (which may, or may not, have been founded in the mid-later Anglo-Saxon period and which in many cases represent the locations of the earliest churches), these were commonly not the locations of the earliest Anglo-Saxon settlements. Cemeteries can not progressively 'move towards' a settlement that was not yet in existence! In addition to this, the hypothesis that early Anglo-Saxon cemeteries were located on the boundaries of territories, represented by modern parishes, has been questioned more recently (Goodier 1984: 17). It should also be noted that increasing evidence has indicated that early Anglo-Saxon cemeteries were actually situated adjacent to early Anglo-Saxon settlements (Morris 1983: 53; Lucy 1998: 4), as for example at West Stow (Suffolk), Mucking (Essex) and West Heslerton, (E. Yorks.) (West 1985; Hamerow 1993; Haughton and Powlesland 1999). It is difficult to say if there was, indeed, a gravitational pull of cemeteries towards settlements, and further study comparing the relationship between cemeteries and settlements

throughout the Anglo-Saxon period is needed. At present, in the light of the evidence from sites such as West Stow, West Heslerton and Mucking, this hypothesis must remain questionable.

Boddington (1990: 196) concluded his paper by stating that the 'final phase' model could be seen to be 'inherently weak'. His evidence, as outlined above, does support this, but there are further flaws in the 'final phase' model. In 1992 Helen Geake produced a short description of the variation in burial practice for the 7th century. She describes three different types of burial in addition to 'final phase' burials (discussed above): 'princely', 'unfurnished' and 'deviant' (Geake 1992: 84-89). These three different types of 7th-century burials will now be discussed.

Throughout the early to mid Anglo-Saxon period burial occurred in and around prehistoric earthworks and barrows (Lucy 1998: 1). However, from the 7th century new barrows were constructed and many more isolated barrow burials were founded (Meaney 1964: 19). These 7th-century mound burials are generally accompanied by grave goods and some have been interpreted as 'princely' due to the abundance of high quality grave goods (Geake 1992: 85). Where do these burials fit into the picture of a supposedly deliberate suppression of grave goods by the Church? After all, according to the documentary sources royalty were the first converts to the new religion and would presumably all be buried in 'Christian' graves and not furnished barrows. Such burials have, however, sometimes been identified with known historical figures. For example King Raedwald, believed to be buried at Sutton Hoo (Carver 1998: 23), is documented to have reverted to paganism after his conversion to Christianity (Bede, HE ii:15), thus explaining the apparent paradox of an ornate 'pagan' grave at the time of the conversion. This and other barrow burials have been interpreted as an overtly 'pagan' reaction to the increasing power of the Church (Carver 1992; van de Noort 1993: 66; Carver 2001: 6). However, Robert van de Noort (1993) has also

argued that while some of the pagan top-ranking elite were buried in richly furnished barrows (for example at Taplow and Sutton Hoo), most barrow burials (those with less elaborate grave good assemblages) were of members of the local elite who were excluded from more prestigious burial within churches. He argued that burial both within barrows and within churches were a form of monumental display, linking the deceased, and their successors, to their land and reinforcing ownership rights (van de Noort 1993). Such a pattern of legitimisation was also used during the early Anglo-Saxon period through the reuse of prehistoric monuments (Bradley 1987: 1; Williams 1997: 26). In contrast, John Blair and Richard Morris have suggested that instead of being a strongly pagan burial rite, these 7th-century barrow burials may have been acceptable to the Church, given that the Church was not actively suppressing the deposition of grave goods at this time. Thus these burials were an alternative to churchyard burial for the elite, and may have been of those individuals with no strong family ties to a local 'Minster' (Morris 1989: 256; Blair forthcoming, cited in Hadley 2000d: 296).

The third category of burial that Geake draws attention to is unfurnished burial. These are usually west-east aligned, often arranged in rows, and do not have any associated grave goods other than occasional small knives. They are often found within cemeteries containing furnished burials although unfurnished burials may make up the majority or all of the burials within a cemetery (Geake 1992: 86-87). These cemeteries are not associated with a church, and, in the absence of artefactual dating evidence, are difficult to identify as being mid to late Anglo-Saxon. Such cemeteries have rarely attracted scrutiny in the past (Geake 1997: 5). However an increasing number of mid to late unfurnished Anglo-Saxon cemeteries are being located and securely dated to the Anglo-Saxon period through the application of radiocarbon dating (see Sections 3.7 and 3.8). This growing body of evidence indicates that small, local, largely unfurnished cemeteries may have been

common from the 7th century onwards (Blair 1994: 72-73; Hadley 1995: 155; Hadley 2000a: 212).

Fourthly Geake described 'deviant' burials. These are the oddities that are sometimes found, either in their own cemeteries or combined with other types of burials, and are often arranged in unusual positions (for example the Sutton Hoo 'ploughman'), are prone or show signs of mutilation, decapitation or binding. Such graves rarely contain grave goods and are sometimes placed in multiple or mass graves (Geake 1992: 87-88). Andrew Reynolds has identified many such cemeteries, and at the time of publication most of his examples were thought to be of probable 10th-or 11th-century date (Reynolds 1997; 1998). However recent radiocarbon dating has shown many of these cemeteries (including Staines, Sur. Stonehenge, Wilts. and Walkington Wold, E. Yorks.) are of mid Anglo-Saxon date (Pitts et al. 2002; Reynolds 2002; see Sections 3.6.5 and 8.1.2, below). Andrew Reynolds interpreted these as executed criminals buried in unconsecrated ground. It now appears that this tradition of isolating executed individuals has origins in the 7th century, prior to the perceived importance of distinguishing consecrated ground, according to documentary sources, and the concomitant exclusion of execution victims (Reynolds 1999; Gittos 2002).

Previous research has, then, shown that during the 7th century, there was a variety of different burial practices, all in use at the same time. Indeed, the evidence suggests that some of these cemetery types – small unfurnished cemeteries and execution cemeteries – continued to be used and founded during the later Anglo-Saxon period. This suggests that the 'final phase' model of burial, with progression from 'pagan', grave good rich cemeteries to 'final phase' cemeteries with fewer grave goods followed by burial in Minster churchyards is too simplistic. It is apparent that the range of burial practice for the middle and later Anglo-Saxon period is much greater than previously believed.

A further problem with the interpretation of 7th-century cemeteries lies in the dating of the burials. In the past 'final phase' cemeteries were dated to the 7th century on the premise that they post-date the conversion but must have gone out of use in the 8th century, when many Minster churches were founded. Likewise, burials containing small knives were also dated to the 7th century simply on the basis of the presence of the knife in the grave, as grave goods were not found in 8th-century churchyards. Helen Geake addressed these issues through her detailed study of conversion period grave goods (Geake 1997). By surveying the evidence for furnished burial from c.600 AD onwards, she revealed that there were two changes in the types of grave good deposited during the conversion period. The first change (to the previously discussed 'final phase' assemblages) occurred from c.600 in southeast England and c. 650 for the remainder of the country. However the second change, after c.720/30, marked a sudden decline in furnished burials but did not represent a complete cessation of the deposition of grave goods, as had been previously assumed (Geake 1997: 133). She interpreted the first change in grave goods to the adoption of more 'Romanized' forms of grave good as a symbol of allegiance to 'both secular and sacred authority' (Geake 1997: 134). By the end of the conversion period this 'acceptance of the authority of Church and state' was, instead, symbolised through burial in churchyards, thus precluding the need for grave goods (Geake 1997: 134). However later deposition of grave goods could, and did, occur, as the finger rings and earrings from the York Minster cemetery and the jet cross from Scarborough indicate (Thompson 1931: 52; Goodall 1995: 522), although these appear to have been items that would have been worn, rather than additional items placed in the grave.

1.5 Late Anglo-Saxon cemeteries and the foundation of Minsters

Much of the 'final phase' model rests on the assumption that by the mid 8th century everyone was buried without grave goods in the cemetery next to

the local Minster church (Meaney and Hawkes 1970: 51; Biddle 1976: 69; Lucy and Reynolds 2002: 3). However it is far from certain that all individuals were buried in churchyard cemeteries by this early date. Indeed, debate still rages as to how many Minster churches had been founded by the mid 8th century, let alone if all members of Anglo-Saxon society would have been buried in their cemeteries. This section will briefly outline the differing hypotheses regarding the foundation of Anglo-Saxon churches (known as the Minster model or Minster hypothesis), and the evidence for burial at these sites. It will reveal that archaeological evidence has shown that different types of cemetery were in existence during the 8th to 11th centuries, not just the large Minster cemeteries, and that individual burial practice was highly varied at this time. It will also briefly discuss the evidence for Viking burial from the 9th century onwards and will demonstrate that not all Viking burials contained grave goods (or indeed that all 10th-century burials containing grave goods were necessarily those of Vikings).

1.5.1 The Minster model

Historical sources imply that shortly after the first kings were converted to Christianity most of Anglo-Saxon society embraced the new religion. Many authors have assumed that by the 8th century everyone would be buried in Christian cemeteries attached to the first churches. But how and when were these early churches founded? The 'Minster model', developed by John Blair, argues that during the 7th and 8th centuries the newly converted kings set up *monasteria* or Minsters (Blair 1988b). These were not monasteries in the strict later medieval sense, but rather the term describes religious communities of different sizes and status, most (but perhaps not all) of which probably comprised of loosely organized communities of *monarchi* or *clerici* ruled by an abbot. Thus the term Minster should always be used in its widest sense (Blair 1988a: 1; Foot 1992: 215; Thacker 1992: 139; Blair 1995b: 194). These ecclesiastical communities served large *parochiae* (Anglo-Saxon

'parishes', again meant in a more loose manner than in the later medieval sense), providing pastoral care[3] to the local populace (Blair 1988b: 35).

Minsters were founded in the 7th and 8th centuries, usually by kings (Blair 1988b: 39). From the 10th century a more regulated system of mother and daughter churches was established, with the 9th- and 10th-century daughter churches filling in the large *parochiae* (Blair 1988b: 37). The mother churches and their parishes closely correlated to the *monasteria* and *parochiae* of the 7th and 8th centuries, indicating the system was based on the 7th- and 8th-century Minsters (Blair 1988a: 2). Proprietary churches and private chapels were frequently founded by manorial lords, along with the daughter churches, thus slowly fragmenting the large *parochiae* (Blair 1988b: 37). However, the old Minsters retained their rights as mother churches, and were protected by a series of law codes. These controlled baptism and burial, guarding the status of the mother churches and, in the case of the payment of tithe, church-scot and soul-scot, providing a secure income (Blair 1988a: 8). The formalization of these payments through the introduction of laws indicates that the mother churches were protecting their interests at a time when their importance was threatened by the new foundations (Blair 1988b: 8).

Eric Cambridge and David Rollason criticized this hypothesis, arguing that not all *monasteria* played an active pastoral role and, indeed, that pastoral care may not have been of central importance to the early Anglo-Saxon Church (1995: 95). However one of the main achievements of the early Anglo-Saxon Church was the conversion of the laity. By the later 9th century the 'English' were Christian enough to convert the Vikings (Thacker 1992:

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[3] Exactly what this pastoral care entailed is unknown, however it probably included 'preaching and teaching; baptism; visiting the sick; receiving the faithful to church on Sundays and major feast days; the prohibition of clearly pagan activities (such as sacrifice to pagan gods, incantation, divination and the taking of auguries); penance and confession; seeking out those who had not recently received clerical ministrations; and an obligation to leave behind a priest "for the offices of the church" if a Minster was removed'. This did not necessarily include burial until the later Anglo-Saxon period. (Hadley 2000d: 293).

170). Thus some pastoral care must have been provided prior to the 10th century, and historical sources indicate that '"true monasteries" were expected to participate in pastoral care as fully as other less strict communities' (Thacker 1992: 142).

Cambridge and Rollason also argued that 10th-century parish organization was not derived from the earlier Minster system, but rather that these parishes were planned by the 10th-century kings in a later period of church organization, influenced by the Carolingian reforms (Cambridge and Rollason 1995: 98-103). In addition they stressed that the regional and chronological diversity of the early Church, arguing that the 'Minster model' is not appropriate for all regions of the country, if indeed it is appropriate at all (Cambridge and Rollason 1995: 103).

John Blair responded to these criticisms by stressing that the 'Minster model' did allow for the 10th-century reforms of the Church, however these were based on the earlier Minster system (Blair 1995b: 197). Blair also argued that Cambridge and Rollason were unable to find strong evidence of continuity because they looked at less typical areas which had been affected by the Scandinavian settlement, and that other areas of the country show much stronger evidence of continuity (Blair 1995b: 199). Case studies that have shown the 'Minster model' to be reasonably accurate have been based on areas outside of the Danelaw, for example Blair's study of Worcester (Blair 1995b: 199-200), Hase's study of Hampshire (Hase 1988) and Hall's study of Dorset (Hall 2000). However some remnants of a pre-Viking Minster system have been identified in the Danelaw. Palliser's study of Yorkshire has revealed that despite the disruption caused by the Vikings, early provisions of pastoral care based on the early Minsters did survive, with such institutions, including Beverley and Ripon, becoming mother churches (Palliser 1996: 214). This pattern was also revealed for the northern Danelaw by Dawn Hadley, who found that several churches 'founded by the 9th

century... survived to form the mother churches of the Middle Ages' (Hadley 2000d: 287). Thus although areas in the Danelaw may not have shown the same pattern of ecclesiastical development as elsewhere in the country, and may indeed have been disrupted by the Vikings, some of the later parochial system was founded prior to the 10th century.

In sum, the likelihood is that the formation of the parish system was more complex than either Blair's 'Minster model' or Cambridge and Rollason's idea of a new 10th-century parochial system. Although Cambridge and Rollason argue that the parochial system was established from scratch during the 10th century, the evidence of continuity from the 7th century is striking in some areas, and evident, if not consistently, in others. The reality was probably a combination of both models, with ecclesiastical development occurring in a piecemeal fashion rather than as a single event. Large 7th- and 8th-century *parochiae* would be under the control of the *monasteriae*, however these would become fragmented by the foundation of daughter churches and the establishment of new 10th-century parishes and proprietary churches (Thacker 1992).

1.5.2 Variation in late Anglo-Saxon cemeteries

What effect did all this have on burial rites? As mentioned above, a traditional view would have all members of society buried in large Minster cemeteries from the mid 8th century onwards (Meaney and Hawkes 1970; Biddle 1976: 69). Certainly there is historical evidence that bishops, kings, members of religious communities and some of the aristocracy were buried at Minsters from the late 7th or early 8th century (Hadley 2000a: 200). However it appears that at this date Minsters were few and far between in the landscape, which would make it difficult for all of Anglo-Saxon society to be buried in their cemeteries. Indeed, burial at a Minster may have been reserved for the ecclesiastical and lay elite until much later in the Anglo-Saxon period. It was not until the later fragmentation of these large *parochiae*

that each community would have easy access to a churchyard, so where were they buried before the 10th century?

As discussed above, excavations have revealed a growing number of isolated mid to late Anglo-Saxon cemeteries (Hadley 1995: 151; Hadley 2000a: 212). These were not apparently adjacent to a church, although some of these may have been controlled by a Minster church, as was demonstrated at Bampton in Oxfordshire (Blair 1994: 72). Most of the burials in such cemeteries are west-east aligned, supine and extended. Some graves may contain occasional small items such as buckles and knives, presumably indicating an unaccompanied but clothed burial rite (Hadley 1995: 155). In addition, many of the cemeteries located around Anglo-Saxon churches may have been founded prior to the building of the church. Excavations have revealed that on many sites, including Pontefract (W. Yorks.), St Peter's Barton-on-Humber (Lincs.), Barrow-on-Humber (Lincs.), Holton-le-Clay (Lincs.) and Kellington (W. Yorks.), the earliest church foundations cut through and disturbed earlier burials. Given that law codes reveal that churches with cemeteries were of a higher status that those without a cemetery, this may have been a deliberate placement of a newly founded church on a pre-existing cemetery to increase the importance of the church (Hadley 2000a: 211).

By the late 10th century the Church was beginning to exercise more control over burial rites, when laws enforced the payment of a burial tax (soul-scot) to the mother church, although occasional references to the payment of soul-scot occurred earlier (Gittos 2002: 201). It was also during the 10th century that increasing importance was placed on the consecration and demarcation of cemeteries (although there is some evidence that the consecration rites were established at an earlier date) (Gittos 2002: 196). Thus the unbaptised, criminals, suicides and strangers were excluded from burial with the remainder of the population in churchyard cemeteries (Gittos 2002: 201) and

an increasing number of 'execution' cemeteries were founded (Reynolds 1997: 38).[4]

From the mid 9th century Scandinavians are known to have settled in northern and eastern England, however very few 9th- and 10th-century graves have been identified as those of Scandinavians (Halsall 2000: 259; Richards 2000: 142). The best evidence of Viking burial is from Heath Wood, Ingleby (Derbys.), where a cemetery of 59 barrows containing cremation burials, and animal offerings has been excavated (Richards et al. 1995). The use of an intrusive burial rite (cremation) and the presence of two broken swords, a ring headed pin and some wire embroidery, similar to items found in graves at Birka in Sweden, identified this cemetery as Viking (Richards et al. 1995: 60; Richards 2000: 148). However many other supposed Viking burials are rather less distinctive. These burials, both isolated and in churchyards, generally contain grave goods, occasionally of Scandinavian style, which has been taken to mean that these were the burials of pagans (and hence Vikings) at a time when accompanied burial had ceased (Halsall 2000: 263). However, as we have already discussed, the deposition of grave goods does appear to have continued into the late Anglo-Saxon period and may not have been against Christian doctrine at this time. Thus the presence of grave goods (particularly those of Anglo-Saxon manufacture) should not be taken to prove the deceased was of Scandinavian origin (Halsall 2000: 262-268). Instead it appears that most individuals of Viking descent (apart from those cremated at Heath Wood Ingleby) were buried in the established cemeteries in Christian style graves (Halsall 2000: 270; Richards 2000: 151). So why were some individuals buried with grave goods around the time of the formation of the Danelaw? Guy Halsall has suggested that these individuals were promoting their 'local standing, power and wealth' through the deposition of grave goods, and that Scandinavian grave goods may have been used to

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[4] See the section on deviant burials, above, and Sections 3.6.5 and 8.1.2 for a more detailed discussion of execution burials.

signal allegiance to the Vikings (Halsall 2000: 270-271). Thus it appears that accompanied 'Scandinavian' burial in the 9th and 10th centuries may, in fact, merely be a further variation in burial rite at this time. The evidence for Viking burial in Lincolnshire and Yorkshire will be presented in Section 3.6.3.

In sum, from the mid 8th century onwards, various different cemetery types were in existence. These included large cemeteries around mother churches, smaller churchyard cemeteries, cemeteries without a church, some of which may have been on land belonging to churches, isolated cemeteries with a later church and execution cemeteries. Many of these cemetery types appear to have been continuations from the mid Anglo-Saxon period, and indeed the different Conversion-period grave types appear to have developed from early Anglo-Saxon burial practice. Thus differences in cemetery types appear to have evolved rather than changed dramatically throughout the Anglo-Saxon period, and did not change sequentially and uniformly from 'pagan' to 'Christian' through a transitional 'final phase' (Lucy and Reynolds 2002: 3). This variation in cemetery type and the impact of the Vikings are investigated further in Chapter 3.

1.5.3 Variation in late Anglo-Saxon burial types

Not only was the location and type of cemetery variable during the later Anglo-Saxon period, but so too were grave types. Although by the 8th century most graves were roughly west-east aligned with the body supine and extended, the position of the arms, and the grave itself could be highly varied. Although the majority of excavated late Anglo-Saxon burials are in plain earthen graves there is also evidence of the use of coffins, stone-linings, sarcophagi, chests, pillow stones (stones placed next to or behind the head), charcoal spreads, grave markers and carved stone grave covers (Hadley 2001a: 97-99). This variety stresses the lack of regulation in burial practices at a time when the Church was disinterested in prescribing the form burials should take (Bullough 1983: 186). This variation in burial form has been

rarely studied in detail prior to the present study, particularly in terms of its social significance, presumably because it has not been seen to be as interesting as the deposition of grave goods during the early Anglo-Saxon period (Lucy and Reynolds 2002: 2). Variation in burial form is discussed briefly during Chapter 3, however a more detailed study and comparison with osteological data such as the age and sex of the deceased, is presented in the in-depth study of six cemeteries (York Minster, Swinegate and St Andrew's Fishergate in York, St Peter's Barton-on-Humber, Barrow-on-Humber and St Mark's Lincoln) in Chapter 6. The burial rites at these cemeteries were compared with those at two early Anglo-Saxon cemeteries, Castledyke South in Barton-on-Humber (Lincs.) and Sewerby in Bridlington parish (E Yorks.), in Section 8.2.5. These eight cemeteries will now be introduced.

1.6 Cemeteries included in detailed analysis

This section will introduce the cemeteries analysed in detail in the present study. Three cemetery populations, from Swinegate in York, Barrow-on-Humber and Castledyke South in Barton-on-Humber, were analysed by the author using the methods discussed in Chapter 4. In addition, evidence of pathology and stress markers were recorded, as discussed and presented in Chapter 7. Published and archived details of a further five sites were used to provide a comparison for this data. These sites were St Mark's Lincoln, St Andrew's Fishergate York, York Minster, St Peter's Barton-on-Humber (Lincs.) and Sewerby (E. Yorks.). The location of these cemeteries is shown in Figure 1.1.

1.6.1 The York cemeteries i: Swinegate

Three cemeteries from York were included in the present analysis. The Swinegate cemetery was excavated in 1989 and 1990 (site codes 1990.1 and 1990.28) by York Archaeological Trust (Pearson 1989; 1990). Although much post-excavation work has been undertaken on the cemetery it has not yet

been fully published, and an osteological report has not been prepared by the excavators. Thus the skeletal material was analysed by the present author. In addition much of the information about the site was gained from the archive held at York Archaeological Trust.

Graves were found in eight of the fifteen trenches excavated (see Figure 1.2). The burials were west-north-west/east-south-east aligned, following the orientation of the underlying Roman structures (Pearson 1989). Many of the burials excavated were in preserved oak coffins. These were mainly constructed using dowel pegs rather than nails, highlighting the potential loss of evidence on sites with no organic preservation. Seven of these coffins were dendrochronologically dated to the very late 9th to the early 11th centuries (Table 1.1, below) (Bagwell and Tyers 2001).

Skeleton	Reference code: Site/Coffin/Board/Fragment	Date of Sequence of Tree Rings	Interpretation of Date[5]
3379	1990.28/3344/151	AD796-882	After AD892
3511	1990.28/3414/210	AD831-956	After AD966
3511	1990.28/3434/211	AD813-892	After AD902
3511	1990.28/3434/213	AD799-975	AD975-1001
3511	1990.28/3434/213z	AD828-928	After AD938
3489	1990.28/3476/185a	AD772-838	After AD848
3489	1990.28/3476/185b	AD834-903	After AD913
3505	1990.28/3502/202c	AD828-923	After AD933
3505	1990.28/3509/207	AD793-915	After AD925
3505	1990.28/3509/209b	AD767-892	After AD902
5032	1990.28/5031/262	AD749-921	After AD931
5032	1990.28/5031/275	AD761-912	After AD922
14044	1990.1/14045/341	AD804-914	After AD924
14044	1990.1/14046/342	AD807-985	After AD995
14044	1990.1/14046/345	AD765-986	After AD996
15015	1990.28/15006/346z	AD841-929	After AD939

[5] The date of sequence refers to the years of growth present on the wood sample. However, the date of felling is indicated by the presence of sapwood and bark-edge. The date of samples with just sapwood present can be estimated, usually to ± 10 years. For samples where no sapwood is present the dendrochronological date of the artefact would thus be after the last year in the date sequence.

Table 1.1: Dendrochronological dates from Swinegate.

Trench 3 was the most northerly of those containing graves. These were well spaced and arranged in rows, with little evidence of intercutting (see Figure 1.3). The burials increased in density to the south, with many layers of graves excavated in Trenches 14 and 15 (see Figures 1.4 and 1.5). These two trenches were excavated under rescue conditions, so little evidence about their relative stratigraphy was recorded. This increased density in burial (see Table 1.2) accords well with historical evidence, which suggests that St Benet's church (to which the cemetery probably belonged) was located close to the corner of Swinegate and Back Swinegate (Pearson 1990). The exact location of the church was not revealed during the excavations. In total, 100 skeletons were recovered, along with almost 800 identifiable disarticulated human bones (from grave fills, charnel pits and unstratified material). This disarticulated material represented a minimum of 54 individuals (see below).

Trench	Approximate Size (m)	Number of Burials
3	15.5 x 3	27
5	3 x 3	11
7	3 x 3	4
8	2 x 2	5
11	2 x 3	4
12	3 x 3	1
14	3 x 3	21
15	3 x 3	27

Table 1.2: Location of burials at Swinegate

During the 11th century a metalled surface was laid over much of the site. This sealed burials in Trenches 3, 5, 7, 8, 11 and 15, and marked the cessation of burial activity in Trenches 5, 7, 8 and 11. However burial continued in Trenches 3 and 15, cutting through the metalled surface. The metalled surface was not recorded in Trenches 12 and 14.

1.6.2 The York cemeteries ii: York Minster

The Anglo-Scandinavian cemetery at York Minster was excavated between 1969 and 1973. The Anglo-Scandinavian period of the site has been fully published, so only a short summary will be given here (Phillips and Heywood 1995a; 1995b).

A total of 118 pre-Conquest burials were excavated. These were orientated north-east/south-west, following the alignment of the underlying Roman buildings. These burials are within an 11th-century west-east aligned apsidal church, which appears to post-date this phase of the cemetery. Further burials on a west-east alignment were excavated, however as these were not necessarily pre-Conquest they were not grouped in this phase, and were not reported on in the pre-Conquest publication (Phillips and Heywood 1995a: 75), or included in the present analysis. Part of the cemetery was overlain by an 11th-century cobbled surface, which sealed the Anglo-Scandinavian burials. Burial continued in this area on the north-east/south-west alignment (Phillips and Heywood 1995a: 78), however these early Norman graves were not included in the present study. The unusual alignment of these burials and the presence of an 11th-century cobbled surface reveals a striking similarity between the Minster cemetery and that at Swinegate, located approximately 200m to the south. The variation in burial practice at the Minster, however, is much greater, with evidence of stone and tile lined graves, chests, charcoal burials and stone grave covers and markers (Phillips and Heywood 1995a: 82-88). This probably reflects the higher status of the Minster cemetery, which is known to have been the resting-place of various bishops and royalty (Rollason 1998).

1.6.3 The York cemeteries iii: St Andrew's Fishergate

The cemetery of St Andrew's Fishergate was excavated by York Archaeological Trust in 1985 and 1986. The cemetery was founded in the late 10th century and continued to be used through the later medieval period,

although St Andrew's was re-founded as a Gilbertine priory at the end of the 12th century (Stroud and Kemp 1993: 121). A total of 412 burials were recorded, however only those dating to the Anglo-Scandinavian and early Norman periods were included in the present analysis (published as phase 4, totalling 130 individuals). Burial practice was again varied in this cemetery, with evidence of coffins, pillow stones and stone markers (Stroud and Kemp 1993: 153). The skeletal material was analysed by Gillian Stroud, and is noted for a high occurrence of weapon injuries within the phase 4 population. The data given in the published report was used unaltered in the present analysis.

It is necessary to explain why one published cemetery from York was not included in the present study. The cemetery of St-Helen-on-the-Walls was in use from the 10th to the mid 16th century. York Archaeological Trust excavated over 800 burials and the remains of five churches between 1973 to 1976. The site is fully published with a full bone report by Jean Dawes (Dawes and Magilton 1980). However this cemetery was excluded from the present study, as the recorded phasing did not differentiate earlier burials from those of the 13th century onwards.

The three late Anglo-Saxon cemeteries from York examined in the present study provide a cluster of sites that can be compared and contrasted, not only with other cemeteries included in the present study, but also within York itself. Little is known about the status of York in the 6th century (James 1995: 9), however in the 7th century Paulinus baptised King Edwin in a wooden chapel, which was the precursor to St Peter's (Bede HE ii: 14). From this time York became one of the ecclesiastical centres (and a bishopric) of Northumbria and the burial place of many royals, ecclesiastics and members of the nobility (see Chapter 6). From the late 9th century York was the capital of the northern Viking kingdom (James 1995: 10-11). It may be possible to infer something of the relative status of the populations of the three York

cemeteries through not only the skeletal evidence, but also through the variation and types of burial accorded different individuals.

1.6.4 The cemetery of St Mark's, Lincoln

There is some debate about the status of Lincoln during the 5th to 9th centuries. Unlike York, there are few archaeological remains in the city dating to the early Anglo-Saxon period, and little documentary evidence survives to confirm whether Lincoln itself was the main urban centre and capital of the kingdom of Lindsey. Kate Steane and Alan Vince have suggested that the city retained some religious and administrative importance through the 5th to 9th centuries, although the exact nature of these ecclesiastical and administrative functions remains unknown (Steane and Vince 1993: 77).

By the 7th century Lincoln was sufficiently important to be the location of the conversion of the *praefectus* Blæcca, the process of which closely paralleled the conversion of King Edwin of Northumbria at his royal palace in York (Stocker 1993: 117). Thus it is likely that Lincoln was a royal palace by the 7th century. The Bishop of Lindsey (usually described in terms of the people he officiated over rather than his episcoal seat), was referred to as the Bishop of the *syddensis ciuitas* in 803, leading to much speculation as to the location of this 'southern city' and thus the episcopal seat of Lindsey (Bassett 1989; Stocker 1993: 118-9). Steven Bassett has argued that the Episcopal seat was located in the Wigford district of Lincoln. By contrast David Stocker has suggested that 7th-century bishops officiated in both important monasteries and at royal centres. Thus the Bishop of Lindsey could have been had a base at both Lincoln and Bardney, either of which could qualify as *syddensis ciuitas* (Stocker 1993: 119). Neither of these hypotheses has so far been confirmed by excavation.

The status of Lincoln is better understood from the 9th century onwards, when Lincoln was one of the 'Five Boroughs' of the Danelaw. There is clear archaeological evidence of planned development, land reclamation and urban activity in the city during the years following the Viking settlement, and by the 10th century Lincoln had a mint (Richards 2000: 76).

Thus the excavated late Anglo-Saxon cemeteries of Lincoln provide an ideal opportunity to compare and contrast with those at York. Unfortunately the skeletal material from St Paul-in-the-Bail was reburied after preliminary analysis and prior to the presentation of a full bone report to the Lincolnshire Archaeological Trust,[6] which unfortunately did not later materialise (J. Mann, CLAU, *pers. comm.*). However the cemetery of St Mark's, Lincoln dates from the 10th century, and thus the early phases of this cemetery provide a useful comparison with the York cemeteries.

The St Marks's cemetery was excavated in 1976 and 1977 by Lincolnshire Archaeological Trust, revealing a number of burials dating from the 10th to the 19th centuries (Gilmour and Stocker 1986: 1). Those dating to the mid 10th to mid 12th centuries (phases VIII and IX) were included in the present study. Since the initial publication of the site in 1986 the cemetery has been further analysed, with contexts grouped into 'landuse blocks' or LUBs (Steane et al. 2001). The LUBs represent 'an area of land having a particular function for a specific length of time' (Steane et al. 2001: 5). Some of the LUBs at St Mark's Lincoln continue in use for long periods of time, and one LUB (53) continued in use throughout the whole period of use of the church (see Figure 1.6). Thus if the LUBs were used to select burials many later- or post-medieval burials may have been included in the analysis. Consequently the older, more approximate phasing given by Gilmour and Stocker (1986: 13) was

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[6] Now called the City of Lincoln Archaeology Unit, or CLAU

used to differentiate between the earlier and later burials for the present analysis.

The phasing was not without its problems, as the cemetery phasing for individual graves is only presented on plans and these do not fully correspond to the phasing given in the osteological report. When comparing the plans with the bone report it becomes evident that 20 graves either did not contain human remains or that any remains present were not reported on. In addition 9 graves initially attributed to phase VIII are not present on any of the plans. It was decided that only burials present both on the phase VIII and IX plans and reported on by the osteologist should be included in the present study.

A total of 127 burials (as opposed to graves) were included in the present analysis; 70 dating to phase VIII; 50 dating to phase IX; and 7 burials that dated to either phases VIII or IX (shown on both plans). The range of burial practice within this sample was varied, with examples of stone lined graves, charcoal burials, possible evidence of coffins (although the nails recovered may have been residual Roman nails) and an *in situ* stone grave marker (see Figure 1.7).

1.6.5 Humberside cemeteries i: St Peter's Barton-on-Humber

Between 1978 and 1985 the church and cemetery of St Peter's Barton-on-Humber was excavated by the Department of Environment, following the closure of the church in 1970, under the direction of Warwick and Kirsty Rodwell. These excavations revealed the foundations of a three-celled church, probably of 10th-century date, with the standing tower forming the central cell (Rodwell and Rodwell 1981: 210; 1982: 288). The site had been used as a settlement in the early Anglo-Saxon period, prior to the foundation of a cemetery in the late 8th/early 9th century that predated the first church. This cemetery was located outside a sub-circular enclosure marked by a bank

and ditch, thought to be the boundary of a manorial complex (Rodwell and Rodwell 1982: 290). During the late Saxon period the three-celled church was extended over part of the cemetery. Prior to this the site had been 'ritually "cleansed" by exhuming those burials upon which the new buildings would impinge', although one burial was cut by the church walls (Rodwell and Rodwell 1981: 212). Many of the burials contemporary with the first church were in preserved wooden coffins. Pillow stones had been used frequently during this period, placed either behind or on either side of the skull (Rodwell and Rodwell 1981: 300-301). The full range of variation in grave types and variations, along with coffin construction, will be discussed in Chapter 6.

The post-excavation work for the St Peter's excavations has been undertaken by English Heritage, with publication expected in the next few years. The excavation archive is held by Caroline Atkins Consultants. The skeletal material was analysed by the late Juliet Rogers. The skeletons and skeletal recording forms are currently held in the English Heritage stores in York.

All of the burials from Phase E of the site (620 individuals), dating from the late 8th to the 12th centuries, and including many of the burials in early Norman coffins, previously dated to the late Saxon period, were included in the present study. Information about grave type and plans of the cemetery were supplied to the present author by Caroline Atkins. Osteological estimates of age and sex were collected by the present author from the skeletal recording forms held in York.

1.6.6 Humberside cemeteries ii: the 10th- to 12th-century cemetery at Barrow-on-Humber

The cemetery at Barrow-on-Humber was excavated in 1977 and 1978. The cemetery has not been published although a draft excavation report was written by Guy Grainger (Grainger unpublished), including a bone report prepared by Jean Dawes. The Humber Archaeology Partnership in Hull

currently holds the site archive, however several integral parts of the archive appear to have been mislaid in the intervening 25 years.[7] At the time of excavation the site was heralded as the cemetery of the lost Anglo-Saxon monastery of *Aet Baeruwe*, founded by King Wulfhere and St Chad in 669 AD (Boden and Whitwell 1979: 66). However, radiocarbon dating has shown that the cemetery was actually of 10th- to 12th-century date (see Table 1.3, below) and thus was not that of the monastery of St Chad's (although the site is still frequently referred to as St Chad's). This cemetery will be referred to as 'Barrow-on-Humber' throughout this thesis.

Laboratory Number	Skeleton Number[8]	Radiocarbon Age (BP)	Calibrated date range (1σ)	Calibrated date range (2σ)
HAR-3123	Charcoal	1030±80	Cal AD 900-1150	Cal AD 780-1210
HAR-3124		880±80	Cal AD 1030-1260	Cal AD 990-1290
HAR-3125	BW 111	1130±80	Cal AD 780-1000	Cal AD 680-1030
HAR-3126	BW 74B	1090±70	Cal AD 880-1020	Cal AD 770-1160
HAR-3127		970±80	Cal AD 990-1170	Cal AD 890-1250
HAR-3128		1080±80	Cal AD 880-1030	Cal AD 770-1160

Table 1.3: Radiocarbon dates from Barrow-on-Humber

Approximately 75 partial and complete skeletons were excavated, along with some disarticulated material. Many of these were post-dated by an 11th- to 12th-century apsidal church (Grainger unpublished). Unfortunately much of the skeletal material had become mixed during storage, leaving some individuals indistinguishable from other skeletons or charnel. However, other graves contained elements of more than one skeleton that could be

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[7] Although some inked illustrations are present few primary drawings are held in the archive. Many graves are not numbered on plans (or on plans at all) and thus it was impossible to establish the location of many burials. The excavation was recorded in notebook form, leaving out much of the information recorded as standard on modern excavations. Such recording was standard on many excavations during the 1970s, at a time when modern *pro forma* recording techniques were being pioneered. Many skeletons from Barrow-on-Humber are not recorded in the notebooks, leading to the conclusion that either they were not fully recorded or that a notebook has been lost. Thus the archive should be viewed as a product of its time.

[8] Skeleton number of sample given where known. Sample HAR-3123 is of the charcoal found beneath BW60A. Due to the confused nature of the archive it was not possible to establish which skeletons the remainder of the dates referred to.

separated into separate individuals (for example the skeletons of an adult and a child). The present osteological analysis identified 97 discrete individuals and a further 99 individuals within the charnel (it must be noted that some of these bones may have belonged to a 'discrete individual' that had been disturbed, however the figure is for the minimum number of individuals present). These differed slightly from the individuals identified in the primary analysis by Jean Dawes. The lack of a complete, labelled cemetery plan has meant that it was not possible to undertake a spatial analysis of the Barrow-on-Humber cemetery. Despite these problems Barrow-on-Humber was retained in the present analysis due to the importance of the cemetery, particularly in terms of its close chronological and geographical relationship with St Peter's Barton-on-Humber.

1.6.7 Early-Mid Anglo-Saxon cemeteries: Castledyke South and Sewerby

Two early to mid Anglo-Saxon cemeteries were included in the analysis to establish how identity was signalled in the study area during the earlier Anglo-Saxon period. This was undertaken to determine whether or not any particular aspects of identity continued to be symbolised throughout the Anglo-Saxon period, despite the striking change in mortuary practice after the 7th century. These cemeteries are both well known and fully published (Hirst 1985; Drinkall and Foreman 1998) and will not be discussed at great length here.

The cemetery at Castledyke South is located in Barton-on-Humber just 300m to the southwest of St Peter's church and cemetery. The cemetery was discovered in 1959 when five graves were discovered during the construction of air raid shelters. Excavations between 1975 and 1990 revealed a further 196 graves containing 227 individuals, one of which was a cremation (Drinkall and Foreman 1998: xxi, 1). The cemetery was in use from the late 5th or early 6th century to the late 7th century (Drinkall and Foreman 1998: 330). Helen Geake identified 45 conversion period graves on the basis of

grave goods, although she was unable to date securely any of the 63 'unfurnished' graves[9] to the 7th century (Geake 1997: 159-60).

The cemetery at Sewerby is located just to the east of Sewerby village in the parish of Bridlington on the chalk Wolds of East Yorkshire (Hirst 1985: 10). Forty-nine graves were excavated in 1958 to 1959, with a further 10 excavated in 1974. The majority of these burials dated to the 6th century, with one possible late 5th-century grave (Hirst 1985: 95). Susan Hirst described two 7th-century graves, although a further three were identified by Helen Geake on the basis of grave goods (Hirst 1985: 95; Geake 1997: 159).

The skeletal and archaeological evidence of burial rite from each of the above late Anglo-Saxon cemeteries will be discussed in Chapter 6. The osteological data will be then compared with the evidence of funerary provision. The results from these cemeteries will be compared with those from Sewerby and Castledyke South in Section 8.2.5.

1.7 Outine of study

This thesis aims to investigate the variation and location of cemeteries throughout the Anglo-Saxon period. Data were collected about different cemeteries using the methodology outlined in Section 2.4. A series of criteria for identifying mid to late Anglo-Saxon cemeteries were developed. Data were collected about undated cemeteries in the study area to try and identify further mid to late Anglo-Saxon cemeteries using radiocarbon dating. The results of the cemetery survey and radiocarbon dating programme are given in Chapter 3.

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[9] Although 63 of the graves did not contain grave goods only 30 could be firmly identified as unfurnished due to the disturbance of the remaining 33 graves (Drinkall and Foreman 1998: 332)

In the second part of the thesis, six late Anglo-Saxon cemeteries are studied in detail to establish the range of variation seen in the burial rites present. These variations were compared with the osteological data from the skeletons, using the methodology discussed in Chapter 4. The results of this analysis, investigating the relationship between age and sex and grave type, are presented in Chapter 6. A brief outline of previous studies comparing skeletal and burial evidence is given in Chapter 5. A second study of the relationship between grave type, health status and social status is presented along with the methodology for the health status study in Chapter 7. The results of the thesis are discussed further in Chapter 8, where the six late Anglo-Saxon cemeteries studied in detail are compared with two early to mid Anglo-Saxon cemeteries.

Chapter 2: Cemetery Survey 1 – Study Area and Methodology

This chapter will discuss the chosen study area of the modern counties of Lincolnshire and Yorkshire. It will briefly describe the geography and geology of the region and will then discuss the archaeological and historical evidence of the changing political boundaries during the Anglo-Saxon period. This will include a brief discussion of the archaeological and historical evidence of the Anglo-Saxon 'migrations', and the historical evidence for the foundation of kingdoms from the 7th century. It will also outline the impact of Scandinavian settlement and the formation of the Danelaw. The ecclesiastical organisation of the region, and how this relates to estate boundaries and the fragmentation of manors will also be discussed. This discussion will enable the impact of the changing political situation and ecclesiastical development on burial practices in the study area to be assessed in Chapter 3. The chapter will then highlight some of the different issues to be addressed by the cemetery survey, and will reiterate the questions relevant to the cemetery survey that were discussed in Chapter 1. The chapter will conclude with a discussion of the methodology employed whilst collecting data for the cemetery survey.

2.1 Geography and geology

This section will briefly discuss the topography of Lincolnshire and Yorkshire, describing the region in terms of lowland and upland regions, which may have been occupied and used differently from each other in the past, and particularly areas prone to flooding, which are less likely to have been inhabited during the Anglo-Saxon period and thus may not have contained many cemeteries. It will also discuss the soils present in the region, particularly in terms of their effect on bone preservation.

2.1.1 The topography of Lincolnshire

In general Lincolnshire is characterised by low relief, with large areas little higher than sea level and up to three-quarters of the county less than 30 metres OD (Ordnance Datum) and the higher ground not exceeding 168 metres OD (Swinnerton and Kent 1981: 3; Boutwood 1998: 23; Ellis 1998: 9). The county can be roughly divided up into six topographical areas. Five of these landscape zones divide northern and central Lincolnshire into roughly parallel north-south orientated strips: the Trent Valley, the Lincoln Edge (or Heath), Kesteven Uplands, the Lincoln Clay Vale (or Mid Clay Vale), the Lincolnshire Wolds and the Lincolnshire Marsh (Figure 2.1) (Kent 1980: 2-6; Boutwood 1998: 23).

The Trent Valley lies on the western edge of the county and includes the Isle of Axholme. The valley is approximately 32km wide, with the river Trent cutting into Mercia Mudstone and Liassic clays overlain by gravel and cover sands (Kent 1980: 2-4; Boutwood 1998: 23). The floodplain of the Trent would have been marshy and prone to flooding prior to artificial draining in the last three centuries and thus may not have been extensively occupied during the Anglo-Saxon period (Boutwood 1998: 25; Ellis 1998: 14).

The Lincoln Edge is situated at the eastern edge of the Trent Valley, with a steep escarpment on the eastern side and a gradual slope to the Lincoln Clay Vale to the west. This limestone ridge extends from the Humber to Stamford, and is breached by two valleys at Lincoln and Ancaster, known as the Lincoln Gap and the Ancaster Gap (Kent 1980: 4; Swinnerton and Kent 1981: 3; Boutwood 1998: 25; Straw 2002: 17). The section between Lincoln and Ancaster is known as the Lincoln Heath. South of Ancaster the ridge broadens out into a wide plateau reaching 154 metres OD, known as the Kesteven Uplands (Swinnerton and Kent 1981: 3; Boutwood 1998: 25).

The Lincoln Clay Vale (or Mid Clay Vale or Ancholme valley) lies to the west of the Lincoln Edge and to the east of the Lincolnshire Wolds. This area of lowland, approximately 12 km wide, stretches from the Humber to the Fens. It was formed by the erosion of Jurassic clays and is drained by the rivers Ancholme and Witham (Wilson 1948: 7; Boutwood 1998: 26; Ellis 1998: 9).

The Lincolnshire Wolds rise steeply to the east of the Clay Vale, forming a belt of upland 15 km by 70 km. The Wolds are capped by Chalk, overlying Lower Cretaceous limestones and sandstones and are dissected by several streams (Kent 1980: 4-6). Deposits of cover sands are located at the foot of the scarp and cover much of north Lincolnshire (Wilson 1948: 9; Swinnerton and Kent 1981: 4; Boutwood 1998: 26).

