RESEARCH AGENDA

THE IRON AGE AND ROMANO-BRITISH PERIODS IN WEST YORKSHIRE

By Adrian M. Chadwick

This document is one of a series designed to enable our stakeholders and all those affected by our advice and recommendations to understand the basis on which we have taken a particular view in specific cases. It is also a means by which others can check that our recommendations are justifiable in terms of the current understanding of West Yorkshire’s Historic Environment, and are being consistently applied.

As the document is based upon current information, it is anticipated that future discoveries and reassessments will lead to modifications. If any readers wish to comment on the content, the Advisory Service will be glad to take their views into account when developing further versions. Please contact:

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**Notes**

Unless otherwise stated, all dates including calibrated radiocarbon dates are presented as years BC or AD, but for ease of reading details of these dates including laboratory names and numbers have not been included. Readers are referred to the original references. No uncalibrated dates BP (Before Present) have been used.

**Abbreviations and acronyms**

<table>
<thead>
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<th>Abbreviation</th>
<th>Description</th>
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<tr>
<td>ARCUS</td>
<td>Archaeological Research and Consultancy, University of Sheffield</td>
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<td>AS WYAS</td>
<td>Archaeological Services West Yorkshire Archaeology Service</td>
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<tr>
<td>DCMS</td>
<td>Department of Culture, Media and Sport</td>
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<td>HDAS</td>
<td>Huddersfield and District Archaeological Society</td>
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<td>Tees Valley Archaeology</td>
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<td>WYAAS</td>
<td>West Yorkshire Archaeology Advisory Service</td>
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<td>YAT</td>
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1. Introduction

1.1. Aims and objectives

1.1.1. This document summarises the current state of knowledge regarding the Iron Age and Roman periods in West Yorkshire, and identifies research priorities and means by which these can be addressed. It complements and overlaps with existing period summaries and research agendas already been published by the West Yorkshire Archaeology Advisory Service (WYAAS) (Sanderson and Wrathmell 2005; Vyner 2008), and will inform and support future curatorial project specifications drafted by WYAAS in addition to landscape management plans drawn up by WYAAS, English Heritage and other bodies such as the Environment Agency and Natural England. It will act as a baseline document for other relevant stakeholders including contractual field units, consultants, developers and construction contractors. The research themes and methodologies for addressing them should also prove useful for specialists, university research staff and students, and members of local societies and independent (so-called ‘amateur’) archaeologists.

1.1.2. This research agenda is not intended to be a ‘final word’, as future archaeological finds and research will inevitably overtake it and lead to modifications and reassessments. In addition, feedback and constructive dialogue concerning this document is welcomed.

1.2. The history of archaeological research in West Yorkshire

1.2.1. Unlike Derbyshire and East and North Yorkshire, there was a comparative lack of antiquarian investigation in the study region during the 18th and 19th centuries. Until the 1960s, most work on the Iron Age concentrated on surveys and/or limited excavations of hillforts such as Barwick in Elmet, and Castle Hill, Almondbury (Armitage 1900; Armitage and Montgomery 1912; Colman 1908; Morehouse 1861; Petch 1924; Whitaker 1816); followed at the latter site by Varley’s excavations during 1936-1939, 1969-1970 and 1972 (Varley 1976). There were also very limited (and unpublished) investigations of South Kirkby in 1949 (Atkinson n.d.).
1.2.2. Early Romano-British studies included reports on finds of pottery, burials and coin hoards in Adel, Castleford, Huddersfield and Wetherby (Clark 1934, 1939; Johnson 1861; Kent and Kitson Clark 1934; Richmond 1925; Thoresby 1702, 1715). There were also early investigations of the villa at Dalton Parlours (Procter 1855). Earlier excavations of Roman sites included a particular focus on forts, as at Slack (Dodd and Woodward 1920), Ilkley (Woodward 1925) and Castleshaw on Saddleworth Moor in Lancashire (Buckley 1898; Bruton 1908; Watson 1766).