To the east of the Wolds lies the Lincolnshire Marsh. This coastal plain stretches from the Humber to the Fenland basin and is formed of a Chalk platform overlain by Quaternary clays covered by deposits of peat, clay, silt, gravel, shingle and blown sand. It has an irregular, undulating relief and lies between 3 and 9 metres above sea level. This area may have been marshy during the Anglo-Saxon period, and thus may not have been extensively occupied (Wilson 1948: 9; Swinnerton and Kent 1981: 4; Boutwood 1998: 26). Much of the Lincolnshire coastline has suffered from coastal erosion over the last 1500 years, leading to the loss of the Anglo-Saxon coastline and any coastal settlements and cemeteries.

The Lincolnshire Fens are bounded by the 15-metre contour and have an average height of 4.5 metres. The Fens are located to the south of the Clay Vale, Wolds and Marsh and to the east of the Lincoln Heath and Kesteven Uplands. The Fenland basin is a shallow depression in the Cretaceous and Jurassic rocks and is covered by glacial, recent marine and fluvial deposits. There are extensive beds of peat along the edge of the basin between Sleaford and Bourne. This was once a large area of saltmarshes, and thus is unlikely

to have been occupied intensively during the Anglo-Saxon period, when the area was prone to flooding (Wilson 1948: 9; Boutwood 1998: 26). Indeed, it will be shown in Chapter 3 that few Anglo-Saxon cemeteries have been located in the Lincolnshire Fens.

2.1.2 The topography of Yorkshire

The Lincolnshire Wolds and the Lincolnshire Marsh both continue north across the Humber as the Yorkshire Wolds and the Plain of Holderness respectively. The topography of the Vale of York is similar to that of the Trent Valley, creating a band of low-lying ground that continues on both sides of the Humber. Further north Yorkshire can be divided into the Vale of Pickering, the North York Moors and the Howardian Hills (Wilson 1948; Kent 1980; Muir 1997: 4-20). To the west of the Vale of York lies the Yorkshire Coalfield and the central Pennines, with the Yorkshire Dales further north along the Pennines (Rayner 1974: 1) (see Figures 2.2 and 2.3).

The Vale of York is similar to the Trent Valley, although it is rather wider than the Trent Valley and has deeper clay beds. The Vale narrows towards Northallerton where the Jurassic rocks of the North Yorkshire Moors approach the Pennines to the west and is known as the Vale of Mowbray (Wilson 1948: 6; Kent 1980: 4).

Towards the east, the Vale of York is bounded by a narrow belt of Jurassic rocks, which begins the slope up to the Yorkshire Wolds. The Chalk Wolds continue from the Lincolnshire Wolds across the Humber into a 'crescentic curve', which ends at the cliffs at Flamborough Head (Kent 1980: 6). The Yorkshire Wolds are much more deeply dissected by streams than the Lincolnshire Wolds, which criss-cross the uplands forming many ridges and valleys (Wilson 1948: 9). The Yorkshire Wolds slope steeply down into the Vale of Pickering to the north, and more gradually to the east onto the Plain of Holderness (Wilson 1948: 9; Kent 1980: 6).

The Plain of Holderness has a low, irregular relief between 3 and 10 metres OD, and terminates to the east in a low line of cliffs, 10 metres high on average, which are being continually eroded by the sea (Kent 1980: 6). This coastal erosion has led to the loss of the Anglo-Saxon coastline and any coastal settlements and cemeteries. The plain is formed of boulder clays, glacial sands, gravels and recent deposits overlying a Chalk platform. During historic periods, this area had many meres and marshes, and may have been a less desirable place for occupation during the Anglo-Saxon period (Wilson 1948: 9; Sheppard 1957; Kent 1980: 6; Gilbertson 1984: 9).

The Vale of Pickering lies to the north of the Yorkshire Wolds. This wide, flat-bottomed east-west valley is formed of layers of alluvium over Kimmeridge clay. It is bounded to the north by the North York Moors and is drained by the rivers Derwent and Rye (Wilson 1948: 10; Kent 1980: 7). The Howardian Hills lie to the west, separating the Vale of Pickering from the Vale of York. This narrow strip of limestone hills, just 6 km wide, rises to 172 metres OD (Kent 1980: 7).

The North York Moors and the Cleveland hills are formed of Middle Jurassic sandstones and shales, with Liassic clays and ironstones forming the lower slopes (Wilson 1948: 10; Kent 1980: 7). The plateau is covered by wide expanses of moorland, and is dissected by many streams, forming deep valleys and gorges. Much of this region is over 300 metres OD. The western part of this area is known as the Hambleton Hills, which overlook the Vale of Mowbray to the west (Wilson 1948: 10; Kent 1980: 10).

The Pennines lie to the west of the Vales of York and Mowbray. The Yorkshire Fells, to the north, are formed of Carboniferous rocks including

Limestone and Yoredale Beds[10] (Muir 1997: 5). This dissected plateau has summits up to 600 metres (Aitkenhead et al. 2002: 1) and is the highest area of land included in the present study area. The central Pennines, between Craven and the Peak, are formed of Millstone Grit with some Coal Measures, and are characterised by high hills, moors, crags and edges (Edwards and Trotter 1954: 3).

Much of the West Riding of Yorkshire (present day West and South Yorkshire) is within the Yorkshire and East Midlands coalfield, which extends from Leeds and Bradford down to Nottingham (Edwards and Trotter 1954: 4). The mining of this coal since the industrial revolution will have had an enormous impact on the landscape of this area, and is likely to have destroyed some of the region's archaeology. Towards the east the Carboniferous rocks are overlain by deposits of the Permo-Trias, with a thin belt of Magnesian Limestone extending from the Tees to the Trent, separating the Pennines and the coalfield from the Vale of York (Edwards and Trotter 1954: 4).

2.1.3 Soils and bone preservation

It is necessary to discuss briefly the effect of soil types on bone preservation, since in areas of poor preservation bone can decay leaving nothing more than an empty grave cut or possibly a sand pseudomorph (as seen at Sutton Hoo, Suff.) (Henderson 1987; Waldron 1987; Janaway 1996). Thus unaccompanied burials without robust grave furniture such as stone grave linings may not be identified at all due to the complete decay of the bone.

Bone preservation is dependent on the bond between the protein and mineral components of the bone. Once this bond is broken bone becomes much more susceptible to decay (Garland and Janaway 1989: 26; Nielsen-

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[10] Yoredale Beds are strata of shales, limestones and sandstones which weather unevenly to form distinctive 'staircase' terrains (Edwards and Trotter 1954: 3; Muir 1997: 5)

Marsh et al. 2000: 450). The preservation of bone over archaeological time-scales is influenced by the chemistry, size, shape, structure and density of the bone (known as intrinsic factors) and by ground water, soil type, temperature and air (known as extrinsic factors) (Henderson 1987: 45). However, soil pH and groundwater are thought to be the most influential extrinsic factors on bone preservation (Gordon and Buikstra 1981: 569; Henderson 1987: 45; Nielsen-Marsh et al. 2000: 448). Generally speaking, bone preservation is better in soils with a neutral or slightly alkaline pH, while burial in free-draining acidic soils such as sand and/or gravel results in poor bone preservation (Henderson 1987: 46; Waldron 1987; Janaway 1996: 60). Thus human skeletons are more likely to be preserved when buried in soils derived from calcareous rocks such as Chalk and Limestone. However, the nature of the drift geology (i.e. unconsolidated surface deposits) may be different from the underlying rocks and may have differing pH levels to that of the underlying solid geology.

As the drift geology of the study area is complex (Straw 1969; Penny 1974), it is difficult to predict levels of bone preservation. Broadly speaking, areas in the north and west of the study area that overlie non-calcareous rocks such as the gritstones of the central Pennines and the sandstones of the Cleveland Hills and North York Moors will have poorer levels of bone preservation than the Chalk Wolds, and the limestones of the Lincoln Edge and the Howardian Hills. The cover sands present over much of North Lincolnshire and the Plain of Holderness would give rise to moderate levels of bone preservation. It must be noted, however, that local variations in drift geology and soil pH may mask these broad patterns, with preservation being different not only between two neighbouring sites, but also within a single cemetery (Henderson 1987: 43; Nielsen-Marsh et al. 2000: 439).

2.2 Anglo-Saxon Lincolnshire and Yorkshire

This section will discuss the historical and archaeological evidence for the 'Anglo-Saxon migrations' and their impact on burial practices in the study region. According to Gildas (a British cleric writing during the 6th century), following the end of Roman rule in Britain, Germanic mercenaries were asked to come and defend the east side of Britain by an unnamed Briton during the mid 5th century (*De Excido* 22-23[11]). The traditional view is that these mercenaries, aided by reinforcements, took power and settled in eastern England, forcing the 'British' to the west (Campbell 1991: 22; Yorke 1993a: 45). This story was expanded upon in the early 8th century by Bede, who described the migration and settlement of Angles, Saxons and Jutes (Bede HE i: 15). Bede went on to describe the histories and development of the different Anglo-Saxon kingdoms and the conversion of the English to Christianity, some of which will be summarised here.

The reliability of both of these historical sources (and other later documents describing the migrations) for the 5th and 6th centuries have been questioned by Barbara Yorke (1993a). She pointed out that these sources were describing events that had happened at least 100 to 200 years previously at a time when the Anglo-Saxons were illiterate. Thus the sources must have relied on oral traditions. Yorke showed that many of the stories about the migrations and the foundation of different royal dynasties borrow much from Germanic origin myths and may include fictional characters, although some aspects probably were based on fact (Yorke 1993a). Consequently any historical documents discussing the 5th and 6th centuries should be treated with extreme caution, and should not seen as an accurate record of the events and people of that time (Yorke 1993a). Documents dating from the 7th century onwards, particularly Bede's *Ecclesiastical History of the English People*, may be more accurate, as the events recorded in the texts happened within living memory of the authors. However these accounts may still have been

exaggerated and altered to suit the political and religious aims of the authors (Yorke 1993a; Higham 2000). Thus the following description of the political development of Anglo-Saxon Lincolnshire and Yorkshire will begin in the 7th century, when historical documents become more reliable. Prior to this a brief description of the archaeological evidence for the settlement of the 'Anglo-Saxons' in Lincolnshire and Yorkshire will be given.

Most archaeological evidence from the 5th and 6th centuries comes from 'Anglo-Saxon' cemeteries. The distribution of cemeteries and the dating of artefacts found in graves indicates that much of Lincolnshire and lowland East Yorkshire were settled by people using an 'Anglo-Saxon' material culture during the 5th century, but that these people did not settle further north until the 6th century, and expanded to the west in the 7th century (Faull 1977: 2; Leahy 1993: 33). However, contrary to the interpretations of the historical sources mentioned above, it seems unlikely that the British 'flew to the west' during this period. Although a new material culture was introduced in the 5th century, continuity of land-use and population between the late Roman and early Anglo-Saxon periods has been inferred (Thomas 1981: 244), despite a lack of archaeological evidence for continuity of land use or of the 'British' in the 5th century (Whyman 1993: 63). This lack of archaeological evidence of any surviving British population stems from the fact that late Romano-British material culture cannot always be securely dated beyond c. 420 AD. This material may have continued to be used throughout the 5th century, rendering any 5th century British archaeologically 'invisible' (Whyman 1993). Although much of the 5th-century material culture is clearly intrusive, some elements of Anglo-Saxon material culture, including Anglo-Saxon houses and bird headed ring brooches, are not purely Germanic in style, and appear to have been influenced by British material culture (Whyman 1993: 65; Cramp 1999: 6). Thus it appears that the Germanic settlers (however many there were) became integrated into the

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[11] All historical texts referred to in this chapter are given in full in Appendix II.

existing community, bringing with them a different material culture and language that was adopted by the British, while at the same time being influenced by British styles (Whyman 1993; Cramp 1999: 6; Loveluck 1999). The 5th and 6th-century cemetery evidence for Lincolnshire and then Yorkshire will now be introduced.

In the mid 5th century in Lincolnshire several large Anglo-Saxon cremation and mixed-rite cemeteries were founded, each serving a large area and possibly a different tribal group (Leahy 1993: 36). These are fairly evenly spaced throughout the region, although there is a notable lack of such a cemetery close to Lincoln (Leahy 1998: 11). The absence of 5th-century cremation cemeteries to the west of the River Trent indicates that the river may have been a political boundary in the 5th century, with land to the west remaining in British hands (Leahy 1993: 36). However, a recent fieldwalking survey of the Isle of Axholme has revealed early-mid Anglo-Saxon settlement evidence similar to that in Lindsey at Owston Ferry, Crowle and Beltoft. This may indicate that this area was part of Lindsey, with the boundary with Elmet located further west on Hatfield Chase (Kevin Leahy, *pers. comm.*). It has been suggested that much of the Isle of Axholme was probably flooded during the late 4th century following a rise in the sea level, rendering the area largely uninhabitable during the early Anglo-Saxon period (Leahy 1998: 9), with evidence of settlement restricted to higher ground.

During the late 5th and 6th centuries the large cremation cemeteries were supplemented by a series of smaller inhumation cemeteries. Graves in these cemeteries often contained grave goods that were Danish in style, including sleeve clasps, scutiform pendants and square-headed brooches (Leahy 1998: 12). Kevin Leahy has suggested that these graves may represent a second migration of non-cremating people from Scandinavia (Leahy 1998: 12). In Lincoln, unaccompanied, west-east aligned burials from the cemetery at St

Paul-in-the-Bail have been radiocarbon dated from 370±80 AD right through to the 11th century. Thus, it appears that the changes in burials practice in the rest of Lincolnshire did not impact on the population burying their dead in Lincoln. This may indicate that a Christian centre (and possibly an administrative centre) survived in Lincoln throughout the Anglo-Saxon period (Bassett 1989: 11; Eagles 1989 207; Leahy 1993: 36). Little evidence of early Anglo-Saxon occupation has been found in the city (Bassett 1989:14-15).

In Yorkshire, only one large 5th-century cremation cemetery similar to those found in Lincolnshire has been located. The Sancton cremation cemetery (known as 'Sancton I') has been linked through the study of pottery types with the Lincolnshire cemeteries of Cleatham, Elsham, Baston and Elkington, possibly belonging to the same population group living around the Humber (Myres 1935: 257; Leahy 1998: 11). The remaining early Anglo-Saxon cemeteries in East Yorkshire date from the 6th century and are generally smaller inhumation cemeteries similar to those found in Lincolnshire in the 6th century. These differ from the Lincolnshire cemeteries in that they are frequently located in or around prehistoric earthworks including Bronze Age round barrows, and later in the 7th century, around linear earthworks and Iron Age square barrow cemeteries (Lucy 1999: 20). Sixth-century 'Anglo-Saxon' cemeteries are less common in North Yorkshire and further north, and are rarely found in South and West Yorkshire, possibly indicating the limits of 'Anglo-Saxon' settlement in the 6th century, with undiscovered 'British' cemeteries located to the north and the west (Faull 1974; Faull and Moorhouse 1981), which may be revealed through the study of undated burials (see Chapter 3). From the 7th century, cemeteries are more evenly distributed across Yorkshire, although fewer are found towards the west of the county (Lucy 1999: 16-20).

From the 7th century it becomes easier to establish the locations and extent of the Anglo-Saxon kingdoms, which had begun to form in the 6th century (see

Figure 2.4, Hooke 1998: 45). However, due to successive military campaigns and political developments these boundaries did not remain static (Yorke 1993b: 142-143). The following section will firstly discuss the situation in Yorkshire from the 7th to the 9th century, and will then move on to discuss Lincolnshire. It must be remembered that the records of these events may have been altered and exaggerated by the authors (Yorke 1993a; Higham 2000), and thus should be regarded as idealised stories loosely based on fact, and not necessarily as a true record of events.

2.2.1 The rise of kingship in Yorkshire

The Northumbrian kingdom of Deira was bounded by the Tees and the Humber, with the kingdom of Bernicia lying to the north (Yorke 1990: 74). The apparently British kingdoms of Rheged, Elmet and Craven have been said to be located to the west, although their boundaries can not be defined on the basis of documentary evidence (Faull 1977: 2; Faull 1981: 171). Philip Rahtz has suggested that the boundary between Deria and Elmet (situated somewhere between Leeds and York) may have been marked by the undated earthworks Aberford Dyke and Grims Ditch (Rahtz 2000: 4), however this theory has yet to be confirmed by excavation. Rheged was located to the west of Bernicia, but extended south into the North Riding of Yorkshire (Faull 1974: 24). Indeed, the 6th-century poems by Taliesin refer to King Urien of Rheged as Lord of *Catraeth*, suggesting that Catterick may have been one of the royal centres of the kingdom (Cramp 1999:4; Nennius HB 63; Taliesin). Elmet seems to have lain to the south of Rheged and to the west of Deira, covering much of the West Riding. This deduction is based on three pieces of evidence. First, its location in the Tribal Hidage[12] between the *Pecsætna* (Peak Dwellers) and Lindsey (Davies and Vierck 1974: 231). Second, the identification of *Loidis*, which was close to the forest of Elmet according to

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[12] The Tribal Hidage is a 7th-century 'tribute list' generally attributed to Mercia (Dumville 1989a: 129-130), although it has been suggested that it may have been of Northumbrian origin (Brooks 1989: 159)

Bede, as Leeds (Bede HE ii: 14), and, third, place name evidence, for example Barwick in Elmet in W Yorks. and Sherburn in Elmet in N Yorks. (Long 1993: 118). Craven has been located in the north of the West Riding on the basis of place name evidence (O'Hare 1993: 15), and was probably incorporated into Deira earlier than Elmet (Faull 1977: 3; 1981: 171).

The ruling dynasty of Bernicia was established c. 547, with the reign of King Ida, although some of the kings in the surviving regnal lists for the period may have ruled concurrently (Yorke 1990: 75). Kingship is historically attested from the 560s in Deira, although it is likely to be 'of greater antiquity' (Dumville 1989b: 219). Unfortunately little is known of the early kings of Deira, other than the name of Sœmil, who separated Deira from Bernicia, presumably when Bernicia was still British (Nennius HB 61; Yorke 1990: 74). This lack of information about the early kings of Deira is due to the confusion over Æthelric of Deira and Æthelric of Bernicia, who were not the same person, by one of the compilers of the Anglo-Saxon Chronicle (Yorke 1990: 77). Our knowledge of the kings of Deira becomes more certain with the rule of Ælle, who was ruling in 597 (Bede HE ii:1; Miller 1979: 37). Bernicia and Deira were united by Æthelfrith, apparently sending Edwin, son of Ælle of Deira, into exile (Bede HE i: 34; Nennius HB 61; Yorke 1990: 77; Hooke 1998: 55). However, Edwin returned to Northumbria in 616 and became king of the united Northumbria (Bede HE iii: 1; Yorke 1990: 77), expanding the kingdom to incorporate Elmet in 616 or 617 (Nennius HB 63; Faull 1977: 3; Yorke 1990: 616). Bede records that the Northumbrians were converted during Edwin's reign (Bede HE ii: 9). After the death of King Edwin, Northumbria was divided again, with Deira ruled by Osric and Bernicia by Eanfrith. Both of these kings had been converted, however Bede reports that they reverted back to paganism once they became kings. Eanfrith and Osric were killed by the British king Cædwalla, who then ruled the Northumbrians for a year. Cædwalla was defeated by Eanfrith's Christian brother Oswald, who then became king of a united Northumbria

(Bede HE iii: 1). After the death of Oswald in 642 the kingdom of Northumbria was again divided into Deira and Bernicia. Oswald's brother Oswiu succeeded to the throne of Bernicia and the Deiran throne passed to Oswine, son of King Osric (Bede HE iii:14; Yorke 1990: 78). It was around this time that Rheged was probably incorporated into Northumbria, possibly following the marriage of Oswiu and Riemmelth (Nennius HB 57). This marriage was not reported in any English source, although it is recorded that Oswiu also married Edwin's daughter Eanflæd. The kingdom of Rheged was not mentioned again after c. 638, indicating it had ceased to exist, possibly due to a political alliance following Oswiu's first marriage (Faull 1977: 3; Dumville 1989b: 220). Following the reign of Oswiu and Oswine (c. 679) there is no record that Deira and Bernicia were ruled separately again, although they may have been separated for administrative reasons (Yorke 1990: 79). Although there were military threats from, and treaties with, Mercia and Wessex after this date, Northumbria survived as a kingdom until the arrival of the Scandinavians in the 9th century (Yorke 1990: 96).

2.2.2 Kingship and conquest in Lincolnshire

There has been much scholarly debate as to whether or not Lindsey was a kingdom (Stenton 1970; Bassett 1989) or a Mercian administrative unit (Davies and Vierck 1974: 237) during the 7th century. Sarah Foot has summarised the debate, arguing that Lindsey was a 7th-century kingdom on the basis of the following evidence. Its assessment in the Tribal Hidage[13] of 7,000 hides is the same as that for the well-attested kingdoms of Essex and Sussex, and there exists, moreover, a genealogy for the kings of Lindsey in the 'Anglian Collection'. Lindsey had its own bishops, and Bede described Lindsey using terminology he usually used to refer to kingdoms, and furthermore because of the interest shown in the region by Mercia and Northumbria in the 7th century (Foot 1993: 128-133). The control of the kingdom frequently passed between Mercia and Northumbria during the 7th

century, but Lindsey was probably an independent kingdom prior to this (Yorke 1990: 100; Foot 1993: 129).

Sir Frank Stenton argued that the 7th-century kingdom of Lindsey was the same area as that covered by the 12th-century Lindsey Survey, and thus was bounded by the Humber Estuary, the rivers Trent and Witham and by the Roman Fossdyke canal that joins the Trent and the Witham (Stenton 1970: 133-134) (see Figure 2.5). Indeed, all of the places in Lindsey mentioned by Bede lie within this area (Stenton 1970: 133). However, the geographical extent of the kingdom would place the supposed capital, Lincoln, on the very edge of the kingdom. Consequently, it has been suggested by other historians that 7th-century Lindsey may have extended south as far as Ancaster between the River Trent and the River Slea, an area that has not been associated with other documented tribal groupings (Bassett 1989: 2; Yorke 1993b: 142-3; Leahy 1998: 7).

Despite Lindsey's probable independence in the early 7th century, it may have been under the overlordship of Northumbria when Paulinus converted the reeve Blæcca in Lincoln during the reign of King Edwin, sometime after c.624 (Bede HE ii: 16; Foot 1993: 133). Lindsey may have continued to be under Northumbrian control during the reign of Oswald of Northumbria, who died in 642. However during the reigns of Oswiu and Oswine, when Deira and Bernicia were ruled separately, it is unlikely that Deira wielded enough power to keep control of Lindsey, and thus Lindsey probably passed into the control of Mercia until Penda's death in 655. Following this, Oswiu became overlord of Mercia and the rest of the southern kingdoms, including Lindsey (Bede HE iii: 24; Foot 1993: 135). At an unknown date after 658 King Wulfhere of Mercia extended his power into Lindsey, and granted 50 hides of land at *Aet Baeruwe* (widely accepted to be Barrow-on-Humber) to Bishop Chad for a religious community in 669 (Bede HE iv: 3). Northumbria

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[13] See Appendix II and discussion of the Tribal Hidage below.

regained control of Lindsey following a battle between Wulfhere and Ecgfrith of Northumbria sometime between 673 and 675 (Stephanus VSW 20; Bede HE iv:12). This power struggle was finally resolved by the battle of the Trent in 679, with Lindsey returning to Mercian control under Æthelred (Bede HE iv: 21; Foot 1993: 135).

The area to the south of Lindsey (including the present area of Kesteven, if this was not part of Lindsey in the 7th century) was occupied by several small tribal groups that were collectively known as the Middle Angles (Brooks 1989: 160; Dumville 1989a: 129; Eagles 1989: 211; Yorke 1990: 106). These people are known from the Tribal Hidage. The exact location of many of the different groups is not known and has been subject to much debate[14] (Hill 1981: 77), however several tribes have been attributed to South Lincolnshire, including the Spaldingas, the Bilmiga and the North Gyrwe (Brooks 1989: 161; Dumville 1989a: 131; Leahy 1998: 7). Middle Anglia as a whole 'was likely to have been bounded by Wessex to the south, Essex to the south-east, East Anglia to the east, Lindsey to the north, Mercia proper to the north-west and the Hwicce to the south-west' (Dumville 1989a: 134) thus including all of Lincolnshire that was not part of Lindsey (whatever the boundaries of Lindsey actually were).

There is little historic evidence relating to the Middle Angles, however we do know that during the 7th century, when Mercia was expanding in several different directions, the Middle Angles were annexed to Mercia (Dumville 1989a: 128). According to Bede, in c.653 Penda created the kingdom of the Middle Angles for his son, Peada, although it is uncertain if the Middle Angles were a separate political unit before this date (Bede HE iii: 21; Dumville 1989a: 131; Yorke 1990: 107). Peada converted the Middle Angles, but was murdered in 656 (Bede HE iii: 21; iii: 24). The Middle Angles appear to have ceased to exist politically from this date, being incorporated into

Mercia, which was divided into North and South Mercia by Oswiu. However, the Middle Angles were treated separately for ecclesiastical administration after their incorporation into Mercia proper (Dumville 1989a: 131-132). The border with the East Angles, located somewhere in the Fens, continued to be disputed during the 7th century until Penda killed the East Anglian king Anna in 654, thus securing the eastern border and Mercia's hold over the Middle Angles (Dumville 1989a: 132).

2.2.3 Scandinavian settlement and conquest by Wessex

The first Scandinavian activities reported in England were the raids of the late 8th and early 9th centuries (for example see ASC D 793; ASC D 794; ASC 835; ASC 836). The reports of these raids and the size of the enemy may have been exaggerated by the Christian Anglo-Saxon historians, however it is evident that these Scandinavians were 'exploiting the possibilities for trade and plunder as they arose' (Richards 2000: 20). From 850 the Scandinavian armies began to overwinter in England, and by the 870s they began to settle in earnest (Hadley 1997: 69; Richards 2000: 23, 27). In 876 Halfdan's army settled the land around York. This was followed by the settlement of Mercia in 877 and East Anglia in 880 (ASC 876; ASC 877; ASC 880; Hadley 1997: 69). The Danes reinforced their rule by placing an Anglo-Saxon lord Egbert on the throne in York and making Ceolwulf King of Mercia (Stenton 1971: 248, 252). However, the remaining Scandinavian armies continued to plunder the rest of Britain (Richards 2000: 29). The treaty of Wedmore (possibly dating to 886) defined the boundary between Alfred's Wessex and the area of Scandinavian settlement. This boundary stretched 'up the Thames, and then up the Lea, and along the Lea to its source, then in a straight line to Bedford, then up the Ouse to Watling Street' (Richards 2000: 29), however it seems that such treaties were frequently broken and any boundaries between Anglo-Saxon and Scandinavian settlement probably fluctuated throughout the Anglo-Scandinavian period (Holman 2001: 6).

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[14] Compare the maps produced by Hill and Brooks (Figures 2.6 and 2.7), for example.

This approximate area of Scandinavian settlement has been taken to be the extent of the 'Danelaw', first referred to in a law of Æthelred in 1008, describing an area where Scandinavian influenced laws were used rather than Mercian or West Saxon laws (Hadley 1997: 84; Richards 2000: 29). The term has subsequently been used to describe an area strongly influenced by Scandinavian settlement, characterised by a different social structure and estate system, the use of Scandinavian legal and administration terms, and a prevalence of Scandinavian place names (Hadley 1997: 70). However, it has recently been argued that the area under Danish law was never really a different political counterpart to Mercia and Wessex, and that a division into 'Danish' and 'English' areas may be artificial (Holman 2001: 7). Indeed, Dawn Hadley has shown that many of the things that make the Danelaw distinctive may in fact be due to regional differences apparent prior to the Scandinavian settlement and to developments that occurred after the conquest of the area by Wessex (Hadley 1997). Certainly the area that came to be known as the Danelaw was occupied by people of both Scandinavian and Anglo-Saxon descent from the late 9th century, and was under fluctuating Scandinavian and English rule during the late 9th and early 10th centuries (Hadley 1997: 88).

From the early 10th century King Edward of Wessex and his sister Æthelflæd of Mercia began the conquest of the area later known as the Danelaw. In 919 a Norse king, Ragnald, from Ireland founded a new Scandinavian kingdom in York (*Historia Regum* 919; Stenton 1971: 333). In 920, after the death of Æthelflæd, Edward accepted the submission of the kings of Northumbria, York and Scotland (ASC A 920; Richards 2000: 29). The newly founded Norse Kingdom of York continued to exist alongside the kingdom of Wessex. Sometimes it came back under West Saxon control, for example under Æthelstan, and following the poorly-documented downfall of Erik Bloodaxe

in 954, the kingdom of York became incorporated into Eadred's England (ASC D, E 954; Stenton 1971: 362; Richards 2000: 29).

Whatever the true extent and influence of Scandinavian settlement, both Lincolnshire and Yorkshire lie firmly within the zone later known as the Danelaw. Thus the study of burial practice in the present study area will enable the examination of Scandinavian influence, if any, on burial practice during the 9th, 10th and 11th centuries.

2.3 Ecclesiastical development and organization

As mentioned above, the missionary Paulinus converted King Edwin and the Northumbrians in 626, following Edwin's marriage to the Christian Æthelburh in 625 (Bede HE ii: 9). Edwin was baptised in York in 627 in the wooden church of St Peter, hastily built prior to his baptism. He then established a see for Paulinus in York (Bede HE ii: 14). Osric and Eanfrith, Edwin's successors, reverted to paganism once they gained the thrones of Deira and Bernicia respectively. However, Christianity was restored by King Oswald, who succeeded to the united kingdom of Northumbria in 634 (Bede HE iii: 1; Yorke 1990: 78). Oswald founded a bishopric at Lindisfarne, based on Celtic Christianity, and completed the building of Edwin's church in York (Bede HE ii: 14; Higham 1993: 127, 134). From this time it appears that the bishopric of York was subordinate to that at Lindisfarne (Higham 1993: 150). The introduction of both Irish and Roman Christianity to Northumbria caused divisions within the Northumbrian Church, over differences in ecclesiastical custom, and crucially in calculating the date of Easter (Higham 1993: 127). These differences were discussed at the Synod of Whitby in 664, when it was decided that all of the Northumbrian churches would follow the Roman tradition (Bede HE iii: 25). From this date onwards it is likely that Northumbrian ecclesiastical power passed from Lindisfarne to York (Higham 1993: 149-150). At the time of Bede, Northumbria had four sees, Lindisfarne (Northumb.), York, Whithorn (Dumf.) and Hexham (Northumb.)

(Wormald 1991: 70-71) (see Figure 2.8). A fifth, short-lived see had been established at Abercorn (W Loth.) in the 7th century (Higham 1993: 150). York's superiority over Lindisfarne was confirmed in 735 with its promotion in status to an archbishopric, leaving the Northumbrian Church independent of that of Canterbury (Bede HE continuations; Wormald 1991: 86).

The situation in Lindsey and Middle Anglia was somewhat less clear-cut, due to the changing political circumstances in these regions. As mentioned above, the people of Lindsey were converted by Paulinus in 624 (Bede HE ii: 16). Lindsey was probably under the lordship of Deira at this time and may have been included in the diocese of York since its foundation c. 627 (Foot 1993: 133, 136; Stocker 1993: 116). The Middle Angles were converted under Peada c. 653 (Bede HE iii: 21; Dumville 1989a: 131). Following the death of Penda, Oswiu became overlord of Mercia and converted the Mercians. Oswiu made the Irish priest Diuma Bishop of both the Middle Angles, and the Mercians, including Lindsey (due to a shortage of bishops) (Bede HE iii: 21; iii: 24; Dumville 1989a: 131). The bishopric of Lindsey was established in 678, during the reign of Ecgfrith (Bede HE iv: 12; Foot 1993: 135). A separate diocese was eventually created for the Middle Angles in Leicester in 737 (Dumville 1989a: 131).

The location of the episcopal seat of Lindsey has received much debate, with Caistor, Lincoln (and the Wigford area in particular) and Bardney all being discussed as contenders (Bassett 1989; Wormald 1991: 71; Gem 1993: 123-125; Stocker 1993: 118-9). However, without the archaeological discovery of a suitably impressive early church and cemetery, possibly similar in status and elaborateness to the cemetery found at York Minster (which is unlikely given the superiority of York over Lincoln from the mid Anglo-Saxon period, and the historically attested burial of royalty at St Peter's), this issue is unlikely to be resolved.

The dioceses in the study region appear to have been disrupted during the Scandinavian settlement of the 9th century. Gaps in the Episcopal lists for northern and eastern England and the lack of land held by churches in Domesday Book (1086) have been used to imply that the Scandinavians devastated the ecclesiastical structure of the Danelaw (Stenton 1971: 433). So far there is no clear archaeological evidence of churches that went out of use during the period of Scandinavian settlement, although churches went out of use both before and after this period (for example Flixborough and Barrow-on-Humber, Lincs.) (Barrow 2000: 165; Hadley 2000d: 295). Although churches were not in ownership of much land in 1086, it is not known when and by whom this land was taken from them. Nonetheless, it is likely that much land was acquired by secular lords both at the time of the Scandinavian settlement and following the conquest by Wessex (Hadley 1996: 112, 125; 2000c: 189).

While it is true that little is known about the bishops of Lindsey and the Archbishops of York during the period of Scandinavian settlement, a lack of documentation about them does not necessarily mean that there were any breaks in succession (Barrow 2000: 157). Some powerful allegiances were made between the Scandinavian lords and the indigenous ecclesiastics, to the benefit of both parties (Hadley 1996: 116; 2000c: 115; 2000d: 289). The Church offered models of kingship and support to the new Scandinavian lords, who in return supported their religious activities and granted some land to religious communities, the best documented examples relating to the community of St Cuthbert (Hadley 1996: 126; 2000c: 115). The Scandinavians adopted the Christian God, although this may have been in conjunction with their pagan gods, and does not necessarily imply that they were Christian from an early date (Abrams 2000). Indeed, it has been argued that the disruption of the bishoprics in the Danelaw may have had more to do with the kings of Wessex and Mercia. By blocking access to Canterbury, new bishops for the Danelaw could not be consecrated, thus weakening the

power of the Danes (Hadley 1996: 120, 126; Barrow 2000: 158; Hadley 2000d: 286). In addition, the kings of Wessex removed relics from the Danelaw and even attacked the church at Ripon in 948 (Hadley 2000c: 119). The see of Lindsey was re-established in the 10th century, implying it had ceased to exist during the period of Danish rule, presumably leaving Lindsey under the ecclesiastical authority of York, which appears to have continued to function throughout the 9th and 10th centuries (Barrow 2000: 160).

Despite this evidence for disruption in ecclesiastical organisation in the Danelaw there is much evidence of continuity. Many pre-Viking churches – such as York, Ripon, Beverley and Whitby in Yorkshire and Lincoln, Crowland, and Caistor in Lincolnshire – emerge in the later historical record as the mother churches of the later Middle Ages, possibly indicating some degree of continuity in ecclesiastical authority (Hadley 1996: 113; Barrow 2000: 165; Hadley 2000c: 120; 2000d: 220). However, during the 10th century lots of churches were founded. Many of these were proprietary churches founded on secular estates. Thus, in areas with more fragmented estate structures, more churches were founded as the local lords sought to demonstrate their importance through the foundation of their own church (Hadley 1996: 126; 2000c: 121). These churches generally had graveyards (which would increase their status), with the graves of the lords marked by sculpted monuments. Thus many churches in Lincolnshire and Yorkshire have one or two pieces of surviving 10th-century stone sculpture (Stocker 2000: 182). The mother churches of Lincolnshire were apparently unable to control this proliferation, leading to the creation of many small parishes in the county. It is notable that any major churches that retained large parishes in Lincolnshire generally coincide with large estates recorded in Domesday Book, as seen at Grantham (Hadley 1996: 113; 2000d: 287). However, in Yorkshire, where the estate structure was less fragmented and the proliferation in church foundation occurred slightly earlier, larger parishes and more pre-Viking foundations survived into the later Middle Ages

(Hadley 1996: 121-122; Stocker 2000: 206). In urban centres and settlements associated with markets, in both Lincolnshire and Yorkshire, churches appear to have been founded by groups of traders, leading to an increased frequency in the use of stone funerary monuments, and far more churches than in towns in the West Midlands (Stocker 2000: 183, 189). This proliferation of churches and the increased use of stone sculpture during the 9th and 10th centuries indicates that rather than disrupting the ecclesiastical structure of the Danelaw, the Scandinavians invested in a thriving Church, although this may have been as a reassertion of Christianity after an initial period of disruption (Hadley 2000d: 290).

2.4 Cemetery survey methodology and aims

Data were collected about all cemeteries containing burials dating to the Anglo-Saxon period (from the 5th century to the nominal date of 1100) for the present counties that make up the historical counties of Lincolnshire and Yorkshire (Lincs., N Lincs., NE Lincs., E Yorks., N Yorks., S Yorks. and W Yorks.). In addition a survey of all burials recorded as undated was carried out to see whether it was possible to identify burials of mid- to late Anglo-Saxon date among them. The overall site survey aims to study trends and patterns in Anglo-Saxon mortuary behaviour, assessing the range, variation and change over time in both cemetery and burial type, cemetery size and cemetery location. Although several surveys of early and mid Anglo-Saxon cemeteries have been undertaken in the past, no survey incorporating late Anglo-Saxon cemeteries has been previously undertaken. The site survey is presented as a gazetteer in Appendix III, divided into the present four counties of Yorkshire (E Yorks., N Yorks., S Yorks. and W Yorks.) and Lincolnshire. The results of this survey are discussed in Chapter 3.

An initial survey was carried out of all Sites and Monuments Record (SMR) databases in the study area. A total of 11 SMRs were visited, summarised in Table 2.1, below. The databases were searched for all burials (inhumations

and cremations) recorded as being Anglo-Saxon, Anglo-Scandinavian, or post-Roman in date, including medieval cemeteries with late Anglo-Saxon burials, along with all finds of human bones and/or burials that had not been dated securely. All sites were recorded in an Access database constructed by the present author (referred to hereafter as the sites database). Most SMR officers informed the current researcher of problems in database coverage, as not all archaeological sites, particularly very recent excavations, had been entered onto the computer at the time of researching (throughout the year 2000). Thus searches through card indexes and recent backlog folders were undertaken whenever possible. For this reason many sites appear to not be recorded at an SMR, when in reality many were known about by the relevant SMR officer.

SMR Name	Location	SMR Code
Lincoln County Council	Lincoln	LC
N Lincolnshire	Scunthorpe	NL
N Yorkshire	Northallerton	NY
N Yorkshire Moors	Helmsley	NYM
NE Lincolnshire	Grimsby	NEL
S Yorkshire	Sheffield	SY
SE Yorkshire	Hull	SEY
South Lincolnshire	Heckington	SL
W Yorkshire	Wakefield	WY
York City	York	YC
Yorkshire Dales	Bainbridge	YD

Table 2.1: SMRs searched in the present study

This initial survey was followed by a search of all Anglo-Saxon burials (as defined above) on the National Monuments Record (NMR) database. A search of undated burials was not undertaken at the NMR on the advice of an NMR officer, due to the complicated and time-consuming nature of such a search. Indeed similar searches of SMR databases outside the present study area have also been refused on the same grounds (Dawn Hadley, *pers. comm.*). This second stage of the survey revealed a lack of concordance

between the SMRs and the NMR, caused by patchy database coverage and variable SMR funding, issues that will be discussed further in Chapter 3.

A series of published gazetteers of Anglo-Saxon cemeteries of different dates were cross-referenced with the sites database. These sources are summarised in Table 2.2. Those gazetteers that had been relied upon in later works (including Eagles 1979; Faull 1979; Morris 1983), however, were not searched again, but are referenced in the gazetteer (Appendix III). In addition, searches were made through journal sections reporting on recent archaeological work in Lincolnshire (*Lincolnshire History and Archaeology*) and Yorkshire (*The Yorkshire Archaeological Journal*), along with the relevant sections in *Medieval Archaeology* (see Table 2.3). These are referenced in the gazetteer under the names of the compilers of the section for the relevant year, or the author of a particular sub-section where this differs from the compilers. The literature search revealed several medieval cemeteries containing late Anglo-Saxon burials that were not recorded as 'early medieval' on the SMR records, for example, St Martin's Wharram Percy, St Andrew's Fishergate York and St Helen-on-the-Walls York.

Compiler	Period[15]	Area	Reference
Audrey Meaney	Early Anglo-Saxon	England	Meaney 1964
Kevin Leahy	Early Anglo-Saxon	Lindsey and surrounding area	Leahy 1993
Helen Geake	c. 600-850	England	Geake 1997
Sam Lucy	Early Anglo-Saxon	E Yorks. and the eastern part of N Yorks.	Lucy 1998
Kevin Leahy	Early Anglo-Saxon	As for Leahy 1993 but also including North Humberside (E Yorks.)	Leahy 1998

Table 2.2: Summary of gazetteers used in site survey

15 Each of the early Anglo-Saxon gazetteers include mid Anglo-Saxon cemeteries containing grave goods.

Journal	Name of section searched	Years summaries published
Medieval Archaeology	Archaeology in Britain	1957-1982
	Archaeology in Britain and Ireland	1983-current
Lincolnshire History and Archaeology	Archaeological Notes	1966-1974, 1992-1993
	Archaeology in Lincolnshire	1975, 1994-current
	Archaeology in Lincolnshire and South Humberside	1976-1991
Yorkshire Archaeological Journal	The Yorkshire Archaeological Register	1963-1982, 1986-1988

Table 2.3: Journal sections searched for site survey

Further sites not previously entered onto the sites database were identified through discussions with locally based archaeologists, SMR officers and museum staff, most notably including Kevin Leahy of Scunthorpe Museum, Jen Mann of the City of Lincoln Archaeology Unit and the staff of the Yorkshire Archaeological Trust. The survey was completed by the end of the year 2000, and thus more recent archaeological discoveries not brought to my attention by archaeological or SMR personnel have not been included in the gazetteer. Sites identified from sources other than the SMR were subsequently cross checked with SMR officers, in case they had been added onto the SMR subsequent to the initial search, or were entered in such a way as to have been missed in the initial SMR search.

This survey investigates the changing nature of Anglo-Saxon burial practice and cemetery types, the impact of changing political circumstances and ecclesiastical developments on burial practice, along with the distribution and changing location of Anglo-Saxon cemeteries. It will investigate regional differences in mortuary practice, and how these changed over time. The influence of the work of antiquarians and current researchers on our knowledge of Anglo-Saxon cemeteries in the region, in particular the work of John Mortimer in the 19th century on the Yorkshire Wolds and the current work of Kevin Leahy in North Lincolnshire, will also be assessed. The

survey highlights the abundance of known early-mid Anglo-Saxon cemeteries in eastern Yorkshire and Lincolnshire, and a relative dearth of identified late Anglo-Saxon cemeteries. However, by pulling together the evidence for post-conversion burial practice in the region, a series of criteria for identifying additional late Anglo-Saxon cemeteries will be established. The survey of undated burials will reveal cemeteries that fit these criteria. Some of these were selected for radiocarbon dating by the present author, and consequently firmly identified as mid to late Anglo-Saxon in date. The results of the cemetery survey and the radiocarbon dating programme are discussed in Chapter 3, with a gazetteer of sites presented in Appendix III.

Chapter 3: Cemetery Survey 2 – Site Survey Results

This chapter will present the results of the site survey. The number of sites identified in each region and for each time period will be outlined. The distribution of sites will be discussed in relation to the quality of the SMR and NMR data, the different geology and geography of the two counties and the changing political developments of the Anglo-Saxon period. The different types of cemetery dating to the late Anglo-Saxon period will then be described, and a series of criteria for identifying further mid to late Anglo-Saxon cemeteries will be outlined. The results of a radiocarbon dating programme will then be presented. This successfully dated to the mid to late Anglo-Saxon period six cemeteries selected using the identification criteria adopted in this thesis. Finally, the historical and sculptural evidence for later Anglo-Saxon burial will be evaluated.

The methodology of the site survey was outlined in Section 2.4. A total of 464 sites (both Anglo-Saxon and undated) were identified in the study area of Lincolnshire and Yorkshire. These were grouped into a series of sixteen date categories, given in Table 3.1, below. Figure 3.1 reveals that approximately one third of the sites were undated (36.0%), with less than a quarter of the total number of sites dating to the mid and late Anglo-Saxon period (21.05%). These date categories are used in the gazetteer (Appendix III). However, this high number of different date categories would make analysis of the data unwieldy, and so the number of categories has been reduced to seven (referred to in Table 3.1 as 'New Date Category'). Thus the questionably dated sites were combined with the more securely dated sites for each date category (i.e. 'early Anglo-Saxon' was combined with '? early Anglo-Saxon' and so on). Those sites described in the gazetteer as 'Anglo-Saxon' or '? Anglo-Saxon' were commonly dated to the Anglo-Saxon period in the 19th and early 20th centuries, and were generally dated on the basis of grave goods. Thus these sites were combined within the new 'early to mid

Anglo-Saxon' date category. Those sites dating to the 'late Anglo-Saxon to medieval' period were included in the new 'late Anglo-Saxon' date category. One site was identified as possibly being multi-period[16] however as the dating for the early Anglo-Saxon burial was more secure, this site was included in the new 'early Anglo-Saxon' date category. The 'undated' and 'unlikely' categories stayed the same under this new dating system.

Date Category in Gazetteer	Number of Sites	New Date Category	Number of Sites
Undated	167 (36%)	Undated	167 (36%)
Early Anglo-Saxon	57 (12.3%)	Early Anglo-Saxon	104 (22.42%)
? Early Anglo-Saxon	46 (9.9%)		
Early Anglo-Saxon; ? Late Anglo-Saxon	1 (0.2%)		
Early to Mid Anglo-Saxon	44 (9.5%)	Early to Mid Anglo-Saxon	92 (19.83%)
? Early to Mid Anglo-Saxon	19 (4.1%)		
Anglo-Saxon	5 (1.1%)		
? Anglo-Saxon	24 (5.2%)		
Mid Anglo-Saxon	25 (5.4%)	Mid Anglo-Saxon	28 (6.03%)
? Mid Anglo-Saxon	3 (0.65%)		
Mid to Late Anglo-Saxon	12 (2.6%)	Mid to Late Anglo-Saxon	17 (3.66%)
? Mid to Late Anglo-Saxon	5 (1.1%)		
Late Anglo-Saxon	20 (4.3%)	Late Anglo-Saxon	52 (11.21%)
? Late Anglo-Saxon	16 (3.4%)		
Late Anglo-Saxon to Medieval	15 (3.2%)		
? Late Anglo-Saxon to Medieval	1 (0.2%)		
Unlikely	4 (0.85%)	Unlikely	4 (0.85%)

Table 3.1: Number of sites identified in each date category.

The total number of sites and the proportion of sites in each date category varied considerably for each region. One explanation for this is that the level

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[16] At St Mary's church, Lockington several burials were found that were cut by the Norman church, suggesting an Anglo-Saxon date. One of these was accompanied by early Anglo-Saxon grave goods,

of information available varied considerably for different regions of the study area, particularly in terms of SMR and NMR coverage. Thus it is necessary to discuss the results of each SMR search, along with the evidence acquired from the NMR and subsequent literature reviews including those of Meaney (1964), Geake (1997) and Lucy (1998).[17]

3.1 Discussion of data collection

Most of the 464 sites identified in the survey were recorded on the regional SMRs. However many (116, or 25%) were not initially found through SMR searches for all Anglo-Saxon and undated burials, but from the subsequent NMR search and from journals and gazetteers (discussed in Section 2.4). After the literature and NMR search, the SMRs were searched again to cross-reference sites not found on the initial SMR search. In general, most of the sites identified from the literature were later found to be on the relevant SMR,[18] despite not being identified using the initial search criteria. Many of these sites were multi-period – either under a later medieval church (for the later cemeteries) or inserted in a prehistoric earthwork (usually early to mid Anglo-Saxon burials) – and the early medieval date was not always recorded separately in the date field on the SMR databases. In addition, findspots later identified as possible cemetery sites (especially metal detectorist sites in Lincolnshire identified by Kevin Leahy; Leahy 1993) were not identified in the initial searches, as they were not always recorded as burials. In addition, some SMRs were not fully computerised at the time of the initial search, thus making data retrieval more difficult, leading to sites being missed. Issues of data retrieval and SMR coverage, both for the whole study area and for each region, will now be discussed.

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however the other burials were described as 'separated by stones at the sides of the heads' (Moore 1893: 186), suggesting some of these burials may have been of late Anglo-Saxon date.

[17] The full list of literature reviews used to compile the database is given in Section 2.4.

[18] The second SMR search was undertaken by letter, apart from Lincoln City SMR and North Yorkshire SMR, which were visited for a second time due to the quantity of data to be collected. Responses to the second SMR search requests were not received from North East Lincolnshire SMR or York City SMR.

3.2 Initial site survey results – number and distribution of sites

The total number of sites recorded for each region and at each SMR varied considerably (see Table 3.2 and Figure 3.3). This was in part due to the size of the region covered by the SMR, but was also influenced by the density of identified sites in each region. As a general rule fewer sites were identified in the west and north of the study area (see Figure 3.4). The distribution of sites for each region will be discussed in more detail later in this Chapter.

SMR	Initial SMR search	Second SMR search	New sites	Literature/ NMR search only	Total sites
Lincolnshire[19]	156	23	8	2	189
N Lincs.	34	5	2	1	42
NE Lincs.	3	0	0	2	5
E Yorkshire	89	14	0	2	105
N Yorkshire	22	34	1	6	63
N Yorks. Moors	14	3	0	0	17
Yorks. Dales	7	0	0	0	7
City of York	6	0	0	10	16
W Yorks.	12	0	0	1	13
S Yorks.	5	1	0	1	7

Table 3.2: Numbers of sites recorded for each SMR region in each stage of the site survey.

3.2.1 Lincolnshire

The county of Lincolnshire is served by four SMRs. The City of Lincoln SMR covers the whole of the county apart from the area previously incorporated into Humberside. The information at Lincoln SMR is almost entirely computerised, apart from some sites within the city of Lincoln as these are on the Urban Archaeology Database.[20] A second SMR in South Lincolnshire at Heckington was developed from a database compiled by the

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[19] These figures include sites identified on the South Lincolnshire SMR, as the regions overlap. At present the two SMRs are undergoing a data transfer, and eventually all sites will be on both SMRs.
[20] The Urban Archaeology Database for Lincoln was not available for public access when this site survey was undertaken. Thus it was not consulted for this research.

Community Archaeologists at Heritage Trust Lincolnshire. This SMR covers the southern districts of North Kesteven, South Kesteven and Holland, overlapping with the area covered by Lincoln SMR. At the time of the initial site survey many of the data available on the card system at Heckington were not duplicated at Lincoln, although a data-exchange programme was in progress. Thus both SMRs were searched for sites. When a site was present on both SMRs, the references for Lincoln SMR were included in the present database and gazetteer. At the time of the second SMR search much of this data-exchange was complete, so only the Lincoln SMR was searched for further sites. Throughout this Chapter the sites identified by both of these SMRs will be treated as the same data set, and referred to as 'Lincolnshire SMR', however care must be taken to distinguish them from the SMRs in the north of the county.

The SMRs in the north of Lincolnshire represent unitary authorities created from that portion of the former county of Humberside which lies south of the Humber. North Lincolnshire SMR is based at the North Lincolnshire Museum, Scunthorpe. The museum curator, Kevin Leahy, is very active in the study of Anglo-Saxon cemeteries and the SMR staff are involved in the Portable Antiquities Scheme, recording the discovery of many metal detectorist finds. Thus the area has a high density of identified Anglo-Saxon cemeteries. Grimsby SMR in North East Lincolnshire covers a small area of just twenty-three parishes. In addition the area has seen little archaeological activity in the past, possibly due in part to the fact that the former county archaeology unit (Humber Archaeology Unit, now Humber Archaeological Partnership) was unable to cross the Humber Bridge frequently to access the region from their base in Hull due to cost (E. Dickinson, North East Lincolnshire SMR, *pers. comm.*). Thus few archaeological sites have been identified in this area.

A total of 236 sites were identified in Lincolnshire. The vast majority of these (189) were in the area covered by Lincolnshire SMR, due to the large size of the area. Most of the sites (156) were identified from the initial site survey, however a further 25 sites were identified during the literature search and NMR search. After the second visit to Lincoln SMR all but two of these sites were found on the SMR database. In addition, a further eight sites had been reported to the SMR in the time between the two searches. Forty-two sites were identified in North Lincolnshire. Again, most of these (43) were identified during the initial SMR search. Of the six sites found during the literature and NMR searches, only one was not later found on the SMR. In addition, two new sites had been reported to the SMR by the time of the second survey. Just five sites were located in North East Lincolnshire, reflecting the small area covered by the SMR. Two of these were identified during the literature search.

3.2.2 Yorkshire

East Yorkshire (including the former north Humberside) produced the highest number of sites out of the four main Yorkshire counties (105). This may be due to the high incidence of secondary early and mid Anglo-Saxon cemeteries inserted into standing earthworks such as Bronze Age round barrows, linear earth works and Iron Age square barrows in the region (Lucy 1998). The work of Rev. John Mortimer in the late 19th century identified many cemeteries (36 included in this survey), which were published to a high standard for the period (Mortimer 1905). Most of the sites in the county (89) were identified on the first search of the SMR, with a further fourteen located on the SMR following the literature and NMR search. Just one site (Routh Hall, Driffield) was identified in the literature search and not later located on the SMR.

North Yorkshire is served by three SMRs. The two National Parks (Yorkshire Dales in Bainbridge and North Yorkshire Moors in Helmsley)

both have their own SMRs. The remainder of the county is served by the SMR at Northallerton (North Yorkshire SMR). A total of 87 sites were identified in North Yorkshire. Seventeen of these were in the North Yorkshire Moors National Park. All but three were identified in the initial SMR search, and these were later located on the SMR after the literature search. All of the seven sites in the Yorkshire Dales were identified in the initial SMR search. Sixty-three sites were identified in the remainder of the county. However, only twenty-two of these were identified from the initial SMR search. This is due to severe funding problems at the North Yorkshire SMR in the past, which has created a large backlog of sites not listed on the SMR. During the second visit to the SMR a further thirty-four sites previously identified from the NMR and from the literature search were located on the newly updated computer database and in the parish files. Six sites were not located on the SMR and one new site was identified during the second SMR search. It should also be noted that due to the large backlog at Northallerton SMR, few undated burials have been entered onto the database. In addition, it was noted by the SMR officer that some regions of the county were better covered by the SMR than others, possibly resulting in a patchy distribution of sites on the SMR database.

Sixteen sites were identified in the area covered by the City of York SMR. Just six of these were identified from the card index, however it is likely that many of the ten sites not identified on the SMR may be present, but recorded as medieval in date.[21] In addition, many sites in York may not be fully recorded on the SMR in York due to the overlap with the Urban Archaeology Database.[22]

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[21] Although contacted by the present author as part of the second site survey, no response was received from York SMR.
[22] This was not available for consultation by the present author at the time of the initial site survey.

Thirteen sites were identified in West Yorkshire. One of these was identified from the literature search, but was not later located on the SMR. Seven sites were identified in South Yorkshire. Two of these were initially found through the literature search, but only one of these was later located on the SMR. The low density of identified sites in these two counties will be discussed further below.

3.3 Results of NMR search.

The NMR was only searched for burials dating to the Anglo-Saxon period, as the present author was advised by a NMR officer that a search for undated burials for the entire study area would be impractical. The NMR contains two databases, one recording sites (hereafter NMR sites database) and a second recording archaeological activity (hereafter NMR monarch database).

Just 61 of the 297 dated sites were found on the NMR databases. Thirty-one of these sites were on the NMR sites database, thirteen were on the NMR monarch database and seventeen sites were recorded on both databases (Figure 3.16). When examined county by county (Figure 3.17) it is apparent that the NMR coverage was greatest for North Yorkshire, with approximately one third of the dated sites in the county on the NMR databases. This data indicated that the NMR does not record as many sites as the regional SMRs, however it should be noted that several sites found in the NMR databases were not identified in the initial SMR search.

3.4 Site survey results – period of sites

The overall breakdown of the results for the whole study area into time periods was discussed above. This section aims to demonstrate what proportion of sites date to each period in different counties of the study area. The city of York has been included in the county of North Yorkshire for the purpose of analysis. The number of sites dating to each date category for

each county is given in Table 3.3, below. The larger date categories (used in Figure 3.2) will be used throughout this section.

Period	Lincs.	E Yorks.	N Yorks.	W Yorks.	S Yorks.	Total
Undated	111	33	12	5	6	167
Early	62	22	19	1	0	104
Early-mid	30	32	29	1	0	92
Mid	8	8	10	2	0	28
Mid-late	7	2	7	1	0	17
Late	17	6	25	3	1	52
Unlikely	1	2	1	0	0	4
Total	236	105	103	13	7	464

Table 3.3: Number of sites dating to each period for each county

It is apparent from Figure 3.5 that the county of Lincolnshire has both the highest number of sites, and the highest number of undated burials (111), accounting for almost half of the sites in the county (47%). One further undated burial (Kingerby Hall, Osgodby) is unlikely to date to the Anglo-Saxon period as a second burial at the site was dated to the Roman period on stratigraphic grounds. Approximately a third of the sites in Lincolnshire date to the early or early to mid Anglo-Saxon period, with just eight sites dating to the mid Anglo-Saxon period, seven to the mid to late period and seventeen sites dating to the late Anglo-Saxon period. Thus a total of 32 sites in Lincolnshire (13.6% of sites in the county) date to the 7th century or later.

Of the 105 sites identified in East Yorkshire, 33 (31.4%) were undated (see Figure 3.7). Two undated sites (Garton Brickyard and Withernsea) are unlikely to date to the Anglo-Saxon period, but rather appear to be possibly Romano-British in date. Half (50.5%) of the sites in the county dated to the early or early to mid Anglo-Saxon period, possibly due to the high number of early Anglo-Saxon burials in visible prehistoric monuments and the work of John Mortimer in the 19th century. Sixteen sites (15.2% of those in the county) date to the 7th century or later.

In North Yorkshire relatively few of the sites were undated (11.7%), possibly due to the practice of including mainly dated sites on the North Yorkshire SMR database due to constraints in funding. The majority of the 103 sites in the county dated to the early or early to mid Anglo-Saxon period (19 and 29 respectively, giving a total of 48 or 46.6% of sites in the county). The relatively high proportion of late Anglo-Saxon sites identified in the county (25, or 24.3%) is due in part to the high number of churchyard cemeteries and late Anglo-Saxon or Anglo-Scandinavian burials excavated in the city of York (nine sites).

A total of thirteen sites were identified in West Yorkshire. Five (38.5%) of these were undated and three (23.1%) dated to the late Anglo-Saxon period. One site dated to the mid to late Anglo-Saxon period and two sites dated to the mid Anglo-Saxon period. Thus six sites (46.2%) dated to the 7th century or later.

Just seven sites were identified in South Yorkshire. All but one of these were undated, however a west-east aligned stone-lined grave found under a charcoal burial in Conisborough churchyard may date to the late Anglo-Saxon period.

This summary shows that the proportion of undated burials recorded in most counties was high, ranging from 11.7% (North Yorkshire) to 85.7% (South Yorkshire), with typically between a quarter and a half of the burials in each county undated. The numbers of early or early to mid Anglo-Saxon burials was high for the counties to the east of the study area, but low for West and South Yorkshire. The proportion of mid to late and late Anglo-Saxon cemeteries in each county was quite variable, however those counties with fewer undated or early cemeteries tended to have a smaller proportion of later cemeteries present. The distribution of the cemeteries for the different periods, and the reasons for this patterning will now be discussed.

3.5 Distribution of sites across study area

The distribution of undated burials across the study area (Figure 3.11) shows that the majority of the recorded undated burials are in Lincolnshire and East Yorkshire. The scarcity of undated burials in the western region of the study area probably reflects the different geology, as bone is generally poorly preserved when buried in soils overlying non-calcareous rocks (see Section 2.1.3). Fewer undated burials were recorded in North Yorkshire, due to the problems with SMR coverage mentioned above. The lack of undated burials in the Fenlands of South Lincolnshire is probably due to this area of land being largely uninhabitable prior to drainage in the post-medieval period.

The distribution of early (5th- to 6th-century) and early to mid (5th- to 7th-century) burials is similar to that of the undated burials, with most sites being in the east of the study area (Figure 3.12). This clustering of sites dating to the early Anglo-Saxon period (and thus containing easily identifiable early Anglo-Saxon grave goods) has been attributed to the extent of the Anglo-Saxon migrations in the 5th and 6th centuries. It is debatable if the distribution of Anglo-Saxon artefacts reflects the distribution of Germanic people, however there does seem to be a limit to the spread of Anglo-Saxon material culture of the 5th and 6th centuries. Exactly where and how the people populating the western areas of the study area in the 5th and 6th centuries were buried remains open to debate, however it is possible that some of the (admittedly few) undated burials in this region may date to the early Anglo-Saxon period.

More early and early to mid Anglo-Saxon sites than undated burials were identified in North Yorkshire, possibly due to a combination of the visibility of the early Anglo-Saxon burial rite in the region (frequently inserted into prehistoric earthworks) and the subsequent raising of interest of antiquarians such as John Mortimer. The impact of antiquarian activity in distribution

patterns should not be underestimated; indeed, there is a distinct cluster of sites around Mortimer's home in Driffield! In addition the higher number of early and early to mid cemeteries compared with undated burials in North Yorkshire may be, in part, due to the type of site likely to be identified in literature searches, as a high proportion of the sites identified in North Yorkshire were found using published gazetteers and summaries of recent and ongoing research in journals, rather than from the SMR initially (see discussion of SMR data above). In general, dated sites are more likely to be recorded in such sources than undated burials. The early to mid sites in the eastern part of the study area tend to cluster along the edges of the higher ground, namely the Yorkshire Wolds, Lincolnshire Wolds, Lincoln Edge and Kesteven Uplands (this is shown more clearly in Figure 3.13).

The mid (7th- to 8th-century), mid to late (7th- to 11th-century) and late (9th- to 11th-century) sites have a very different distribution (Figure 3.14), with a slightly more even coverage across the region than either undated or earlier sites. The lack of sites to the far west and north of the study area may be due to poorer levels of bone preservation and/or the undertaking of less developer funded and rescue archaeology in these areas, rather than a lack of burial taking place in these areas in the later Anglo-Saxon period. More mid Anglo-Saxon burials are located in the western areas than earlier burials, perhaps reflecting the spread of Anglo-Saxon material culture into these regions in the 7th and 8th centuries, coinciding with the time of the historically attested conquest of these supposedly British kingdoms by Northumbria and Mercia (see Section 2.2). In areas with large parishes where the mother church retained a monopoly on burial one might not expect to find many cemeteries beyond that of the mother church. The absence of a strong concentration of the later cemeteries on the edges of higher ground (Figure 3.15) may indicate a change in preferred cemetery location from the early Anglo-Saxon period. Clusters of cemeteries are located in Lincoln and York, indicating both the importance of these centres in the later Anglo-Saxon

period, and the increased level of rescue and developer funded archaeology being undertaken in these cities.

3.6 Categorisation of later Anglo-Saxon cemeteries

This section will describe the main types of cemetery identified for the mid- to late Anglo-Saxon period. It will quantify the number of each type of site identified in the present study. The main types of cemetery and burial identified were accompanied burials, churchyard cemeteries and cemeteries of unaccompanied burials with no evidence of a church. In addition, the presence of Scandinavian burials, execution burials and princely burials in the present study area will be discussed.

3.6.1 Accompanied burials

The presence of accompanied burials in the 7th and early 8th centuries was discussed in Chapter 1. Burials containing conversion-period grave goods were present in several cemeteries that were founded in the 5th and 6th centuries (for example Castledyke South (Barton-on-Humber, Lincs.) and Cleatham (Manton parish, Lincs.) and Sewerby (Bridlington parish, E Yorks.)). However, as these cemeteries predominantly date to the early Anglo-Saxon period, those burials containing conversion-period grave goods merely represent a continuation of cemetery use into the 7th century. Thus these cemeteries will not be discussed in detail here. However, many cemeteries in the study area have been dated to the conversion period alone, on the basis of the style of grave goods. It should be noted that this group of cemeteries does not include all 7th- and 8th-century burials containing grave goods, as occasional grave goods are frequently found in many mid to late Anglo-Saxon cemeteries, including those in churchyards. Thus the presence of an occasional knife, buckle or finger ring within a burial does not merit inclusion of a site in this group of cemeteries. Rather, the cemeteries included in this group contained a higher proportion and wider variety of grave goods characteristic of the conversion period including amber beads,

pendants, chatelaines, annular brooches, seaxes, hanging bowls and coins as well as the ubiquitous buckles and knives. A total of twenty-two mid Anglo-Saxon cemeteries containing conversion-period grave goods have been identified in the present study. This group of twenty-two cemeteries included Garton Green Lane Crossing cemetery and Garton Station cemetery (both in Garton parish, E Yorks.) and Uncleby cemetery in Kirby Underdale parish (E Yorks.), Greet's Hill in Acklam parish (N Yorks.) and Kirkby-la-Thorpe (Lincs.). This group also includes single accompanied burials dating to the conversion period, for example Womersley (N Yorks.) and Occaney Beck (Walkingham Hill with Occaney parish, N Yorks.). The 7th-century barrow burial at Caenby (Lincs., excavated in 1849) contained various elaborate grave goods including a shield with silver mounts, a sword and possible fragments of a helmet (Geake 1997: 167) and is the only so-called princely burial identified in the study area.

It is unclear when grave good deposition finally died out (Geake 1997: 24). Some cemeteries included in the present category of 'accompanied burials' contain very few grave goods. Indeed, in some cases it is difficult to determine whether a cemetery should be grouped with the 7th- and 8th-century cemeteries consisting of accompanied burials, or whether the cemetery had so few grave goods that in reality it should be grouped with non-churchyard cemeteries containing mostly unaccompanied burials. An example of this dilemma occurs at Garton on the Wolds (also known as Garton Slack I, in Garton parish, E Yorks.) where the cemetery contained approximately 64 west-east aligned burials located around a prehistoric linear earthwork. The majority of the burials were unaccompanied, however a bone comb, two or three iron knives and a purse containing eight silver sceattas were found in different graves. In addition an iron spearhead and an arrowhead were recovered from the site, although these were unstratified. The coins dated from the first half of the 8th century (Geake 1997: 158). This

example highlights the problems created by imposing categories on cemeteries.

3.6.2 Churchyard cemeteries

Traditionally, unaccompanied burial in churchyard cemeteries is thought to have replaced furnished burial by the 8th century (see Section 1.4). The site survey has shown that while many later Anglo-Saxon cemeteries were around a church, many more sites have not revealed evidence of a church (these cemeteries will be discussed below).

Twenty-nine sites have been identified in the study area with evidence of mid to late Anglo-Saxon burial around a church. These sites include examples of late Anglo-Saxon burials discovered in the churchyards of churches that are still in use today (for example St Mary's Stow and St Peter's Holton-le-Clay, both Lincs.) or went out of use within the last 100 years (for example St Peter's Barton-on-Humber and St Helen's Cumberworth in Lincs., St Mark's and St Paul-in-the-Bail in Lincoln and St Helen-on-the-Walls and St Andrew's Fishergate in York). Other cemeteries were adjacent to a church that went out of use in the Anglo-Saxon period (for example Flixborough, Lincs., Thwing, E Yorks. and Pontefract Tanners Row W Yorks.), or that went out of use shortly after the Norman Conquest (for example Castle Hill Scarborough, N Yorks. and Barrow-on-Humber, Lincs.). Two of these sites were identified on the basis of historic references to churches, and are recorded on the NMR and SMR respectively as possible cemetery sites: Sancton Church (E Yorks.) and Lunds Church High Abbotside (N Yorks.). It is unclear if any later Anglo-Saxon burials have ever been found at either of these two locations.

Evidence of later Anglo-Saxon burial in churchyards ranges from single inhumations (for example the individual with a stone-lined charcoal burial found under a Norman tomb in Conisbrough churchyard, S Yorks. or the

chalk-lined burial found under the tower of Hessle Church in Haltemprice parish, E Yorks.) to large cemeteries with hundreds of pre-Conquest burials (for example St Peter's Barton-on-Humber, Lincs. and St Martin's Wharram Percy, N Yorks.). These cemeteries often contain stone-lined graves, evidence of coffins, charcoal burials and/or pillow stones. Graves could be marked with simple stone or wooden markers or carved grave markers, grave covers, head and foot stones and possibly crosses. This evidence reveals that burial was far from egalitarian in churchyards. In addition, occasional artefacts have been found with churchyard burials, for example gold finger rings at Wakefield Cathedral (W Yorks.) and York Minster, a jet cross at Castle Hill Scarborough, N Yorks., white quartz pebbles at Kellington (N Yorks.) and hazel 'wands' at St Peter's Barton-on-Humber.

3.6.3 Scandinavian burials

More extensive deposits of grave goods in churchyards have been used to identify burials as those of Scandinavians. The most famous example of this phenomenon in England was a series of accompanied burials at St Wystan's Repton (Derbs.) (Biddle and Kjølbye-Biddle 1992). However, three cases of accompanied churchyard burials in the present study area have also been identified as the burials of Scandinavians. Seven or eight burials found under the church at Kildale (N Yorks.) in the 19th century were west-east aligned but were accompanied by grave goods including three swords, several daggers, an axe, a set of scales and spurs. An illustration of the grave goods has been used to suggest that they were, indeed, of Scandinavian character. Two burials from a group of four excavated at St Mary Bishophill Junior, York have also been identified as Scandinavians on the basis of grave goods. The first burial was accompanied by a silver penannular arm-ring. The second burial was accompanied by a 10th-century silver penny, an iron knife, a whetstone and a copper-alloy buckle. A single burial accompanied by a sword, spearhead, sickle and a knife found in Wensley churchyard (N Yorks.) in 1915 has also been interpreted as that of a Scandinavian, despite

the fact the sword is probably of Anglo-Saxon manufacture (Richards 2000: 150).

In addition to these accompanied burials in churchyards, a series of accompanied barrow burials have been identified as those of Scandinavians. These barrows typically contain grave goods stylistically similar to artefacts found with burials in Scandinavia. At Camphill (also known as Bedale) in Carthorpe parish (N Yorks.) a burial in a natural mound accompanied by a sword and a spear has been identified as a possible Scandinavian. A pair of 10th-century tortoise brooches have also been found at Bedale (this time in Northallerton parish), which may have come from a second Scandinavian burial in the area (Bjørn and Shetelig 1940: 77, 105-6). In addition, a pair of tortoise brooches from Romanby (close to Northallerton) were reported by Bjørn and Shetelig (1940: 15, 19). It is possible that this is a duplication of the Bedale discovery, however recent research has suggested that two discoveries of tortoise brooches were made close to Northallerton (N. Boldini, N Yorks. SMR, *pers. comm.*).

In the final weeks of researching and writing this thesis, details of a recently excavated Scandinavian burial, not previously known to the present author, was published. Consequently, the burial has not been included in the discussion in this chapter and has not been included in the gazetteer. The 9th-century grave of a female skeleton accompanied by a pair of tortoise brooches, a bronze bowl, a latch-key and an iron knife was excavated at Adwick-le-Sreet near Doncaster (S Yorks.). Isotopic analysis has shown that this woman probably spent her childhood in Norway (Pitts 2004).

3.6.4 Cemeteries without churches

A total of thirty-eight later Anglo-Saxon cemeteries without clear evidence of a church were identified in the present study. Many of these cemeteries were characterised by a lack of grave good deposition, west-east aligned supine

and extended burials, and contain evidence of coffins, stone grave linings and pillow stones. In addition some of these cemeteries appear to have been planned (for example Addingham, W Yorks., see Figure 3.18). Thus these cemeteries only differ from the churchyard cemeteries due to the lack of a church building found during excavation. While some of these cemeteries may have once had a church that has not yet been identified archaeologically, many of these cemeteries may never had a church (Hadley 2000a).

A large proportion of the later Anglo-Saxon cemeteries without evidence of a church (nineteen of the thirty-eight discussed above) are located close to a later medieval church. These can be divided into two smaller groups. The first relates to burials located very close to the known location of medieval churches (either lost or still extant) that have been identified during excavation and/or watching briefs prior to construction work. These burials are usually attributed to the known church, for example the St Marygate burials in Ripon, located just 12m from the excavated Ladykirk; burials on Eastgate, Lincoln located close to the cemetery of All Saints-in-the-Bail church; the Swinegate cemetery in York which is close to the suspected location of St Benet's church; burials from Cornhill Square, Lincoln, close to the suspected location of St John the Baptist's church; and two burials in Blue Bridge Lane York, believed to be outliers of the St Andrew's Fishergate cemetery. The second group of cemeteries are not located so close to a church or known church site. Typically these burials are between 50m and 100m from a medieval church. The location of these burials gives rise to three possible scenarios: first, that late Anglo-Saxon cemeteries were much larger than their medieval successors, and that they must have shrunk at some point during their use, as for example at Addingham; second, that the location of the cemetery (and possibly the church) must have moved slightly within a settlement at some point during the medieval period (i.e. that no late Anglo-Saxon predecessor was situated in the same location as the later

medieval church); or third that some settlements contained two (or more) cemeteries (and possibly multiple churches) during the later Anglo-Saxon period (this may have been the case at Fillingham). It is also possible that these church-less cemeteries were under the jurisdiction of a church located elsewhere, as has been shown for the cemetery at Chimney (Oxon.), which was attached to the church at Bampton, located three miles away from the cemetery (Blair 1994: 73).

While many of the sites included in this category of cemetery would fall into the group of organised non-church cemeteries, some isolated later Anglo-Saxon burials differ from the main group. These cases will now be briefly discussed. The full list of references for these sites can be found in Appendix III.

Some cemeteries closely resemble the form of mid Anglo-Saxon accompanied burial cemeteries, but lack the regular deposition of grave goods. At Kemp Howe, Cowlam (Cottam parish, E Yorks.) eighteen burials were found to the south-east of a Bronze Age barrow in a similar location to many accompanied mid Anglo-Saxon burials. However, these burials were unaccompanied and some individuals had been interred in coffins. These burials have been radiocarbon dated to the 8th century (Geake 1997: 159). Further mid to late Anglo-Saxon burials have been found in a mound at Lamel Hill, York. Several of the burials at Lamel Hill were buried in coffins, and one individual was accompanied by an iron knife and a small buckle (Geake 1997: 190). Two unaccompanied burials were found in Ash Hill Long Barrow, Swinhope (Lincs.). These were radiocarbon dated to the 10th or 11th centuries (Phillips 1985: 72-3). Barrows were not the only type of ancient monument reused for burial during the mid to late Anglo-Saxon period. At Scampton (Lincs.) a series of approximately twenty west-east aligned burials were found overlying the remains of a Roman villa (Illingworth 1810), and are probably of late Anglo-Saxon date. At York Road, Kilham (E Yorks.) a

series of six burials were excavated in 1956. These burials were unaccompanied and an unspecified number of individuals were buried in coffins, however the skeletons were crouched rather than extended, indicating not all mid to late Anglo-Saxon burials were extended and supine (Lucy 1998: 129).

While the vast majority of later Anglo-Saxon burials will be supine and extended, some mid to late Anglo-Saxon cemeteries also contain flexed or crouched burials. A single unaccompanied crouched burial found at Kettlewell (N Yorks.) was radiocarbon dated to 660-780 AD (cal 2 sigma). However, it is difficult to assess the importance of a crouched 7th- or 8th-century burial found to the north-west of the present study area as so little burial evidence exists from this region both earlier than and contemporary with this burial. In addition, the six burials from York Road Kilham (discussed above) were crouched, possibly indicating they are more akin to the burials from Garton on the Wolds and Kemp Howe, Cowlam, despite the lack of grave goods accompanying them.

It should also be noted that the remains of infants are occasionally found in settlement sites during the early Anglo-Saxon period (see Section 5.3). However it appears that this method of disposal of infants may have continued into the mid Anglo-Saxon period. A single neonate dating to 600-750 (cal 2 sigma) was discovered during the excavation of a sunken-featured building at Wharram Percy (N Yorks).

3.6.5 Possible execution cemeteries

Three sites with possible evidence of judicial burial were identified in the present study area. Two of these sites (Walkington Wold and Cottam) have been identified as execution cemeteries, whereas at the third site (Lamel Hill) several execution victims have been identified in what appears to be in all other respects a normal cemetery without a church.

An execution cemetery inserted into a Bronze Age barrow was excavated at Walkington Wold (E Yorks.) between 1967 and 1969. Of the twelve secondary burials excavated, ten were buried without a skull. A series of ten isolated skulls were also excavated, four of which demonstrated clear evidence of decapitation wounds. One of these burials was radiocarbon dated as part of the present research to 640-775 AD (cal 2 sigma) (Buckberry and Hadley in prep-b).

An isolated skull found during the excavation of an Anglo-Scandinavian settlement at Cottam may also have been that of an execution victim. The skull was deposited in a pit associated with an enclosure ditch. The skull was radiocarbon dated to 647-877 AS (cal 2 sigma), however a coin found in the backfill of the ditch dating to 858-862 indicates that the skull was already old when deposited in the pit. An area of weathering on the skull may indicate that the skull was exposed prior to burial. The skull demonstrated no evidence of trauma, however it has been suggested that this may have been the skull of an execution victim (Richards 1999: 34-7, 92-4).

At Lamel Hill, York (also known as Belle Vue House), nine out of the 38 burials excavated by York Archaeological Trust have been identified by the excavator as being either decapitated or mutilated (Briden 1983; 1984). Five of these burials were reported as decapitated, two of which were orientated east-west rather than west-east; one burial was described as not having a skull (although without palaeopathological evidence of decapitation, the removal of the skull during the digging of a new grave cannot be ruled out); one burial had a foot removed, one burial had a hand removed and a further individual had two articulated fingers placed between the femurs, away from the rest of their hand (Briden 1984: 7-8), although again it is not clear if these body parts were removed in life, or if they had been removed due to disturbance of the grave. Indeed, Helen Geake (1997: 190) suggested that no

cut marks were present on the bones, suggesting the lack and/or movement of body parts was probably due to later disturbance of the graves. The excavator interpreted this group of burials as execution victims (Briden 1984: 8), presumably buried within a normal cemetery. Because of this uncertainty, Lamel Hill is also included in the section on cemeteries without churches, above.

In contrast to the scarcity of execution burials and cemeteries in Lincolnshire and Yorkshire, many more execution burials have been identified in southern England, for example the cemeteries at Staines (Sur.), Stockbridge Down and Old Dairy Cottage (both Hants.), and a single 7th-century decapitation burial at Stonehenge (Wilts.) (see discussion in Section 8.1.2, below).

3.7 Identification of late Anglo-Saxon cemeteries

Many cemeteries are difficult to identify as later Anglo-Saxon, due to the similarities in the form of burial that exist between these and both later medieval and late Roman cemeteries. However, evidence of coffin fittings, in particular coffin brackets as found at Ripon Ailcy Hill (N Yorks.) and Whitton (Lincs.) and pillow stones strongly indicate a later Anglo-Saxon date for such a cemetery. The presence of stone-lined graves could also be used as an indicator of later Anglo-Saxon date, however stone-lined graves were also used during the late Roman and later Medieval periods. It should, however, be noted that cemeteries that conform to several of the above characteristics that are located between 50 and 100m from a medieval church have been consistently found to be of mid to late Anglo-Saxon date.

Many of the cemeteries securely dated to the mid to late Anglo-Saxon period contain some form of independent dating evidence. Several burials contain occasional artefacts such as knives (Saltergate, Lincoln), buckles (Great Hale, Lincs.), coins (Whitby Abbey Headland, N Yorks.), finger rings (Barrow Gas House, Barrow-on-Humber, Lincs.), quartz pebbles (Whitby Abbey

Headland, N Yorks.) and bronze hanging bowls (Castle Yard, York). In the absence of datable material in graves, the occurrence of mid to late Anglo-Saxon pottery or metal artefacts in the vicinity of the cemetery may also point to a later Anglo-Saxon date (for example pottery at Normanby-le-Wold, Whitton and Fillingham, all Lincs., and coins at Winghale Priory Farm, South Kelsey Lincs.).

One of the aims of this research was to identify further later Anglo-Saxon burials by defining a series of cemetery characteristics. It has already been demonstrated that a large number of undated burials exists. These are recorded on the NMR, SMRs and in various journals, however it is likely that many more burials have been discovered in the past but not recorded. While many of the reports of undated burials are sketchy and do not reveal a great deal about the type of burial accorded, some records are more complete and can be scrutinised for evidence that may in turn be used to suggest a likely date for the burials. Following the discussion above it is possible to create a series of identification criteria for later Anglo-Saxon cemeteries. It should be noted that few of these characteristics offer conclusive dating evidence, and it is the combinations of these criteria that help to narrow down the date of cemeteries. The criteria identified are as follows (with caveats expressed in brackets):

- Burials are typically (but not always) supine and extended.
- Burials tend to be west-east aligned.
- Cemeteries tend to be planned, with burials arranged in rows and care taken to avoid inter-cutting (in cemeteries that were not in use for several generations).
- Carved grave markers, grave covers, crosses etc. may be present or have been found locally.
- Occasional artefacts such as finger rings, knives and buckles may be present in burials post-dating the 8th century.

- Charcoal burials, pillow stones and the deposition of white quartz pebbles all strongly suggest a late Anglo-Saxon date (although these practices may have continued into the 12th century). These grave variations are more common in, but are not confined to, urban cemeteries.
- Evidence of coffins, and coffin brackets in particular, is common in cemeteries from the 7th century onwards.
- Stone-lined graves (or cists) are also common in later Anglo-Saxon cemeteries (however these are also present in late Roman and later Medieval cemeteries).
- Late Anglo-Saxon pottery or artefacts may be found in close proximity to the cemetery.
- Many cemeteries are located within 50 to 200m of a known medieval church. This is particularly true for rural cemeteries.

Of course, many sites recorded on SMRs/NMR as undated will not contain the more obvious indicators that could be used to identify a late Anglo-Saxon date. For example, it seems unlikely that burials with pillow stones or datable stone sculpture would be recorded as 'undated', however many cemeteries do not reveal any strongly datable characteristics. Thus the only way to test independently a suspected late Anglo-Saxon date is to radiocarbon date the burials. As part of the present research a series of previously undated or insecurely dated burials from seven sites that fitted some of the above criteria were radiocarbon dated (funding obtained from NERC) (Buckberry and Hadley in prep-a). Radiocarbon dates for Whitton obtained by Dr D. Hadley (funded by the British Academy) have also been included in this section as the site had several of the above criteria. It must be noted that these radiocarbon dates were applied to the sites prior to the construction of the gazetteer and this Chapter. Thus the sites have not been grouped with the undated burials. Those sites shown through radiocarbon dating not to be of late Anglo-Saxon date were excluded from the gazetteer

and all subsequent analysis, but are mentioned below for the sake of completeness.

3.8 Results of radiocarbon dating programme

The sites database was searched for undated or insecurely dated burials that fitted the identification criteria outlined above. Various museums and archaeological units were contacted to establish whether the human remains from these excavations were still extant, and to determine if permission would be granted to take samples for radiocarbon dating. Subsequently fifteen samples from seven sites were submitted to the Oxford Radiocarbon Accelerator Unit. In addition, three samples taken from Whitton were dated by the Radiocarbon Dating Laboratory, University of Waikato, New Zealand. A short description of each site, giving the reasons for inclusion in the dating programme and the resultant radiocarbon dates, will now be given. A longer description is given in the gazetteer for each site that was successfully dated to the mid to late Anglo-Saxon period.

3.8.1 Chapel Road,[23] Fillingham, Lincs.

In 1953 and 1982 a series of west-east aligned stone-lined graves were discovered in Fillingham. Three burials were excavated (one in 1953 and two in 1982) and a further ten stone-lined graves were located but left unexcavated. These burials were situated 250m to the west of the medieval parish church. Further excavation was undertaken in 2000 in association with the present study, to determine if these burials dated to the late Anglo-Saxon period. Six of the previously identified burials were excavated along with a section of a mid Anglo-Saxon ditch and a post-medieval quarry containing disarticulated human remains. The discovery of the ditch and considerable amounts of mid Anglo-Saxon pottery in the grave fills, and late Anglo-Saxon pottery from other areas of the excavation, along with the

presence of pillow stones in several graves, strongly suggested a late Anglo-Saxon date for the cemetery. Three individuals from the cemetery were radiocarbon dated to 660-885 AD, 895-1025 AD and 900-1160 AD (cal 2 sigma).

3.8.2 Great Hale, Lincs.

Eight west-east aligned burials were discovered 70m to the east of the parish church in Great Hale in 1981. One of these burials was accompanied by a small iron buckle and an unidentified bronze object. Two samples from this cemetery were sent for radiocarbon dating, however only one was sufficiently well preserved to produce a radiocarbon date. This burial was dated to 660-865 AD (cal 2 sigma).

3.8.3 Belton, Lincs.

The fragmented remains of four adult skeletons were found in Green Lane, Belton in 1998, situated over 2 km from the parish church. In 1999 the site was investigated by the Department of Archaeology and Prehistory, University of Sheffield, recovering the upper half of a single west-east aligned supine and extended inhumation (Buckberry and Hadley 2001a). No artefacts were recovered from the inhumation, however a coffin stain containing fragments of wood and a possible iron coffin fitting was identified to the side of the inhumation. Pottery dating to the 15th century was identified during the excavation, although this was not directly associated with the burial. Perhaps more significantly, no pottery dating to the Anglo-Saxon period was recovered from any of the four trenches excavated (Buckberry and Hadley 2001a). Thus no characteristics strongly associated with the later Anglo-Saxon period were identified at this site. This skeleton was radiocarbon dated to 510 ± 31 BP (1325-1445 AD cal 2 sigma), and was subsequently excluded from the present research.

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[23] This road name refers to a post-medieval chapel, and does not suggest that an earlier chapel was located in this area of Fillingham.

3.8.4 Walkington Wold, E Yorks.

The cemetery at Walkington Wold was described above in the section on possible execution cemeteries (Section 3.6.5), and thus the site will not be introduced again. It should be noted, however, that following the excavations by Bartlett and Mackey the burials were interpreted as a 'massacre or a series of executions' dating to anywhere between the late Roman and later Medieval period (Bartlett and Mackey 1973). The site was subsequently suggested as a possible late Anglo-Saxon execution cemetery (Reynolds 1997). Four[24] samples were taken from this site for radiocarbon dating. One of these was not sufficiently well preserved to be dated, however three skeletons were dated to 640-775 AD, 775-980 AD and 900-1030 AD (cal 2 sigma), indicating the execution cemetery was in use for a long period.

3.8.5 Middle Street, Kilham, E Yorks.

Human remains and a possible lead coffin have been found close to the site of the Wesleyan Chapel in Middle Street, Kilham over the past 200 years. This site is located approximately 150m from the parish church. Excavations in 1976 and 1989 revealed a series of west-east aligned supine and extended burials, with frequent evidence of inter-cutting. Ten articulated skeletons and at least 29 further individuals (identified from an analysis of disarticulated material) were recovered from these two excavations. Two skeletons from this cemetery were radiocarbon dated to 720-690 AD and 690-940 AD (cal 2 sigma).

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[24] Initially two samples from Walkington Wold were submitted for radiocarbon dating. One of these was the poorly preserved sample, and the other gave a date of 640-775 AD. Following the contamination of the two samples from Wold Newton (see below), two further samples from Walkington Wold were submitted for radiocarbon dating, producing dates of 775-980 and 900-1030 AD.

3.8.6 Wold Newton, E Yorks.

A series of west-east aligned burials were excavated by JCB then reported to the local SMR in 1991 (SMR No. EY 9753). Descriptions given by the builders indicate that the burials were supine with legs slightly flexed. No artefacts were found in the vicinity of the burials. This site was chosen for radiocarbon dating due to the occasional occurrence of largely unaccompanied flexed burials during the 7th and 8th centuries in East Yorkshire. Two samples were submitted for radiocarbon dating and produced dates of 1783 ± 33 and 3330 ± 120 BP, dating two burials at the site to the prehistoric and Roman to early Anglo-Saxon periods respectively. This result is hardly surprising given the lack of substantive evidence indicating a mid to late Anglo-Saxon date for this cemetery. However, these dates were later found to have been contaminated during the dating process, giving rise to a slightly older date being estimated. The dates provided were estimated to be incorrect by 300 years and 50 years respectively, and thus the radiocarbon dates were withdrawn by the radiocarbon lab, although the dates provided can be taken as an estimate of the date of the burials. As neither of the burials were likely to date to the later Anglo-Saxon period, these samples were not resubmitted for dating, however two further samples from Walkington Wold were submitted to the laboratory in their place.