1.2.3. Few resources were available for rescue archaeology in the 1950s-1960s, but Castleford, Slack and Ilkley saw salvage excavations ahead of development (Fossick and Abramson 1999; Hartley 1966; Hunter, Manby and Spaull 1967). J.K.S. St Joseph and the Cambridge University Committee for Air Photography recorded Roman forts in the region (St Joseph 1953, 1969), and Derrick Riley undertook more regular flights from the early 1970s until his death in 1993, though with a focus on South Yorkshire and Nottinghamshire (e.g. Riley 1973, 1977, 1988). The Air Photography Unit of English Heritage based in York still undertakes regular flights.

1.2.4. In the 1970s and 1980s, in advance of quarrying, new roads or housing estates there were a few poorly funded ‘salvage’ excavations within West Yorkshire undertaken by the West Yorkshire Archaeology Service, but unfortunately many of these projects have never been written up or remain as unpublished ‘grey literature’. These include many investigations of late Iron Age and Romano-British sites on the Methley gravels west of Castleford. Funding was often only available for salvage excavation, not post-excavation work and report writing.

1.2.5. Since the publication of Planning Policy Guidance Note 16 in 1990 (DoE 1990) there has been a dramatic rise in developer-funded excavations of Iron Age and Romano-British sites within the region. Unfortunately, this has also led to a growth in the numbers of unpublished archaeological reports. Nevertheless, notable results derived from or stimulated by this work include a series of aerial photographic studies carried out by Alison Deegan (e.g. Deegan 1999, 2001), who was also largely responsible for the Lower Wharfedale National Mapping Project, the latter funded by English Heritage and completed in 2004, but still unpublished. Another English Heritage commissioned project funded by Aggregates Levy Sustainability Fund (ALSF) money and undertaken by Archaeological Services WYAS has been examining the Magnesian Limestone and some of the Sherwood Sandstone areas of West and South
Yorkshire (AS WYAS 2006; Roberts et al. 2004, 2007). When collated and fully published, these projects will be invaluable aids for future research into the Iron Age and Romano-British periods of West Yorkshire.

1.2.6. Comparatively few regional syntheses have been published (Challis and Harding 1975; Faull and Moorhouse 1981; Haselgrove 1984; Raistrick 1939), with some older accounts bemoaning the lack of hillforts, villas and other key ‘type sites’ (e.g. Branigan 1980, 1984; Hanson and Campbell 1986). Broader treatments of Iron Age and Romano-British Britain have consistently overlooked the West Yorkshire evidence (e.g. Cunliffe 1991, 2005; Dark and Dark 1997), and its Iron Age archaeology has been overshadowed by discoveries in East Yorkshire. The lack of national recognition perpetuates a lack of knowledge of the regional evidence, as with other parts of northern Britain such as Derbyshire and South Yorkshire (e.g. Bevan 2000; Chadwick 1997; Cumberpatch and Robbins n.d.; Robbins 1999).

1.2.7. A recent account of the Iron Age in northern Britain used published information from West Yorkshire nearly 20 years old (Harding 2004), but did not refer to more recent developer-funded investigations. An extensive interpretative synthesis of the Iron Age and Romano-British evidence from West Yorkshire, South Yorkshire and Nottinghamshire resulting from PhD research included summaries of many previously unpublished developer-funded investigations (Chadwick 2008a, forthcoming); but largely ignored the Romano-British evidence for urban settlements and fort sites, focusing instead on rural settlement and field systems.

1.3. Other relevant research agendas and summaries

1.3.1. Two relevant national research frameworks have been published – the Iron Age Research Agenda (Haselgrove et al. 2000, 2001), and the Romano-British Research Agenda (James and Millett 2001). The former was the more useful of the two agendas, as it was jointly conceived and authored and clearly identifies problems and potentials, and methodological means of addressing these. I have partly drawn on the format of that document for this agenda here. Although some individual chapters in the Romano-British Research Agenda were extremely cogent (e.g. Burnham et al. 2001; Hill 2001; Taylor 2001b), this volume lacked the focused approach of the Iron
Age Research Agenda and did not clearly identify a series of research priorities for future archaeological work.