3.8.7 Riccall Landing, N Yorks.

A group of 69 west-east aligned burials have been excavated at Riccall in 1956, 1957 and 1983. The burials were supine and extended, apart from one burial that was slightly flexed. No datable artefacts were recovered from the graves or the surrounding area, and the cemetery was located approximately one kilometre from the parish church. The site has been interpreted as the cemetery of the Scandinavians killed at the battle of Stamford Bridge (Wenham 1960), although there was no evidence – either documentary or in the form of skeletal trauma – to corroborate this suggestion. As there was little evidence to suggest a late Anglo-Saxon date for Riccall, initially only

one sample was sent for radiocarbon dating. This skeleton was dated to 895-1155 AD (cal 2 sigma). Following this result, two further samples were radiocarbon dated, in place of the failed samples from Great Hale and Walkington Wold. These provided dates of 775-980 and 895-1025 AD (cal 2 sigma). Isotopic analysis undertaken at the same time as the first radiocarbon date was obtained revealed that six individuals from Riccall may have originated in the Baltic region, possibly in Norway (Hall 2002). While the radiocarbon dates obtained suggest that these burials do not relate to the battle of Stamford Bridge, it is possible that these burials may be of an earlier generation of Scandinavian settlers, buried in the same manner as the local population. If so, this is an extremely important discovery, and such analyses may, in future, throw light on the vexed issue of the general lack of visibility of Scandinavian burials (indeed, see the summary of the recently excavated burial from Adwick-le-Street in Section 3.6.3).

3.8.8 Whitton, Lincs.

Subsequent to the radiocarbon dating programme outlined above, dates were obtained for the cemetery at Whitton, Lincs. This site was also identified as being potentially of mid to late Anglo-Saxon date using the identification criteria given above. This cemetery was situated approximately 50m from the parish church. The burials were west-east aligned, supine and extended. Iron coffin fittings were recovered from two graves and from unstratified deposits around the cemetery. Three skeletons were radiocarbon dated to 560-780 AD, 620-780 AD and 680-960 AD (all cal 2 sigma). Approximately 50 burials have been identified during excavations at Whitton in 1987, 2001 and 2002. Two of these burials were found with a set of coffin fittings *in situ*, and further coffin fittings have been found scattered across the site (Hadley 2001b; 2002; 2003; forthcoming-a).

3.8.9 Summary of radiocarbon dating

The series of radiocarbon dates obtained as part of this research indicate that the criteria for identifying late Anglo-Saxon cemeteries work well. Of the eight sites sampled for radiocarbon dating, four (Fillingham, Great Hale, Kilham and Whitton) matched several of the criteria outlined in Section 3.7, above. Of the three sites that matched few of the identification criteria, one (Riccall) was dated to the later Anglo-Saxon period. Walkington Wold cannot really be assessed against the identification criteria, as the cemetery is not typical of the mid to late Anglo-Saxon period as a whole, although it is typical of mid-late Anglo-Saxon execution sites. These results indicate that the identification criteria outlined above are successful at identifying later Anglo-Saxon cemeteries. Indeed, these criteria were utilised during a subsequent radiocarbon dating programme for cemeteries in Wessex, which successfully dated burials from eight of nine sampled sites to the late Anglo-Saxon period (A. Cherryson, *pers. comm.*).

3.9 Other evidence of later Anglo-Saxon burial

Evidence other than actual burials can be used to identify later Anglo-Saxon cemeteries. This section will summarise the historic evidence for burial in Lincolnshire and Yorkshire. It will then briefly discuss late Anglo-Saxon sculpture, and how this relates to evidence of burial in the region.

3.9.1 Historical evidence of burial

In order to assess the historical evidence of burial in the study area, a series of historical texts and summaries of historical evidence were examined to establish if they record the burial of any individuals within the study area (these texts are listed in Table 3.4). Naturally the majority of these descriptions will refer to important historical figures rather than the population as a whole, and the details may be inaccurate. However, this evidence should be considered, as it provides some insight into the locations of burial in the late Anglo-Saxon period. These texts were also examined for

descriptions of different types of burial, which will be discussed in Chapter 6.

Texts examined for evidence of burial	Translation
The Chronicle of Æthelweard	Campbell 1962
The Anglo-Saxon Chronicle	Whitelock 1955
The Secgan	Rollason 1978
Bede's Ecclesiastical History	Colgrave and Mynors 1969
Felix's life of St Guthlac	Colgrave 1956
Æthelwulf de Abbatibus	Campbell 1967
Life of Bishop Wilfrid	Colgrave 1927
Anonymous Life of St Cuthbert	Colgrave 1940
Bede's Life of St Cuthbert	Colgrave 1940
Sources for York History	Rollason 1998

Table 3.4: Historical sources examined for evidence of burial.

A total of twenty-eight references to burial locations were made in these documents. It should be noted that King Edwin of Northumbria has two different burial locations as his body was buried in Whitby, but his head was buried in York. Most of these were the burials of kings and saints, reflecting the importance placed on where these people were laid to rest. While half (fourteen) of the burials were in York, others were recorded in Beverley, Ripon, Lastingham, Whitby, *Cecesege* (possibly Hibaldstow, Lincs.), Bardney and Crowland. Unsurprisingly all of these sites were ecclesiastical centres or monasteries during the mid to late Anglo-Saxon period. The approximate location of these sites is shown in Figure 3.19 and the full details about each burial are given in Table 3.5.

Name	Position	Date of Burial	Location of Burial	Details of Burial Location	Historical Source	Reference[25]
Ælfflæd	Daughter of King Oswiu. Nun at Hartlepool and Whitby	7th century – Oswiu died 670	Whitby	In the monastery church of St Peter	Bede HE iii: 24	Colgrave and Mynors 1969: 293)
Eanflæd	Wife of King Oswiu	7th century – Oswiu died 670	Whitby	In the monastery church of St Peter	Bede HE iii: 24	(Colgrave and Mynors 1969: 293)
St Higebald	Abbot in Lindsey	7th century	*Cecesege*	Thought to be Hibaldstow, Lincs.	Secgan	(Rollason 1978: 89)
St Osthryth	Queen of Meria, daughter of King Oswiu	8th century	Bardney		Secgan	(Rollason 1978: 89)
St Wihtburht	Possibly St Egbert's companion		Ripon		Secgan	(Rollason 1978: 89)
Æthelhun	Son of King Edwin	627 x 633	York	In the church	Bede HE ii: 14	(Colgrave and Mynors 1969: 187-9)
Æthelthryth	Daughter of King Edwin	627 x 633	York	In the church	Bede HE ii: 14	(Colgrave and Mynors 1969: 187-9)
Edwin (body)	King of Northumbria	633	Whitby	In the monastery church of St Peter. (His head was buried separately in York).	Bede HE iii: 24	(Colgrave and Mynors 1969: 187-9)

[25] All historical references are given in Appendix II.

Edwin (head)	King of Northumbria	633	York	His head was buried at St Peter's, York	Bede HE ii: 20;	(Colgrave and Mynors 1969: 205)
Oswald	King of Northumbria	641	Bardney	In the monastery, possibly in the church. Moved to Mercia in 909	Bede HE iii: 11; ASC E	(Whitelock 1955: 151; Colgrave and Mynors 1969: 245-7)
Cedd	Bishop of the East Saxons	644	Lastingham	Outside the walls of the monastery. Later moved inside the monastery church of the Mother of God, on the right side of the altar	Bede HE iii: 23	(Colgrave and Mynors 1969: 289)
Oswiu	King of Northumbria	670	Whitby	In the monastery church of St Peter	Bede HE iii: 24	(Colgrave and Mynors 1969: 293)
Ælfwini	Sub-King of Bernicia	679	York	Body brought to York, presumably for burial.	Stephanus VSW 24	(Colgrave 1927: 51)
St Wilfrid	Bishop of York	709	Ripon	In the church of St Peter the Apostle, close to the altar on the south side, in the monastery	Stephanus VSW 54; Secgan; Bede HE v: 19; ASC E	(Colgrave 1927: 143; Whitelock 1955: 158; Colgrave and Mynors 1969: 517; Rollason 1978: 89)
St Guthlac	Monk, hermit at Crowland	714	Crowland	In his oratory	Secgan; Felix's Life of St Guthlac	(Colgrave 1956: 155-61; Rollason 1978: 89)
St Æthelred	Son of King Penda of Mercia, founder of Bardney	716	Bardney		Secgan	(Rollason 1978: 89)

St John	Bishop of Hexham, known as John of Beverley	721	Beverley	In the chapel of St Peter in the monastery	Secgan; Bede HE v: 6; ASC D	(Whitelock 1955: 159; Colgrave and Mynors 1969: 469; Rollason 1978: 87)
St Egbert	Presumably same person as the monk who died on Iona (Bede HE v: 22)	729	Ripon		Secgan; Bede HE v: 22; v: 23	(Colgrave and Mynors 1969: 555; Rollason 1978: 89)
Eadberht	King of Northumbria	After 738	York	In the city of York, in the same chapel [as his brother Egbert].	ASC 738; Chronicle of Æthelwærd 2:15	(Whitelock 1955: 161; Campbell 1962: 22)
Egbert	Archbishop, brother of King Eadberht	After 738	York	In the city of York, in the same chapel [as his brother Eadberht].	ASC 738; Chronicle of Æthelwærd 2:15	(Whitelock 1955: 161; Campbell 1962: 22)
Eanbald	Archbishop of York	796	York	In the church of the blessed Apostle Peter	*Historia Regum*	(Whitelock 1955: 249)
Osbald	King of Northumbria	799	York	In the church of the city of York	*Historia Regum*	(Whitelock 1955: 250)
Guthfrith	King of Northumbria	895	York	In the high church	Chronicle of Æthelweard 4:3	(Campbell 1962: 51)
Swein	King of the Danes	1014	York	In St Peter's (although other accounts just say at York). Later moved to Norway	Geffrei Gaimar History of the English	(Rollason 1998: 174)
Siward	Earl, founder of St Olave's church	1055	York	In St Olave's church	ASC D	(Rollason 1998: 198)

Tostig	Earl of Northumbria	1066	York		William of Malmesbury Deeds of the Kings of England	(Rollason 1998: 210)
Ealdred	Archbishop of York	1069	York	In St Peter's at his bishop's seat	ASC D	(Rollason 1998: 198)
Thomas	Archbishop of York	1100		Died in Ripon but brought to York for burial in St Peter's church next to Archbishop Ealdred	Chronicle of the Archbishops of York	(Rollason 1998: 199)

Table 3.5: Locations of historical burials

Many of the individuals whose burial location was recorded in the historical sources were buried inside a church (occasionally locations close to an altar are specified), either within a settlement or a monastery. It should be noted that several of the York burials were described as being buried at St Peter's, the precursor to York Minster. A wide variety of burial forms were evident in the excavated late Anglo-Saxon cemetery at York Minster, suggesting that burial was both more elaborate and varied in a cemetery used for the burial or various nobles and high ranking ecclesiastics (see Section 6.3.1).

3.9.2 Evidence of burial from Anglo-Saxon sculpture

Anglo-Saxon sculpture can also be used to identify possible cemetery sites. Broadly speaking, there were two types of sculpture in northern England: church decoration and free standing monuments including crosses and grave covers (Sidebottom 2000: 213-4). These two categories of sculpture co-existed, but developed in different ways and at different speeds (Cramp 1977: 192). This may relate to the different social functions of these sculptures.

Architectural decoration is usually from ecclesiastical structures, and includes columns (e.g. in the crypt at Repton, Derbs.), screens (as seen at Monkwearmouth, Tyne., Hexham, Northumb., South Kyme, Lincs. and Hackness, N Yorks.) and decorative friezes and panels (as seen at Breedon-on-the-Hill, Leics.) (Cramp 1986: 101-2). These sculptures are usually found at high-status ecclesiastical sites, many of which can be shown to have had a cemetery from documentary or archaeological evidence.

Many of the free-standing monuments are believed to have had a funerary function. Some are undisputedly funerary monuments, namely sarcophagi, grave covers and grave markers. However, other monuments believed to have had a funerary function may also have had other uses, for example free-standing crosses may have marked graves, but others may have been

cenotaphs or memorials to saints or have been used as boundary markers (Lang 1988: 8; Richards 2000: 159). Logically, the presence of a piece of funerary sculpture would indicate the presence of a late Anglo-Saxon cemetery, providing these pieces of sculpture have not been moved (Stocker 2000: 224). The majority of sculptures found in northern England are crosses and decorated grave covers (Sidebottom 2000: 213).

Sculpture is usually dated on stylistic grounds, as few pieces have been found in a stratigraphically sealed location that can be used to date the sculpture independently (Bailey 1980: 45-6; Sidebottom 2000: 215). The stylistic detail of the decoration is compared with decoration on more securely dated artefacts including illuminated manuscripts and metalwork (Cramp 1977: 192; Bailey 1980: 46; Hawkes 1999: 204). This type of typological dating has been heavily criticised, as it is difficult to determine if variation in a style is due to the development of a style, the debasing of an earlier style, the difference between the work of a skilled or novice craftsperson, or a regional difference in style often attributed to a 'school' of sculpture (Bailey 1980: 53; Sidebottom 2000: 214-5).

It is generally agreed that sculpture can be dated to the pre- and post-Scandinavian periods with a fair degree of certainty (Bailey 1980: 74; Richards 2000: 159). It should be noted that the Scandinavians did not have a tradition of erecting stone sculpture (with the main exception being the Island of Gotland), and that Anglo-Scandinavian sculpture is essentially a continuation of an Anglo-Saxon tradition that adopts Scandinavian-style motifs and imagery (Richards 2000: 159). Any sculptures with elements of decoration in a Scandinavian style (as indicated by its use on Scandinavian artefacts such as metalwork, for example Borre, Jellinge, Ringerike and Mammen styles) are dated to the post-Scandinavian period (Bailey 1980: 53-4). Sculptures that do not have Scandinavian style decoration, but do have stylistic elements (carved designs and monument forms) that are also

'consistently associated with Scandinavian-derived motifs' on other pieces of sculpture are attributed to the post-Scandinavian period (Bailey 1980: 73). All other sculpture is thus dated by elimination to the pre-Viking period, and is described as having only 'Anglian' stylistic elements (Sidebottom 2000: 214). This division into pre- and post-Scandinavian sculpture has been criticised by Sidebottom, who argues that sculptures without Scandinavian design elements may be contemporary with post-Scandinavian sculpture, as 'only assumption separates them into separate chronological periods' (Sidebottom 2000: 214). Thus they are in essence undated, non-Scandinavian sculpture forms (Sidebottom 2000: 214). While this argument may have its merits, the more traditional and generally accepted separation into pre- and post-Scandinavian styles will be utilised here.

Fragments of pre-Scandinavian sculpture have been found across Lincolnshire and Yorkshire. These are usually found at important ecclesiastical sites (for example Lastingham and Hackness, N Yorks.) (Lang 1988: 8; Lang 1991: 16; Richards 2000: 159; Stocker 2000: 193; Stocker and Everson 2001: 225). These are usually crosses or architectural fragments (Richards 2000: 159), and probably relate to the ecclesiastical use of the site. Indeed, it has been suggested that Continental stonemasons contracted to build early ecclesiastical buildings introduced the tradition of stone sculpture to England (Lang 1988: 8).

The majority of sculpture in Lincolnshire and Yorkshire dates to the post-Scandinavian period and is increasingly both funerary in nature and located at 'proto-parochial' churches (Richards 2000: 159-60; Stocker and Everson 2001: 223). Indeed, one or two sculpted monuments are found at many churches in Lincolnshire and Yorkshire, and not just at important ecclesiastical centres (Richards 2000: 160; Stocker 2000: 180; Stocker and Everson 2001: 224-5). This abundance of funerary sculpture from the 10th century onwards is probably linked with the increased numbers of churches

being founded at this time, and the increasing role of secular lords in the foundation of churches (see Section 1.5.1). It has been suggested that the graves marked with stone sculpture may have been those of the church founders and their family (Richards 2000: 160; Stocker 2000: 180). This theory is supported by the findings at Raunds (Northants.), where the complete excavation of a late Anglo-Saxon cemetery revealed just two pieces of sculpture, both of which were located *in situ* marking graves (Boddington 1996: 11; Stocker 2000: 182; Stocker and Everson 2001: 225). Thus, the presence of post-Scandinavian funerary monuments reflects the burials of the elite, and their distribution reveals the location of 10th-century graveyards (Stocker and Everson 2001: 224).

Some sites do not conform to this pattern of just one or two monuments in a cemetery. Multiple sculpted monuments have been identified at St Mark's Lincoln, St Mary-le-Wigford Lincoln, Creeton, Manton and Stow, all in Lincolnshire (Stocker 2000: 183). All of these sites have been identified as trading centres during the late Anglo-Saxon period. It has been suggested that the abundance of sculpture at these sites reflects the aspirations of a competitive mercantile elite (Stocker 2000: 189; Stocker and Everson 2001: 225). A similar pattern occurs in Yorkshire, and it is probable that the high numbers of sculpted monuments present at Lythe, St Mary Bishophill Senior in York, Brompton-in-Allertonshire and Stanwick may also be explained by the presence of a mercantile elite population located close to Hiberno-Norse inland markets (Stocker 2000: 204-5). The high numbers of monuments present at York Minster has also been attributed to an unusual burial population. In this case the cemetery is known to have been used by the highest levels of secular and ecclesiastical society (see above; Stocker 2000: 204).

It has been noted that many sites with pre-Scandinavian sculpture also have post-Scandinavian sculpture, suggesting a lack of disruption to ecclesiastical

sites during the Scandinavian settlements (Richards 2000: 159). Continuity between the pre- and post-Scandinavian period sculpture is also indicated by the continued use of Anglian forms of decoration on Anglo-Scandinavian sculpture (Richards 2000: 159).

In sum, pre-Scandinavian sculpture is usually located at important ecclesiastical sites, many of which probably had a cemetery. More importantly for the present study, post-Scandinavian sculpture frequently had a funerary function and was used to mark the graves of both the ecclesiastical and secular elite. Thus the distribution of most post-Scandinavian sculpture can be profitably used to infer the location of 10th-century and later cemeteries. It must be stated that not all cemeteries necessarily contained sculpted stone monuments, and accordingly an absence of sculpture should not be used to infer an absence of late Anglo-Saxon burial. Indeed, areas of East Yorkshire with geology unsuitable for the creation of sculpture (the Chalk Wolds and areas with deep beds of clay) unsurprisingly contain few examples of sculpture (although some imports do exist; Lang 1991: 16). However, these areas do contain archaeological evidence of late Anglo-Saxon cemeteries (see above). It must also be noted that several extensively excavated cemeteries including St Peter's Barton-on-Humber and Barrow-on-Humber have not yet produced any free-standing sculpture. It should also be noted that the distribution of Anglo-Saxon funerary sculpture for Lincolnshire (Figure 3.20) reveals a much denser pattern of burial than the distribution of archaeological evidence of cemeteries, highlighting the need for more archaeological investigation of late Anglo-Saxon burial sites.

3.10 Conclusions

This study has shown that although many early to mid Anglo-Saxon cemeteries have been found in the archaeological record, few cemeteries securely dated to the late Anglo-Saxon period have been identified. In the

past, it has generally been assumed that cemeteries dating to the 8th century and later were located around churches, which continued to be used and rebuilt on the same location throughout the medieval period and remain in use today. This assumption has, to a certain extent, led to a lack of research into the location and form of late Anglo-Saxon cemeteries. Unless some form of excavation is undertaken within the churchyards, these cemeteries are not identified archaeologically. However, other evidence of late Anglo-Saxon burial may be evident at these locations. It is generally agreed that many types of late Anglo-Saxon sculpture were used in a funerary context, namely grave markers, grave covers, hogbacks and probably crosses. These pieces of sculpture can shed much light on the location of late Anglo-Saxon cemeteries, a task becoming much easier since the compilation and publication of the British Academy *corpi* (Lang 1991; Everson and Stocker 1999; Lang 2001). In addition, historical references to burials can shed some light not only on burial practice, but also on the location of the burials of some high status individuals. Such evidence may even be employed to argue for a higher status for individual cemeteries (see the discussion of York Minster in Chapter 6).

It has also been demonstrated that not all late Anglo-Saxon cemeteries were located around a church, and that even if a church was present, it may have gone out of use long before the present day. Thus many cemeteries may be found in locations away from medieval parish churches. Such cemeteries can be difficult to date due to a lack of datable material, however a series of identification criteria developed during the present study and outlined above has been successfully used to identify further late Anglo-Saxon cemeteries from the large body undated burials recorded on SMRs and in the literature.

It is evident from the site survey that burial was varied during the late Anglo-Saxon period, but what does this variation signify? This thesis will now discuss the evidence and theoretical arguments surrounding the use of

funerary practice to signal aspects of social identity. The following chapter will discuss the relationship between biological variables such as age and sex, and different social identities, discussing how these different social roles may be signalled through mortuary practice. Osteological methods for estimating age and sex will then be discussed, highlighting the strengths and weaknesses of the different methods and indicating to what extent the methods can be used to investigate the social meanings of funerary rites in the late Anglo-Saxon period.

Chapter 4: Osteology and Identity – Age and Sex, Lifecycles and Gender

This chapter briefly discusses current approaches to the study of cemeteries. Recent research has shown that mortuary practice was used by past societies to symbolise aspects of social identity. This chapter will show that two of these aspects – stage in the life cycle and gender – are intimately linked, but not synonymous, with biological age and sex. Accordingly, it will stress that osteological analysis needs to be central to any cemetery interpretation. Osteological evidence has been frequently misinterpreted in the past, largely due to a lack of understanding and knowledge of the limitations of the methods used, particularly when ageing adult skeletons, but also because of misguided attempts to estimate subadult sex and reliance on analysis of poorly preserved remains. Hence the underlying biological processes allowing the estimation of age and sex will be discussed, and the subsequent development of estimation methods. This discussion will show that adult age estimates need to remain wide, as age related skeletal changes are highly variable between individuals. It will show that despite the resultant age brackets being described as 'unacceptably large' (for example by Cox 2000: 75), the age ranges obtained may loosely correspond to recognised stages in the life cycle, and thus are meaningful and appropriate for use in osteological and cemetery analysis. The lack of a current osteological method (and the absence of actual skeletal dimorphism) allowing for the successful estimation of subadult sex will be highlighted, and thus future researchers will be cautioned from trying to establish subadult sex. Further discussion later in this chapter and in Chapter 5 will demonstrate that gender is not necessarily synonymous with sex and thus sex should not be inferred from mortuary practice. The principles outlined in this chapter governed not only the osteological analysis undertaken by the present author, but also the validity attributed to the results of published osteological reports.

The following chapter (Chapter 5) will review studies that have revealed differentiation between males and females and between different age categories within medieval mortuary rituals, and will assess how these rituals change over time. Such studies show that age and sex (or life cycles and gender) are not independent of each other, but are often bound together, thus forming categories such as old men, young women and so on. Consequently cemetery analyses need to be undertaken on two levels - initially examining the relationship between males and females, adults and subadults, and then in more detail investigating how subdivisions of age combined with sex are reflected in burial practice.

4.1 Theoretical approaches to cemetery analysis

The relationship between mortuary practice and social identity has been long studied. Processual archaeologists assumed a direct link between the living and the dead, interpreting aspects of burial rites as a method of expressing the role the deceased individual held in life [Binford, 1971 #405]. Thus the energy expended on a burial was a direct reflection of that individual's social rank. Consequently, if an infant was buried in a manner usually associated with adult burial, it could be inferred that rank was ascribed at birth rather than acquired during life in that society [Tainter, 1978 #402: 106].

Other studies, however, have suggested that burial practice may not be a direct and unambiguous reflection of status (Ucko 1969; Parker Pearson 1982). These have shown that mortuary ritual is highly variable both between and within different communities and often does not conform to the processual model of burial practice as a direct representation of life. The reasons for this are manifold. Firstly, it has been emphasized that the dead do not bury themselves, and consequently all aspects of the funerary rite would have been conscious decisions made by the mourners (Barrett 1996). Burial practices are not necessarily directly mirroring the deceased's role in

life, but rather represent the mourner's perception of the deceased's social identity, and thus these aspects of social identity are open to interpretation and manipulation by the mourner. Thus funerary practice projects an ideal rather than reality (Hodder 1980: 165) and is more about the individuals who performed the rites than about the dead (Parker Pearson 1999: 3).

Secondly the meaning of any aspect of symbolism within the rite is now recognised as being dependent on interpretation by those present (Barrett 1991). The presence of a particular rite, be it a coffin, grave good, marker or something that is spoken or acted out, will not have an intrinsic meaning. Instead meaning is given by the context in which it is used and its subsequent interpretation by the participants (Barrett 1987; 1991; Richards 1992). It has often been assumed that such meaning will not change over space and time, however detailed mortuary analysis has shown variations in symbolism at a local level, stressing the importance of analysing cemeteries individually as well as looking for general trends (Pader 1982: 200; Lucy 1997b: 103).

Thirdly it has been shown that such symbolism can operate on many levels, and can convey many meanings at the same time (Richards 1992; Parker Pearson 1999). Thus mortuary practice is highly complex and unlikely to reflect social identity directly. Instead it may represent a projected persona, as perceived and possibly manipulated by the community burying the dead. If aspects of identity such as age and sex are not differentiated through burial practice this does not mean that they were not differentiated in life (Hodder 1980: 167). Instead of directly reflecting social identity and organisation, mortuary practice reveals which aspects of identity were important enough to the mourners to be signalled and asserted following the death of a member of their community (Lucy 1997b: 103).

Lastly (but perhaps most importantly) the excavated burial will not preserve all aspects of the mortuary practice. The actions of the mourners, words spoken at the grave and any artefacts that degrade in the soil are lost to us as archaeologists. However these may have held great significance (Barrett 1996; Parker Pearson 1999). This must always be borne in mind when analysing mortuary remains. Some surviving items will hint at what has been lost to the archaeological record, for example shroud pins and dress accessories in graves, and the context of burial sites may give us clues about funerary rituals, for example churches, monuments and evidence of feasting.

Funerary practice can be in the form of items deposited in the grave or actions performed around the grave or elsewhere at the time of death and mourning. Although these rituals do not directly reflect living social personae, they may be linked to them. Consequently it is important that mortuary analysis utilises the information available from the skeleton to build a better understanding of the social roles (if any) symbolised through burial ritual. This will show which identities were important enough to the mourners for them to be actively signalled, and how this perceived importance changed over time.

Many previous studies have interpreted what funerary rites represented and then sought osteological evidence to support the ensuing hypothesis. Whilst this may appear to have academic merit, cases that do not fit the projected pattern have often been interpreted as anomalies (rather than as part of the pattern) that must be explained away (discussed in Section 5.1, below). In the present study the 'demography' of a particular aspect or aspects of burial rite will be examined before an interpretation of its social meaning is made. In addition, the rites accorded males and females, and to different age categories will be studied, to discern any predominant practices within those groups. For this to be undertaken it is necessary first to estimate the age and

sex of individuals within the cemetery population. Thus methods of age and sex estimation will now be discussed.

4.2 Estimating age at death

When estimating age at death we are trying to correlate non-linear maturation stages (biological age) with the linear passing of time (chronological age) (Buikstra and Ubelaker 1994: 15; Cox 2000: 61-2). The following section will discuss different methods of age estimation and will indicate the problems and limitations of these methods, particularly with regard to correlating them with chronological age. It will assess the relative merits of different systems of age estimation and will outline the method used during the present analysis. Given relatively complete skeletal remains, subadult age can be estimated with some confidence, however estimation of adult age is much more difficult. Adult age ranges have, by necessity, been widened in recent work and consequently published narrow age ranges should be treated with caution, particularly in reports dating to before the 1980s. These wider age ranges do, however, seem to correspond partially with stages in the life cycle, and thus may approximate to any perceived differences of age in the past.

4.3 Estimating sub-adult age at death

Estimating sub-adult age at death is less problematic than estimating adult age at death, as the process of growth and development of bones and teeth is well understood and this occurs in a fairly regular sequence. This allows the ages of children to be estimated with fairly high degrees of accuracy, if their skeletons are complete and not fragmentary. Naturally the accuracy of an age estimate will decrease considerably for skeletons missing important skeletal elements, particularly the dentition. Sub-adult age at death can be estimated using the calcification and eruption of the dentition and the

growth and fusion of bones. The main problem encountered when estimating the age of sub-adults is that there is some variation in the timing of particular developmental stages between the sexes, with girls generally slightly ahead of boys, particularly during puberty. As discussed below, the sexing of sub-adults is questionable, which means that age estimates for each sex have to be combined, thus producing wider age ranges (Scheuer and Black 2000a: 12).

4.3.1 Dental calcification

The mineralization of dental enamel and dentine follows a well-understood sequential pattern (Whittaker 2000: 83), is genetically controlled and is little affected by external environmental forces (Lewis and Garn 1960: 76; Smith 1991: 143). This makes dental development the most reliable indicator of juvenile age (Smith 1991: 143; Mays 1998: 44; Scheuer and Black 2000a: 13). The tooth cusps initiate in crypts within the alveolar bone and develop into tooth crowns. Once these are complete the roots develop. Eruption usually occurs one to two years prior to the completion of root development (Hillson 1996: 118-25). These stages can be observed radiographically and all but the earliest stages can be seen in archaeological specimens, although complete jaws have to be radiographed to observe teeth and roots within dental crypts. These stages of tooth formation have been recorded in living children, and ages of attainment of the different stages for deciduous and permanent teeth have been recorded (Smith 1991).

The standards published by Moorrees and colleagues (1963a, b) for assessing dental age are considered to be the most accurate, as their population included many younger individuals (some under 2 years of age) thus not truncating the lower age ranges (Smith 1991: 157). Usefully, each tooth can be assessed independently, although combining the ages for several teeth increases accuracy in age estimation (Moorrees et al. 1963a, b). Girls were

found to be more advanced than boys throughout the sequence of development, although this was less marked for the deciduous dentition (Smith 1991: 162; Hillson 1996). Smith (1991) analysed the data collected by Moorrees and colleagues (assessing dental maturity) and reworked it for age estimation for permanent teeth. She presented the mean age of attainment for each stage for males and females as a table, although referred back to the original publication for the full ranges. The Smith (1991) method was found to be significantly more accurate for age estimation than the original Moorrees and colleagues (1963a) method when applied to the Christ Church, Spitalfields known-age collection (Liversidge 1994: 42). In contrast, testing on the Belleville, Ontario sample revealed that the Moorrees and colleagues (1963a, b) systems for permanent teeth were more accurate than that of Smith (1991) for determining age at death (Saunders et al. 1993: 181).

Other standards of dental development have also been developed (Demirjian et al. 1973; Anderson et al. 1976; Demirjian and Goldstein 1976). The Anderson and colleagues (1976) method was found to overestimate the age of young children, probably due to the lack of individuals in the reference sample under 3 years of age (Saunders et al. 1993: 181). The applicability of the Demirjian et al (1973) method of age estimation has been criticised for use with archaeological material as it does not allow for missing teeth (Hillson 1996: 134). The four tooth systems devised by Demirjian and Goldstein (1976), however, can be applied to archaeological samples, providing the correct four teeth (M_2, M_1, P_2, P_1 or M_2, P_2, P_1 I_1)[26] are present.

The methods of Moorrees and colleagues for deciduous teeth, and as adapted by Smith for permanent teeth, are generally agreed to be the most accurate

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[26] In the shorthand notation utilized here, a tooth is referred to by the first letter of its name. A number is used to indicate its position in the jaw, with subscript denoting a mandibular tooth and superscript indicates a maxillary tooth. Hence M_2 refers to the lower second molar (Schwartz 1995: 155-6).

method of age estimation using dental development (Hillson 1996: 146), and were utilised in the present study. As the sex of sub-adult remains cannot be reliably estimated (discussed below), the ranges for males and females were combined. Radiographic facilities were available in Sheffield and thus radiographs were taken of subadult teeth present in most of the skeletal collections analysed in the present study. Radiographic facilities were not available to the author in York (where analysis of the Swinegate material took place), so radiographs could not be taken of the Swinegate material. For this collection, therefore, these methods were only applied to teeth that were not firmly lodged in the mandible.

4.3.2 Dental eruption

Dental eruption refers to the process where teeth migrate from within the jaw, through the alveolar bone and gums, to the occlusal plane. This process continues throughout life, compensating for occlusal wear (Hillson 1996: 138; Scheuer and Black 2000b: 152-3). Clinical or gingival eruption refers to the appearance of teeth through the gums. This stage of development cannot be assessed on archaeological specimens, but eruption through the alveolar bone and the entry of the crown onto the occlusal plane can be recorded (Hillson 1996: 138-9).

Most studies of dental eruption are based on gingival eruption, and have shown that both the timing and sequence can be highly variable both within and between populations (Hillson 1996: 139), with eruption generally occurring slightly later for those from a lower socio-economic background (Garn et al. 1973: 235). In addition, dental eruption can be affected by caries, premature tooth loss and malnutrition. Despite these problems dental eruption is frequently used to assess juvenile age, usually using the dental chart produced by Ubelaker (1989b: 64) using Native American dental data, based on earlier work by Schour and Massler (1941). Whilst this chart is

useful for obtaining an approximate age, there are problems inherent within this, not least in the applicability of using a Native American standard to age British archaeological material.

The high levels of variation observed in the timing and sequence of dental eruption make it an unreliable estimator of juvenile age, however certain eruption events are useful for identifying broad age categories, particularly when other ageing methods cannot be used. The eruption of M1 at approximately 6 years of age and the eruption of M2 along with the replacement of all of the deciduous dentition by about 12 years of age (Scheuer and Black 2000b: 151) are particularly useful age markers. Overall, however, dental eruption is not a reliable estimator of sub-adult age, and was rarely utilised in the present study.

4.3.3 Ossification and epiphyseal fusion

Most of the major bones of the body begin to ossify during foetal life, although some smaller bones including the carpals and tarsals ossify during infancy and childhood (Mays 1998: 8). These are primary ossification centres and include the shafts, or diaphyses, of the long bones. Secondary ossification centres begin to form after birth, and are called epiphyses, which later in life fuse onto primary ossification centres. The major epiphyses are located at the ends of the long bones, and are separated from them by cartilaginous growth plates (Mays 1998: 8). During adolescence these epiphyses fuse onto the diaphyses of the long bones in sequence, terminating the longitudinal growth of bone and hence increase in stature (Ubelaker 1989b: 69). As these events occur sequentially, epiphyseal fusion can be used to estimate subadult age, particularly during adolescence when fusion of the long bones occurs and dental development becomes less reliable as an ageing method. The timing of the appearance of secondary ossification centres can also, in theory, be used to estimate age (Scheuer and Black 2000a: 15).

However, as these are often very small and hard to identify as bones, they are often lost during excavation. When they are recovered it is difficult to identify which skeletal elements they are due to their nondescript shape, and it would be impossible to ascertain whether the absence of particular centres was real or an artefact of the recovery process (Ubelaker 1989a: 56). For this reason they are not used for age estimation purposes on material from archaeological sites.

The timing of epiphyseal fusion varies throughout the body. The bones of the skull and vertebral column fuse during early childhood, enclosing and protecting the central nervous system (Scheuer and Black 2000b: 11). The temporal and occipital bones undergo several distinct phases of development during infancy and early childhood, and can be particularly useful when estimating the age of the very young (Redfield 1970; Weaver 1979). The os coxa fuses from three primary centres, with the ischium and pubis fusing during childhood, and uniting with the ilium at puberty (Schwartz 1995: 127). After this the epiphyses of the major long bones begin to fuse. However the timing of fusion varies between the sexes, with females generally being advanced on males by one to two years (Ubelaker 1989a: 56). As it is generally considered highly problematic to estimate the sex of subadult remains (see below) it is necessary to combine the age ranges for both sexes for the timing of each fusion event. Many standard osteological texts appear to give data for male epiphyseal fusion only, with the caveat that female fusion occurs 1 to 2 years earlier (e.g. Schwartz 1995: 194-200).

The epiphyseal fusion data used in the present thesis were taken from Scheuer and Black (2000b), with the age ranges for males and females combined. These are given in Table 4.1, below. In addition, the data on temporal and occipital development were also considered (Redfield 1970; Weaver 1979). Several epiphyses do not fuse until after the major long bones

(i.e. after 17-18 years of age), and are useful for estimating young adult age. These are considered below in a section on late fusing epiphyses.

	Males	Females	Combined
Greater wing of sphenoid to body			0-1 yr
Midline of mandible			0-1yr
Neural arches in midline (L & T 1st)			1-2 yrs
Metopic suture			2-4 yrs
Lateral occipital to squame			1-3 yrs
Cervical & lumbar arches to body			3-4 yrs
Gtr tuberlcle of humerus to H head			2-6 yrs
Calcaneal epiphysis appears	7-8	5-6	5-8 yrs
Pubic to ischium			5-8 yrs
Ilium ischium and pubis unite	14-17	11-15	11-17
Distal humerus to shaft	12-17	11-15	11-17
Proximal radius	14-17	11.5-13	11.5-17
Base MC 1	16.5	14-14.5	14.5-15.5
MC heads 2-5	16.5	14.5-15	14.5-16.5
Base MT 5	12-14	9-11	9-14
MT heads 2-5	14-16	11-13	11-16
Base MT 1	16-18	13-15	13-18
Calcaneus fused	18-20	15-16	15-20
Distal fibula	15-18	12-15	12-18
Femoral head	14-19	12-16	12-19
Greater trochanter	16-18	14-16	14-18
Lesser trochanter			16-17
Distal femur	16-20	14-18	14-20
Olecranon of ulna	13-16	12-14	12-16
Distal radius	16-20	13-17	13-20
Ischial tuberosity			17-23
Proximal tibia	15-19	13-17	13-19
Distal tibia	15-18	14-16	14-18
Head of humerus	16-20	13-17	13-20
Distal ulna	17-20	15-17	15-20
Spheno-occipital synchondrosis	13-18	11-16	11-18

Table 4.1: Timing of Epiphyseal Fusion.

4.3.4 Bone size

Age estimates from bone size (most frequently estimated from long bone lengths) rely on the assumption that chronological age is directly related to height/body size, and hence bone length/size. Whilst there is a general relationship between the two, height will vary amongst children within a given year group, although on average a group of older children will be taller (Ubelaker 1989b: 65). The variation in height within an age group is influenced by genetic inheritance, disease and nutritional status (which in turn is linked to socio-economic status) (Hoppa 1992: 275-6; Saunders and Hoppa 1993; Scheuer and Black 2000b: 4). Despite this variation in height and bone length, sub-adult age-at-death can be estimated from long bone lengths, producing an age range that reflects the variation caused by genetic inheritance, health and nutrition.

4.3.5 Foetal and neonatal age estimation from long bone length

Bone growth appears to be much more constant cross-culturally for individuals under one year of age than for older children, probably reflecting the fact that once weaned, children are far more susceptible to the external pressures that influence growth (Hoppa 1992: 283). This allows the age of foetuses and infants to be estimated from bone size with higher degrees of accuracy than for older children.

Fazekas and Kósa collected data on foetal osteometry from a series of modern foetal skeletons (Fazekas and Kósa 1978; cited in Kósa 1989: 22). They used the linear correlation between foetal crown-heel length and age to create ageing standards for 67 measurements on 37 bones. Their study found that the long bones, mandible and clavicle provided accurate age estimates, were easily identifiable and least susceptible to decay and distortion, however any bone could be used to estimate age (Kósa 1989: 25, 43).

Scheuer and colleagues (1980) found that accuracy was increased if age estimations were made directly from bone length rather than via crown-heel length. Their study of modern British material included perinatal infants, thus increasing the range of age estimates that could be obtained from the long bones. They found that most cases fell very close to their regression lines (i.e. there was little spread or variability), and hence concluded that the regression equations could be used to estimate age (Scheuer et al. 1980: 258). The authors cautioned that these equations were population specific, and that due consideration of this should be given to any age estimates obtained using this method for different populations (Scheuer et al. 1980: 263).

Gowland (1998) used Bayesian statistics to understand better the influence that the slight spread reported by Scheuer et al. (1980) would have on perinatal age estimation in Romano-British cemeteries. She found that when the degree of spread was taken into consideration using prior probabilities, biases in the age distributions produced by the ageing method were removed. This suggested that the peak in neonatal mortality at birth, often interpreted as infanticide in Roman Britain, in fact represented natural mortality, and still-born babies were included in the cemetery population, along with those who suffered neonatal death (Gowland 1998; Gowland and Chamberlain 2002). This study indicates that error margins need to be included in age estimates from long bone length to allow for the reported dispersion from the regression lines produced by Scheuer and colleagues (1980). Consequently in the present study foetal/neonatal age at death was given as a range rather than as a mean.

4.3.6 Age estimation from long bone length for children

Once an infant has been weaned it becomes much more susceptible to external stress. Those affected by under- or malnutrition and disease are likely to exhibit a slower rate of bone growth and delayed skeletal and dental

development (Humphrey 2000: 23), causing variation in height and development between individuals of the same age. Long bone length has been shown to be more variable than dental calcification and epiphyseal fusion (Lewis and Garn 1960: 72), but no more variable than dental eruption (Hoffman 1979: 463). Consequently long bone length can be used to estimate the age of children, providing the degree of variation is taken into consideration (Hoffman 1979; Hoppa 1992). Hoffman (1979) studied a series of data collected from radiographs of modern white American children. He found that although the age estimates provided from long bone lengths were less accurate than those made from dental development, the method was still of use. This is particularly true for estimating the age of individuals under 12 years (when the major epiphyses have yet to start fusing) if the dentition is not present (Hoffman 1979). He did caution, however, that this method was population specific, and due care should be taken when applying it to other populations.

Hoppa (1992) compared Anglo-Saxon skeletal growth with that of other published populations. He used dental calcification (Moorrees et al. 1963a, b; Anderson et al. 1976) to estimate the age of the sub-adults from a 10th- to 11th-century cemetery in Raunds, Northamptonshire. These age estimates were plotted against bone measurements to produce skeletal growth profiles for each of the major long bones and the ilium (Hoppa 1992). The skeletal growth profiles for Raunds were compared with published profiles of a modern population and two archaeological populations. This showed that when compared with the modern sample all of the ancient populations had shorter bones for each age group over one year. It was hypothesised that this could represent a mortality bias, and that the modern skeletal growth profile may represent that of the living children (Hoppa 1992: 285). Alternatively it

could indicate that children in the past were shorter on average than modern children.

Age estimates from long bone length have been used in the present study, but age estimates derived from dental calcification were regarded as more reliable, in cases where both age estimation methods could be applied to the same skeleton. The ranges produced by Gowland (1998) for long bone length and the regression formulae of Kósa (1989) for other bones were used to age perinatal infants in the present study. For young children, age was estimated using the graphs produced by Hoppa (1992), with age expressed as a range that spanned from the 'modern' to the 'Raunds' (Anglo-Saxon) best-fit lines. Long bone length was not used to estimate the age of individuals over twelve years of age, when epiphyseal fusion could be used, as the levels of variability increase during adolescence (Hoppa 1992: 284).

4.3.7 Conclusion

The estimates produced by the methods discussed above were combined for each individual for the present study. Dental development and epiphyseal union were relied upon for younger and older children respectively. Long bone length and dental eruption were used if the other methods of age estimation did not produce age estimates. Subadults were then placed into one of five categories, given in Table 4.2, below.

Age Category	Age Code	Age Range
Foetus	FE	Pre-term foetus (up to 38 weeks in utero)
Infant	IN	Birth (38 weeks in utero) to 1 year
Young child	YC	1 to 6 years
Older child	OC	7 to 12 years
Adolescent	ADO	13 to 17 years
Subadult	SA	Up to 17 years (age category could not be determined)

Table 4.2: Subadult age categories

4.4 Estimating adult age at death

Estimating adult age at death is much more difficult than estimating sub-adult age at death. Once skeletal maturity has been reached (usually in the mid-20s) there are no additional 'reliable markers' that can be used for age estimation (Bass 1995: 12). Ageing methods become dependent on the examination of degenerative processes, which are much less understood than skeletal development and can be highly variable in terms of timing. Many of the ageing methods discussed briefly in this chapter have been argued to be unreliable, are potentially unsuitable for cross-populational use, systematically under- or over-age individuals and/or only produce wide age estimates. Some researchers have argued that ageing adult skeletons accurately is an ideal, but one, which, at present we are unable to achieve (Mays 1998: 50; Cox 2000: 75-6). Many of these perceived problems with adult age estimates are caused by their limitations not being fully understood, and because of age estimate ranges that are too narrow (for example 25 to 30 or 30 to 35 years) being applied to skeletons. The use of wider age estimates (for example mid adult, or 25 to 45 years) allows for the variation present in skeletal degeneration, and produces age bands that are useful for cemetery interpretation (see below). The following discussion of adult age estimation techniques will highlight the importance of allowing for this variation in the ageing process when developing an age estimation technique and when producing an age estimate. It will also stress the importance of utilising methods that did not omit 'abnormal' cases during the development of the method.

Archaeologically, age estimates are often taken at their narrowest range (which, one suspects, are still regarded by many as too wide,) or alternatively the mean age may be given. These age estimates are then taken at face value without full understanding of the limitations of the methods employed, and hence the limitations of the estimates themselves. This is particularly true

when estimating the age of older adults, which are often described as '45+', leading to the misconception that most adults died before 50 years of age (Chamberlain 2000b: 105). The following section will highlight these issues, and will show how these seemingly inadequate age ranges may be of use to funerary analysis.