1.3.2. Period-based surveys of the archaeological evidence for West Yorkshire were published in 1981 as part of *West Yorkshire: an Archaeological Survey to 1500* (Faull 1981; Keighley 1981). This was an excellent baseline review of the state of archaeological and historical knowledge at the time, but is now over 25 years old and out of date. The results of developer-funded investigations in particular have dramatically increased both the numbers of Iron Age and Romano-British sites and finds, and (in most cases) the quality of the evidence. The M1-A1 Link Road and A1 (M) developer-funded infrastructure projects allowed the production of useful summaries of the Iron Age and Romano-British periods in West Yorkshire (Brown, Howard-Davis and Brennand 2007; Burgess 2001c; O’Neill 2001c).

1.3.3. English Heritage encouraged the development of regional research agendas as part of its *Frameworks for our Past* initiative (Olivier 1996), and examples produced for other regions include the East Midlands (e.g. Bishop 2001a, 2001b; Cooper 2006; Willis 2001). A recent research agenda for the wider Yorkshire region concentrated on the evidence from North and East Yorkshire and the Vale of York rather than West and South Yorkshire, however (Manby, Moorhouse and Ottaway 2003), and its Iron Age section in particular failed to incorporate the results of many recent developer-funded investigations (cf. Manby 2003; Ottaway 2003). WYAAS therefore recognised the need for an updated synthesis and future research framework for the Iron Age and Romano-British archaeology of West Yorkshire.

1.3.4. A brief summary of the Iron Age evidence has already been summarised in the overall prehistoric research agenda produced by WYAAS (Vyner 2008). This document explores the evidence in more detail, however, and many aspects of this period deserve to be compared and contrasted directly with the Romano-British archaeology as there was much apparent continuity in inhabitation and social practice, especially in rural areas. There are still many gaps in knowledge, but the evidence is increasingly allowing the archaeology of West Yorkshire to be considered on its own terms rather than being continually compared and contrasted to that from south-central England or East or North Yorkshire, which has tended to dominate discussions of the Iron Age in particular, and has led to highly stereotypical views of Iron Age and Roman Britain.
2. Chronological issues

2.1. The Iron Age

2.1.1. The national Iron Age Research Agenda has noted that with the possible exception of Wessex and eastern and south-eastern England, there are few parts of Britain with anything other than outline chronological frameworks for the Iron Age (Haselgrove et al. 2001: 2-3). Prehistoric artefact typologies are still a key feature of dating, but although reliable stratigraphic sequences and diagnostic artefacts are rare elsewhere, in northern England in general and West Yorkshire in particular they are virtually nonexistent. Until recently there were few reliable radiocarbon (\(^{14}\text{C}\)) dates, and the paucity of Iron Age metalwork and ceramic finds has not permitted the construction of typological sequences. As a first step towards a regional chronology, there needs to be a full ‘audit’ of available Iron Age radiocarbon dates from West Yorkshire, with an assessment of their reliability.

2.1.2. A significant issue with radiocarbon dating occurs with ‘plateaus’ in the calibration curve, one of which falls between roughly 800-400 BC. This makes dating of the later Bronze Age and early to mid-Iron Age problematic, although it can be addressed through the use of multiple samples, more accurate AMS dates and statistical analyses (see section 2.3. below). Much of the available archaeological and radiocarbon dating evidence for West Yorkshire derives from the period \(\text{circa}\) 400 BC onwards (or the middle to late Iron Age). As yet there is little scope to distinguish between the middle and later periods, however, and a more realistic framework might be an earlier Iron Age from \(\text{circa}\) 850-400 BC, and a later Iron Age from c. 400 BC-AD 70 (q.v. Haselgrove and Pope 2007: 5-6; Vyner 2008: 12), along with clear recognition that many Iron Age traditions and practices continued well into the Romano-British period (Faull 1981: 151).

2.1.3. Retrospective dating programmes should be undertaken on reliably stratified and recorded organic material (such as human and/or animal bone) retrieved from earlier archaeological investigations. This could include material from potential Iron Age contexts such as those at Ledston and Dalton Parlours. This would be an ideal subject for a collaborative university-based research project in partnership with some of the local contractual field units, and funding for this research could be sought.
An Archaeological Research Agenda for West Yorkshire

The Iron Age and Romano-British Periods

through English Heritage HEEP initiatives, and/or research grant awarding bodies such as the British Academy and NERC.

**2.2. The late pre-Roman Iron Age and Roman periods**

2.2.1. It might be presumed that with some historical records and a greater frequency of more closely dateable artefacts, there would be few significant chronological issues with the Romano-British period. This is not the case. Firstly, the existing culture-history narrative of the Roman invasion of Britain cannot be accepted at face value as an accurate record of those events. The dates at which Roman forces stopped their northwards advance and (it is thought) established bases at Chesterfield, Templeborough and Rossington Bridge may have been sometime between c. AD 55-65. The extent and nature of Roman contacts with native populations north of the line formed by the Rivers Trent, Don and Humber is unknown, but they would have taken place over 15-20 years.

2.2.2. In West Yorkshire, there have only been a few finds of early Roman artefacts such as sherds of pre-Flavian samian and a rare late Iron Age carinated cup of c. AD 1-70 from Ferrybridge (Evans, Wild and Willis 2005: 135, 142). Another Ferrybridge find was a very rare Alésia brooch of mid-1st century BC to early 1st century AD date (Duncan, Cool and Stead 2005: 153-154). There was an intaglio ring in the Silsden hoard (Hartley 2001: 37), and Republican and early Imperial Roman coins formed part of the Lightcliffe and Honley Iron Age coin hoards (Allen 1960: 1415; Keighley 1981: 132). It is not known how such objects were acquired – was it as ‘diplomatic gifts’, dowries, traded goods or through raiding?

2.2.3. According to the *Annals* of Tacitus, Roman troops suppressed unrest in Brigantian territory in AD 48, in AD 57 and again in AD 68-69 (Hanson and Campbell 1986; Hartley 1980; cf. Tacitus *Annals* 12: 31), but there is no archaeological evidence (and thus no independent dating) for this, nor for the actual Roman invasion of the north in AD 70-71. The sequence of the invasion and the dating of the establishment of many Roman forts and settlements are still unclear. The very end of the Roman period and the later phases of occupation in forts and urban settlements still remain poorly understood.

2.2.4. Another major chronological problem results from the fact that Roman material culture was far from ubiquitous in West Yorkshire and northern England for the first
100 years of the occupation. Dateable objects from this period including coins, brooches and finewares such as samian seem to have been comparatively rare. Even Roman-style coarsewares do not appear on many settlement sites before c. AD 120-130, at least two generations after the invasion of the north. Military, urban and ‘high-status’ rural sites have produced Roman coins and more closely dateable metal and pottery artefacts, but these remained rare on many rural sites – the enclosure at Whitwood Common produced only 56 sherds of mostly coarseware pottery from two to three centuries of admittedly intermittent occupation (Evans 2004: 32-33). Away from settlement enclosures, artefacts were even scarcer. Dating the development of field systems and phases of inhabitation on small-scale rural sites is often extremely problematic.

2.2.5. Most of the Romano-British pottery produced and consumed in northern England consisted of relatively plain coarsewares. Despite publication of kiln sites in South, East and North Yorkshire, there remain many gaps in archaeological knowledge of changes in styles and fabrics (R. Leary pers. comm.). Many kilns were excavated before modern archaeomagnetic dating techniques. Some Romano-British coarsewares, often the bulk of ceramic assemblages on small-scale rural settlement sites, cannot be dated more closely than 50-100 years. Such broad dates may be of little use when trying to establish detailed sequences of structures within a settlement, or the landscape development of field systems and trackways. Later Roman and immediately post-Roman ceramics are particularly poorly understood.

2.3. Absolute dating techniques

2.3.1. As noted in national research agendas (e.g. Haselgrove et al. 2001: 4), multiple radiocarbon samples need to be taken on archaeological projects to achieve more precise dating, particularly when this is combined with Bayesian modelling and other statistical techniques (Bayliss 1998). One or two radiocarbon dates are simply not sufficient. More accurate AMS dating of smaller samples of material and single-entity dating using single pieces of organic material from reliable contexts should also be undertaken wherever possible (Ashmore 1999).