Many of the adult ageing methods currently employed look at skeletal degeneration, which is not yet fully understood. These degenerative processes appear to be highly variable both at a population and an individual level (Ubelaker 1989b: 78; Bass 1995: 12; Schwartz 1995: 185; Mays 1998: 50; Cox 2000: 75), and may be influenced by socio-economic status, sex, parity status in females, lifestyle and disease (Schwartz 1995: 185).

It has been argued that dental wear may be more reliable than other ageing methods, as the process of dental wear is more fully understood (Mays 1998: 50). Contrary to this, William Bass (1995: 19) cautioned that dental wear is of limited use as an ageing technique until its relationship with different foods and food preparation techniques has been researched further. However, population specific dental ageing methods can be developed from any skeletal sample (providing it is large enough and has sub-adults present), reducing problems caused by inter-population variation, the eating of different foodstuffs and variations in food preparation techniques (Mays 1998: 60). These issues will be discussed further in the section about dental wear (Section 4.4.5).

4.4.1 Late fusing epiphyses

It is generally recognised that the ageing of young adults, who have yet to reach full skeletal maturity, is much less problematic than ageing fully mature individuals (Brothwell 1972: 57; Cox 2000: 75). This is partly because epiphyseal fusion is a regular process that occurs over a relatively short

period of time (see above), and also because the process of fusion is better understood than skeletal degeneration, upon which many other adult age estimation methods are based.

The last epiphysis to fuse is the medial clavicle, an event that usually begins between the ages of 17 and 33 years, with fusion complete from 21 to 33 years (Webb and Suchey 1985: 462). Prior to this, during late adolescence and early adulthood, many epiphyses including those of most of the major long bones (discussed above), the iliac crest, the bodies of the 1st and 2nd sacral vertebrae and the spheno-occipital synchondrosis fuse. The timing of these events and the regularity of their occurrence allow late adolescents and young adults to be aged with a considerable degree of accuracy.

A detailed study into the union of the anterior iliac crest and medial clavicle was carried out on a modern American sample (Webb and Suchey 1985). This study described four stages of union for both epiphyses, which were applied to the material analysed in the present analysis. Stages 1 (nonunion without separate epiphysis present) and 2 (nonunion with separate epiphysis present) were combined, as it is unlikely that the separate epiphyses would be recovered from an archaeological site. The age ranges are given in Table 4.3, below.

Stage	Medial Clavicle			Iliac Crest		
	Males	Females	Both	Males	Females	Both
Nonunion without epiphyses	0-25	0-23	<22	0-16	0-11	<19
Nonunion with epiphyses	16-22	16-21		13-19	14-15	
Partial union	17-30	16-33	16-33	14-23	14-23	14-23
Complete union	21+	20+	21+	17+	18+	18+

Table 4.3: Age ranges for fusion of the medial clavicle and iliac crest. Data taken from (Webb and Suchey 1985: 462)

The epiphyses between the sacral bodies, particularly S1[27] and S2, are also useful for age estimation in young adults. By 23 years fusion is generally complete, although a gap may persist between the bodies of S1 and S2 until the 32nd year (McKern and Stewart 1957: 154). As the upper portion of the sacrum, including the 1st transverse line, is frequently recovered from archaeological sites, this age indicator was considered particularly useful for the present study.

The spheno-occipital synchondrosis (or basio-occipital synchondrosis) is thought to close during adolescence, with fusion generally complete by 18 years of age (Irwin 1960: 452; Powell and Brodie 1963: 22; Melsen 1969: 84). McKern and Stewart, however, give 21 as the upper limit for fusion (1957: 34), and Gray's anatomy quotes an age range of 18 to 25 years (Williams et al. 1989: 322). A combined age range of 11 to 25, allowing for the variation evident in the timing of the fusion of the spheno-occipital synchrondrosis, was employed in the present analysis.

The petroexoccipital articulation, or jugular synchondrosis, is thought to fuse between 22 and 36 years of age (Maat and Mastwijk 1995: 164). However a more recent study has shown that fusion may not occur until after 70 years of age (or not at all) in a small percentage of individuals (Hershkovitz et al. 1997: 371). This variation probably reflects the higher number of individuals included in Herschkovitz and colleagues' study. Although the articulation may be useful for obtaining an estimate of age, it will under- a small proportion of any given population, and thus was not utilised in the present study.

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[27] In shorthand, vertebrae are denoted by the first letter of their name and by their position in the spinal collumn. Thus, T6 is the 6th thoracic vertebra and S1 is the 1st sacral vertebra.

McKern and Stewart (1957) studied epiphyseal fusion at various locations across the vertebrae. For example, McKern and Stewart (1957: 99-100) found that all of the ventral rings were completely fused by 24 years of age, with thoracic vertebrae 2 to 7 generally fusing slightly later than the others. The heads of the ribs also fuse during early adult life (McKern and Stewart 1957: 160; Scheuer and Black 2000b: 239-40). Epiphyseal fusion begins in the upper and lower ribs, and progresses towards the middle, starting at about 17 years of age, with all rib heads completely fused by 25 years. These epiphyses were particularly useful in the present study for estimating the age of partial skeletons that did have any other skeletal elements normally used for age estimation present.

Late fusing epiphyses are particularly useful when ageing young adults. Many of the epiphyses discussed in this section are prone to destruction in the burial environment, but their fusion status was recorded in the present analysis whenever observable. The age ranges given by Webb and Suchey (1985) were used for the medial clavicle and iliac crest. Ages of fusion for the sacrum were taken from McKern and Stewart (1957). All other ages of fusion were taken from Scheuer and Black (2000b).

4.4.2 Pubic symphysis ageing

The pubic symphysis is the joint between the left and right pubic bones at the front of the pelvis. The age-related changes of this joint surface have been used to develop methods of age estimation, initially by Todd (1920). The age ranges produced from this analysis are problematic, as Todd removed all individuals who did not 'fit' the ageing techniques current at the time of development, hence reducing sample variability. Todd's initial method has, however, been re-appraised and reassessed, and a separate scheme for females has been developed (McKern and Stewart 1957; Acsádi and Nemeskéri 1970; Gilbert and McKern 1973; Katz and Suchey 1986). This

reassessment culminated in the development of the Suchey-Brooks system (Suchey et al. 1988; Brooks and Suchey 1990), generally regarded as superior, having been developed on the least biased skeletal sample (Buikstra and Ubelaker 1994: 21; Mays 1998: 53-54).

The Suchey-Brooks method was developed on modern material collected during post-mortem examinations. All individuals were used during the development of the method, allowing the true level of variation to be reflected in the age estimates. This has led to very wide age ranges that overlap a great deal, especially for women, which have been criticised as being so wide that they are of little use (Cox 2000: 69). Wide age ranges, however, seem to reflect the variation that is seen between individuals and the way that they age, and it is increasingly the case that age ranges are extended when new ageing methods are developed (Buckberry and Chamberlain 2002). In addition, the use of wide age ranges allows for the successful investigation of cemetery populations, as will be shown in Chapters 5 and 6.

The pubic symphysis is notoriously absent in many archaeological specimens (Waldron 1987: 62; Cox 2000: 69), due to its relative fragility and location in the body. This means that it is infrequently relied upon in archaeological analysis, unless a collection is very well preserved. When the pubic symphysis was present in the samples studied for the present thesis, the Suchey-Brooks method was used to estimate age.

4.4.3 Auricular surface ageing

Age-related changes on the auricular surface of the ilium were studied and developed into an ageing method by Lovejoy and colleagues (1985b). The increased survival rate of auricular surfaces in archaeological material and the presence of interpretable changes that extended beyond 50 years of age

made this an important development (Lovejoy et al. 1985b). However, when tested this method was found consistently to under-age older individuals, and over-age younger individuals (Murray and Murray 1991: 1166). This probably reflects the differences between the age structures of the collections on which the method was developed and tested (Bocquet-Appel and Masset 1982).

A new method of recording the age-related changes on the auricular surface was developed using known-age archaeological skeletal material from Christ Church Spitalfields (Buckberry 1999; Buckberry and Chamberlain 2002). This method considerably widened the age ranges predicted from the auricular surface, allowing for the high levels of variation observable in the ageing process. The Buckberry and Chamberlain (2002) method was used in the present study rather than the method of Lovejoy and colleagues (1985b), as the former reflects the levels of variation present in adult ageing more accurately.

4.4.4 Cranial suture closure

During childhood the cranial sutures are open, separating the different bones of the skull. These sutures gradually fuse together during adulthood. The closure of the sutures appears to begin endocranially (internally) and spreads to the ectocranial (external) surface (Acsádi and Nemeskéri 1970: 116). Methods of age estimation using the timing of the closure of the cranial sutures have been developed utilising both endocranial and ectocranial surfaces.

Cranial sutures were one of the first areas of the skeleton to be utilised for ageing purposes (Meindl and Lovejoy 1985: 57; Key et al. 1994: 193). Many different analyses of cranial suture closure have been published since Dwight's (1890; cited in Brothwell 1972: 38) study. Each subsequent

reanalysis of cranial suture closure increased the range of age estimates (Todd and Lyon 1924; 1925; Brooks 1955; McKern and Stewart 1957), leading to its widespread rejection by many as an ageing method in the 1950s. Despite the general scepticism, age estimation using cranial suture closure has continued to be studied and developed (Acsádi and Nemeskéri 1970; Perizonius 1984; Meindl and Lovejoy 1985; Key et al. 1994). However cranial suture closure is often regarded as too variable to be used extensively as an independent ageing method (Brothwell 1972: 38; Krogman and Isçan 1986: 129; Masset 1989: 100; Buikstra and Ubelaker 1994: 32; Schwartz 1995: 206-7; Mays 1998: 50; Cox 2000: 68). This is despite the fact that other ageing methods are providing broader and broader estimates, and probably reflects the fact that the problems with narrow age ranges were first identified for cranial sutures. The wide age estimates produced by cranial suture closure age estimation methods are similar to the levels of accuracy that can be expected from most adult ageing methods. In addition, when multiple age estimation methods are used in conjunction, individuals can be placed into age categories that are valuable for cemetery analysis.

Cranial suture closure data are still considered to be worth collecting and utilising, especially when other age estimation methods cannot be used (Buikstra and Ubelaker 1994: 32; Schwartz 1995: 207). The method developed by Meindl and Lovejoy (1985), recommended by Buikstra and Ubelaker (1994), was chosen for the present study because ectocranial suture closure is considerably easier to observe than endocranial suture closure and it extends later into life. In addition this method does not omit 'abnormal' specimens from the collection on which it was developed (Cox 2000: 67-8), thus increasing levels of variability.

4.4.5 Dental wear

Dental attrition is caused by tooth on tooth contact between neighbouring and opposing teeth (producing interproximal wear and occlusal wear respectively). This, combined with abrasion (which is caused by erosive agents such as hard particles in diet) is termed dental wear (Hillson 1996: 21). In most individuals there is little difference in the rate of wear between the sides of the jaw, and the upper dentition usually wears slightly slower than the lower (Hillson 1996: 237). The rate of occlusal wear is influenced by diet, hard inclusions in food (e.g. grit), dental disease, tooth loss, malocclusion, the use of teeth as a tool (e.g. as a 'third hand'), dental modification and any sex differences in any of these categories (Kieser et al. 1983: 10-11; Schwartz 1995: 209). Thus ageing methods dependent on the rate of dental wear are more reliable if they are population specific, but assume that wear within that population is constant (Ubelaker 1989b: 92; Schwartz 1995: 210-11).

Various systems of recording dental wear have been developed, ranging from the simple (Murphy 1959; Miles 1962; Brothwell 1972) to the complex, where the angle variations of wear across the occlusal surface are recorded (Molnar 1971; Scott 1979). Hillson (1996) describes these different systems and their merits and so only the systems based on British material will be discussed here.

The Miles (1962) method of dental wear age estimation uses the relative eruption times of the permanent molars to determine a population specific dental wear rate. This can then be used to produce age estimates for all adults, although its reliability decreases as age increases (Miles 1962: 885; Kieser et al. 1983: 10). The system was applied to British skeletal material from the Neolithic to the medieval period by Brothwell (1972: 68), who found that the rate of wear did not vary a great deal across this time period. The resulting dental wear age estimation table (Brothwell 1972: 69) is widely used

by British osteoarchaeologists, and has been applied to collections across the world (Hillson 1996: 239). A recent reanalysis by Miles (2001) has shown that his old system truncated older age ranges. Levels of ante-mortem tooth loss and accelerated rates of wear on the remaining teeth can be used to infer much older age, extending the upper age limit of estimates from this method into the eighth decade of life (Miles 2001: 980).

Dental wear is regarded by many as the most accurate adult ageing method, providing a population specific system is used (Miles 1962: 886; Brothwell 1972: 68; Kieser et al. 1983: 11; Lovejoy et al. 1985a: 11). Whilst the Miles method (1962) can be calibrated for each cemetery (providing enough sub-adults are present), it was not thought that this would be necessary for the present research. The method was developed using an 8th- to 9th-century Anglo-Saxon skeletal population from Breedon-on-the-Hill, Leicestershire which, in view of the findings of Brothwell (1972), is probably sufficiently representative of the skeletal populations undergoing analysis in the present study to be used unaltered.

4.4.6 Conclusions – summary of ageing methods used

All of the ageing methods described above have been found to correlate with increasing age, although in most cases only wide age ranges can be given. This is due to the high levels of variability inherent in the biological processes that reflect increasing adult age. The resultant wide age ranges have successfully been used to investigate cemetery populations and age-related aspects of funerary practice. It should be noted that published osteological reports that give only narrow adult age ranges should be treated with caution.

It is generally advised that as many methods as possible should be employed when estimating age. Adult age has been estimated in the present study

using late fusing epiphyses (McKern and Stewart 1957; Webb and Suchey 1985; Scheuer and Black 2000b), pubic symphysis morphology (Suchey et al. 1988), the auricular surface of the ilium (Buckberry 1999; Buckberry and Chamberlain 2002) cranial suture closure (Meindl and Lovejoy 1985) and dental wear (Miles 1962).

These methods were chosen because they are believed to be those most appropriate for the material being studied. Emphasis has been placed on inter-populational applicability and/or population specific methods where possible. Ease of application and reproducibility have also been considered. Methods reliant on skeletal elements rarely recovered from the archaeological record were not employed, although methods for many skeletal elements were used in an attempt to increase the number of individuals that could have their age estimated. The adult age ranges used in the present study are given in Table 4.4, below.

Age category	Age code	Age range
Young adult	YA	18-25 years
Young to mid adult	YA-MA	18 to 45 years
Mid adult	MA	26 to 45 years
Mid to old adult	MA-OA	26 years or older
Old adult	OA	46 years or older
Adult	AA	18 years or older

Table 4.4: Adult age categories

Many other methods of age estimation have been developed (Krogman and Isçan 1986; Schwartz 1995: 185-222; Cox 2000). These were not used in the current study, as they do not appear to increase the accuracy of age estimation, are destructive of skeletal material and/or utilise skeletal elements rarely recovered from archaeological populations, however they are discussed in Appendix IV.

4.5 Problems with the applicability of ageing criteria

Most ageing methods have been developed on modern known-age material. Many of those developed in the United States have been shown to vary between different races, indicating that ageing methods cannot necessarily be applied to populations from different geographical locations and potentially different time periods. We also do not know how these age-related changes are influenced by extrinsic factors which were probably very different for past populations, implying that these methods may not be entirely applicable to archaeological material (Mays 1998: 55; Cox 2000: 63). However, the use of wide age ranges may reduce the risks posed by the problem of inter-populational use.

Many of these techniques have been shown to reflect the demography of the population that they were developed on (Bocquet-Appel and Masset 1982; Bocquet-Appel and Masset 1985; Konigsberg and Frankenberg 1992; Mays 1998: 55; Cox 2000: 63). A method that was developed on a young known-age collection will be more proficient in accurately ageing younger populations. It is likely to under-age consistently older individuals, causing a bias towards younger ages in demographic analyses. Many techniques were not developed on older individuals, which have left an upper limit on age estimations (Cox 2000: 62-3; Miles 2001: 974). If an ageing method does not provide age estimates beyond a certain age, say 50 years, then all individuals aged over this threshold are given an estimated age of, in this case, 50+. This methodological problem has been incorporated into archaeological analysis, where a 50+ individual would be seen as about 50, rather than potentially as old as 100 years, leading to the misconception that young adult mortality was the norm. In reality, even populations with an average age of death at birth of 20 years will have some individuals that

survive into their 80s or 90s (Chamberlain 2000b: 103-5). This is compounded by the quotation of life expectancy at birth, usually c.20-30 years for pre-industrial societies. These figures, however, include very high levels of infant mortality, which reduces this average considerably. Most people who survived into their early 20s had a fair chance of surviving into their 60s or 70s (Shahar 1993: 329). Whilst these issues are understood by most of the osteological community, they may not yet have reached the consciousness of funerary archaeologists.

Naturally it would be useful to have accurate, narrow age estimates. Age estimates are used extensively when considering social aspects of burial practice, palaeodemography and palaeopathology. For some of these analyses (especially palaeodemography) narrow age estimates have been seen as essential, although the use of statistics can enable the wide age ranges produced by most osteological methods to be used for these purposes (Chamberlain 2000b). It has been argued that it is much more difficult to use these necessarily wide age estimates when analysing social symbolism within burial practice, leading Margaret Cox to suggest that current skeletal ageing techniques are not able to 'provide useful data capable of addressing our research agendas' (2000: 75). However, if due allowance is made for the width of these ranges, they can be valuable for cemetery analysis. Indeed, analysis incorporating a smaller number of age categories is much more likely to produce results that are statistically significant and will not produce data sets that are unwieldy and overly-complex. Previous studies of mortuary symbolism have produced significant results whilst using wide age ranges (see Sections 5.3 to 5.5, below) showing that the ranges cannot be hopelessly wide – if the age ranges were meaningless then no patterns would emerge. These positive results imply that wide age ranges are appropriate for cemetery analysis.

Many of the stages in the lifecycle are linked to sex as well as age, and in addition, mortuary practices may symbolise sex as well as age. Consequently the sex of the deceased also needs to be estimated. Thus bony sexual dimorphism will now be discussed.

4.6 Estimation of sex

This section will discuss the biological difference between males and females, and the methods used to estimate sex from osteological remains. It will reveal that whilst adult sex can be estimated with high levels of confidence (given well-preserved remains) it is virtually impossible to estimate the sex of subadults. The distinction between sex and gender will be discussed, and it will be shown that sex cannot be ascribed on the basis of mortuary practice, as this reflects gender, which may not always be the same as biological sex.

Biological sex is determined by the presence or absence of the Y chromosome (XY = males, XX = females). The secretion of male or female hormones in sufficiently high quantities causes the body to develop male or female characteristics, which can vary in their degrees of expression during life. Studies have shown that the female phenotype is the norm, and that males develop male physical features due to the presence of male hormones during gestation (Wilson et al. 1981: 1278). These sex differences manifest themselves in both soft tissues and eventually in bone, and the latter can be used to estimate the sex of skeletons (Mays and Cox 2000: 117).

4.7 Estimating sub-adult sex

The levels of hormones secreted by the body vary throughout life. The increase in the levels of androgen during puberty causes males to develop male physical features (Mays 1998: 38; Mays and Cox 2000: 117-8), increasing levels of sexual dimorphism and allowing us to estimate adult sex with high

levels of accuracy. Prior to puberty, however, sex hormone levels are low, giving rise to very low levels of sexual dimorphism and making estimation of childhood sex very difficult. The exception to this is foetal sex, which in theory should be easier to estimate, as testosterone levels rise at about 8 weeks *in utero* and are maintained until birth, potentially causing a higher level of sexual dimorphism in neonatal skeletons than for other sub-adults (Mays 1998: 38; Mays and Cox 2000: 121).

4.7.1 Sex estimation using the sub-adult pelvis and skull

Standards have been established to estimate the sex of foetal ilia (Weaver 1980; Schutkowski 1993), with reliability 'about as high as that reported for similar morphological traits in adult skeletons' (Schutkowski 1993: 204). Metrical standards comparing the size of the sciatic notch with the ilium as a whole, however, were not found to perform so well (Weaver 1980: 194). A more recent study investigating the shape of the sciatic notch found that whilst sexual dimorphism was present in juveniles, it did not reach the level of dimorphism found in adults, and was not sufficiently distinct to allow reliable sex estimation (Holcomb and Konigsberg 1995: 121-2).

This sexual dimorphism in the infant ilium is blurred by childhood growth, making it impossible to sex children from the pelvis. Despite this, methods of sex estimation for children have been developed using the face, based on known-sex individuals from Christ Church, Spitalfields (Molleson et al. 1998). This method only predicts sex with a 78% level of accuracy, which although found to be statistically significant is in reality little better than an outright guess, and has not been tested on other known-sex samples.

4.7.2 Sex estimation using tooth size

Permanent teeth are generally larger in males than females. These measurements can be used to sex adults, but the real potential is in their

ability to sex older children, whose permanent tooth crowns begin to develop in the first few years of life (Rösing 1983: 149; Hillson 1996: 82). However, as with all metrical sexing methods (see below) the cut off point needs to be population specific, as tooth size will vary between different populations (Rösing 1983: 150). Consequently measurements need to be taken of the adult teeth as well as the juvenile teeth, to determine the cut off point.

An additional problem with this approach lies in the fact that smaller children are more likely to die prior to adulthood. It has been suggested that if these children also had stunted growth in their teeth, then there would be a bias towards the female sex using this method (Mays 1998: 42). However, previous studies have indicated that tooth formation is less likely to be affected by external environmental forces (Lewis and Garn 1960: 75-6; Smith 1991: 143). This issue remains disputed. However, the variation in size between the sexes is approximately 0.5mm and there is a high potential for recorder error when taking the measurements. When combined with a potential mortality bias problem, it was decided that this method would not be used for the current research, but remains an intriguing possibility for future research.

4.7.3 Determining sex using DNA

Theoretically it is also possible to estimate sex using DNA. As biological sex is determined by the presence/absence of the Y chromosome (XY=male, XX=female), the presence/absence of the Y chromosome in ancient DNA can be used to determine whether an individual is male or female (Brown 2000: 463). This would be particularly useful for estimating sub-adult sex (Mays and Cox 2000: 126). However, ancient DNA analysis is, at present, prohibitively expensive, and is fraught with problems concerning contamination (Brown and Brown 1992; Brown 1998). In addition, many

burial environments are not conducive to DNA survival (Brown 2000: 461; Smith et al. 2001: 771-2), reducing the applicability of this method.

4.7.4 Conclusions – the problems of sexing subadults

The methods discussed above highlight a fascinating area of research, and there is great potential for sexing sub-adult skeletons in the future, once further work has been undertaken. However, at present it is generally agreed that there is no reliable method for determining the sex of sub-adult remains (Saunders 1992: 4). The sexing of sub-adult remains was thus not attempted during the present research.

This has huge implications for mortuary analysis. Many previous studies of early Anglo-Saxon children have grouped subadults as girls and boys on the basis of accompanying grave goods (see discussion by Härke 1997; Crawford 1999; Stoodley 2000). Given that it has been shown that adult sex should not be estimated using grave goods (see Sections 4.10 and 5.1, below), it becomes untenable that this is done for subadult remains, given this lack of reliable subadult sexing criteria. Thus any study that describes girls and boys and dividing children on the basis of grave goods, rather than just grouping them together according to age, should be treated with extreme caution.

4.8 Estimation of adult sex

Sexual dimorphism in adults reflects the greater size and robusticity in males, and adaptations in the female pelvis to accommodate childbirth. These adaptations in the female pelvis will be discussed below. In general adult males are larger than females, not only in terms of average height, but also in terms of robusticity due to the relative greater body mass in males. The bone cortex is generally thicker in males than in females (Schwartz 1995: 276) and many of the major muscle attachments are more pronounced (particularly those of the skull). Joint surfaces also tend to be larger in males,

enabling the skeleton to support their greater weight effectively. Consequently there are three main areas of the adult skeleton used to estimate sex (given in order of reliability) – the pelvis (os coxae and sacrum) the skull (crania and mandible) and some major joint surfaces.

4.8.1 Sexual dimorphism in the adult pelvis

The human pelvis evolved to ensure successful bipedal locomotion, however, subsequently, the female pelvis evolved to ensure obstetric success (Hager 1996: 294, 297). This causes the female pelvis to be lower and broader than the male pelvis, with a comparatively wider and more oval pelvic space and a larger pelvic outlet. The female pubic bone is comparatively longer, and has a wider sub-pubic angle, increasing the size of the birth canal (Mays and Cox 2000: 118). The pubic bone has been shown to be the most sexually dimorphic region of the human skeleton, reflecting these adaptations in the female pelvis (Phenice 1969; Buikstra and Ubelaker 1994: 16). The wider sub-pubic angle and the presence of a ventral arc, sub-pubic concavity and/or ischio-pubic ridge in females can be used to sex the pubic bone with up to 96% accuracy (Phenice 1969: 300). A more recent analysis of these traits revealed that the ventral arc does not form until the mid 20s, although a precursor arc may be present in females over the age of 14 (Sutherland and Suchey 1991: 504). Unfortunately, the pubic bone is notoriously rare in skeletal populations (Waldron 1987: 62). Pubic pitting has been used to estimate parity status in females, but recent work on the Christ Church Spitalfields collection has shown that this trait is not consistently associated with parity status (Cox and Scott 1992: 438). Although pubic pitting can be absent in both males and females, its presence is limited to females (Cox 1989: 257) and thus its presence can be used to infer female sex.

Other regions of the pelvis are also strongly sexually dimorphic, with females having a wide sciatic notch, smaller ischial tuberosity, less rugged

iliac crest, wider sacral alae, and frequently a pre-auricular sulcus (Ubelaker 1989b: 54; Bass 1995: 113-4, 208-18; Schwartz 1995: 277; Mays 1998: 33; Mays and Cox 2000: 118). Sex estimation accuracy levels of over 90% have been quoted for skeletons with relatively well preserved pelves (see below), although this may be lower for incomplete skeletons or less sexually dimorphic populations (Mays and Cox 2000: 119).

4.8.2 Sexual dimorphism in the adult skull

After puberty the male skull develops masculine characteristics due to the larger muscle mass present in males (Mays and Cox 2000: 118). The adult male face is longer and more angular, with prominent brow ridges, rectangular orbits and thicker, blunter orbital margins. The mandible also becomes more angular, with a prominent mental eminence and gonial eversion creating the characteristic masculine square jaw. Places of muscle insertion such as the mastoid processes, suprameatal ridges, nuchal crest, external occipital protuberance and temproral lines increase in size and robusticity (Ubelaker 1989b: 54; Bass 1995: 85-6; Schwartz 1995: 277; Mays 1998: 36; Mays and Cox 2000: 118).

Female skulls, in contrast, retain more gracile, sub-adult features, with vertical foreheads, prominent frontal and parietal eminences, rounder orbits with a sharper margin and a smoother brow region (Ubelaker 1989b: 54; Bass 1995: 85-6; Schwartz 1995: 277; Mays 1998: 36; Mays and Cox 2000: 118). Their muscle insertions are usually less prominent and smoother than those of males. However, with increasing age, and especially after the menopause, female skulls develop more masculine characteristics (Acsádi and Nemeskéri 1970: 74). The pelvis, however, retains its female features and thus, where possible, sex estimates should always rely on pelvic morphology, especially in older individuals. In addition the muscle insertions on the skull are frequently more robust in populations that had a coarse diet. Consequently

archaeological female skulls are often more masculine in appearance than modern female skulls (Mays and Cox 2000: 125).

4.8.3 Metrical estimation of sex – sexual dimorphism of the joint surfaces

Although the male skeleton is generally larger and more robust with greater joint surfaces than the relatively gracile female skeleton, naturally this is a general rule, and there is a reasonable amount of overlap between the sexes. Despite this, measurements of joint surfaces and bone widths have been successfully used to estimate sex with between 80 and 85% accuracy (Acsádi and Nemeskéri 1970: 75).

As body size varies between different populations, it is necessary to develop population specific standards. To do this for archaeological populations it is necessary to take the chosen measurements of all skeletons in a collection. Those that have been confidently sexed using morphological traits of the pelvis and skull are used to determine cut off points for determining sex in the remainder of the population. This method is particularly useful when dealing with partial or fragmentary skeletons.

Discriminant functions using several measurements rather than a single measurement have been shown to provide higher levels of accuracy, and have been developed on the tibia (Isçan and Miller-Shaivitz 1984), arm bones (Holman and Bennett 1991) and talus and calcaneus (Steele 1976). However, metrical sex determination is generally used to sex fragmentary material, which may not be able to provide all of the necessary measurements. The need to develop a population specific cut off point (and hence measure all skeletons in each collection) would make this a very time consuming task, with a comparatively small gain, and consequently only single measurements were used for sex determination in the present study.

Several single measurements frequently used for sex estimation were chosen for use in the present research. The seven measurements were taken from six different bones distributed across the skeleton, aiming to provide a sex estimation method for most regions of the skeleton. These were the vertical diameter of the humerus head (Ubelaker 1989b: 55), clavicle length (Bass 1995: 133-6), glenoid fossa length (Bass 1995: 125-9), maximum radial head diameter (Berrizbeitia 1989), maximum femoral head diameter (Ubelaker 1989b: 55), femoral bicondylar breadth (Bass 1995: 230) and proximal tibia breadth (Isçan and Miller-Shaivitz 1984; Holland 1991). The measurements were taken from all of the adults in the collections. The left measurement was used in all cases except where only the right side was present. The sex of each individual was determined independently, using morphological traits of the skull and pelvis, as described above. Each individual was placed into one of seven sex categories (male, female, probable male/female, possible male/female and unknown), based on the dimorphism of the observable sex traits and the completeness of the necessary bones.

All of the measurement data and the estimated sexes were entered into the SPSS for windows package. Those individuals categorised as 'male' or 'probable male', and 'female' or 'probable female' were grouped together as 'males' and 'females' respectively. These individuals were used as the known cases. The discriminant function tool was used to establish a cut off point between males and females for each measurement, and to predict the sexes of the unknowns. The percentages of incorrect classifications for the known-sex samples were also calculated (results given in Table 4.5, below).

Measurement	Castledyke South		Swinegate		Barrow on Humber		All	
	Cut-off point	Percent mis-classified	Cut-off point	Percent mis-classified	Cut-off point	Percent mis-classified	Cut-off point	Percent mis-classified
Clavicle length	143.23	25.9	144.696	20	146.01	18.75	144.42	23.8
Humeral head diameter	44.22	9.5	44.807	7.1	46.44	20.8	46.01	11.7
G. F. length	38.18	16.3	36.576	3.7	37.8	28.6	37.62	19.8
Radial head diameter	23.6	22.2	22.591	12.5	23.25	38.5	23.07	21.8
Femoral head diameter	45.65	10.9	45.141	3.1	47.08	26	45.88	7.2
Femoral bicondylar breadth	78.53	17.9	78.29	8	79.02	21.4	78.71	15.4
Proximal tibia breadth	73.06	26.7	71.598	12.5	70.6	26.7	73.55	21.3

Table 4.5: Populational specific cut-off points for metrical sexing.

This revealed that all but maximum clavicle length were good estimators of sex for the Swinegate population. However, many were less successful estimators of sex for the Castledyke South population, and none was very accurate at predicting sex for the Barrow-on-Humber population. The bias towards male individuals in the articulated material from Barrow-on-Humber (see Chapter 5) is likely to have reduced the accuracy levels achieved for this sample, and increased the values of the cut-off points. The cut-off values were similar for Swinegate and Castledyke South.

The predicted sex for all of the measurements for each unsexed individual were compared, using population specific cut-off points. Where all or most of the predictions agreed, sex was tentatively estimated, with the good estimators of sex (humerus head, glenoid fossa length, femoral head and bicondylar breadth) given a higher weighting. These measurements were only relied upon when sex could not be determined using morphological criteria of the skull and pelvis, and resulting estimates were given as possible male or possible female.

4.8.4 Conclusions – adult sex estimation

It is generally agreed that sex estimates using both the skull and pelvis are the most accurate, followed by estimates made using the pelvis alone, the skull alone and finally metrical estimates (Mays and Cox 2000: 118, 121). The accuracy levels given for these varies between authors (see Table 4.6 below). These reliability levels are for complete bones, and probably represent highly dimorphic populations.

Reference	(Krogman and Isçan 1986)	(Molleson and Cox 1993)	(Meindl et al. 1985a)
Skull and pelvis	98%	98%	97%
Pelvis	95%		96%
Skull	92%		92%
Long bones	80-85%		

Table 4.6: Accuracy levels for sex determination of known-sex populations.

Sex estimates are dependent on skeletal preservation – a partial pelvis missing the highly diagnostic pubic bone will not provide an estimate with a 98% level of accuracy, which must always be considered not only when estimating sex, but also when using published sex estimates. Many skeletons are found to be of indeterminate sex, and this must be considered when looking at the sex ratio for any cemetery, as it is possible that all of the indeterminate skeletons were of one sex, thus balancing any bias apparent on initial examination.

For this thesis sex estimates were assigned into seven categories (male, probable male, possible male, indeterminate, possible female, probable female and female). This took into consideration not only the degree of dimorphism of the individual, but also skeletal preservation, which determines the sexing methods used, and the relative accuracy of those methods. Whenever possible estimates were made of sex for all individuals aged 18 years and above. Sex determination was not attempted for sub-adult skeletons, due to the difficulties outlined above. All subsequent analyses concerning sex were run twice, once with possible males and possible females grouped with the males and females respectively, and once with them grouped with the unknowns.

Now that the methods used to estimate age and sex in the present study have been discussed, it is necessary to establish how biological age and sex relate to stages in the lifecycle and gender respectively. The following section will

discuss the relationship between chronological age and stages in the lifecycle, including a brief discussion of childhood in the early medieval period. Following this, the relationship between biological sex and socially constructed gender will be discussed.

4.9 Chronological age and stages of the lifecycle

For societies where much of the population was illiterate and innumerate it is probable that chronological age was both unknown and irrelevant (Cox 2000: 62). Age may have been seen, rather, in terms of maturation stages, such as weaning, walking, puberty, menopause and senility. Such stages in the lifecycle have been shown to be significant to many different societies, many of which were marked by 'rites of passage' (van Gennep 1960). These stages are sometimes reflected in mortuary practice.

Stages in the lifecycle are often associated with biological maturation stages including puberty and menopause and senility. However they are culturally defined and may be separated from each other by idealised or arbitrary landmarks (van Gennep 1960: 3; Crawford 1999: 47-56; Stoodley 2000: 468-9). Whilst these may not correspond exactly with chronological age (which in any case may not have been known with any accuracy, especially for older individuals), they will have been related to increasing age. Such arbitrary landmarks may have been much less variable between individuals than biological events such as puberty and the menopause (van Gennep 1960: 65). It is possible that these stages were, in part, connected to an individual's ability or psychological maturity, which could leave the boundaries between the stages somewhat fluid. Crawford (1999; 2000) discussed several examples of grave good deposition in early Anglo-Saxon cemeteries deemed unusual for the age of the deceased. This reflects such fluidity and indicates that stages in the lifecycle may have been connected to other social roles that may have been taken on by someone of an unusual age in exceptional

circumstances, for example following the untimely death of an important family member.

It is difficult to establish which stages in the lifecycle may have been perceived as important in Anglo-Saxon society. Differences in early Anglo-Saxon grave good deposition have led authors to suggest that weaning, transition to 'adulthood', puberty, marriage and parenthood and old age were deliberately reflected through funerary symbolism (Huggett 1996: 359-60; Härke 1997: 126-30; Crawford 1999: 26-32; Stoodley 2000: 465-8; and see further discussion in Sections 5.3 to 5.5). Other events that could have held significance may include walking, transition from deciduous to permanent dentition, betrothal, becoming the head of a household, the reaching of maturity of an individual's children, grandparenthood, loss of dentition, declining physical ability and senility.

It must be remembered that while many stages in the lifecycle may have been important to the living society, they were not necessarily all reflected through burial provision. Aspects of funerary practice may have been deemed to be appropriate to different age groups, or certain age categories may have been deliberately symbolised (Lucy 2000). However, an absence of age-related symbolism does not indicate that age related identities were not present in the living society – merely that they were not reflected through mortuary practice. Thus if individuals in different age categories are treated differently in death we can infer that not only were these age categories perceived by the society, but also that the mourners believed this age group should be deliberately differentiated from other age groups in death.

As has been shown above, it is possible to estimate the age of subadults with a considerable degree of accuracy. This means that if any significant stages in the lifecycle that occur prior to maturity are symbolised through mortuary practice, then these may be revealed more easily though cemetery analysis

than significant stages that occur in adulthood. Once these have been identified, and the age at which symbolism changes has been determined, it may be possible to infer what this change in symbolism actually signified – for example weaning, puberty or transition to adult status. Much work has been undertaken to identify children in the archaeological record. Many studies have tried to determine if children were perceived as different from adults in the past, to establish at what age they reached majority or adulthood, and to investigate how they were treated during childhood (Moore and Scott 1997; Sofaer Derevenski 2000).

The concept of childhood is culturally defined, and is only understood with reference to a concept of adulthood (Lucy 1994: 22; Sofaer Derevenski 1997; Crawford 1999: 8). It has been suggested that subadults were not perceived as children in the past, but rather as 'miniature adults' who had not yet reached full adulthood (Ariés 1962). Thus children would not have had their own special identity, material culture and place in society (Crawford 2000). However, documentary analysis has indicated that there was a psychological differentiation of adults and children during the later Anglo-Saxon period. Many of the Anglo-Saxon Lives of Saints present accounts of childhood – albeit idealised – revealing that children were expected to act differently to adults, to play and to have an aptitude for learning (Keufler 1991). In addition, many Anglo-Saxon laws protect children, and allowances were made to provide for them if their parents died. Individuals under 10 or 12 years were not held criminally responsible (Crawford 1991; Keufler 1991; Crawford 1999). Such descriptions do not indicate that children were seen as miniature adults, but rather that children were regarded as psychologically different from adults, implying that there was a concept of childhood during the Anglo-Saxon period.

Whilst children appear to have been perceived as different from adults in the past, categories of childhood may have been different from those used by us

today, and thus we must not assume that people always 'came of age' at 18 or 21 years (Sofaer Derevenski 1997; Crawford 1999). This means that any study of childhood must investigate, and not assume, at what age stages of transition occurred. For the later Anglo-Saxon period it is possible to make inferences about the age of majority from documentary evidence, however this is not possible for early Anglo-Saxon England, and thus mortuary practice has been analysed in the past. To investigate Anglo-Saxon childhood from mortuary remains it is necessary to start with osteological estimates of age, and then examine how children of different ages were treated in burial (providing they were marked out in some way). Luckily, as discussed above, subadult age estimates are generally narrow, allowing fine levels of analysis of ages of transition to take place.

4.10 Sex and gender

Sex is biologically determined and, given reasonably well-preserved adult remains, can usually be estimated from the skeleton with confidence. Gender is the social construction of the difference between men and women, and is historically contingent (Gibbs 1987; Conkey and Gero 1991; Gilchrist 1994). It is 'one of many aspects which construct social identity, including occupation, ethnicity, age, religion and especially class or social status' (Gilchrist 1994: 8), and consequently cannot be entirely separated from these other social variables. In many societies children are considered as genderless or sexually neutral, and gender may change as different stages in the life cycle are reached (Gilchrist 1997: 43; Hadley and Moore 1999: 36-7).

Gender archaeology emerged from the feminist archaeologies of the 1980s, in which androcentrism in archaeology and archaeological interpretation was critiqued (Conkey and Spector 1984; Conkey and Gero 1991; Gilchrist 1994). This led to an increased awareness of the importance of including women in archaeological narratives. However recent work has cautioned the

overemphasis on women and has argued for a more balanced approach including discussion of men and masculinity, and examining the way in which genders relate to one another (Hadley and Moore 1999: 22-6).

Gender is learnt during childhood through social constructions placed on girls and boys (based on their physical differences) and through their experience of surrounding material culture and social behaviour (Nordbladh and Yates 1990; Gilchrist 1994). Whilst sex usually consists of the binary opposition of male: female, gender may be multi-dimensional, and can include not only masculine and feminine but also other gender constructions, for example transsexuals, eunuchs and berdache (Gilchrist 1994: 6). It has also been argued that more than two sex categories exist, and consequently we should be aware of possible cases of androgeny and hermaphroditism in the archaeological record (Nordbladh and Yates 1990: 224-5; Gilchrist 1997: 43). Recent research into disorders of sexual differentiation, including hermaphroditism, has indicated that skeletal manifestations of such disorders could lead to incorrect assignation of sex (O'Connell et al. 2001). This would pose problems for the successful identification of individuals with these disorders, however such cases are rare today and are unlikely to be common in the archaeological record (Rega 1997: 242).

Studies have shown that individuals can transcend their sex and cross the gender divide, allowing females to be seen as 'masculine' and males as 'feminine' (Hadley and Moore 1999). Most early Anglo-Saxon graves show strong evidence of gender signalling through grave goods (see Section 5.1), although Lucy (1997b) argues that many of these cemeteries contain a handful of exceptions to the general pattern of weapons with males and jewellery with females. This has been disputed by Nick Stoodley (1999a), who found that most of these 'cross-gendered' graves had been disturbed or that the skeletons were only tentatively sexed, however it remains possible that occasionally individuals were buried with grave goods normally

associated with the opposing sex. As an analogy, it is notable that Carol Clover (1993) has shown that powerful or heroic women were described in masculine terms in Viking sagas. By showing 'masculine' virtues women were seen as and described like men and in a few cases were accorded masculine burials. Likewise feminine terms were used to insult men showing signs of weakness. Thus Viking 'gender' division was between weak and strong rather than between women and men (Clover 1993: 380). Valerie Hotchkiss (1996) has discussed examples of medieval women who aspired to positions of authority and who adopted masculine dress in the process. Both of these studies reveal the way in which individuals of one gender may adopt the characteristics of the opposite gender for strategic reasons. These examples show that although gender is intimately linked with biological sex, the two are not necessarily synonymous. Consequently care should be taken not to interpret those with conflicting biological sex and signalled gender as individuals of a third sex or even a third gender.

4.11 Conclusion

This chapter has discussed different methods of age and sex estimation, and has evaluated the merits of the different methods. In addition, the osteological methods used in the present study have been outlined. The relationship between age and lifecycles, sex and gender has been discussed, and it has been suggested that aspects of social identity, including stage in the lifecycle and gender, may have influenced the selection of appropriate burial practice in the past. The following chapter will discuss previous studies comparing social identity and funerary practice for the Anglo-Saxon period. This will be followed, in Chapter 6, by the analysis of funerary practice with reference to age and sex for six cemeteries dating to the late Anglo-Saxon period.

Chapter 5: Previous Studies of Early Medieval Cemeteries

The previous chapter discussed osteological ageing methods, and the ways in which estimates of age may relate to stages in the life cycle. It also discussed methods of sex estimation and showed that biological sex is strongly associated with gender, but not necessarily the same. It was concluded in Chapter 4 that by determining osteological estimates of both age at death and sex and by comparing them with aspects of funerary practice it may be possible to ascertain if variation in funerary practice was reflecting the age (or stage in the lifecycle) and sex (or gender) of the deceased. This chapter will discuss previous studies undertaken on early Anglo-Saxon (5th- to 7th-century) cemeteries that have begun to assess the relationship of mortuary practice to osteological identity, before comparisons between osteological data and funerary practice are made for the six case study cemeteries in Chapter 6.

5.1 Gender symbolism in early Anglo-Saxon burials

The signalling of gender through grave goods in early Anglo-Saxon inhumation cemeteries has been extensively studied over the last two decades. Many early Anglo-Saxon inhumations are accompanied by grave goods, that are typically divided into three assemblage groups: weapons (e.g. swords, spearheads, shield bosses and arrowheads), which are usually associated with male burials, and dubbed 'masculine' assemblages; dress accessories or jewellery (e.g. brooches, beads, wrist clasps, girdle-hangers and latch-lifters), which are usually associated with female burials and dubbed 'feminine' assemblages; and other grave goods (e.g. buckles, knives, strap ends and pottery vessels) commonly referred to as 'gender-neutral' grave goods. A fourth group of early Anglo-Saxon inhumations appear to be unaccompanied by grave goods, although it is possible that these, as, indeed, other burials, may have been accompanied by organic artefacts that did not survive the burial environment (Lucy 1997a: 157). In a study of early Anglo-

Saxon cemeteries in East Yorkshire, Sam Lucy (1997a: 157) showed that 42.4% of burials at Sewerby and 55.4% of burials at West Heslerton contained a 'masculine' weapon or 'feminine' dress accessory assemblage, 33.9% and 23.4% of burials contained 'gender-neutral' grave goods and 23.7% and 21.2% of burials were unaccompanied. A similar pattern is seen throughout Anglo-Saxon England, although the proportions of burials with each assemblage type can vary regionally.