2.3.2. All human inhumation and cremation burials need to be radiocarbon dated, as even if accompanied by artefacts these may be residual or curated ‘heirloom’ items
that may not necessarily date the individual’s likely life. Wherever possible, more substantial disarticulated human remains (such as skulls, skull fragments and long bones found in ditches, pits and postholes) should also be subject to radiocarbon dating, in order to assess the possibility of residuality or alternatively the deliberate curation of human remains from earlier periods. Complete animal burials also need to be routinely dated, as well as partially articulated ‘placed deposits’ or Associated Bone Groups (ABGs). For example, it has been claimed that individual animal burials were more likely to be of sheep/goats during the Iron Age, and that in the Romano-British period dogs became the animal most favoured for this (Morris 2008). This hypothesis clearly needs testing in the region, and routine dating of animal burials is the principle means of addressing this. Other contextual and chronological patterns may also be discerned through such analyses.

2.3.3. Organic residues on the internal or external surfaces of pottery, and sooted residues on external surfaces, should be subject to AMS radiocarbon dating (Berstan et al. 2008; Haselgrove et al. 2001: 5; Woodward 2008: 290). This should be the case for Romano-British vessels, but is especially crucial for Iron Age pottery or ceramics of Iron Age tradition produced in the Romano-British period. Identifying when and how Iron Age vessel forms and fabrics were replaced by Romano-British pottery is vital to understanding social changes and processes of ‘Romanisation’. Thermoluminescence (TL) dating of minerals within the fabric of Iron Age pottery may also help produce more accurate chronologies (see section 8.17. below). This has shown some potential in eastern England (Barnett 2000), but has had mixed results elsewhere (Willis 2002: 14-16; Woodward 2008: 290). In West Yorkshire the technique needs to be assessed to see if it might be valuable. Optically Stimulated Luminescence (OSL) dating of minerals within pottery may also prove useful.

2.3.4. The reporting and publication of radiocarbon dates must be seen as a much greater priority, and Bayesian modelling and other statistical techniques should be used to combine dates and give increased precision about date ranges where possible. Archaeological contractors must also improve the timescales for the analysis and reporting of sites (including that of radiocarbon dating). One important site in West Yorkshire has still not been fully reported seven years after fieldwork took place. This hampers regional as well as national research.
2.3.5. Archaeomagnetic dating of hearths, ovens and furnaces is another technique that should be routinely used wherever possible. Even on Romano-British sites there is often little artefactual evidence to reliably date buildings, ancillary structures and cooking/heating features, and any such finds deposited in backfill within them may not closely date the actual use of the feature. In situations where taking multiple (or any) radiocarbon dates is not possible due to a lack of organic material, alternative techniques such as OSL dating should be considered instead. Many pits, field system ditches and even some enclosure ditches only produce a few sherds of pottery, and OSL may provide a rough date to within a few centuries if the geology was suitable. Magnesian Limestone may not be that suitable for OSL sampling of unheated sediments, however, due to the lack of quartz grains in sediments, but this needs to be tested and assessed as a possible technique.

2.3.6. This more rigorous analysis and dating all has obvious implications for the post-excavation costs of projects, but it must be accepted that due to improvements in techniques and understanding of the need for such dating, it is imperative that such analyses take place. In particular, developers and archaeological consultants must not be allowed to ‘talk down’ post-excavation analyses and dating programmes. Such costs must be clearly built into research designs, with contingency funds available for unexpectedly productive deposits.

2.4. Priorities and implementation

2.4.1. The following research questions, problems and priorities have been identified:

- There is a paucity of independent scientific dates for West Yorkshire, particularly for the Iron Age. Although a full audit of available radiocarbon dates and their contexts is required, there are less than 20 reliable $^{14}C$ dates for this entire period.

- The late Bronze Age to Iron Age transition and the early to middle Iron Age are particularly poorly served at present by radiocarbon and other scientific dating techniques.

- Key events such as the Roman invasion and occupation of the north, changes in occupation within forts and settlements, and the eventual abandonment of many forts and settlements, currently have few independent dates to support (or contest) the conventional historical narratives. The immediate post-Roman period is largely unknown.
• The nature of the geology and soils of West Yorkshire mean that organic material suitable for radiocarbon dating is often poorly preserved.

• Some isolated human burials and most animal burials recorded in earlier archaeological investigations have no independent dates to tie them into contemporary occupation. Iron Age, late Roman and post-Roman burials often have few if any dateable artefacts accompanying them.