The provision of males with weapons and females with dress accessories has been seen as such a strong indicator of gender that in the past grave goods have been used to sex individuals in the absence of osteological analysis, and sometimes the grave goods have been preferred to osteological analysis as a means of estimating sex (e.g. by Hirst 1985: 33-4; Evison 1987: 123). Certainly, these two categories of grave good - weapons and dress accessories - are rarely found in the same grave, as has been shown by surveys of inhumation burials at Spong Hill (Norf.) (Brush 1988: 80-81) and of cemeteries throughout Wessex (Stoodley 1999a: 100). Yet, a few exceptions to the normal dichotomy between weapons and dress accessories have been identified. For example single brooches have been found in weapon burials at Kempston (Beds.), Harwell (Berks.) and Shalfleet (Isle of Wight) (Meaney 1964: 37, 47, 100). Four definite and four possible female skeletons were buried with weapons and seven definite and six possible males were buried with dress accessories at Buckland, Dover (Kent) (Evison 1987: 123-6). At Norton in Cleveland eleven males and two possible males were buried with dress accessories (Sherlock and Welch 1992: 73).

Heinrich Härke has argued that brooches included in weapon graves are examples of Roman or 'Celtic' style male dress, rather than reflecting a mixing of the standard grave good assemblages (Härke 1997: 133). One weapon burial (grave 40) at Spong Hill (Norf.) contained an amber 'sword-bead' (Brush 1988: 81), however this bead is noted as being a different shape

and larger than beads found in dress accessory assemblages at the cemetery (Hills et al. 1984: 8). These examples suggest that such combinations of 'masculine' and 'feminine' grave goods were not a straightforward mixture of elements from the standard repertoire of weapon and dress accessory assemblages. These examples also highlight the importance of seeking further information when graves are claimed to contain a combination of elements from the standard weapon and dress accessory assemblages, as the items contained in such comparatively unusual assemblages may be atypical. Furthermore, when graves containing both weapons and dress accessories are reported, it must be established that this was not due to disturbance of the grave or inaccurate recording of antiquarian excavations, before any significance is attached to the unusual combination of grave goods (Härke 1997: 132; Stoodley 1999a: 100). We must also be cautious about labelling the various artefacts as 'weapons' and 'dress accessories' (a category that usually includes all jewellery), as this also potentially affects our impression of the extent to which the weapon/dress accessory dichotomy in maintained, for example if a single brooch combined with weapons can be seen as a 'masculine' assemblage, should a single brooch on its own be seen as feminine?

Nonetheless, female burials containing weapons and male burials containing dress accessories have been used to argue that gender was not invariably synonymous with sex during the early Anglo-Saxon period, and that consequently grave goods should not be used to assign biological sex (Henderson 1989: 82; Lucy 1997a: 155; Hadley forthcoming-b). Individuals with the opposite gender signalled appear to be exceptions but not abnormalities, and indicate that the gender divisions signalled in early Anglo-Saxon cemeteries were sometimes fluid. It is possible that weapon and dress accessory assemblages symbolize roles in society normally held by men or women, rather than male and female sex or gender *per se*. In addition, these grave good assemblages may have also signalled age, social

position and family lineage, with the very young and very elderly unlikely to be buried with weapon or dress accessory assemblages (Lucy 1997a: 163). In any case only certain individuals were accorded 'gendered' graves, and the very young and very elderly more commonly have 'gender-neutral' grave goods. Analysis of early Anglo-Saxon cemeteries in East Yorkshire has shown that more graves were accompanied by jewellery assemblages (defined by Lucy as two or more brooches, multiple beads, wrist clasps, pendants, girdle hangers and latch lifters) than by weapons (spears, shields and/or swords) (Lucy 1997a: 157; 1998: 8), perhaps indicating the importance of signalling the feminine gender, or restrictions concerning who could be accorded a weapon burial.

In a discussion of weapon burials, Härke (1990: 36-7) has argued that these were unlikely to be solely those of warriors, as infants unable to bear arms were sometimes buried with weapons, and individuals with weapon trauma (and hence experience of fighting) were not always buried with weapons. In addition, many of the weapon combinations found in graves do not constitute a functional fighting kit (Härke 1989a: 58-9; 1990: 33-5). Härke (1990: 36) also argued that an individual buried with a shield and a spear from Berinsfield, Oxon. (Grave 110) with *spina bifida* would not have been able to bear arms. However this individual suffered from *spina bifida occulta*, (Boyle et al. 1995: 54) a non-metric trait that has no clinical manifestations (i.e. the individual would not have been physically affected by the sacral abnormality) (Aufderheide and Rodríguez-Martín 1998: 61). Härke also interpreted weapon burials as being symbolic of Germanic lineage rather than of warrior status, due to a slightly higher average stature for individuals buried with weapons than adult males buried without weapons. The two groups had similar incidence rates of enamel hypoplasia, indicating the difference in height was not caused by differential access to food (Härke 1990: 38-43). However, the difference in average height used by Härke (between 2 and 5cm) is smaller than the standard errors of the equations

used to calculate stature from skeletal remains (Trotter and Gleser 1952: 495; Ubelaker 1989b: 61). Despite these problems, Härke's argument that individuals buried with weapons were not necessarily warriors still has merit.

Interestingly, Härke has interpreted the female graves containing weapons rather differently from the male burials with weapons. He suggests that only partial weapons were deposited in female graves and that these had functional uses as knives or weaving swords (Härke 1990: 36). This contradicts his interpretation of weapons as symbolic objects in male graves – why were they not symbolic in female graves too? Given the similarity of the layout of the male and female weapon burials and the forms of the swords in the double grave from the Buckland cemetery, Dover (Figure 5.1), it is difficult to understand Härke's interpretation. Why is the male burial of a symbolic warrior while the possibly female burial includes weapons used for weaving? Surely it is at least as plausible that weapons in female burials had a symbolic value?

Härke (1989b; 1990) has argued that subtle variations in the forms of grave goods could also be used to signal aspects of social identity. In his work on burials with knives, his analysis of knife blade length has shown that children were only accompanied by the smallest knives (under 106mm) and that females were not accompanied by knives with blades over 128mm long. The largest knife size (128-175mm) was restricted to adult males, although males could be buried with any size of knife (Härke 1989b: 146). Thus knife sizes symbolised not only gender or sex but also age or an age-related attribute such as social status. The proportion of large knives deposited increased over time, replacing the earlier adult male symbols of swords and large spearheads. Large knives were not only found in graves with many grave goods (unlike swords and shield bosses which are usually found with other grave goods), indicating that knife burials were not just reserved for

the social groups who were accorded weapon burials in the 5th and 6th centuries (Härke 1992: 162). This study has revealed the importance of analysing grave goods in detail, rather than just focussing on the range and types of artefacts in a grave good assemblage, which may mask subtle subdivisions within a single class of object.

Analysis of Anglo-Saxon cremations has revealed that gender and age were signalled through the size, shape and decoration of cremation urns (Richards 1987: 196; 1988: 147). For example, adults tended to be buried in taller vessels, with males in the tallest urns. Females tended to be buried in wider urns than males, and individuals interred without grave goods were more likely to be buried in wide-mouthed vessels (Richards 1987: 150). Cruciform stamps were unlikely to be found on urns containing adults and rectangular stamps were more common on urns containing females (Richards 1987: 184). Hanging arches were more common with males, whereas females were associated with standing arches (Richards 1987: 201).

Grave good assemblages in cremation burials were also associated with gender, but not as strongly as grave goods deposited with inhumations. Individual grave goods were not strongly related to the sex of the deceased, however females were more likely to be buried with grave goods than males (Richards 1987: 128). Julian Richards (1987: 128) identified two groups of grave goods commonly found together. Although both of these groups of grave goods were found with both males and females, each was more likely to be buried with a particular sex. Group one contained toilet implements, which were more likely to be found with males than females. Group two contained glass beads and ivory fragments and was positively associated with females (Richards 1987: 128). Brush (1988) has argued that at Spong Hill (Norf.) beads were not necessarily placed in female cremations and she noted that no brooches were found in any of the cremations sexed as male by the date of the publication of her paper. Richards (1987: 125) also noted that

many cremations contained animal bones as well as cremated human bone. Males were accompanied by animal bones more often than females, and horse bones were particularly common in male cremations (Richards 1987: 128; 1992: 139).

Julian Richards (1988: 155) argued that in cremation cemeteries the symbolism of both cremation urns and grave goods (including animal bones) was highly complex, signalling not only age and gender but also other aspects of social identity including status, kinship links, ethnicity and also the circumstances of death of the deceased. Brush (1988: 83) pointed out that the symbolism of grave goods placed in cremation burials was not necessarily the same when such items were placed in inhumations. In addition, she argued that gender signalling was less important in cremation cemeteries, and suggested that the act of burning the body may have destroyed the gender and sex of the individual (Brush 1988: 83). Thus whatever the relationship between mortuary practice and aspects of social identity were in cremation cemeteries, these might be significantly different from those signalled in inhumation burials.

It is apparent that the way in which gender was expressed in both inhumations and cremations could vary considerably from cemetery to cemetery, even over short distances. Pader's (1982) analysis of the inhumation cemeteries at Holywell Row and Westgarth Gardens (Suff.) revealed that although artefacts had symbolic meanings, these meanings might have been different for different sub-groups of the burying population (Pader 1982: 199). The placement of grave goods and the position of the body in inhumations and the shape and decoration of cremation urns could also be used to reflect aspects of identity, and again the form of these could vary both within and between cemeteries (Pader 1982: 200; Richards 1987: 204-5; Huggett 1996: 361).

Both weapon and jewellery assemblages often contain what are commonly referred to as 'gender-neutral' grave goods such as knives, buckles, strap ends, pottery vessels and iron pins (Brush 1988: 81). While a significant proportion of individuals were buried with weapon or dress accessory assemblages, many other individuals in most early Anglo-Saxon cemeteries were buried with just these 'gender-neutral' artefacts or without any surviving grave goods (Lucy 1997a: 157; Hadley and Moore 1999: 29; Hadley forthcoming-b). Whether or not this suggests that gender was not a 'major structuring principle' in living Anglo-Saxon society (as suggested by Brush 1988: 81), at the very least, it suggests that gender was only signalled in some graves.

Unaccompanied burials or those only containing 'gender-neutral' grave goods have been variously interpreted as the graves of lower status individuals (Alcock 1981: 176; Arnold 1980; see discussion by Härke 1997: 142-6), the graves of people of British descent (Miket 1980: 299) or as representing further social categories that did not require strong gender signalling (Lucy 1997a: 163). Certainly by emphasising the importance of strongly gendered graves approximately one third to half of the individuals in any given cemetery will be overlooked (Lucy 1997a: 163; Hadley and Moore 1999: 29), and the complexity of Anglo-Saxon social identity and gender relations cannot be fully understood.

5.2 Gender expression in later Anglo-Saxon cemeteries

From the 7th century onwards the deposition of grave goods declined in Anglo-Saxon cemeteries. In addition, the number of gender specific grave goods also declined (Geake 1997: 128). Stoodley (1999a: 101) showed that the numbers of gendered graves in Wessex reduced from 53% in the early period to just 24% in the 7th and 8th centuries. Whilst the majority of individuals were buried in flat (non-barrow) cemeteries a proportion of the population were buried in and around new and prehistoric barrows (Stoodley 1999a:

102). These were more likely to be males and to contain 'masculine' grave goods. Conversely 'feminine' graves were more common in flat cemeteries (Geake 1997: 128; Stoodley 1999a: 103). Some (but not all) of these barrow burials (e.g. Swallowcliffe Down and Roundway Down II, both Wilts.) were accompanied by many grave goods and have been interpreted as those of the social elite (Arnold 1988: 115-8; Stoodley 1999a: 104). This decline in gender signalling along with the increased importance of a masculine social elite in the 7th century may have been connected to increasing social stratification and a link between masculinity and power (Hadley forthcoming-b). A similar reduction in gendered graves associated with increased social stratification has been seen on the continent in 7th-century Merovingian cemeteries in the district of Metz (Halsall 1996: 12). It is possible that the reduction in the importance of gender expression in 7th-century Anglo-Saxon cemeteries may have been one of the many factors that contributed to the overall decline in the deposition of grave goods (Stoodley 1999a: 106).

In graves with 'gender-neutral' assemblages knife blade lengths were still used to denote age and gender (Härke 1989b) (see above). The deposition of large knives (symbolising adult male status) increased in the 7th century, replacing earlier indicators of masculinity and power such as swords. However, whilst knives signalled male adulthood they did not reflect status or power, thus denoting a different but related identity (Härke 1992: 162).

The location of burial was also important at this time, with some male elite burials being distanced from the remainder of the population. This elite probably had easier access to burial in churchyards, however barrow burial remained an acceptable alternative of high status burial in this period (Morris 1989: 256; Blair forthcoming, cited in Hadley 2000d: 296). The majority of the population, however, were buried in flat cemeteries and here femininity continued to be expressed in a more elaborate manner and for longer. Children could gain feminine gender and grave goods, however

access to masculine grave goods appears to have been confined to prime adult male burials (Geake 1997: 128-9; Stoodley 1999a: 103).

From the 8th century burials became more uniform and the deposition of grave goods almost entirely ceased (although the date when deposition ceased is still open to debate; Halsall 2000: 264). This change in burial form has been interpreted as the dawn of an egalitarian rite that continued throughout the Middle Ages (Hodder 1980: 168; Geake 1997: 127; Tarlow 1997: 139; Carver 1999: 8). However it appears that aspects of social identity continued to be signalled in these 'Christian' cemeteries, despite the rarity of grave good deposition (Hadley forthcoming-b). The location of burials, the use of above ground markers and varying forms of grave furniture including coffins, stone cists, pillow stones and willow sticks or 'wands', along with any aspects of ritual that leaves no trace today may have been used to signal aspects of social identity. Little work has been undertaken on these burials and their symbolism, but preliminary analysis suggests that these forms of commemoration do not appear to be strongly gender or age sensitive (Hadley forthcoming-b). However, some sex-related patterns in funerary practice have been identified in late Anglo-Saxon cemeteries. For example, at Raunds (Northants.) more males were buried in the area of the cemetery immediately to the south of the church, close to the church entrance, and at Winchester Old Minster more males than females were buried close to St Swithun's grave (Kjølbye-Biddle 1992: 228; Boddington 1996: 55; and see Chapter 8, below). The relationship between varying burial rites, age and gender in later Anglo-Saxon cemeteries has been investigated further in the present study, the results of which will be presented in Chapter 6.

While the vast majority of burials dating to the 9th century and later did not contain any grave goods, for a short period around c.900 a form of burial, accompanied by grave goods appeared in northern and eastern England. These burials were frequently located in churchyards, but are sometimes

found in isolated locations. Many of these graves contained weaponry (e.g. Repton, Derbs.), and burials including distinctive Scandinavian brooches have also been found (e.g. Bedale, N Yorks., see Figure 5.2). This group of accompanied inhumations is small and unfortunately little independent evidence as to the age and sex of the individuals remains. However all appear to be of adults, and most of males (Halsall 2000: 270). Such burials have been interpreted in the past as those of Vikings, combining their native pagan Scandinavian customs with the local Christian burial rite (Richards 2000: 155-8). However it is inadvisable to assign ethnicity based on the presence and types of grave goods (see Section 7.1), and in any case it appears that there may have been some low level of grave good deposition occurring at this time within 'Anglo-Saxon Christian' contexts (Halsall 2000: 264). It is possible that these burials might instead be a throwback to the old display of symbols of power, instigated by the instability and stress caused by the Viking raids and the foundation of the Danelaw (Hadley forthcoming-b). Thus a male elite was again being marked through the deposition of (mainly) masculine grave goods.

5.3 Children in early Anglo-Saxon cemeteries

Previous studies of early Anglo-Saxon cemeteries have shown that funerary practice was used to mark out subadults, with adults being buried with higher numbers and different types of grave good than subadults (Härke 1997: 127-8; Crawford 1999: xiv; Stoodley 2000: 459). A number of studies have shown that from about 10 or 12 years of age children could be buried with most 'adult' grave goods, including brooches, girdle hangers, chatelaines, shields and spears (Härke 1997: 128; Crawford 1999: 26-9; Lucy 2000: 88-9). This, in conjunction with later documentary evidence, has been used to suggest that the Anglo-Saxon age of majority was between 10 and 12 years of age (Crawford 1991: 17; Keufler 1991: 826). Other subadult age thresholds that relate to variance in mortuary practice have been identified. These include the increased likelihood of deposition in a single grave and the

inclusion of some grave goods after 2-3 years of age, and a further increase in grave good deposition after about 15 years (Härke 1992: 156-7; 1997: 127-8; Stoodley 2000: 459-61). In addition, knives deposited in children's graves are generally less than 106mm long (Härke 1989b: 146; although the cut off point between adults and children used in this study was not defined). In cremation cemeteries it has been shown that the height of the cremation vessel increased with chronological age, with infants in the smallest and old adults in the tallest vessels (Richards 1987: 136).

Grave goods such as dress accessories and weaponry have been frequently attributed to the graves of 'girls' and 'boys' respectively (e.g. Härke 1997), but given the problems inherent in sexing subadult remains (see Section 4.7) and the fluidity apparent in adult genders for this period (discussed above) this attribution may be flawed. It is generally accepted that sex cannot be inferred for adult remains using grave goods alone, and this is also true for subadult remains. Given the impossibility of sexing subadult skeletons morphologically, it is unlikely that the investigation of the gender association of grave goods in children's graves will be possible in the future, except in those rare instances where DNA from the sex chromosomes is preserved.

From the 7th century, when grave good deposition radically changed, children could be deposited with most grave goods, with the exception of weapons other than knives (Geake 1997: 128-9; Stoodley 1999a: 103). However children were not accorded barrow burial unless accompanied by an adult, but rather were interred in the row cemeteries (Stoodley 1999a: 105). Thus although children and adults were provided with similar ranges of grave goods, children were distinguished from (mostly male) adults through burial location.

One striking feature of early Anglo-Saxon inhumation cemeteries is the scarcity of identified infant graves. Crawford (1993: 84) showed that in a

sample of 1005 burials from twelve cemeteries,[28] less than 6% were under 3 years of age. This evidence has been used to suggest that Anglo-Saxon infants were buried in shallow graves or in locations different from adult cemeteries, possibly indicating that prior to two or three years old infants were seen and treated differently to older children (Crawford 1993: 84-5; Lucy 1994: 26-7; Scull 1997: 164; Stoodley 2000: 458). This hypothesis is supported by evidence of infant burials within settlements: for example c.15 infants were found in sunken-featured buildings at West Heslerton, E Yorks. (Powlesland 1997: 164). However, many of the missing children's skeletons could have been lost due to poor bone preservation, as many early Anglo-Saxon cemeteries (particularly some of those studied by Crawford) are located on acidic sandy soils, which are not conducive to bone survival, particularly of small bones (Buckberry 2000b). Given the presence of infant burials within settlement sites it is necessary to consider not only what this differentiation through burial location meant, but also why some infants were or were not included in the main cemeteries. Such issues of differential burial location and differential preservation must always be considered when analysing demographic patterns (Chamberlain 2000a: 210).

5.4 Children in later Anglo-Saxon cemeteries

For the later Anglo-Saxon and medieval periods few studies have thoroughly investigated the relationship between mortuary practice and age. In the work that has been done, no age-related pattern of burial type has been identified (Daniell 1997: 116-74; Hadley 2001a: 111-2). Yet whilst age does not appear to have been signalled through burial type, it does seem sometimes to influence the location of burial. Clusters of infant graves, often around the walls of churches have been identified at many 7th- to 11th-century cemeteries, including Raunds (Northants., see Figure 5.3), Jarrow

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[28] These cemeteries were Abingdon (Oxon.), Buckland (Kent), Finglesham (Kent), Monkton (Kent), Morning Thorpe (Norf.), Polhill (Kent), Portway (Hants.), Sewerby (E Yorks.), Swaffam (Norf.), Westgarth Gardens (Suff.), Winnall II (Hants.) and Worthy Park (Hants.) (Crawford 1991: 23).

(Northumb.), Winchester Old Minster[29] (Hants.), Cherry Hinton (Camb.) and Compton Bassett (Wilts.) (Crawford 1993: 88; Lucy and Reynolds 2002: 17-20). The location of these burials close to church walls has led to the interpretation that the mourners believed that these infants would be blessed every time rainwater dripped off the church roof onto the graves, and clusters of infant burials have even been used to suggest the location of a lost church, for example at Hartlepool (Crawford 1993: 88). The tradition of burying infants under the eaves of buildings can be traced back to the Roman period (Watts 1989: 372), although obviously burial close to buildings has not been interpreted as a form of symbolic baptism during the Roman period. Whatever the intended symbolism of these burials, they do indicate that at some cemeteries certain types of burial (in this case close to the church walls) may have been seen to be more appropriate for different age groups. It should also be noted that the symbolism of 'eaves-drip' burials might have varied from cemetery to cemetery, as has been demonstrated for the symbolism of grave goods in earlier cemeteries. This pattern is not universal however, as no clusters of infant graves have been observed at extensively excavated cemeteries at Barrow-on-Humber (Lincs.) or St Nicholas Shambles, London (Daniell 1997: 128; White 1998: 14-17).

The narrowness of subadult age estimates (see Section 4.3) allows these issues to be investigated in detail through comparison with mortuary practice, enabling any Anglo-Saxon subadult age thresholds to be identified. This is highlighted by the work of Sally Crawford, who has shown through analysis of grave good deposition that early Anglo-Saxon children may have reached majority at about 10-12 years of age, which corresponds well with documentary evidence from the 7th century onwards, despite the fact that these sources of evidence date to different periods before and after the conversion to Christianity (Crawford 1991: 22; 2000: 47-8). Estimates of adult

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[29] A cluster of infant burials were also found in a small trench close to the walls of the unpublished Nunnaminster site (Annia Cherryson, *pers. comm.*).

age are much wider than those for subadults (see Section 4.4). This means that any symbolism reflecting changes in identity connected with increasing adult age are much more difficult to identify and interpret. However, it is likely that once adulthood and full skeletal maturity was reached, changes in status would become less frequent. Evidence of changing adult funerary practice associated with increasing age during the early medieval period will now be discussed.

5.5 Signalling of adult age in Anglo-Saxon cemeteries

Little work seems to have been undertaken on adult lifecycles in Anglo-Saxon cemeteries. Sociological and ethnographic research have shown that many changes in the lifecycle occur once adulthood has been reached, including marriage, parenthood, becoming head of a household or family, the menopause in women, widowhood, and senility (van Gennep 1960: 2-3; Hockey and James 1993: 3, 15). However evidence of these potential changes in social identity for adults have rarely been studied for the Anglo-Saxon period (but see Stoodley 2000: 465-6). Such analyses, like those for children, would entail looking for any age-related patterns in mortuary practice and burial location.

The major problem associated with this kind of study is the difficulty of ageing adult skeletons. As discussed in Section 4.4, most of the ageing methods available can only produce a wide estimate of age, which makes it difficult to establish when any age-related changes in burial practice may have occurred. However it is possible to identify age ranges that may loosely correspond to social groups perceived as people 'of a similar age.' Adolescents and young adults, between about 13 and 25 years, can be aged with a good degree of accuracy. It is likely that menarche, marriage, first pregnancy and parenthood all occurred within this age range (van Gennep 1960; Huggett 1996: 359; Stoodley 2000: 465). During the early Anglo-Saxon period, many burials of individuals from this age group were deposited with

high numbers of grave goods. From the late teens individuals were more likely to be accompanied by items such as girdle hangers, keys, chatelaines, shields and swords, although these items could be deposited with individuals from 10 years of age (Stoodley 2000: 461-2). These items may have been deposited with individuals who had married, for example. From approximately 18 years of age burials were much more standardised and individuals were more likely to be buried in coffins (Härke 1997: 128). In addition, Sam Lucy (2000: 89) has noted that in cemeteries in East Yorkshire square headed brooches, shields swords, tweezers and tools were only deposited with adults over the age of twenty-five.

From 30 years of age items such as horsegear, axes and seaxes were deposited in masculine graves (Härke 1997: 128). Older adults were less likely to be buried with weapons or girdle items after 40 years of age (Stoodley 2000: 462, 464). The sizes of certain items were also used to signal age, with the largest spears and knives deposited with older adults, while the tallest urns in cremation cemeteries tended to contain the oldest individuals (Richards 1987: 196; Härke 1989b: 146; Härke 1992: 158). Large knives (over 106mm) were used to denote adult age, with males having the largest knives (over 128mm) (Härke 1989b: 146). Clearly, many of these assemblages were determined by gender as well as age, indicating that cemetery studies should consider sex in conjunction with age (Huggett 1996: 360-1; Stoodley 2000: 469).

As noted above, the number of grave goods deposited with old adults in the early Anglo-Saxon period declined sharply, and many of the items with strong masculine and feminine associations were no longer deposited in graves (Stoodley 2000: 462-4). A similar pattern is seen in 6th-century Merovingian cemeteries, where graves of older individuals (and particularly older females) not only contained fewer grave goods than in the 5th century, but also tended to be accompanied by fewer grave goods that were strongly

associated with one of the sexes (Halsall 1995: 85, 109, 162-3; 1996: 11). This could be linked with declining status following the end of reproductively active years, particularly for women, which is reflected elsewhere in the decrease in the value of wergild after 45-50 years in Visigothic and Salian law codes (Shahar 1993: 334; Herlihy 1995: 222-3; Crawford 1999: 30). For women, this may have been connected to the menopause, which was recorded by medieval authorities as occurring at c.50 years of age, similar to the present day (Herlihy 1995: 223). Older adulthood may have been accompanied by increasing levels of dependency: osteologically this is reflected by the loss of teeth and higher rates of osteoarthritis, particularly in the spine, of older individuals. In modern society this increasing dependency causes older adults to be treated as, and described in similar ways to, children (Hockey and James 1993: 9-42) and it is possible that a similar increasing level of dependency also caused a similar shift in attitude in the early Anglo-Saxon period. At this time the graves of older adults appear to become increasingly similar to those of subadults. It may also be significant that the very old and the very young were far less likely to be buried with strongly gendered items such as swords and girdle hangers, possibly reflecting the fact that these individuals were not reproductively active. It is difficult to establish at what age people were perceived as old in the past. However analysis of many medieval texts dating from the 11th to 15th centuries describing stages in the life course, statements by medieval authors about their perceptions of their own age and legislative texts mentioning old age, has suggested that from 40 years people were more aware of and concerned about their approaching mortality, although people were not seen as old until around 60 years of age (Shahar 1993: 340). Although the difficulty of estimating increasing age over c.45 years has been discussed above, it should be noted that some of these individuals may be recognised osteologically as they were likely to have lost many teeth ante-mortem (Miles 2001: 977).

Overall it appears that during the early Anglo-Saxon period young adults were often accorded more elaborate burials, but that their burial status declined with old age. Studies relating changing adult age to burial practice have not been carried out for the later Anglo-Saxon period. These themes are explored in this study for number of late Anglo-Saxon cemeteries in Lincolnshire and Yorkshire, the results of which are given in Chapter 6.

5.6 Conclusions – towards an integrated analysis of later Anglo-Saxon cemeteries

The above sections have shown that much can be learnt from the study of skeletal remains in conjunction with varying forms of mortuary practice. Such analysis can reveal how different groups of individuals were treated in death, and may be used to infer what social groups may have been present in the living society. Many studies have been undertaken of aspects of early Anglo-Saxon identity, however little work has been done on later cemeteries. This is, in part, due to that lack of obviously sex and age linked variation in the 'Christian' funerary ritual. Moreover, studies of early Anglo-Saxon cemeteries have tended to focus on the more elaborate burials, and, thus, exclude a large proportion of the population who were buried with few or no grave goods. Thus, it is hoped that the methodology utilised in this study will be able to shed light on these previously understudied individuals, along with cemeteries of later periods that do not include grave goods.

To study aspects of identity it is necessary to estimate the age and sex of each skeleton, and use this as a starting point in any analysis. Previous studies that have made inferences about burial practice, and then used osteological evidence to back up an ensuing theory, generally have been found to be flawed and subsequent theories have had to be developed to explain away the anomalies. Thus for the present study the demography of different funerary practices will be examined, in order to establish who was accorded

a given burial rite. In addition entire cemetery populations will be divided according to age and sex to determine how men, women, adults and subadults were buried. It has been shown in the above discussion that in early Anglo-Saxon cemeteries there were subdivisions between children and between adults of different age, and that age and sex were intimately linked. In addition, other aspects of identity may have been signalled through funerary practice. Thus these large groups will be subdivided and combined to see how smaller age categories, and gender specific age categories were treated in the burial record. The results of this analysis are presented in Chapter 6.

Chapter 6: Cemetery Analysis 1 – Grave Variation, Age and Sex

Many previous studies have assumed that late Anglo-Saxon burial practice was egalitarian (see Sections 1.1 and 5.2). However, several variations in burial practice did occur throughout the period, demonstrated by the differential use of coffins, stone linings, markers, carved grave covers, pillow stones and charcoal burials and it can be shown that these probably relate to differences in social status. The following section describes these varying forms of burial and their occurrence in the present study area of Lincolnshire and Yorkshire. The chapter then goes on to discuss how the use of different burial types varied among the six late Anglo-Saxon cemeteries included in the present detailed analysis. These cemeteries are the Minster, Swinegate and St Andrew's Fishergate cemeteries, all in York, St Mark's Lincoln, St Peter's Barton-on-Humber and Barrow-on-Humber, Lincolnshire.

This chapter will discuss briefly the variation in alignment and burial position present in late Anglo-Saxon cemeteries. It will then describe the different grave types present in the six cemeteries studied, referring to documentary evidence of grave types where appropriate. The different types of grave found in each of the six cemeteries will be outlined, and the significance of the differing levels of variation seen in each cemetery will be discussed. Following this, grave variations (including charcoal burials and pillow stones), which are found in conjunction with the different grave types, will be described, and the frequency of these grave variations in each of the cemeteries will be highlighted. The next section will present the demography of each cemetery population. Then the different grave types present in each cemetery will be compared with the age and sex of the occupants of the graves. Finally a spatial analysis of each cemetery will be presented, examining the distribution of grave types, age groups and the sexes across the cemeteries.

6.1 Alignment and body position

Whilst all of the burials in the analysed sample were buried in aligned graves, their orientation varied between cemeteries. Most of these were orientated on the west-east axis, however at Swinegate and York Minster the burials were orientated on a southwest-northeast orientation, following the alignment of the earlier Roman buildings and walls (Phillips and Heywood 1995a: 75). Looking further afield, the vast majority of late Anglo-Saxon burials in Lincolnshire and Yorkshire were west-east aligned. Variations in burial alignment occurred at a small number of cemeteries, for example at Kirkdale in Welbourn parish, where the pre-Conquest burials were aligned north-west to south-east; at Ailcy Hill, where variations in burial alignment have been used to distinguish between phases of burial – during Phase 2 most of the burials were west-north-west to east-south-east aligned and during Phase 3 most of the burials were west-south-west to east-north-east aligned; and at Paddock Hill Thwing, where burials were aligned west-east and west-south-west to east-north-east.

Most of the burials in the six cemeteries studied in detail were extended and supine, however some individuals were slightly flexed. Many of these flexed burials were of infants who, due to their small size, would have been difficult to lay out fully extended. Outside of these six cemeteries, just one burial from Riccall Landing was noted as being flexed rather than extended, however it should be noted that site archives were not investigated fully for cemeteries other than the six studied in detail, and that variations in body position may not have been recorded in short published summaries.

The position of arms varied within cemeteries, usually being placed either next to the body or with one or both arms placed across the pelvis or the upper torso (see Figure 6.1). This variation in arm position is rarely given on an individual basis in published cemetery reports but is sometimes recorded on the original context cards within site archives. Occasionally comments

have been made in published cemetery reports concerning variation in arm position. For example, at St Helen-on-the-Walls, York variation in arm position (either beside or placed on the body) was not found to correlate to age, sex or grave type (Dawes and Magilton 1980: 13-14). However at St Andrew's Fishergate, York, most of the phase 4 (late 10th to 12th century) females were found to have both of their arms placed on the body (Stroud and Kemp 1993: 151). Unfortunately, even when arm position was noted in the site archives, it could not be recorded for all individuals, as many graves were either truncated or disturbed. Consequently variation in arm position was not investigated further in the present study, although it remains an intriguing potential avenue of inquiry for future research.

6.2 Grave types

The most striking variation in burial practice in the late Anglo-Saxon period was the use of different forms of deposition, particularly the use of different 'containers' for the body. While many excavated graves are plain with no surviving evidence of enclosure of the body, there is a great deal of evidence for the use of coffins, boat parts, wooden planks or biers, sarcophagi and grave linings made of stone or other material. Many of these burial types (including sarcophagi, lined graves and the use of boat parts) appear to be new introductions not evident in the study region during the 5th and 6th centuries, while previously used forms such as coffined burial appear to become increasingly common (although it is difficult to assess to what extent this is a real pattern due to the differential preservation of wood on archaeological sites). It is apparent that the body is increasingly likely to have been enclosed for burial during the mid to late Anglo-Saxon period (Thompson 2002: 232). These different burial 'containers' have been termed 'burial or grave types' in the present study. This is to differentiate them from 'grave variations', such as charcoal burials and pillow stones, which could be combined with different grave types. The diverse range of burial types evident during the late Anglo-Saxon period will now be described, and the

relative proportions of the grave types in each cemetery included in the present detailed analysis will be discussed.

6.2.1 Plain earth graves

The vast majority of excavated early medieval graves have no evidence of any form of body container. While many of these are the burials of individuals who were deposited straight into an earthen grave, we should remember that organic materials including wood are rarely preserved on archaeological sites. The presence of preserved coffins at both St Peter's Barton-on-Humber and Swinegate in York has revealed that most of the early medieval coffins were held together with small wood dowels rather than metal nails (Rodwell and Rodwell 1982: 301) (see Figure 6.2). Consequently if these coffins had decayed fully without leaving a stain there would be no evidence that a coffin had been present. In addition, other organic items used in the mortuary ritual would not be preserved, thus reducing the evidence obtainable from the graves. The occasional presence of shroud pins indicates that shrouds were used during the period (Thompson 2002: 231). No shroud pins were recorded at any of the cemeteries discussed in detail here, however green stains on the bones of two skeletons from the phase 4 cemetery at St Andrew's Fishergate indicate that copper alloy shroud pins may once have been present. An unspecified number of shroud pins have been recovered from St Helen-on-the-Walls York and a single shroud pin was found during the excavations at Whitby Abbey Headland. In sum, whilst many of the individuals included in the present study were recorded by the excavators as being in a plain earth grave, it must always be remembered that some of the deceased may have undergone quite different funerary rites that have left no surviving trace.

6.2.2 Coffins

There are many descriptions of the use of wooden coffins in Anglo-Saxon documentary sources that usually refer to the burials of important

individuals such as saints, bishops and royalty, although occasionally insights are given about the form of burial accorded individuals of a lower status. Many of the descriptions of burials do not distinguish between wooden and stone coffins, however there is some indication that burial in a wooden coffin was less usual for individuals of a particularly high status. For example, Bede's description of the death of Saint Æthelthryth, the Abbess and founder of a monastery at Ely, states that 'when she died she was buried by her own command in a wooden coffin in the ranks of other nuns, as her turn came' (Bede HE iv: 19). Sixteen years later Æthelthryth's uncorrupted body was exhumed under the orders of Abbess Seaxburh and placed in a stone sarcophagus within the church, where it was venerated by the nuns (Bede HE iv: 19). These passages indicate that Æthelthryth deliberately chose the simple coffined burial usually accorded the remainder of the nuns as an act of piety and humbleness. However Abbess Seaxburh felt that Æthelthryth should have been accorded a more elaborate burial, presumably because it was thought to be a more fitting burial for an Abbess and former Queen. Bede also recounts the story of a servant who was so grievously ill that his wooden coffin had already been prepared before he was saved from death by John of Beverley (Bede HE v: 5). This passage also indicates that coffined burial was not restricted to the upper echelons of society.

Archaeological evidence throws further light on the use of wooden coffins. Evidence from waterlogged cemeteries with good organic survival reveals that many individuals were accorded a coffined burial during the late Anglo-Saxon period. At both St Peter's Barton-on-Humber and Swinegate in York, where many well preserved coffins were excavated, approximately half of the burials were contained in coffins. In addition, the presence of preserved wood coffins has been reported at St Helen's Cumberworth Lincolnshire (Green 1997). Other evidence of coffins (coffin stains, nails and coffin fittings) was present at many of the other late Anglo-Saxon cemeteries in the study area, including Barrow-on-Humber, North Kelsey, Whitton (all Lincs.),

St Mark's and St Paul-in-the-Bail Lincoln, Thwing, York Road Kilham (E Yorks.), St Andrew's Fishergate, York Minster, St Helen-on-the-Walls and Lamel Hill in York, Whitby Abbey Headland, Ailcy Hill Ripon, Kirkdale and St Martin's Wharram Percy (N Yorks.), Addingham and Tanner's Row Pontefract (W Yorks.).

Unlike sites with preserved coffins, at sites where evidence of coffins was in the form of coffin stains, iron nails or iron straps, coffins were not recorded for a high proportion of graves. This highlights the problems caused by loss of evidence that one encounters when studying funerary practice. When coffins are reported in publications and site archives the evidence used to infer their presence may vary considerably. Thus graves where wood survived or a coffin stain was recorded during excavation are categorised in the present study differently from those where metal coffin fittings were present. The latter category includes graves where iron brackets, hinges and padlocks, or a large number of nails left *in situ* forming a rectangular outline around the body were present. A third category, '?Coffin' was assigned to those graves where some nails were recovered, but did not form a coffin outline. In urban centres, nails from underlying Roman deposits could easily become incorporated into the later Anglo-Saxon grave fill and thus be mistakenly used to infer the presence of a coffin. Nail making remained unchanged throughout the Roman and medieval periods, making it impossible to date the nails (J. Mann, CLAU, *pers. comm.*). This was a particular problem at St Mark's, Lincoln. During the excavation of this site the presence of nails in graves was noted in the site archive, however the distribution and number of these nails was not given in the final publication (Gilmour and Stocker 1986: 16). These nails were interpreted as nails from coffins that were largely constructed using wooden pegs, and it was noted by Gilmour and Stocker (1986: 16) that the smaller nail-like objects may have been shroud pins.

The form of the coffins used in the study area could vary considerably. Most of the coffins from St Peter's Barton-on-Humber and Swinegate were of a simple construction. These coffins were built of planks held together by wooden dowels or pegs, although occasionally they were nailed. Both cemeteries also contained examples of dug out oak coffins (Rodwell and Rodwell 1982: 291, 311-2; Bagwell and Tyers 2001).

Thirty-three of the graves at St Peter's Barton-on-Humber contained iron clenches and roves, typically used in the construction of clinker-built boats. Unfortunately most of these were not accompanied by large amounts of surviving wood, so the exact form of these coffins could not be determined. However surviving traces of wood from one grave indicates that the coffin base was made of two boards lapped and riveted together, with the sides riveted to the base and lid (Rodwell and Rodwell 1982: 291-2). The number of clenches and roves found varied from one or two within a burial (here described as '? clinker built coffin') to graves containing clear lines of roves indicating where the sides were riveted to the base and lid ('clinker built coffin'). In one example a row of clenches and roves above the skeleton indicated that the lid was joined along the central axis. It has been suggested that such a coffin could have been triangular in cross section (Rodwell and Rodwell 1982: 291-2). However it is also possible that the lid was constructed of two planks joined together along the central axis by clenches and roves, with the lid attached to vertical coffin sides by dowels (see Figure 6.3).

One grave at York Minster also contained clenches and roves. This grave (YM 93/XK 207) was orientated west-east, differing from the normal southwest-northeast orientation of graves in this cemetery. The skeleton was laid upon a bier constructed of three (decayed) planks held together by two parallel rows of clenched nails (Phillips and Heywood 1995a: 86-7). Two different interpretations of this evidence have been offered. Birthe Kjølbye-Biddle (1995: 500-505) has interpreted the burial as the grave of a Viking laid

in a small boat (see Figure 6.4), or possibly a cart. However the excavators, Phillips and Heywood, did not feel that the size of the grave allowed for anything larger than a coffin base, preferring to interpret this as a bier made out of part of a boat (Phillips and Heywood 1995a: 86-7). The presence of so many coffins constructed with clenches and roves at St Peter's Barton-on-Humber supports this second interpretation, and suggests that sometimes late Anglo-Saxon coffins were constructed reusing boat parts. Thus although the use of clinker built wood may have been significant, and may even have been associated with Viking ethnicity (Richards et al. 1995: 62-5; Richards 2002: 168-9), it remains probable that this was merely a convenient alternative source of timber.

Five of the burials at York Minster were contained in iron-bound wooden chests (one of the four chests contained two individuals). The fittings found in these graves included hinges and locks which would have been redundant on coffins, hence their interpretation as reused domestic storage chests (Kjølbye-Biddle 1995: 517; Phillips and Heywood 1995a: 83). One of the skeletons was flexed (YM 79/SA 36), presumably so that it would fit inside the chest (see Figure 6.5). These four chest graves were so close together that they intercut, leading to the interpretation that these individuals may have been connected to each other in some way during life (Phillips and Heywood 1995a: 84). The use of iron bound burial containers has also been observed at Ailcy Hill Ripon, Whitby Abbey Headland and Thornton Steward in N Yorks., Thwing and Garton Slack in E Yorks., Tanner's Row Pontefract in W Yorks., St Paul-in-the-Bail Lincoln and Whitton in Lincs. (Hall and Whyman 1996: 99). However the more elaborate locks have only been found at York, Aicly Hill Ripon, Thwing and Tanner's Row Pontefract. The use of chests as coffins at these cemeteries may be associated with the burial of high status individuals, and may be connected to high-status or monastic cemeteries. Thus chest burials have accordingly been treated separately here from the other forms of coffined burial.

It is evident from the discussion above that coffins, in many forms, were present in many late Anglo-Saxon cemeteries. Within the sub-sample of six cemeteries that were analysed in more detail in the present research, clear evidence of coffins, represented by preserved wood, coffin fittings or a wood stain, were present at St Peter's Barton-on-Humber, Swinegate, York Minster, and Barrow-on-Humber (Rodwell and Rodwell 1982; Pearson 1989; Phillips and Heywood 1995a). Chest burials were identified at York and burials containing parts of clinker-built boats were excavated at St Peter's Barton-on-Humber and York Minster (Rodwell and Rodwell 1982: 291-2; Phillips and Heywood 1995a: 86-7). A number of graves containing nails were excavated at St Mark's Lincoln, however it was not possible to determine whether or not these were residual Roman nails (J. Mann, CLAU, *pers. comm.*). Possible coffins were also identified by the presence of nails at Barrow-on-Humber. The only evidence of coffined burial at St Andrew's Fishergate, York was the occurrence of iron stains on nine skeletons and by the presence of coffin fittings in one of the graves (Stroud and Kemp 1993: 160-1). Chest burials and burials containing clenches and roves were initially treated separately in the detailed analysis of six cemeteries, below, to determine if they were significantly different from other forms of coffined burial. They were later also included in the coffined burial category for statistical tests requiring a high number of cases per category. In addition, all statistical analyses concerning coffins were undertaken twice, first including possible coffins and then excluding possible coffins.

6.2.3 Lined graves

Stone-lined graves were present at Barrow-on-Humber, Fillingham, St Mary's Stow, Scampton St Mary's Stow and St Giles Avenue Sleaford (Lincs.), St Mark's and St Paul-in-the-Bail in Lincoln, Kirkdale, Whitby Abbey (both N Yorks.) and at York Minster. Partially stone-lined graves are recorded at St Peter's Barton-on-Humber, Saltergate in Lincoln, Tanner's

Row Pontefract (W Yorks.) and St Helen-on-the-Walls York. In addition a grave with a mortar lining and a grave with a mortar base were excavated at St Helen-on-the-Walls York, and a grave with a mortar bed and a tile-lined grave were excavated at York Minster.

In the six cemeteries studied in detail, stone-lined graves were present at York Minster, Barrow-on-Humber and St Mark's Lincoln, although they only represented a small proportion of the burials at each of these cemeteries. In contrast, eight out of the nine excavated graves at Fillingham were lined with stone, which suggests that there was less variation in grave type in this rural cemetery, and that stone grave-linings were common in some late Anglo-Saxon cemeteries, possibly in areas where stone was readily available (Buckberry and Hadley 2001b: 13). Stone grave-linings could be constructed of a few large pieces of stone or alternatively smaller stones were coursed like brickwork. Most stone linings surrounded the whole grave, however at York Minster some burials were only partially lined, with stones surrounding the upper body down to the lower arms (Phillips and Heywood 1995a: 85). Such grave linings were occasionally difficult to distinguish from pillow stones due to the large amounts of building rubble present at the site. Indeed, much of this building rubble was used to line graves and as pillow stones (Phillips and Heywood 1995a: 85). At Fillingham the stone linings narrowed at the head, mimicking the presence of pillow stones, although additional pillow stones were found in three of the graves (see Figure 6.6). At York Minster one grave was partially lined with tiles (YM 16/ST Q) and a second individual was placed on a mortar bed (YM 8/ST H), both interpreted as variations on stone-lined graves by the excavators (Phillips and Heywood 1995a: 84). At St Peter's Barton-on-Humber a single individual was buried with seven stones placed around the head and chest, in what appears to be a partial stone-lined grave.

6.2.4 Sarcophagi, lead coffins and crypts

The use of stone coffins or sarcophagi during the Anglo-Saxon period is evident from historical sources. Both Bede's Life of St Cuthbert and the Anonymous life of St Cuthbert report that the saint was buried in a stone sarcophagus given to him by Abbot Cudda (Bede VSC 37; Anon VSC 13). In his Ecclesiastical History Bede records that the East Saxon King Sebbi and Saint Æthelthryth were also buried in sarcophagi (Bede HE iv: 11; iv: 19).

Only one sarcophagus was present in the six cemeteries included in the detailed analysis. This was found at York Minster (YM 55/ST 8). It contained the remains of four individuals, only one of whom was partially articulated. The sarcophagus was located under the 11th-century transept, indicating that all of these individuals had been placed in the sarcophagus prior to the building of the 11th-century church (Phillips and Heywood 1995a: 82). Only one further sarcophagus was identified during the present survey of cemeteries in Lincolnshire and Yorkshire. This was found during excavations at Kirkdale, North Yorkshire, and contained later medieval charnel (Rahtz and Watts 1997: 422). It has also been noted that a second sarcophagus may have been reused to make the inscribed sundial above the south doorway of the church (Watts et al. 1997: 89). In addition to the sarcophagi found at Kirkdale, stone coffins have reportedly been found at the Former Gas House site in Barrow-on-Humber sometime before 1856 (White 1856), and in Cornhill Square Lincoln in 1848 (City of Lincoln Archaeology Unit 1999). Unfortunately neither of these records of possible late Anglo-Saxon sarcophagi can be corroborated. In addition, sculpted panels that may or may not have come from sarcophagi have been found at Hovingham and South Kyme (Lang 1991: 146-8; Everson and Stocker 1999: 248-51).

The rarity of Anglo-Saxon sarcophagi and their association with royalty and important ecclesiastics in historical documents suggests that sarcophagi were

commissioned (Hadley 2001a: 104). Certainly the presence of a sarcophagus at York Minster, a cemetery known to have included the graves of many noteworthy individuals, and thus likely to be of higher status than other cemeteries in York, suggests that sarcophagi may, indeed, have been reserved for the social elite.

A single possible lead coffin that may date to the Anglo-Saxon period has been identified in Lincolnshire and Yorkshire: in 1928 a possible lead coffin and two skeletons were unearthed one of the gardens close to the Methodist Chapel in Kilham (E Yorks.). These burials are believed to have come from the same cemetery as the skeletons excavated in 1976 and 1989 in Middle Street Kilham, and radiocarbon dated to the 8th to 10th centuries as part of the present research (see Section 3.8.5).

Crypts may also have been used for burial or the display of relics during the late Anglo-Saxon period, as has been suggested for the crypt at Repton (Derbs.) (Biddle 1986: 16-22). One Anglo-Saxon crypt is known from within the present study area, at Ripon. This may also have been a place of burial or used for the display of relics, although it is notable that the most famous interment at Ripon, that of St Wilfrid, was described as being buried on the south side of the altar in the church of St Peter and not in the crypt (Bede HE v: 19).

6.3 Discussion of grave types present in the case study sample

Each cemetery included in the detailed analysis will now be examined in turn, to establish the range and proportion of grave types in each cemetery. This will reveal that the range and variation of burial types within a cemetery can vary considerably. It will show that in waterlogged cemeteries, coffined burial was at least as common as plain earth graves and thus that a cemetery with no organic survival probably once contained many coffined burials.

6.3.1 York Minster

The cemetery at York Minster showed the widest variation in grave types out of all of the cemeteries studied. Grave furniture included one stone sarcophagus (containing four individuals, each recorded here separately), four stone-lined graves, a grave with a mortar bed, a tile lined grave, coffined burials, chest burials, a plank burial, and one individual placed on part of a boat. More than half of the burials, however, were recorded as plain earth graves, and no grave type was recorded in the published report for a further seventeen individuals. It is likely that those for which the burial type was not recorded were in plain earth graves, as other grave types are usually commented on in archaeological reports. However, it must be remembered that some of these plain earth graves may have once contained wooden coffins or planks that did not survive.

The striking diversity in burial practice observed at York Minster may have been partially due to the lack of later burials disturbing the late Anglo-Saxon graveyard. The excavated areas were sealed by the 11th-century transept, which protected these burials, possibly enhancing the chances of survival of different types of burial. The frequencies of each burial type (based on the numbers of individuals in the graves) are given in Table 6.1, below, and are shown in Figure 6.7.

Grave Type	Number of Individuals		Percent of Individuals (%)
Unknown	17		14.9
Plain earth	69		60.5
Coffin (stain/wood)	8	16 'coffined' burials	7.0
Coffin (fitting)	3		2.6
Chest	5		4.4
Plank	1		0.9
Clinker built plank	1		0.9
Stone-lined	4	6 'lined' burials	3.5
Tile lined	1		0.9
Mortar lined	1		0.9
Sarcophagus	4		3.5

Table 6.1: Grave types present at York Minster

The diversity in burial type probably reflects the known high status of the York Minster cemetery at this time. St Peter's (York Minster) was a royal foundation, built by King Edwin in 627 (Bede HE ii: 14). Historical records indicate that at least thirteen people of note were buried in York (including King Edwin's head – his body was buried at Whitby). Five of these historical burials were reported as occurring at St Peter's (York Minster). The remaining eight individuals were not described as being buried at the Minster specifically, but rather at 'the church' in York (see Table 6.2). However, the early date of York Minster (prior to the foundation of many other pre-Conquest churches in York) (Tweddle et al. 1999), and its status as a royal foundation means that many of the other historic York burials were likely to have been at St Peter's.

Name	Position	Date of Burial	Location of Burial	Historical Source	Reference
Æthelhun	Son of King Edwin	627 x 633	'in the church of York', Rollason suggests St Peter's	Bede HE ii: 14	(Colgrave and Mynors 1969: 187-9)
Æthelthryth	Daughter of King Edwin	627 x 633	'in the church of York', Rollason suggests St Peter's	Bede HE ii: 14	(Colgrave and Mynors 1969: 187-9)
Edwin (head)	King of Northumbria	633	His head was buried at St Peter's	Bede HE ii: 20;	(Colgrave and Mynors 1969: 205)
Ælfwini	Sub-King of Bernicia	679	Body brought to York, presumably for burial. Rollason suggests at St Peter's	Life of Bishop Wilfrid 24	(Colgrave 1927: 51)
Eadberht	King of Northumbria	After 738	'in the city of York, in the same chapel' [as his brother Egbert]. Rollason suggests at St Peter's	ASC 738; Chronicle of Æthelweard 2:15	(Whitelock 1955: 161; Campbell 1962: 22)
Egbert	Archbishop, brother of King Eadberht	After 738	'in the city of York, in the same chapel' [as his brother Eadberht]. Rollason suggests at St Peter's	ASC 738; Chronicle of Æthelweard 2:15	(Whitelock 1955: 161; Campbell 1962: 22)
Eanbald	Archbishop of York	796	'in the church of the blessed Apostle Peter'	History of the Kings	(Whitelock 1955: 249)
Osbald	King of Northumbria	799	'in the church of the city of York'. Rollason suggests at St Peter's	History of the Kings	(Whitelock 1955: 250)
Guthfrith	King of Northumbria	895	'in the high church', Rollason suggests St Peter's	Chronicle of Æthelweard 4:3	(Campbell 1962: 51)
Swein	King of the Danes	1014	In St Peter's (although other accounts just say at York)	Geffrei Gaimar History of the English	(Rollason 1998: 174)

Tostig	Earl of Northumbria	1066	Buried at York. Possibly at St Peter's or St Olave's	William of Malmesbury Deeds of the Kings of England	(Rollason 1998: 210)
Ealdred	Archbishop of York	1069	In St Peter's at his bishop's seat	ASC D 1069	(Rollason 1998: 198)
Thomas	Archbishop of York	1100	In St Peter's next to Archbishop Ealdred	Chronicle of the Archbishops of York	(Rollason 199: 199)

Table 6.2: Historical burials at York associated with the Minster.

Unshaded entries indicate burials at St Peter's (York Minster), those shaded are believed to have been buried at St Peter's, although the church was not specified by the historical source.

6.3.2 Swinegate and St Andrew's Fishergate, York

The cemetery at Swinegate, thought to belong to the church of St Benet's (Pearson 1989), shows much less variation in burial type than the Minster. Only plain earth graves, plain coffins (without fittings) and planks were recorded at the cemetery (see Figure 6.8). It must be remembered that without the survival of wood at this cemetery all of these would have appeared to have been plain earthen graves, as no metal coffin fittings were recovered.

At St Andrew's Fishergate there was much less evidence of coffins or other grave furniture than at Swinegate. However, this cemetery was not waterlogged, and consequently no evidence of dowel-pegged or dug out coffins would survive. The presence of coffins has been inferred for a small number of burials on the basis of brown iron stains on the skeleton and the presence of nails in the graves. One burial contained a coffin fitting (see Figure 6.9). It remains possible that many more of the burials at St Andrew's might once have been contained within a coffin.

6.3.3 St Peter's Barton-on-Humber and Barrow-on-Humber

The diversity in burial type at St Peter's Barton-on-Humber was again quite high, due to the high levels of organic preservation (see Figure 6.10). Here evidence of coffined and plank burials was frequent, along with some evidence of coffins and biers made using clenches and roves, thought to have been parts of clinker-built boats (Rodwell and Rodwell 1982: 191-2). Few of the coffined burials had evidence of coffin fittings, again indicating that many more coffins may have been present on sites with no organic survival. One burial was found in a partially lined stone grave. Just less than half of the burials at St Peter's were in plain earth graves.

There was no organic survival at Barrow-on-Humber, which is reflected in the lack of evidence for coffined burial. One grave contained nails and a

metal fitting, indicating that a coffin was once present. Given the multitude of coffins without metal fittings at Swinegate and St Peter's Barton-on-Humber, it is likely that many more individuals were buried in coffins at Barrow-on-Humber. In addition, five individuals were buried in stone-lined graves (see Figure 6.11).

6.3.4 St Mark's Lincoln

Coffins were rarely represented at St Mark's Lincoln. Here coffins were inferred by the presence of nails in graves, however none of these was found *in situ*, outlining a coffin. Thus they could represent residual Roman nails displaced from the Roman levels below the churchyard. Two individuals were buried in stone-lined graves (see Figure 6.12). The variation in burial practice at St Mark's is strikingly similar to that at Barrow-on-Humber, with some evidence of coffins and a small percentage of stone-lined graves present.

6.3.5 Grave types – some conclusions

The dead buried in the six cemeteries studied here in depth were accorded a variety of grave types (summarised Table 6.3). While many were placed directly into an earthen grave, a large proportion of the population was buried in some form of container. The evidence from Swinegate and St Peter's Barton-on-Humber indicates that approximately half of the population may have been buried in some form of coffin, usually made of wood. It is likely that comparable numbers of wood coffins were used in other cemeteries, however these have left no surviving trace. Stone-lined graves, chest burials and sarcophagi in particular were much less common in most cemeteries, and may have been a more prestigious form of burial. However the popularity of stone-lined graves at Fillingham may indicate that this form of burial was merely a variation of coffined burial, which varied in prevalence according to locality and possibly the availability of materials.

Grave Type	YM	SWG	SAF	SPB	BW	SML	Total
Unknown	17 (14.3%)	1 (1%)	-	17 (2.7%)	1 (1%)	-	36 (3%)
Plain earth	69 (58%)	53 (53%)	121 (92.3%)	261 (40.9%)	89 (91.8%)	103 (81.1%)	699 (57.7%)
Coffin (stain/wood)	8 (6.7%)	38 (38%)	-	230 (36.05%)	-	-	272 (22.8%)
Coffin (fitting)	3 (2.5%)	-	1 (0.8%)	14 (2.2%)	1 (1%)	-	18 (1.5%)
?Coffin	5 (4.2%)	-	9 (6.9%)	65 (10.2%)	1 (1%)	22 (17.3%)	100 (8.3%)
Plank	1 (0.8%)	8 (8%)	-	14 (2.2%)	-	-	23 (1.9%)
Clinker built coffin (wood/stain)	-	-	-	15 (2.35%)	-	-	15 (1.2%)
Clinker built coffin (fitting)	-	-	-	8 (1.25%)	-	-	8 (0.7%)
?Clinker built coffin	-	-	-	9 (1.4%)	-	-	9 (0.7%)
Clinker built plank	1 (0.8%)	-	-	4 (0.6%)	-	-	5 (0.4%)
Chest	5 (4.2%)	-	-	-	-	-	5 (0.4%)
Stone-lined	4 (3.4%)	-	-	-	5 (5.2%)	2 (1.6%)	11 (0.9%)
Other lined	2 (1.7%)	-	-	1 (0.15%)	-	-	3 (0.2%)
Sarcophagus	4 (3.4%)	-	-	-	-	-	4 (0.3%)

Table 6.3: Grave types for cemeteries included in detailed analysis (see Appendix I for Abbreviations).

It would appear that levels of variability increase in cemeteries used by the higher echelons of society. The variation in burial practice at York Minster appears to reflect the fact that individuals of a very high status were buried in the vicinity (the exact location of the Anglo-Saxon Minster remains unknown). These high status graves are likely to have attracted other prestigious burials, as individuals of a slightly lower, but still high social status, sought to mark out their burials and possibly emulate royal and other elite graves. Previous studies have shown that burial location within

cemeteries could reflect social status, with burial within or close to the church seen as particularly desirable, along with locations close to funerary monuments, 'founder graves' or access routes (Hadley 2001a: 130). The variation in burial type seen at York Minster is paralleled by that seen during the excavations of Winchester Old and New Minsters. At Winchester evidence of coffins, chest burials and sarcophagi have been excavated (Kjølbye-Biddle 1992: 223-4). This level of variation in grave type contrasts strongly with the other cemeteries included in the present detailed study, none of which is believed to have served a community of such high social standing. Thus levels of variation in burial practice could be used to infer the relative status of a cemetery, reflecting the social status of the burial community.

Levels of variation in grave type appear to have been much more uniform for rural and lower status urban cemeteries. At Fillingham 87.5% of the excavated articulated burials were in stone-lined graves, with the only burial not conforming to this rule dating to the 7th or 8th century (Field 1983; Buckberry and Hadley 2001b: 13). St Mark's Lincoln, Swinegate and St Andrew's Fishergate all show relatively low levels of variation in burial type. At St Mark's the majority of the burials were either in plain earth graves or possibly coffins, at St Andrew's Fishergate all of the burials were in plain earth graves or possible coffins and at Swinegate all of the burials were in either plain earth graves, simple coffins or had wooden planks. Thus these cemeteries appear to have served lower status communities than the York Minster cemetery. Overall it is apparent that most cemeteries, both urban and rural, contained a small number of the wide selection of grave types used during the late Anglo-Saxon period, and that high status cemeteries such as York Minster contained a wider range of grave types. The increased numbers of stone sculpture at cemeteries used by the mercantile elite would suggest that these cemeteries lay somewhere between the high status cemeteries like York Minster, and the more ordinary cemeteries, for example

St Andrew's Fishergate, Fillingham, St Peter's Barton-on-Humber and Barrow-on-Humber. However, at the only cemetery in the detailed study presented here associated with the mercantile elite, St Mark's Lincoln, the range of grave types was similar to those for the lower status urban and rural cemeteries. Interestingly, however, St Mark's Lincoln does have a wider range of grave variations (variations in burial rite that occur in conjunction with different grave types) present in the cemetery. The range of grave variations observed in Lincolnshire and Yorkshire, with specific reference to the six cemeteries studied in detail, will now be discussed.

6.4 Grave variations

The term grave variations is used here to describe aspects of burial practice that could occur with any of the different grave types discussed above. The main variations encountered in the present study were the use of pillow stones, charcoal burial, wands, grave markers and carved grave covers. These will now be described in more detail.

6.4.1 Pillow stones and other stones

In the late Anglo-Saxon period stones were often placed around the head as though to support the skull. These could be in the form of a pair of stones on either side of the skull (leading to the name 'ear-muff stones'), a single stone either by the side or behind the skull, or a series of three of more stones surrounding the skull. This practice may have originated from the inclusion of chalk pillows behind the skull, as seen at the early to mid Anglo-Saxon cemetery at Castledyke South, Barton-on-Humber (Drinkall and Foreman 1998: 214). The meaning of pillow stones is unknown, however it has been suggested that these were placed to secure the head of the deceased individual either looking to heaven or facing the east, in anticipation of the resurrection (Daniell 1997: 161). Alternatively the uncomfortable stones could have been used as a sign of penitence or humility (Daniell 1997: 160). The one example of the use of pillow stones from St Andrew's Fishergate

may have been purely functional, as the individual concerned had been decapitated (Stroud and Kemp 1993: 153; Daniell 1997: 160; Hadley 2001a: 100). Pillow stones were present in many late Anglo-Saxon cemeteries in Lincolnshire and Yorkshire, including St Peter's Barton-on-Humber, Fillingham and Stow (Lincs.), St Paul-in-the-Bail Lincoln, St Mary's Lockington (E Yorks.), Kellington and St Martin's Wharram Percy (N Yorks.) and St Andrew's Fishergate York.

The frequencies of the use of pillow stones within the six cemeteries studied in detail varied considerably, from just one individual at St Andrew's Fishergate (0.8%), Swinegate (1.0%) and Barrow on Humber (1.1%) to four individuals at York Minster (3.4%) and forty-nine individuals at St Peter's Barton-on-Humber (7.7%). In contrast, at Fillingham three out of the four graves with the skull present that were excavated in 2000 had pillow stones, and the stone lining of the fourth burial became more narrow around the head, supporting the skull in the same way as pillow stones. This evidence may reflect a more uniform burial practice within small rural cemeteries.

Occasionally other stones have been found that were deliberately placed in the grave. These include white quartz stones found in graves at Kellington and Whitby Abbey Headland (both N Yorks.), and stones that were indistinctive in appearance but were placed in the mouths of two individuals and on the eyes of a third individuals at Fillingham (Lincs.). The deposition of stones in graves has rarely been discussed in detail, however it has been suggested that the white colour of the quartz stones may have symbolised purity (Freke 1988: 90). It has also been noted that 'the casting of stones' was condemned by William of Wykeham, Bishop of Winchester, in 1384, a decree that may refer to a practice similar to the placement of stones in graves in the late Anglo-Saxon period (Daniell 1997: 165).

6.4.2 Charcoal burials

Burial containing layers of charcoal occurred from the 9th to 12th centuries (Daniell 1997: 158). The charcoal could be spread across the bottom of the grave under the body, or over the body or coffin and is sometimes found up the sides of the grave cut (Kjølbye-Biddle 1992: 228-9; Daniell 1997: 158). Many charcoal spreads are several centimetres thick, however less dense layers of charcoal do occur. These can cause problems with interpretation, as it may be difficult to determine the difference between a thin spread of charcoal and a charcoal rich soil (Kjølbye-Biddle 1992: 231). Charcoal burials are often found in clusters and are frequently located close to a church (for example at St Mark's Lincoln) and thus appear to be a short-lived but high-status variation in the burial rite (Hadley 2001a: 99).

It is difficult to establish what the significance of charcoal burial was, and various interpretations both functional and symbolic have been suggested. Spreads of charcoal may have been used to mark the location of the grave (Daniell 1997: 158; Hadley 2001a: 99), possibly to prevent the accidental disturbance of the burial during later grave digging. However this would only apply for spreads above the coffin or body. Alternatively the charcoal may have been used to soak up decomposition fluids and odours, especially if a body was transported a long-distance prior to burial (Daniell 1997: 159; Hadley 2001a: 99). Charcoal burials have also been interpreted as a sign of penitence and humility, as dying monks were sometimes placed on a bed of penitential ashes (Kjølbye-Biddle 1992: 231; Daniell 1997: 159; Hadley 2001a: 99; Thompson 2002: 420). Whilst the meaning of charcoal burial remains unknown, its deposition as part of the burial ritual involved extra effort by the mourners. Thus it may be a sign of social status. Certainly the frequent occurrence of charcoal burials at high status cemeteries such as York Minster and Winchester Old Minster (Kjølbye-Biddle 1992: 228-31; Phillips and Heywood 1995a: 87-8), and their clustering close to the church at other cemeteries may be further indication of the rites used in burials of a higher

status. Charcoal burials have been excavated at several sites in Lincolnshire and Yorkshire, including Barrow-on-Humber, St Mark's Lincoln, and York Minster and St Helen-on-the-Walls, York. A thin spread of charcoal above the burial of an adult and a child at St Martin's Wharram Percy (N Yorks.) was interpreted as a decayed coffin lid by the excavators (Bell and Beresford 1987: 59), but could also be interpreted as a charcoal burial.

Charcoal burials were found in four of the six cemeteries included in the present study. The frequency of individuals interred with a spread of charcoal varied considerably, from one individual at Barrow-on-Humber (1.03%) to three individuals at St Peter's Barton-on-Humber and five at St Mark's Lincoln and (3.94% and 0.47% respectively), to 14 individuals at York Minster (12.07%). The higher prevalence of charcoal burials at York Minster is probably linked to the high status of the cemetery. One of these 14 individuals was also buried under a stone grave slab, a variation in burial practice that will be discussed below.

6.4.3 Wand burials

Thin hazel rods were found in several burials at St Peter's Barton-on-Humber. These are similar to wooden rods that have been found in later medieval burials at Hull (E Yorks., see Figure 6.13), Sandwell (W Mids.), Hulton Abbey (Staffs.) and Worcester (Daniell 1997: 167) and in the 11th- to 12th-century cemetery at Guildhall, London (Bateman 1997: 117-8).[30] The more sturdy rods like the one found at Worcester (which had a metal spike at the end) have been interpreted as pilgrim staffs, however it is unlikely that more flimsy rods, like those found at St Peter's Barton-on-Humber, would have been strong enough to be used as a pilgrim staff. These have been interpreted as 'wands' symbolic of the medieval position of wand- or rod-bearers, mentioned in documentary evidence for Westminster Abbey

[30] Due to the rarity of burials containing wooden rods in order to find analogous examples it is necessary to refer to rod burials from across the country.

(Daniell 1997: 167). Alternatively, the rods have been interpreted as *metewands* or *meteyards*, which were used for measurement in the 15th and 16th centuries (Daniell 1997: 168). Whatever the function and meaning of these rods or wands (which may have changed over time and have differed between cemeteries), they are rarely found and only in waterlogged conditions. Thus they may once have been present in many cemeteries.

6.4.4 Grave covers and grave markers

Sculptural evidence indicates that late Anglo-Saxon burials were often marked by carved or plain stone grave slabs, upright markers and sometimes even stone crosses. Many of these would have been above ground, and would serve to commemorate the dead (Hadley 2001a: 126), however it should be noted that not all sculpture was funerary in nature (Hadley 2000a: 214). Whilst most of the known Anglo-Saxon sculpture has not been found *in situ*, several recumbent grave slabs and inscribed stone markers were found above graves at York Minster (Phillips and Heywood 1995a: 84). A single carved grave marker was found *in situ* above the chest of a burial at St Mark's Lincoln (Figure 6.14). In addition, a large square cut post hole was found over a second grave, which was interpreted as that for a second stone marker (Gilmour and Stocker 1986: 21). These two stone marked graves represent 1.57% of burials. Four post holes, probably for wooden markers, were also found associated with graves at St Mark's (3.15% of burials).

Whilst relatively few stone markers have been found (in comparison to the number of excavated burials), the regularly planned late Anglo-Saxon cemeteries indicate that many graves were once marked, probably by wooden posts, as, for example, at Addingham (W Yorks.). Post holes interpreted as evidence of grave markers have been found associated with 26 graves at Thwing (E Yorks.). A single plain stone was used to mark the grave of a child at St Andrew's Fishergate (representing 0.76% of the phase 4 burials), and head- and/or foot-stones have been found over four graves at

St Martin's Wharram Percy. In addition, graves covered with flat plain stones have been excavated at Barrow-on-Humber and Fillingham. This use of plain stones as grave covers and markers may represent the emulation of more elaborate burial rites that utilised carved stonework.

Rarely, grave markers and crosses carry inscriptions of personal names indicating whom the monument was commemorating. These are likely to have been for the very wealthy, and possibly just for the ecclesiastical elite (Hadley 2001a: 126). Several inscribed grave markers were found during the excavations of the high-status monastic site of Whitby Abbey in the 1920s, however it is unclear from the excavation records if any of these were found *in situ*. None of the Anglo-Saxon inscribed grave markers from York Minster was found *in situ*, however one grave marker with a reused Roman inscription (0.86% of burials) and nine stone grave covers (7.76% of burials), some with separate end stones (see Figure 6.15), were found *in situ* (Phillips and Heywood 1995a: 84). The abundant evidence of the use of grave markers, both found *in situ* and in unstratified contexts, indicates the increased use of more elaborate burials at this high status cemetery. Several pieces of sculpture with inscriptions have been found in churches, churchyards and other locations, including the late 7th- to early 9th-century cross shaft with an inscription to an Abbess Oedilburga, reputedly found in the village pond at Hackness (Lang 1991: 135-41).

6.4.5 Analysis of grave variations in the present sample

Whilst most of the grave variations occurred independently of each other, they could be combined. For example, one individual at York Minster was buried with charcoal and a grave cover, one individual from St Peter's Barton-on-Humber was buried with both charcoal and pillow stones and five individuals from St Peter's Barton-on-Humber were buried with pillow stones and wands. The grave variations were cross-tabulated with the

different grave types for St Peter's Barton-on-Humber (Table 6.4). This shows that grave variations were not limited to particular grave types.

	Plain Earth	Coffin (stain)	Coffin (fitting)	?Coffin	Plank	Stone-lined
Pillow Stones	11	24		9	2	
Charcoal	16	2		3		1
Wand burial		10				
Grave Cover	8					
Stone Marker	3			1		
Other Marker	6		1			
Cover and Charcoal	1					
Pillow Stones and Charcoal		1				
Pillow Stones and Wand		5				

Table 6.4: Comparison of grave variation and grave type at St Peter's Barton-on-Humber

Due to the small numbers of individuals accorded many of the different grave variations it is difficult to undertake more detailed analysis. However, 49 individuals at St Peter's Barton-on-Humber were buried with pillow stones. In addition, ten burials at St Peter's Barton-on-Humber had wands The wand burials were all in preserved coffins, highlighting the fact that wands will only survive in waterlogged conditions that also increase the likelihood of the survival of coffins. At York Minster, 14 individuals were buried with charcoal, and nine individuals were buried with grave covers (one of these was also buried with charcoal). These larger numbers of individuals buried with particular grave variations allow the demography of the subgroups to be analysed. These are given in Figures 6.16 to 6.19. Individuals of all ages and both sexes were buried with pillow stones at St Peter's Barton-on-Humber, although most of the pillow stones were in adult graves. In contrast, wands were only found with adults, most of whom were old adults (the foetus buried with wands was in the same grave as one of the adult females buried with wands). All of the charcoal burials at York

Minster for which there was skeletal data were of adults, however no skeletal data was available for eight of the 14 charcoal burials. Children and adults were equally as likely to be buried with grave covers at York Minster.

Grave variation	YM	SWG	SAF	SPB	BW	SML
Pillow Stones	3	1	1	43	1	
Pillow Stones and Charcoal				1		
Pillow Stones and Wand				5		
Pillow Stones and Artefact	1					
Charcoal	13			2	1	4
Charcoal and Cover	1					
Charcoal and Artefact						1
Wand burial				5		
Carved Grave Cover	9					
Plain Grave Cover					1	
Stone Marker	1		1			1
Marker and Artefact						1
Other Marker				1		4
Artefact	8	2		1		2

Table 6.5: Grave variations present at each cemetery included in the detailed analysis

It is apparent that the different grave variations could be used in the graves of adults and children, males and females. However, it is noticeable that a wider range of grave variations was present at York Minster than any other cemetery included in the detailed analysis (see Table 6.5, above). Both St Peter's Barton-on-Humber (although the high numbers of grave variations at St Peter's may be influenced by the high number of graves excavated and the waterlogged conditions at the site) and St Mark's Lincoln contain four different grave variations (some in different combinations). In contrast, few grave variations, both in terms of number of graves with variations and number of different variations present, were recorded at Swinegate, St Andrew's Fishergate and Barrow-on-Humber. The pattern in grave variations at these six cemeteries seems to indicate that cemeteries of a higher social status were more likely to contain a wider variety and greater number of grave variations than lower status cemeteries.

6.5 Cemetery demographies

The age and sex of each individual was estimated using the methods discussed in Chapter 4. A basic demographic graph was produced for each cemetery, to establish if the cemetery populations differed in any way. Pie charts were produced to establish if any sex biases were present in the cemetery populations. The possible reasons for any differences, both methodological and cultural, are discussed below.

6.5.1 York Minster

The age structure of the excavated cemetery population at York Minster is normal in comparison to excavated medieval cemeteries (Figure 6.20). Infants are underrepresented, possibly indicating that infants may have been buried in a different zone of the cemetery than that excavated, or that infant graves have been disturbed by later archaeology and intercutting graves or contained no recognisable bone. The numbers of other children present is similar to the proportion present in a model life table, indicating that younger and older children and adolescents were buried in the cemetery and were preserved and successfully excavated. Most of the adults recovered from the York Minster cemetery were not aged with any accuracy due to the incomplete nature and poor preservation of many of the excavated skeletons (Lee 1995: 559), and are recorded here and in the published report merely as 'adults'. However, the age distribution of those for which age data is recorded is relatively even, with no strong peak, although more individuals died during the mid-adult category (26 to 45 years). The adult sex ratio reveals that more males than females were recovered from this cemetery (Figure 6.21). It is possible that all of the individuals that could not be sexed were females, however this would still leave a bias towards male adults. This may reflect the monastic origins of the Minster, or the increased social importance of the male sex in the funerary ritual from the mid Anglo-Saxon period (Hadley forthcoming-b, see section 5.2, below) leading to the burial of

males in a cemetery and location of higher status. Alternatively it could indicate that this area of the cemetery was more popular for male burials for some other reason.

6.5.2 Swinegate

Infants are also underrepresented in the Swinegate population (Figure 6.22), however many more were present than at York Minster. The numbers of young and old children and adolescents present appears normal for a medieval cemetery. There were few young adults in this cemetery population, with more people dying after 25 years of age. Many individuals lived beyond 45 years. The sex ratio of the adults from Swinegate is roughly equal, with several individuals remaining unsexed (Figure 6.23). This would suggest that the areas of the cemetery excavated at Swinegate were largely representative of a normal cemetery populations dating to the late Anglo-Saxon or medieval period.

6.5.3 St Andrew's Fishergate

Again this population contains few infants, with much higher numbers of young children present (Figure 6.24). However the population is strikingly different from those at York Minster and Swinegate due to the high proportion of young to mid adults present. It is probable that this is, in part, due to the age categories used in the published cemetery report, which gives many individuals an age of 20 to 30 years (Stroud and Kemp 1993). Many of these individuals were probably over 25 years of age (certainly they were recorded as young), which would produce a more 'normal' age curve. The small proportion of old adults present may indicate that the population using this cemetery had a lower life expectancy than the other cemeteries in this study. It is equally possible that this younger population could partially reflect the ageing methods used by the osteologist, as studies revealing that many individuals frequently lived into old age have only been published subsequent to the analysis of the Fishergate skeletal material (see Sections 4.4

and 4.5).[31] This problem is equally applicable to other published cemeteries included in this analysis, but is most evident for the St Andrew's Fishergate population. The sex ratio of the adults reveals a slight bias towards males (Figure 6.25).

6.5.4 St Peter's Barton-on-Humber

Again the number of infants present in this sample is lower than one would expect for a model population (Figure 6.26). However, if the foetal skeletons are included with the infants (it is probable that foetal remains were recorded as infants for the other populations included in this analysis) then the total number of infants is similar to the number of young children present at St Peter's. This would still leave infants underrepresented in the St Peter's skeletal population, but not as much as for other populations. Again there are few young adults present in this population, with most adults living into mid or old age. The sex ratio of the adults is roughly equal, especially when those unsexed are taken into consideration, however, slightly more males were identified (Figure 6.27).

6.5.5 Barrow-on-Humber

The age structure of the Barrow-on-Humber population was relatively normal, but with infants underrepresented (Figure 6.28). The adult age distribution was fairly even, with lots of individuals dying during young adulthood. Several old adults were identified, possibly due to recent developments in skeletal ageing techniques that were applied to this collection (see Sections 4.4 and 4.5). The adult sex ratio was strongly biased towards males, with a bias still present even if all of the unsexed individuals were females (Figure 6.29). This may indicate that the burial population was

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[31] The methods used for age estimation at St Andrew's Fishergate utilised the pubic symphysis (Meindl et al. 1985b; Suchey et al. 1988), auricular surface (Lovejoy et al. 1985b), sternal end of the ribs (Isçan et al. 1984; Isçan and Miller-Shaivitz 1984; Isçan et al. 1985), dental wear (Miles 1962; Brothwell 1972), and cranial sutures (Meindl and Lovejoy 1985).

biased towards males at Barrow-on-Humber, or that the area of the cemetery excavated was used to bury males more often than females.

6.5.6 St Mark's Lincoln

Again this cemetery shows under-representation of infant burials characteristic of excavated cemeteries (Figure 6.30). The numbers of older children recovered appears normal. There is a strong peak of mid adults, indicating that either few individuals lived into older adulthood, or that the osteological methods used on this population did not successfully identify older adults. The sex ratio of the adult population is approximately equal, with a small bias towards males (Figure 6.31).

6.5.7 The effect of charnel recording

Disarticulated material from formal charnel pits and grave fills were recorded for both Barrow-on-Humber and Swinegate (Figures 6.32 and 6.33). Although most of the individuals identified were adults, many sub-adults were also identified. For Barrow-on-Humber the number of infants and young children identified from disarticulated material exceeded the numbers of articulated burials. As the bones of children and especially infants are small and likely either to be overlooked during the construction of charnel pits and excavation, or decay more quickly (Buckberry 2000b) it is likely that infants and young children are more underrepresented in charnel than adults. Many of these sub-adults were represented by a single bone found in a grave fill, and thus the minimum number of individuals (MNI) for the entire site is more likely to underestimate the true number of individuals present. A similar situation was seen at Fillingham, where none of the nine articulated skeletons was of a sub-adult, however seven sub-adults of different ages[32] were identified in the disarticulated material redeposited

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[32] The seven subadults identified in the disarticulated material included two infants, three young children (1 to 6 years), one older child (7 to 12 years) and one adolescent (13 to 17 years). In addition, a minimum of further four adults were identified.

following the disturbance of the cemetery during post-medieval quarrying activity (Buckberry and Hadley 2001b: 13).

It appears that many of the graves of 'missing' children from churchyard cemeteries were disturbed by later burial activity, and that many of these individuals will be represented in the disarticulated material from a site. Thus it is essential that charnel and bones from grave fills are recovered and kept following excavations, and that they should not be excluded from skeletal analysis. In instances where large quantities of disarticulated material are recovered, it may be appropriate for an osteologist to examine a small proportion of this material, in order to provide an approximate indication of the demographic composition of the disarticulated assemblage. Recently published guidelines for assessments of human remains state that disturbed and disarticulated bone is not usually considered worthy of further analysis (Mays et al. 2002: 5), however it is the view of the present author that such material should not be excluded from analysis until it has been demonstrated that it contains no useful archaeological information.

6.5.8 Cemetery demographies – some conclusions

St Andrew's Fishergate and St Mark's Lincoln both showed a slight bias towards male sex. This is likely to be the result of a methodological bias due to the increased robusticity of the skulls of some post-menopausal women (see Section 4.8). This is exacerbated by the fact that other female individuals are more gracile and thus are slightly more likely to be poorly preserved than male skeletons (Walker 1995: 35). The stronger biases towards males seen at York Minster and Barrow-on-Humber, however, cannot be explained away in this manner. It is likely that there is a cultural reason for the increased presence of adult males in these two cemetery populations. As both cemeteries were only partially excavated the bias towards males for these two populations may be due to deliberate zoning within the cemeteries.

Alternatively it could indicate that males were more likely to be buried in these two cemeteries than females.

All of the cemeteries contained few infant skeletons. This is a common pattern recognised in most mortuary studies, and is caused by the relatively poor preservation of infant bones combined with the fact that infant graves are more likely to be completely destroyed though later grave digging and building works (Buckberry 2000b). The numbers of older children (above one year of age) combined with the presence of some infant burials, indicates that the small number of infant burials at each cemetery is due to a bias in preservation rather than the deliberate exclusion of the very young from these cemeteries. Any cemetery zoning according to age, especially the clustering of infant burials close to church walls, could increase the number of infant burials destroyed, as burials close to the church are prone to disturbance during later structural alterations. In addition, partial cemetery excavation could miss any areas of preferential infant burial.

The York Minster and Barrow-on-Humber populations have similar age structures, with fairly even numbers of individuals in each adult age category, including a relatively high number of young adults. This could indicate that either the burial population was relatively young, or that some form of zoning based on age was present in the cemeteries. Both St Mark's Lincoln and St Andrew's Fishergate have strong peaks of young to mid adults than is the case for comparable skeletal populations. These are likely to reflect the ageing methods used to analyse these collections, which may not have allowed for the successful identification of older adults (see Sections 4.4 and 4.5). The Swinegate and St Peter's Barton-on-Humber populations contain more mid to older adults, which is more consistent with a model life-table. It is possible that the populations using these cemeteries had an older life expectancy, and that the ageing methods used reflect the age structure of the populations accurately.

6.6 Comparison of burial practice, age and gender

The different grave types outlined above were compared with the age and sex of the skeletons in each of the six cemeteries studied, to determine if stage in the life cycle and gender were symbolised through variation in burial type. This analysis was undertaken in two ways. Firstly the age and sex of individuals accorded each type of burial for each cemetery was examined, producing a 'demography' for each grave type. These grave type demographies were then compared with the demography of the entire cemetery population to determine whether different social groups were accorded different burial types. Secondly the types of burials accorded different age categories, and both sexes were studied to determine how these different groups were buried. Chi-square tests[33] (for nominal data) were performed between grave type and sex, and Kruskal-Wallis tests (for ordinal data) were performed between grave type and age, to determine if any patterns were statistically significant.[34] Finally, as subdivision of data into many categories can reduce the effectiveness of statistical tests, further tests were performed between age and elaborate/non-elaborate graves (Mann-Whitney test for ordinal data) and sex and elaborate/non-elaborate graves (Chi-square test).

6.6.1 Demographies of grave types

The demography of the individuals accorded each grave type at each cemetery are shown in Figures 6.34 to 6.39. These are stacked according to sex. These graphs reveal the relative proportion of the populations accorded each grave type, and also the age and sex of those individuals. The graphs

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[33] Low expected numbers in the cells of tables can cause normal chi-squared tests to be unreliable as the difference between two low frequencies (e.g. 4 and 5) is much larger than the difference between two high frequencies (e.g. 100 and 101) (Hinton 1995: 250). Consequently the significance levels (p value) in these chi-squared tests were estimated by Monte Carlo simulation for 10000 samples in SPSS version 11, which gives a more accurate p value from tables with low cell counts.

[34] All statistical tests were undertaken in SPSS version 11. The resultant statistical tables are given in Appendix VI and are prefixed VI.

can be compared with the demography of the entire cemetery population (Figure 6.20 to 6.31) to see if particular subdivisions of the population were accorded each rite, or alternatively if the different rites were accorded all age and sex groups indiscriminately.

The demographies of individuals accorded plain burial strongly resembled that for the entire population of each cemetery. This reflects the fact that the vast majority of burials at each cemetery (except at Swinegate and St Peter's Barton-on-Humber) appear to have been buried in plain earth graves. The demography of individuals accorded coffined burial at Swinegate and St Peter's Barton-on-Humber also strongly resembled those of the entire cemetery population because of the high numbers of coffined burials present at these cemeteries. The lack of organic survival at York Minster, St Andrew's Fishergate, Barrow-on-Humber and St Mark's Lincoln means that it is also impossible to determine if any further individuals were originally buried in coffins at these cemeteries. However, the demography of individuals possibly buried in coffins at St Mark's Lincoln (all identified by the presence of nails in grave fills) also resembled that of the overall population and of those buried in plain graves. This similarity in demographies for plain and coffined graves would seem to indicate that the provision of coffins was not reliant on the age and sex of the deceased. It should also be noted that approximately the same number of individuals were accorded coffined burial as plain earth burial at both St Peter's Barton-on-Humber and Swinegate, possibly revealing that coffined burial was not reserved for individuals of a particularly high status. The demography of individuals buried in clinker-built coffins at St Peter's Barton-on-Humber was also similar to that of the overall population, although the total number of individuals was much smaller. These results would suggest that coffined burial may have been chosen due to a prevalent fashion at the time of burial or for families with higher social standing than individuals buried in plain

earth graves, rather than being chosen to mark out individuals of a particular age or sex.

It is difficult to draw any strong conclusions about the demographies of individuals accorded the other burial types, as the numbers are so small. At Swinegate more of the plank burials were of sub-adults and adults, whereas at St Peter's Barton-on-Humber the reverse was true. Few individuals were buried in stone-lined graves in the six cemeteries studied in depth here, however these included males and females, adults and children. Individuals under 12 years of age were not buried in chests, coffins or the sarcophagus at York Minster. However, few children's graves were excavated at this site, and the total number of individuals accorded each of these burial types was very small, which may account for the lack on children buried in chests, coffins and in the sarcophagus.

This preliminary study of the demography of each burial type indicates that the provision of different grave types was not dependent on age and sex. The data from Swinegate and St Peter's Barton-on-Humber, the only cemeteries with good organic preservation, indicate that roughly equal proportions of the populations at these cemeteries were accorded plain and coffined burial. It is possible that this was also the case at the other cemeteries included in this analysis. Other grave types were much rarer however they too do not appear to have been constrained by age and sex. The grave types accorded different age and sex groups will now be examined in more detail, and the relationships between funerary practice and osteology will be tested statistically.

6.6.2 Age and sex variation for different grave types

Demographic bar charts for each cemetery were produced, with the bars stacked to indicate the different grave types. These included unaged adults and subadults, which could belong to any adult or subadult age category

respectively. The graphs are shown in Figures 6.40 to 6.45, and are summarised briefly here. Naturally these graphs reflect the age structure of each cemetery population and the range of grave type variation present at each site. However, they reveal that most age categories could be accorded most grave types present in each of the cemeteries studied. There are some exceptions to this general pattern. At York Minster some of the different burial types were not present in children's graves. These included the sarcophagus, two non-stone linings and the clinker built plank. In addition the youngest individual accorded a chest burial was an adolescent who may have reached the Anglo-Saxon age of majority (see Sections 4.9 and 5.3). It is difficult to attach any significance to these grave types not being used for sub-adults, as all of these grave types were rare within the cemetery, however this finding might indicate that innovatory grave types may have been adopted for adults before children.

Whilst this analysis shows that individuals of all age categories could be accorded most of the grave types at each cemetery, it does not indicate the proportion of grave types accorded each age category, or if the proportion of individuals accorded a more elaborate burial changed with increasing age. Thus graphs were produced showing the percentage of different grave types accorded each age category. The age categories were combined to produce larger, statistically valid, sample sizes (see Table 6.6) and those individuals who could not be aged accurately were excluded. Adolescents were combined with young adults, following the work of Crawford (1999), which implies that the Anglo-Saxon age of majority was likely to be around 12 years. These larger age categories were also used for the chi-squared tests described below. Graphs were produced comparing the proportion of individuals accorded different grave types in each of the new age categories (Figures 6.46 to 6.51). The total number of individuals in each age category for each cemetery are included in Table 6.6. These should be taken into

account when examining the proportions of different burial types, as some of the age categories contained very few individuals.