2.4.2. The research priorities can be addressed as follows:

• Multiple radiocarbon dating must become routine for both Iron Age and Romano-British developer-funded evaluation and excavation projects where suitable material allows. Appropriate dating strategies should be explicitly outlined in curatorial specifications, and must be written into research designs where these are produced by contractual field units and consultants. Adequate funding must be built in at the outset of projects for sampling, analysis and publication of results which should be carried out in a timely fashion.

• Single-entity AMS dating should be used wherever possible.

• All inhumation and cremation burials must be dated, and also disarticulated human remains wherever possible.

• Complete animal inhumations must also be routinely radiocarbon dated, in addition to ‘placed deposits’ or ABGs of animal remains that have been identified.

• Organic residues on the interior of ceramic and other vessel sherds should also be routinely radiocarbon dated, along with externally sooted vessels. This should particularly be the case for Iron Age pottery, or vessels of Iron Age tradition, but also Romano-British coarsewares.

• The reporting and publication of radiocarbon dates must be seen as a high priority. Bayesian modelling and other statistical techniques should be used to combine dates and give increased precision about date ranges, where archaeological stratigraphy and the presence of suitable dating material allows.

• Retrospective dating programmes should be undertaken on securely stratified and recorded organic material (such as human and/or animal bone) retrieved from earlier investigations. Deposits of possible early to middle Iron Age date should be a particular focus of such work.

• In situations where taking multiple (or any) radiocarbon dates is not possible due to a lack of organic material, alternative techniques such as Optically Stimulated Luminescence (OSL) dating should be considered (geology permitting), especially where no closely dateable artefactual material has been recovered from contexts such as enclosure or field system ditches.
• Archaeomagnetic dating of hearths, ovens and flues needs to be routinely undertaken where no closely dateable artefacts are associated with such features.

• Thermoluminescence (TL) dating of Iron Age pottery in West Yorkshire also needs to be tested and assessed to see if it is a potentially useful technique that could be routinely used in the future.

3. Landscapes, land-use and land allotment

3.1.1. ‘Landscape’ approaches

3.1.1.1. There has been a recognition during the past 20-30 years by archaeologists that rather than studying specific sites and foci of human settlement, wider scale landscape approaches are often much more relevant to understanding past communities. People did not simply congregate around settlements, but especially in rural areas would spend much of their time in fields, copses and moving along trackways and paths, and moving from river valleys up onto hills and back. There may have been many daily, seasonal and annual movements associated with livestock. Fields and trackways may thus have been as important to everyday life as settlements. Landscape-scale approaches are especially pertinent in the West Yorkshire region where although some traces of Iron Age and Romano-British inhabitation survive as upstanding earthworks, much of the evidence now lies below ground. The modern landscape is in most instances very different in layout from that which existed millennia before. It thus makes sense to place individual settlements in a wider landscape setting and to more closely correlate the archaeological evidence with palaeo-environmental data on past climatic and vegetational conditions. In West Yorkshire and across Britain, existing archaeological techniques such as aerial photographic mapping and large-scale geophysical survey are increasingly providing the baseline evidence for these periods. New techniques such as LiDAR (Light Detection and Ranging) also show great potential for future archaeological work.

3.1.1.2. These approaches also allow archaeologists to consider how human inhabitation related to landscape features such as hills, valleys, rivers and streams; and also the wider spatial organisation of trackways, fields and unbounded areas. Human settlement patterns are never random, and although settlements, fields or other
features were often located in particular places for practical reasons, in other instances cosmological or ideological factors might have been considered important.

3.1.1.3. Identifying, surveying and mapping archaeological features is an absolutely vital first step in assessing human inhabitation in the past. Landscapes are more than objective spaces to be measured and quantified, however, and can also be understood as a series of subjective places, given meaning by human activities, experiences and beliefs. In recent years, many archaeologists and anthropologists have suggested that there may be multiple experiences of landscape based on notions of gender, class and status, affiliations, biographies and histories, and feelings of belonging or not belonging (see Bender 1993; Chadwick 2004b; Evans 1985; Feld and Basso 1996; Hirsch and O’Hanlon 1995; Holloway and Hubbard 2001; Johnston 1998; Tilley 1994). Historical and ethnographic information suggests that the daily and seasonal routines of men, women and children would probably also all have been different in the past. Phrases such as ‘the Iron Age landscape’ or ‘the Romano-British landscape’ may thus be rather generalised terms. For example, an Iron Age woman would have had very different daily and seasonal experiences of a particular landscape from those of a male Roman administrator, and during the Roman-British period there would have been the many different experiences of administrators or senior military officers from Italy or Spain, legionaries and auxiliaries from across the Empire, and native people who had adopted (or rejected) Roman dress, material culture and beliefs to greater or lesser degrees. There were also wealthy villa owners, merchants, prosperous and poor farmers, tied labourers, servants and slaves.