Old Age Categories	New Age Categories	YM	SWG	SAF	SPB	BW	SML
Foetus	Infant	1	7	10	44	2	8
Infant							
Young child	Child <12	14	24	25	106	21	40
Old child							
Adolescent	Young adult	10	10	16	46	16	3
Young adult							
Young to mid adult	Mid adult	14	18	46	137	18	36
Mid adult							
Mid to old adult	Old adult	14	21	21	128	25	5
Old adult							

Table 6.6: Classification of new age categories and numbers of individuals present for each cemetery

At York Minster adults were more likely to be buried in a more elaborate grave than subadults. Young adults were slightly more likely to be accorded a more elaborate burial than older adults. Only a small proportion of children were buried in more elaborate graves and the only infant excavated at the site was in a plain earthen grave. At Swinegate coffined burial was most likely to be accorded to adults, although slightly less so for older adults. Comparatively few children and infants were buried in coffins, and they were more likely to be buried with a single plank or bier. It is difficult to establish if there was any perceived difference in the degree of elaboration between planks and coffins. The provision of a plank would have been much less labour- and raw-material expensive than the provision of a full coffin. This may indicate that plank burials were less prestigious than coffined burials, which in turn may have made them more appropriate for the burial of children, as seen at Swinegate. Indeed, one of the planks used in the burial of an infant (c. 12 months old) at Swinegate (SWG 14007) had previously been used as a board for the game nine men's morris, possibly

making this plank of wood particularly suitable for use in the burial of an infant. At St Andrew's Fishergate no infants and only a small percentage of children were buried in coffins. The percentages of adults buried in coffins were also quite small, however these were greater than for children.

At St Peter's Barton-on-Humber there was a strong relationship between grave type and increasing age. As individuals got older they became increasingly more likely to be buried in a coffin or with a plank. By contrast, there is no apparent relationship with age at death and grave type at neighbouring Barrow-on-Humber, where the vast majority of individuals appear to have been buried in plain earthen graves. Whilst it may seem significant that all of the infants at this cemetery were buried in plain earthen graves, it should be stressed that only two infant graves were excavated. At St Mark's Lincoln it is also apparent that fewer adults than children were buried in plain earthen graves. None of the eight infant graves excavated had any evidence of a container. The large proportion of young adults in possible coffins initially appears to reflect the pattern seen at York Minster, however in fact only three young adults were identified at St Mark's, with two of these possibly buried in coffins.

Overall it is difficult to discern any strong relationships between grave type and age at any cemetery other than St Peter's Barton-on-Humber. This is reflected by the non-significant Kruskal-Wallis tests for all the other cemeteries presented in Table 6.7.[35] However this apparently negative result does not mean that no age related patterns existed. The smaller number of excavated burials at each of the cemeteries, combined with the lack of organic preservation at all except Swinegate may account for the lack of any strong pattern. At all of the cemeteries, the graphs reveal that children were less likely to be buried in an elaborate grave than adults. The pattern evident at St Peter's Barton-on-Humber, in comparison, is striking (H=32.373,

p<0.001 when ?coffins treated as coffins; H=15.360, p=0.001 when ?coffins treated as plain earth graves). This is probably due to the high numbers of excavated graves combined with the excellent levels of organic preservation.

Cemetery	?coffins treated as coffins		?coffins treated as plain earth graves	
	H	p	H	p
YM	5.536	0.237	8.041	0.090
SWG	4.905	0.086	4.905	0.086
SAF	1.900	0.168	0.210	0.647
SPB	32.373	<0.001	15.630	0.001
BW	1.907	0.385	2.225	0.329
SML	1.941	0.379	0.021	0.885
All cemeteries	41.421	<0.001	28.672	<0.001
All except SPB	12.384	0.015	13.838	0.008

Table 6.7: Kruskal-Wallis tests between age categories and grave type for each cemetery (also see Tables VI.1 to VI.32)

It is possible that the use of more elaborate grave forms became increasingly likely with increasing age in all late Anglo-Saxon cemeteries, but this could not be detected here due to the problems outlined above. Analysis of all of the cemeteries combined reveals a similar (although less marked) pattern to that seen at St Peter's Barton-on-Humber alone (see Figure 6.52, H=41.421, p<0.001 when ?coffins treated as coffins; H=28.672, p<0.001 when ?coffins treated as plain earth graves). This may reflect an underlying relationship between age and grave types not detected in individual cemeteries, however the results may be influenced by the size of the St Peter's Barton-on-Humber sample, which comprises approximately half of the total. Consequently the tests were run again, excluding St Peter's Barton-on-Humber. The relationship between age and grave type was significant (see Figure 6.53, H=12.384, p=0.015 when ?coffins treated as coffins; H=13.838, p=0.008 when ?coffins treated as plain earth graves). Thus it is apparent that although all

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[35] The full cross-tabulations and results of each statistical test are given in Appendix IV.

age groups could be accorded most of the different grave types, more elaborate burial became more frequent with increasing age.

It is possible that the lack of a significant result for most of the cemeteries (when analysed independently) may be because the relatively small sample sizes have been divided up into five age categories and up to five grave type groups, leaving a small number of individuals in each category. Consequently, Mann-Whitney tests for independent samples were undertaken comparing the ages of individuals buried in plain earth graves with individuals buried in more elaborate graves for each cemetery (see Table 6.8, below). However, no statistically significant results were obtained for any cemetery other than St Peter's Barton-on-Humber.

	U	p
YM	257	0.619
SWG	735.5	0.674
SAF	403	0.168
SPB	17256	<0.001
BW	224	0.985
SML	586	0.171

Table 6.8: Results of Mann-Whitney tests between age and elaborate or plain earth grave (also see Tables VI.33 to VI.44)

Graphs were produced comparing the proportions of burial types accorded male and female adults in the cemeteries and for all the cemeteries combined (Figures 6.54 to 6.60). Although some of the cemeteries did not have an equal sex ratio (see section on demography, above), the proportions of the grave types accorded each sex was roughly the same. This was confirmed by chi-squared tests, which showed that there was no significant relationship between grave type and adult sex (Tables 6.9 and 6.10). This test was simplified to compare adult sex with elaborate and plain earth graves, as dividing the data into many categories will reduce the chances of obtaining a statistically significant result. The results of these chi-squared tests were all

negative (Table 6.11), proving that neither males nor females were more likely to be buried in a more elaborate grave.

Cemetery	Excludes ??Male/??Female		Includes ?? Male/??Female	
	X^2	p	X^2	p
YM	1.324	1.000	0.940	1.000
SWG	2.732	0.311	2.018	0.365
SAF	0.008	1.000		
SPB	0.060	0.977		
BW	0.769	1.000	1.266	0.793
SML	5.530	0.055		
All	0.782	0.938	0.733	0.931

Table 6.9: Chi-squared tests between grave type (?coffins = coffins) and sex for each cemetery (also see Tables VI.45 to VI.66)

Cemetery	Excludes ??Male/??Female		Includes ?? Male/??Female	
	X^2	p	X^2	p
YM	1.312	1.000	0.923	1.000
SWG	No ?coffins at Swinegate. Results given in Table 6.9, above.			
SAF	0.711	1.000		
SPB	0.271	0.899		
BW	2.977	0.269	2.608	0.549
SML	1.268	0.444		
All	0.656	0.951	0.661	0.941

Table 6.10: Chi-squared tests between grave type (?coffins = plain earth graves) and sex for each cemetery (also see Table VI.67 to VI.84)

Cemetery	Excludes ??Male/??Female		Includes ?? Male/??Female	
	X^2	p	X^2	p
YM	0.116	0.751	0.066	1.000
SWG	0.717	0.531	0.160	0.793
SAF	0.008	1.000		
SPB	0.104	0.821		
BW	0.003	1.000	0.150	1.000
SML	2.934	0.125		
All	0.408	0.576	0.225	0.641

Table 6.11: Chi-squared tests between sex and elaborate/plain earth graves (also see Tables VI.85 to VI.106)

It is apparent that although age groups were not prevented from using different grave types, there was an increasing likelihood that an individual would not be buried in a plain earthen grave as they grew older. Was this connected to the sex of the individual? Although the previous tests indicate that sex did not affect the chosen burial right independently, previous studies of early Anglo-Saxon and early medieval continental (5th to 7th century) burial practice have shown that age related variation in burial practice was also linked to the sex of the deceased (see Chapter 5). Thus three-way tabulations and chi-square tests between age, sex and grave type were produced (see Table 6.12 and Tables VI.107 to VI.120 in Appendix VI). These tests only included adults as subadult skeletons cannot be sexed using osteological methods. Those of unknown sex or who had only been sexed tentatively were also excluded from the analysis. None of the chi-squared tests was significant, indicating that age related variation in burial practice was not influenced by the sex of the deceased.

Cemetery	Sex	X^2	p
YM	Female	4.452	0.735
	Male	3.635	0.539
SWG	Female	1.912	1.000
	Male	2.068	0.564
SAF	Female	0.224	1.000
	Male	2.490	0.398
SPB	Female	3.452	0.497
	Male	4.247	0.378
BW	Female	1.007	1.000
	Male	2.827	0.797
SML	Female	0.071	1.000
	Male	0.240	1.000
All	Female	10.848	0.190
	Male	13.463	0.159

Table 6.12: Chi-squared tests between adult age and grave type for each sex

6.7 Spatial analysis

This section will discuss spatial distribution of grave types and grave variations, and the age and sex of the deceased. Most of the cemeteries were not completely excavated, so any conclusions drawn from this analysis only apply to the excavated areas of the cemetery. In addition, these cemeteries have, for the most part, been divided up into arbitrary areas for the purpose of the present study, which may not have had any significance to the people using the cemetery. The Swinegate cemetery has been divided up into four approximately west-east aligned strips (not evenly spaced from each other) by the present author, reflecting the distribution of excavated areas. Thus Trench 3 is Area 1, Trenches 5, 7, 8, 11 and 12 are in Area 2, Trench 15 is Area 3 and Trench 14 is Area 4 for the purposes of the present spatial analysis (Figure 6.61). The cemetery at York Minster was also divided up into excavation areas: excavation area ST is spatial analysis Area 1, excavation areas SA and SD are spatial analysis Area 2, excavation area XK is spatial analysis Area 3 and excavation area XL is spatial analysis Area 4 (see Figure 6.62).

At St Mark's Lincoln and St Andrew's Fishergate the location of the contemporary church is either known, or a probable church has been identified, so these cemeteries have been divided into areas that relate to the church: north of the church; south of the church; east or west of the church; under/inside the church (Figures 6.63 and 6.64 respectively). However, both of these sites are incompletely excavated, again raising issues concerning 'missing' data from the unexcavated graves. At St Peter's Barton-on-Humber the location of the church is known and the majority of the cemetery was excavated. This means that not only is the data set for the cemetery more complete for the purposes of interpretation, the overall number of burials is much higher, making more detailed analysis of the cemetery possible. Thus the cemetery has been divided into quadrants (Figure 6.65), which in turn can be combined to create large areas relating to the church (north of the church, south of the church, east or west of the church, under/inside the church). In addition, the excavated area is large enough to undertake any analysis examining variations in burial at different distances from the church. For this purpose, the cemetery was divided into three zones: up to 5m from the church; between 5 and 10m from the church; and between 10 and 15m from the church (Figure 6.66). It was not possible to undertake a spatial analysis of the cemetery at Barrow-on-Humber due to a lack of a detailed site plan providing grave numbers in the site archive.

6.7.1 York Minster

The York Minster cemetery was divided into four areas (see above, Figure 6.62). Several graves in the York Minster cemetery were not identified on the cemetery plans, and could not be included in the visual analysis.[36] However,

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[36] These graves are: YM065/ST M; YM066/SA19; YM068/SA21; YM070/SA23; YM071/SA25; YM072/SA27; YM073/SA28; YM074A&B/SA29; YM075/SA29; YM077/SA34; YM084/SA41; YM085/SA42; YM086/SA45; YM087/SA47; YM088/SA49; YM089/SA50; YM090/XK153; YM091/XK155; YM092/XK160; YM093/XK207; YM105/XL122; YM110/XL175.

as the grave numbers are pre-fixed by an area-specific code, all of the graves could be included in the statistical analysis.

As discussed above, there was a great deal of variation in cemetery types at York Minster. A visual examination of the distribution of the different grave types in the cemetery (Figure 6.67) reveals that although plain earthen graves and coffins were present in each of the four cemetery areas, chest burials were only present in Area 2. In addition, all of the lined graves and the sarcophagus were in Area 1 and the two plank burials were located in Areas 3 and 4. A chi-squared test revealed that this difference in the distribution of grave types at York Minster was significant (χ^2=77.306, p<0.001, see Tables VI.121 and VI.122). This result remained significant when the different grave types were combined into broader categories, resulting in larger cell counts in the cross-tabulations (χ^2=37.804, p=0.005, Tables VI.123 and VI.124), and when '?Coffins' were excluded from the coffin category and included with the plain earth graves, leaving only graves with strong evidence of a coffin in the coffin category (χ^2=37.183, p=0.006, Tables VI.125 and VI.126).

A visual examination of the different grave variations in the York Minster cemetery reveals that all of the sculpted stone grave covers were found in Area 1 (Figure 6.68). Both pillow stones and charcoal burials were found in Areas 1, 2 and 3. Artefacts were found in graves in Areas 2, 3 and 4, although most of these were found in Area 2: a coin of 841-8 was found in grave YM065/SA18; a pre-Conquest key and a silver finger ring were found in grave YM068/SA21 (Area 2); a Roman coin and a piece of gold thread were found in grave YM079/SA79; a coin of 841-8 was found in grave YM081/SA38; a silver ring was found in grave YM086/SA45; gold thread was found in grave YM089/SA50; a silver ear ring was found in grave YM092/XK160; a dress pin and pottery and glass fragments were found in grave YM105/ZL122. In addition, a residual Roman coin was found in grave YM093/XK207.

As different grave variations can occur in the same grave, those variations that were present in a high number of graves were statistically tested to determine if there was a significant pattern in their distribution. As the artefacts would have to be divided into different artefact types for analysis to have any real meaning, statistical analysis of the distribution of artefacts was not undertaken, however the numbers of each type of artefact in each area is summarised in Table 6.13, below. A chi-squared test between cemetery area and presence/absence of charcoal burials revealed that there was no significant relationship between the two variables, indicating that they had an even distribution across the cemetery (χ^2=6.852, p=0.72, see Tables VI.127 and VI.128). Pillow stones were also not significantly related to the cemetery area (χ^2=1.684, p=0.594, Tables VI.129 and VI.130 in Appendix VI). However, the distribution of grave covers across the site was significantly related to cemetery area (χ^2=9.757, p=0.024, Tables VI.131 and VI.132).

	Artefacts found in:		
	Area 2	Area 3	Area 4
Anglo-Saxon coin	2		
Roman coin	1	1	
Finger ring	2		
Earring		1	
Dress pin			1
Key	1		
Gold thread	2		

Table 6.13: Location of different artefacts found in graves at York Minster

A visual analysis of the graves of sexed individuals (Figure 6.69) did not reveal any strong groups of the graves of male and female skeletons, although the predominance of male individuals in the cemetery population (see section 6.5.1) was evident. This lack of sex-related patterning in the location of graves was confirmed by a chi-squared test (χ^2=1.975, p=0.663 excluding possible males and females; χ^2=1.593, p=0.722 including possible males and females, see Tables VI.133 to VI.136 in Appendix VI). No strong

patterns in the distribution of burials of individuals of different ages were evident in the visual analysis of the York Minster cemetery (Figure 6.70), although most of the children appeared to have been buried in Areas 1 and 2. In contrast to this, the only infant burial was located in Area 3 (although it is difficult to attach any importance to this, as only one infant burial was identified in the cemetery). This apparent spatial clustering of burials of children identified in the visual analysis was not statistically significant when tested using a Kruskal-Wallis test for ordinal data (H=1.096, p=0.778, Tables VI.137 and VI.138).

In sum, the York Minster cemetery was found to have clusters of certain grave types (chest burials, lined graves), although coffins and plain earth graves were found across the cemetery. This pattern was statistically significant. Charcoal burials and pillow stones were also found across the whole cemetery, however grave covers were only found in Area 1. The cemetery was not organised according to sex. Clusters of graves of children were present at this site, but this pattern was not statistically significant.

6.7.2 Swinegate

The Swinegate cemetery was divided into four arbitrary areas (see above, Figure 6.61). All of the graves are shown on the plans and were included in the statistical analysis. The four areas each contained between twenty-one and twenty-seven graves, despite the variation in the actual size of the excavated areas. This reflects the increasing density in burial to the southwest of the site.

A visual analysis of the distribution of different grave types reveals that coffined burials were present in each of the four areas, however a higher proportion of the burials in Areas 1 and 2 were in coffins (see Figure 6.71). This may indicate that coffined burial was more popular in the north-eastern part of the cemetery. Alternatively this difference in the frequency of

coffined burial may indicate coffins survive less well in areas with lots of inter-cutting than in areas with few inter-cutting graves. Plank burials were present in Areas 1, 3 and 4, but were much more common in Area 4. The survival of plank burials in this area of the cemetery indicates that the second hypothesis given above (that coffins are less likely to survive in areas with lots of inter-cutting graves) is unlikely to be true – if the preservation of coffins was affected by increased density of burial, then it would follow that the smaller planks would be even less likely to survive the repeated digging of graves in Areas 3 and 4. Although this pattern may have been caused by the misidentification of incompletely preserved coffins as planks, the excellent preservation seen at Swinegate (both of skeleton and coffin), the fact that planks were found both above and below skeletons, and the increased likelihood that planks were used for the burial of young children suggests that the variation in grave types across the cemetery is likely to be due to cultural, rather than preservational, reasons. The variation in grave types across the cemetery is statistically significant (χ^2=23.891, p=0.001, see Tables VI.139 and VI.140 in Appendix VI).

Only two graves with 'grave variations' were excavated at Swinegate (Figure 6.72). One grave containing pillow stones was excavated in Area 1. In addition, one individual (SWG 15042) was buried with a small iron object. The interpretation of an x-ray of the artefact identified this as the blade of a small knife. Skeleton SWG 15042 was buried in Area 3.

The burials of male and female adults did not seem to vary across the Swinegate cemetery (Figure 6.73). This lack of spatial organisation of male and female burials was confirmed by chi-squared tests (χ^2=1.151, p=0.780 excluding possible males and females; χ^2=0.457, p=0.923 including possible males and females, Tables VI.141 to VI.144).

A visual analysis of the distribution of the graves of individuals of different ages (Figure 6.74) reveals that whilst older children, adolescents and adults were buried in all four cemetery areas, most of the infants and young children were buried in Areas 3 and 4. The exceptions to this were SWG 5104, aged 2-3 years and SWG 8015, aged 1-2 years, both buried in Area 2. This pattern was statistically significant when tested using a Kruskal-Wallis test (H=14.794, p=0.002, Tables VI.145 and VI.145). As discussed above, the high numbers of plank burials in Area 4 may be connected to the high number of burials of infants and young children in this area of the cemetery. Interestingly, the excavators suggested that the church of St Benet's may have been located close to the corner of Swinegate and Back Swinegate (Pearson 1990), placing it fairly close to Areas 3 and 4. Thus it is possible that this increased density of burials of infants and young children may have been originally located close to the church. However, without archaeological evidence confirming the location of the church, this hypothesis remains speculative.

The Swinegate cemetery appears to have areas that were more appropriate for the burial of young children and infants. In addition, Area 4 had a higher frequency of plank burials, which may be connected to the increased numbers of infants and young children at this side of the cemetery. No sex-related spatial pattern could be identified in the areas excavated. Due to the incomplete excavation of the cemetery it is difficult to ascertain if these patterns are real or merely reflect a chance variation in the distribution of graves in the excavated areas.

6.7.3 St Andrew's Fishergate

A clay layer [1598] and an associated slot [6435], identified as a possible foundation trench, were excavated in the south-west area of the St Andrew's Fishergate cemetery. These features were interpreted as the south wall and floor of a timber church dating to the mid 11th to mid 12th centuries. The

cemetery was divided into three areas that relate to this structure for the purposes of this spatial analysis. The line of the timber slot, identified as the south wall of the possible church, was used to define the southernmost area of the cemetery (Area 3, labelled 'south of church' in the statistical tables. See Figure 6.64). The position of the north wall of the church was not identified during excavation, however the plan of the Phase 4 cemetery clearly shows a gap in burial close to the south wall of the Phase 6 nave. Burial to the north of this line is noticeably less dense and is organised into approximate rows. This area of the cemetery forms Area 1 in the present spatial analysis, and is labelled 'north of the church' in the statistical tables. As the east and west walls of the church were not identified during excavation, the central area of the cemetery (Area 2) was labelled 'under/E/W of church' in the statistical tables. Several Phase 4 burials could not be located exactly on the plan, and were excluded from this analysis.[37] Many of these may have been in the westernmost part of Area 2, as the context numbers for some of these burials were not given on the plans in the site archive. However, as this is not certain they were not included in Area 2 for the purposes of the present analysis.

A visual analysis of the distribution of coffined graves at St Andrew's Fishergate reveals that these were present in each of the three areas of the cemetery, and were fairly evenly distributed (Figure 6.75), although three examples were located close to the clay layer interpreted as the floor of the timber church. This pattern was not found to be statistically significant (χ^2=2.554, p=0.357, see Tables VI.147 and VI.148 in Appendix VI). Only two grave variations were present in the St Andrew's Fishergate cemetery (Figure 6.76). One grave containing pillow stones was located at the southeast corner

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[37] Burials at St Andrew's Fishergate not located on the plan were: SAF 1492, SAF 6163, SAF 6164, SAF 6182, SAF 6188, SAF 6191, SAF 6196, SAF 6253, SAF 6260, SAF 6265, SAF 6269, SAF 6314, SAF 6334, SAF 6389, SAF 636 and SAF 6451.

of the clay layer. In addition, one grave situated to the west of the clay layer had a stone grave marker.

The distribution of the graves of male and female adults appears to be even across the cemetery, with no clusters of either male or female burials (Figure 6.77). This lack of sex-related zones in the cemetery was confirmed by a chi-squared test (χ^2=1.424, p=0.478, Tables VI.149 and VI.150).

A visual analysis of the graves of individuals in different age groups indicates that more infants and children appear to have been buried close to the possible church, however although the p-value is approaching significance, the result was not statistically significant (H=5.936, p=0.051, see Tables VI.151 and VI.152). It should be noted that many of the burials excluded from the spatial analysis of the cemetery (because they were not shown on the cemetery plan in the archive) were of young children and infants, and many of the unidentified graves on the plan were within the cluster of infants and children. It is possible that if these graves could have been included in the spatial analysis that a statistically significant result might have been obtained.

This analysis suggests that the St Andrew's Fishergate cemetery did not have specific areas that were more appropriate for different grave types, or sexes. The cluster of infant burials identified visually in Area 2 did not produce a statistically significant relationship between age and cemetery area. The apparently negative results for St Andrew's Fishergate should be treated with caution as the cemetery was not completely excavated and the exact location and full extent of the church was not determined. Thus the groups of graves used for this analysis may not accurately reflect any organisation within the entire cemetery.

6.7.4 St Peter's Barton-on-Humber

The scale of the excavations and the large number of burials dating to Phase E at St Peter's Barton-on-Humber have allowed this cemetery to be examined in more detail. The cemetery was divided into fourteen arbitrary quadrants to establish if there were any variations in the position of different types of burial between adjacent areas (Figure 6.65). The cemetery was also divided into three larger areas constituting north of the church (Quadrants 1 to 5), south of the church (Quadrants 10 to 14) and a third group consisting of burials to the east or west of the church, and burials located either inside or under the church buildings (Quadrants 6 to 9). Finally the cemetery was divided into four zones representing burials located under or inside the church; burials within 5m of the church, burials between 5 and 10m of the church and burials located between 10 and 15m from the church (see Figure 6.66). The following sections will discuss the distribution of grave types and grave variations, and the burials of different sex and age groups. For each of these variables the spatial analysis of the cemetery will be discussed relating to a visual examination of the distributions across the whole cemetery, and the statistical analyses for the cemetery quadrants, cemetery areas and cemetery zones (distance from church). It should be noted that the blank areas on the cemetery plan forming a larger rectangle around the church relate to the position of the later medieval church walls and that these areas probably contained burials during the late Anglo-Saxon period.

6.7.4.1 Distribution of grave types

A visual analysis of the cemetery was undertaken before any of the statistical tests. The plan shows all '?coffins' and '?planks' as coffins and planks (Figure 6.79). Clinker-built coffins are shown on the plan in green, and clinker-built planks as purple with green outlines. This was followed by four statistical tests for each of the three cemetery divisions. Initially the clinker-built coffins and planks were separated from the other coffins and planks in the cemetery. This analysis was undertaken twice, once including '?coffins'

as coffins and a second time categorising '?coffins' as plain earth graves. The whole analysis was then repeated, treating clinker-built coffins and planks as normal coffins and planks, and again this was undertaken twice: including '?coffins' as coffins and then '?coffins' as plain earth graves.

The visual interpretation of the distribution of grave types indicated that all of the different grave types were present across all areas of the cemetery. A higher proportion of burials to the northeast and southwest of the excavated areas were in plain earthen graves. Coffins and clinker-built coffins were present in most areas of the cemetery, although a cluster of clinker-built coffins has been noted in the far northwestern area of the cemetery. Plank and clinker-built plank burials were less common, but appeared to be distributed fairly evenly across the cemetery outside of the area of the church. No plank burials were located within or under the church.

When the cemetery is divided into quadrants it is apparent that the clinker-built coffins are more common than would be expected by chance in Quadrants 2, 3 and 4, all of which are located to the north of the church (Table VI.79). The perceived increased density of plain earth graves in Quadrants 1 to 3, 12 and 13 is also confirmed by comparing the real and expected counts in Table VI.79. This table also reveals that planks are more frequent than would be expected in Quadrant 13. Although p is close to 0.05, this pattern was not statistically significant (χ^2=162.967, p=0.053, see Tables VI.153 and VI.154 in Appendix VI). However, when the possible coffins, clinker built coffins and planks were treated as plain earth graves in the analysis this difference between real and expected counts for Quadrants 1 to 3 and 12 (for the number of plain earth graves) and Quadrants 4 and 5 (for the number of coffins) becomes much larger (Table VI.81). This time, the chi-squared test was statistically significant (χ^2=111.108, p=0.045, Tables VI.155 and VI.156). It is likely that this pattern reflects differing levels of the preservation of wood across the site. These results are reflected by the

analyses that treated clinker-built coffins and planks as normal coffins and planks: when the possible coffins were included in the coffin category the chi-square test was not statistically significant (χ^2=63.951, p=0.060, Tables VI.157 and VI.158), however when the possible coffins were treated as plain earth graves the chi-square test was statistically significant (χ^2=77.918, p=0.031, Tables VI.159 and VI.160).

When the cemetery was divided into three larger areas (north of the church, under/W/E of church and south of church) it was apparent that there was no strong pattern to the distribution of different grave types. This was true when clinker-built coffins and planks were treated as separate grave types (χ^2=18.356, p=0.069, see Tables VI.161 and VI.162 in Appendix VI); when possible clinker-built coffins and normal coffins were treated as plain earth graves (χ^2=18.122, p=0.117, Tables VI.163 and VI.164); when the grave types were combined, treating clinker built coffins and planks as normal coffins and planks (χ^2=8.903, p=0.181, Tables VI.165 and VI.166); and when clinker-built coffins and planks were treated as normal coffins and planks and possible coffins were treated as plain earth graves (χ^2=8.832, p=0.185, see Tables VI.167 and VI.168).

The analysis of the cemetery when divided into zones reflecting the distance of burials from the church revealed no strong patterns for the different grave types when clinker-built coffins and planks were combined with normal coffins and planks (χ^2=5.557, p=0.723 treating '?coffins' as coffins; χ^2=6.786, p=0.578 when treating '?coffins' as plain earth graves, see Tables VI.169 to VI.172). However, when the clinker-built coffins and planks were separated from normal coffins and planks the chi-square test was statistically significant (χ^2=42.183, p=0.002, Tables VI.173 and VI.174). This result was not significant when the '?clinker-built coffins' were treated as plain earth graves (χ^2=22.836, p=0.117, Tables VI.175 and VI.176). The significant result is due to the high numbers of clinker-built coffins between 10 and 15m away

from the church. Many of these were located in Quadrants 1 to 4, which were shown to have poorer wood preservation than much of the rest of the cemetery. This lack of clinker-built coffins with preserved wood is indicated by the non-statistically significant result when '?clinker-built coffins' were excluded from the clinker-built coffin category.

6.7.4.2 Distribution of grave variations

The distribution of grave variations showed that pillow stones were found across the cemetery, with slightly more examples present to the north of the excavated area, over 5m from the church (Figure 6.80). A cluster of burials with 'wands'[38] was evident in the northeastern corner of the cemetery. Two burials were associated with features thought to indicate the presence of grave markers: these were in Quadrants 2 and 6. The fill of one burial in Quadrant 3 contained a Roman coin. Charcoal burials were present in Quadrants 7, 11 and 13.

Statistical analyses were undertaken examining the spatial distribution of pillow stones and wand burials. The distribution of pillow stones was not found to be statistically significant when compared with cemetery quadrants (χ^2=15.876, p=0.257, see Tables VI.177 and VI.178 in Appendix VI) or the distance from the church (χ^2=4.053, p=0.248, Tables VI.179 and VI.180). The p-value for the chi-square test between cemetery area (north of church; under/E/W of church; south of church) and presence/absence of pillow stones was not significant (χ^2=5.598, p=0.060, Tables VI.181 and VI.182), but was approaching significance, reflecting the distribution of pillow stones observed visually.

As noted above, there was a distinct cluster of wand burials in the north-eastern corner of the cemetery. Statistical analysis showed that this

distribution was not significant when compared with the distance from the church (χ^2=3.308, p=0.343, see Tables VI.183 and VI.184). However, the chi-squared tests comparing the presence/absence of wands with both cemetery quadrant and cemetery area were significant (cemetery quadrant χ^2=52.465, p=0.004; cemetery area χ^2=11.022, p=0.007, see Tables VI.185 to VI.188). The concentration of wand burials in this area of the cemetery was evidently not due to chance alone. It is possible that the wand burials were deliberately placed close together in the cemetery. It is equally possible that this area of the cemetery was particularly conducive to the preservation of wands, which may originally have been present across the whole cemetery – certainly this area of the cemetery produced a high number of preserved coffins (see section 6.7.4.1).

6.7.4.3 Distribution of the graves of males and females and different age groups

A visual analysis of the distribution of the graves of males and females indicates that these burials were evenly distributed across the cemetery (Figure 6.81). This apparent lack of sex-related spatial zoning was confirmed by the non-significant chi-square test results with cemetery quadrant (χ^2=15.776, p=0.349, see Tables VI.189 and VI.190 in Appendix VI), cemetery area (χ^2=3.066, p=0.230, Tables VI.191 and VI.192) and distance from church (χ^2=2.112, p=0.552, Tables VI.193 and VI.194).

The plan showing the distribution of the graves of individuals of different ages (Figure 6.82) reveals that all age groups were buried in all areas of the cemetery. However, distinct clusters of infants and young children are evident clustering around the church walls, particularly close to the walls of the first three-celled church and to the largest, most western cell of the later additions (shown in the plan as a dashed line). The graves of older children

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[38] Although 'wooden rods' would perhaps be a better phrase to describe this grave variation, they are referred to as 'wands' in the site archive and the secondary literature. Thus the name 'wands' has been used to describe the wooden rods at St Peter's Barton-on-Humber throughout this thesis.

(aged 6 to 12 years) were also found in clusters, in cemetery Quadrants 2, 4 and 11.

The statistical analyses showed that the spatial distribution of the graves of individuals in different age groups was found to be significant when the cemetery was analysed according to cemetery quadrants (H=28.641, p=0.004, see Tables VI.195 and VI.196) and distance from church (H=8.014, p=0.046, Tables VI.197 and VI.198), however it was not statistically significant when analysed according to cemetery area (H=3.443, p=0.179, Tables VI.199 and VI.200).

6.7.4.4 Summary of spatial analysis at St Peter's Barton-on-Humber

The spatial analysis of the cemetery at St Peter's Barton-on-Humber revealed that some areas had a higher concentration of coffins and clinker-built coffins that others. However, as this pattern is more marked when possible coffins and clinker-built coffins were treated as plain earth graves in the analysis, it is probable that this difference is due to differential preservation of wood across the site. There was no apparent variation in grave types north or south of the church, or at different distances from the church. Wand burials were clustered in the northeastern corner of the excavated area. This distribution was statistically significant when analysed according to cemetery quadrant and cemetery area. There was no significant difference in the distribution of pillow stones across the cemetery.

No strong pattern was found in the distribution of the graves of males and females either visually or statistically using any of the three different cemetery spatial analysis schemes. This negative result is important, as cemetery organisation according to sex has been suggested for other cemeteries including Raunds Furnells[39] (Boddington 1996: 53-7). Conversely, the cemetery at St Peter's Barton-on-Humber was found to have cemetery

zones that were used preferentially for the burials of individuals of different ages. In particular, graves containing infants and young children were often found in clusters, which were frequently close to the church building. This pattern has been identified at many other late Anglo-Saxon cemeteries (see Section 5.4) and has been interpreted as a deliberate rite allowing rainwater dripping off the eaves of a church to provide a symbolic baptism for the very young (Crawford 1993: 88).

6.7.5 St Mark's Lincoln

The St Mark's Lincoln cemetery was divided into four areas that related to the Phase IX church: Area 1 is to the north of the church, Area 2 is to the west of the church, Area 3 contains burials that are under or inside the church and Area 4 is to the south of the church (Figure 6.63). It should be noted that the Phase VIII burials date to before the construction of this building. A possible timber church dating to Phase VIII is located to the southeast corner of the excavated area. Thus the cemetery areas are arbitrary for the Phase VIII burial, but may be meaningful for the Phase IX burials. The spatial organisation of the site was studied three times: once for Phase VIII, once for Phase IX and a third time combining the Phase VIII and Phase IX burials. The excavators attributed seven burials to Phase VIII-IX.[40] These burials are shown on both the Phase VIII and the Phase IX plans, but were incorporated into Phase VIII for the purposes of the present analysis.

6.7.5.1 Spatial analysis of the Phase VIII burials

The distribution of coffined burials in the Phase VIII cemetery is fairly even, with coffined burials present in Areas 1, 3 and 4 (Figure 6.83). Just one burial dating to this phase was in a stone-lined grave. This was located in Area 3. A chi-square test showed that there was not a statistically significant distribution of different grave types in Phase VIII (χ^2=3.065, p=0.534, see

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[39] These results were based on visual rather than statistical analysis.

Tables VI.201 and VI.202 in Appendix VI). Five of the Phase VIII burials (four graves – SML 433 was a double burial) contained a charcoal spread. Four of the burials were located close to each other in Areas 3 and 4. The fourth charcoal burial was located to the very south of the excavation in Area 4 (Figure 6.84). The distribution of the charcoal burials was not found to be statistically significant (χ^2=1.172, p=0.648, Tables VI.203 and VI.204). In addition, one burial (SML 432) was accompanied by a small copper-alloy buckle and one burial (SML 408) contained a Roman coin.

A visual analysis of the distribution of the graves of males and females showed that more males than females were buried during Phase VIII (Figure 6.85). All of the sexed burials in Area 1 were males, however Areas 3 and 4 contained the graves of both males and females. This distribution was not found to be statistically significant (χ^2=5.128, p=0.105, see Tables VI.205 and VI.206), which is surprising given that all of the sexed burials in Area 1 were male! The plan of the distribution of graves of individuals in different age groups (Figure 6.86) shows that a high proportion of the infants and young children were buried in Area 3, and were later sealed by the floor of the Phase IX church. The apparent increased density of the graves of infants and young children in Area 3 was not statistically significant (H=111.669, p=0.434, Tables VI.207 and VI.208), however the increased high density of burials of the very young in this area identified visually suggests that this area was preferentially used for the burial of the very young and/or that the floor of the later church protected these small graves from later disturbance.

6.7.5.2 Spatial analysis of the Phase IX burials

Most of the burials dating to Phase IX were in plain earthen graves (Figure 6.83), however coffined burials were present in each of the three areas containing burials dating to this period (Areas 1, 2 and 4). In addition a

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[40] The seven Phase VIII-IX burials were: SML 355, SML 388, SML 429, SML 432, SML 433A, SML 433B and SML 438.

single stone-lined grave was located in Area 2. This distribution of different grave types was statistically significant (χ^2=19.229, p=0.008, see Tables VI.209 and VI.210). This is probably because the only stone-lined grave was in Area 2, which only contains three burials, rather than in one of the more dense areas of burial, as would be expected if the different grave types were distributed by chance alone.

Two of the burials in the Phase IX cemetery had stone markers and a further three burials may have been marked by wooden posts (Figure 6.84). All of these burials are in a tight cluster in Area 4. This distribution pattern was not found to be statistically significant (χ^2=3.512, p=0.229, Tables VI.211 and VI.212), probably reflecting the small number of graves with evidence of a grave marker. However, the cluster of marked graves is striking, and requires further comment. This part of the cemetery may be the only area where evidence of grave markers survived. Alternatively it is possible that this cluster of marked burials may have been deliberately positioned close to an important feature in the cemetery, perhaps the grave marked by the carved stone marker (SML 374).

A visual analysis of the distribution of the graves of males and females did not reveal any sex-related clusters of burials (Figure 6.85). This was confirmed by a chi-square test (χ^2=3.338, p=0.196, see Table VI.213 and VI.214). In addition no distinct clusters of graves of individuals of different ages were identified (Figure 6.86), although many individuals in Area 4 were in the mid adult age category. The distribution of graves of individuals in different age groups was also shown not to be statistically significant (H=4.321, p=0.115, Tables VI.215 and VI.216).

6.7.5.3 Spatial analysis of Phases VIII and IX combined

This section examines the spatial distribution of all of the Phase VIII and IX burials together. The distribution of different grave types appears to be

fairly even across the cemetery (Figure 6.83). A chi-square test suggested that the distribution of different grave types across the site was statistically significant (χ^2=23.175, p=0.020, see Tables VI.217 and VI.218). It is notable that one of the two stone-lined graves is located in an area with few burials, rather than in an area with a high number of burials, as would be expected by chance alone. This is probably the reason for the significant result in this chi-square test, as the real and expected frequencies for plain earth graves and coffins are similar for each of the cemetery areas (see Table VI.139). The distribution of charcoal burials and grave markers (Figure 6.84) were not found to be statistically significant when the two phases were combined (charcoal burials: χ^2=1.653, p=0.656; grave markers: χ^2=5.818, p=0.181, Tables VI.219 to VI.222). These statistically non-significant results are probably due to the small numbers of graves that contained charcoal or were marked, and because these grave variations were located in dense areas of burial.

Visual examination of the distribution of the graves of males and females suggests that there were more male than female burials to the north of the church and that more females than males were buried to the south of the church (Figure 6.85). This pattern was confirmed by a statistically significant chi-square test (χ^2=9.648, p=0.013, Tables VI.223 and VI.224). This pattern had been visually identified, but was not found to be statistically significant when the burials were divided into separate phases. The significant results for the distribution of sex groups for the two phases combined may be due to the larger sample size, and, more importantly, larger cell sizes in the cross-tabulation, enabling the differences between real and expected counts to be measured more accurately. However, the significant result for the two phases combined may not be significant in respect of burial locations around the church, if the timber structure identified in the southeast corner of the site was an earlier church, placed in a slightly different location than the Phase IX church.

The distribution of the graves of individuals in different age groups reveals that many of the young children and infants were buried in Area 3 (Figure 6.86), and that many of the mid adults were buried in Area 4, however this distribution was not statistically significant for the two phases combined (H=6.064, p=0.109, see Tables VI.225 and VI.226).

In sum, the St Mark's Lincoln cemetery did not appear to be organised according to grave type, although the presence of a stone-lined grave in Area 2 resulted in significant chi-squared tests between grave type and cemetery area for Phase IX and Phases VIII-IX. The apparent clusters of charcoal burials and grave markers were not found to be statistically significant, although this may be because few charcoal burials and grave markers were identified, and that these grave variations were located in areas of dense burial. The distribution of sex groups were not found to be statistically significant for the two separate phases, but was statistically significant for the two phases combined, stressing the importance of large sample sizes when undertaking statistical analyses. The distribution of different age groups was not found to be statistically significant, although some patterns in the distribution of age groups were identified visually.

6.7.6 Summary of spatial analysis

The spatial analysis showed that most grave types and grave variations were evenly distributed across the cemeteries. This was particularly true of coffins and plain earth graves. Interestingly, when significant results were obtained for the spatial distribution of grave types and grave variations, these were usually due to clusters of more unusual grave types: sarcophagus, grave covers, chest burials and lined graves at York Minster; plank burials at Swinegate; clinker-built coffins (for distance from church analysis only) and wands at St Peter's Barton-on-Humber and stone-lined graves and marked burials at St Mark's Lincoln. This finding would suggest that the more common types of graves (plain earth and coffin at most cemeteries, although

regional variations in this may occur, for example stone-lined graves at Fillingham – see Section 6.2.3) and grave variations (for example, pillow stones at St Peter's Barton-on-Humber) were distributed evenly across cemeteries, but that grave types and grave variations only found at some cemeteries, or grave types and grave variations only used by a small proportion of a cemetery population are likely to be found in clusters. This may suggest that the use of these grave types and grave variations within the cemetery may have been restricted to a small group of society who were usually buried close together, or that these grave types and grave variations were popular over a short period of time, and thus are only found in areas of the cemetery used for burials during that short period. The fact that the chest burials at York Minster inter-cut would support the former hypothesis.

None of the cemeteries appears to have been organised according to sex. The only exception to this was at St Mark's Lincoln, which had a high number of male burials to the north of the church, and female burials to the south of the church. This pattern was only statistically significant when the two phases of burial were combined. This result is important, as a previous analysis of the cemetery at Raunds suggested that there was a concentration of male burials to the south of the church (Boddington 1996: 55-7), although the published results of the spatial analysis of the Raunds cemetery did not include the results of any statistical tests, so it is unclear if the pattern observed at Raunds was statistically significant. The spatial analysis of the Raunds cemetery is discussed in more detail in Section 8.2.4.

All of the cemeteries were found to have clusters of burials of individuals of different ages, although not all of these clusters gave rise to statistically significant results. This was particularly true of the burials of infants and children: children under 12 years tended to be buried in Area 1 at York Minster (not statistically significant); all of the infants and most of the young children (under the age of 6) were buried in Areas 3 and 4 at Swinegate

(statistically significant); the graves of infants and children were often close to the possible church at St Andrew's Fishergate (not statistically significant); the graves of infants and young children were frequently found close to the walls of the church at St Peter's Barton-on-Humber (statistically significant); and many infants and children were buried under the Phase IX church at St Mark's Lincoln (not statistically significant).

6.8 Conclusions

This chapter has shown that a wide variety of burial practices were present in late Anglo-Saxon cemeteries. Of the six cemeteries studied in detail, the cemetery with the largest variety in burial practice is known from historical documents to have been used by the upper echelons of society, suggesting that the social elite may have had access to a wider range of grave types and grave variations. Most of the other cemeteries studied in detail appear to have contained just two or three grave types, suggesting that the majority of late Anglo-Saxon society were able to chose from a more limited range of burial practices. The different grave types present in a single cemetery can vary, even over short distances – at St Peter's Barton-on-Humber most of the population were buried in either a plain earth grave or a coffin, with just one individual being buried in a partial stone-lined grave. At Barrow-on-Humber, however, a higher proportion of the cemetery population were buried in stone-lined graves. The spatial analysis revealed that most of the different grave types were present in all areas of the cemeteries, however any grave types that were less frequent in the cemetery were often clustered in different areas of the cemetery. A similar pattern was seen for some grave variations. At St Peter's Barton-on-Humber, charcoal burials and pillow stones were widely spread, whereas wand burials were only found in the northeast area of the cemetery. At York Minster, charcoal burials and pillow stones were found in most areas of the cemetery, but sculpted grave covers were only found in Area 1.

The comparison of osteological data with burial practice revealed that the sex of the deceased was not related to the grave type, grave variations or the location of the grave in the cemetery. However, the age of the deceased does seem to have affected the burial practice chosen for them. While all age groups could be accorded all grave types and variations, adults were more likely to be buried in a more elaborate grave than children. At St Peter's Barton-on-Humber this pattern is very strong, with individuals in each older age category becoming more likely to be buried in a coffin. In contrast, the graves of the very young were often found in clusters in the cemeteries. At St Peter's Barton-on-Humber, many of the graves of the very young were located close to the walls of the church, whereas at St Mark's Lincoln most of the graves of children were located under the Phase IX church.

The increased variation in burial practices at York Minster suggests that the choice of funerary treatment was, in part, related to the social status of the deceased and/or the mourners, with more choice and variety in grave types (and grave variations) available to the upper classes (who were frequently buried in urban cemeteries). Does it follow that the individuals buried in elaborate graves in more ordinary cemeteries were of a higher social status that those buried in plain earth graves? This question is difficult to answer solely on the basis of the evidence discussed above, however the prevalence rates of pathologies known as 'stress-markers' (often caused by poor nutrition and a lower health status) may be able to shed some light on this issue. The following chapter will discuss the potential of stress-markers to investigate status-related variations in burial practices, and will present the stress-marker evidence for Swinegate and Barrow-on-Humber.