3.1.1.4. In addition to conventional archaeological techniques such as aerial photographic survey, geophysical survey and excavation, it has thus also been proposed that archaeologists can consider these varied embodied perspectives through investigating the sensory-based ways in which people actually experience their world (Bender 1993; Hamilton et al. 2007; Tilley 1994). Some of these approaches have proved controversial, and archaeologists must be extremely careful not to assume generalised, ahistorical or ‘common sense’ notions of ‘the human body’ (Bender 2001; Brück 1998). Age, gender, belief, ideology and many other social factors would all have influenced people’s perceptions in the past.
3.1.2. Priorities and implementation

3.1.2.1. The following research questions, problems and priorities have been identified:

- Landscape scales of analysis may be just as appropriate or even more important when considering past human occupation as detailed studies of settlements and buildings themselves.
- Conventional plan views of settlements and buildings may not convey how those features were actually experienced by those people inhabiting them.
- Many important human activities in the past may have taken place in areas away from clearly identifiable settlement foci.
- Archaeological results must be combined with localised palaeo-environmental information wherever possible.
- The likely existence of different experiences and perspectives amongst people in the past should be recognised in archaeological work.

3.1.2.2. The research priorities can be addressed as follows:

- Specifications for developer-funded archaeological projects should stipulate that detailed aerial photographic analysis, systematic field walking and extensive geophysical survey must be routinely undertaken on medium and large-scale projects where appropriate and feasible, and should accompany trial trenching and excavation work.
- Even where foci of human settlement such as enclosures have been identified and targeted, specifications for developer-funded fieldwork must ensure that ‘outlying’ ditches, pits and other features are also adequately investigated.
- Where appropriate, developer-funded archaeological reports on settlement sites should include basic GIS (Geographic Information System) based viewshed and site line analyses, to be orientated from archaeological features such as building doorways and enclosure entrances.
- In unpublished client reports as well as published reports, articles and monographs, consideration should also be given to thinking about likely paths of human and animal movement in and around settlements, through trackways and across the landscape. Access analyses (q.v. Foster 1989) can be a simple means of indicating some of these spatial relationships.
3.2. **Palaeo-environmental evidence**

3.2.1. **Problems with the evidence**

3.2.1.1. The soils of the region are generally poor at preserving organic remains. Upland peat bogs on Millstone Grit areas in the western Pennine fringes of West Yorkshire may preserve waterlogged plant and insect remains and charcoal but not pollen or animal bone; and alluvial sediments may contain pollen; but on the vast majority of excavated archaeological sites only charred plant remains can provide information about past environments. The alkaline soils on Magnesian Limestone areas allow some limited pollen and mollusc preservation.

3.2.1.2. Problems of preservation thus influence where sampling has been undertaken (e.g. Berg 2001: 4, fig. 2). In the Millstone Grit Pennines in the west, investigations have focused on areas such as Crawshaw Moss, Rombalds Moor and Marsden Moor, and the analysis of pollen cores and plant macrofossils. To the east, lowland sites include developer-funded excavations on Magnesian Limestone areas, peat accumulations at Methley Mires and Sharlston; and lake deposits at Bingley North Bog (e.g. Bastow 1992; Gearey and Kirby 1999). Many pollen and peat sequences are incomplete or undated, however. The central swathe of Coal Measures geology is still largely a blank area in palaeo-environmental terms. It might once have been supposed that the heavier soils here would not have attracted much human inhabitation, but archaeological work from elsewhere in Britain and Europe (e.g. Clay 2002; Mills and Palmer 2007; Ottaway 2003: 138) suggests that this assumption is unlikely. The apparent absence of archaeology may thus be the result of poor cropmark formation. More work is urgently needed here to identify deposits with some palaeo-environmental potential, no matter how limited.

3.2.2. **General chronological overview**

3.2.2.1. Despite the limitations noted above, there is a growing corpus of palaeo-environmental evidence for West Yorkshire, assisted by developer-funded analyses. The first extensive woodland clearance took place during the Bronze Age (contra Turner 1981a), with an associated increase in grassland and perhaps cultivation (Berg 2001: 8-9). This is matched by evidence from Nottinghamshire and South Yorkshire.
Peat from River Trent palaeochannels indicates a marked decline in woodland and a rise in grasses and sedges from 1200-1000 BC, along with hints of cultivation and pastoralism (Brayshay and Dinnin 1999; Knight and Howard 2004; Scaife 1999; Smith and Howard 2004). At Hatfield Moors in South Yorkshire, smallscale Bronze Age woodland clearance accelerated greatly during the Iron Age (Buckland 1979; Dinnin and Whitehouse 1997; Smith 2002).

3.2.2.2. Peat formation in the Pennine uplands probably began in earnest during the mid to late Bronze Age, with tree clearance possibly exacerbated by a climatic downturn between c. 1000-800 BC, along with rising sea levels and inland water tables from around 500 BC (Bell 1996; Dark 1999; Dinnin, Ellis and Weir 1997; Turner 1981b). The wetter, colder conditions were once linked to volcanic eruptions (Baillie 1991, 1995; C. Burgess 1985, 1989), and were regarded as causing the abandonment of upland settlements. Such environmentally deterministic arguments have been criticised, however (e.g. Buckland, Dugmore and Edwards 1997; Tipping 2002; Young and Simmonds 1995), and although the nature and scale of occupation might have changed, inhabitation seems to have continued in many upland areas.

3.2.2.3. Conditions became warmer and drier from around 150 BC (Lamb 1981: 62-63; Simmons 2001: 53). In the eastern limestone areas of West Yorkshire there were probably extensive open grasslands, with some evidence for ploughing and arable cropping (Long and Tipping 2001: 225; Richardson 2001a: 248). Drier, poorer soils supported heath with heather, gorse, birch and even remnant pine trees on ridges and elevated ground (Bastow and Murray 1990: 266-267; Berg 2001: 9; Druce 2007: 359-360). Low-lying river valleys were probably dominated by alder carr, with some willow, birch, hazel and oak, and wet grassland, as South Yorkshire evidence suggests (Boardman 1997: 245-247; Gearey 2007: 62-64; Greig 2005: 13; Roper and Whitehouse 1997: 244). Many valley bottoms had large areas of standing water called meres during winter and spring, but these formed lush pastures in summer and autumn. Water tables were higher than today with more springs and minor becks (Berg 2001: 4). The River Aire, along with the Rivers Trent, Don, Wharfe and Ouse drained into the Humberhead Levels, an extensive area of alder and birch carr, open water and reed swamp, peat bog and raised mires (Van de Noort and Ellis 1997, 1999). The Vale of York also formed part of this. Once regarded as a barrier to communication and largely uninhabited, the Levels contained many important resources and may have
been seasonally exploited for fish, wildfowl, plant foods and construction materials, and bog iron ore. These areas may also have held significant symbolic meanings.

3.2.2.4. During the Iron Age and Roman periods, much of the eastern part of West Yorkshire would have consisted of open landscapes with pasture and arable fields interspersed with small copses of managed woodland (Bastow 1992; Berg 2001; Brown, Howard-Davis and Brennand 2007; Carter, Bunting and Tipping 2001; Richardson 2001c; Yarwood 1981). Plants associated with hedges may have helped define some ditched boundaries (Greig 2005: 13). Stands of wildwood might have remained on steeper hillsides and upland areas, but most tree cover had probably disappeared by the earlier Iron Age. On the western upland side of West Yorkshire, open moorland, heath and peat bog were probably expanding, again with some remnant woodland on steeper slopes or in sheltered cloughs and dales. Nevertheless, this was not always a straightforward progression from wooded to cleared areas over time. At Rishworth Moor trees declined and pasture and cereal species increased during 800-200 BC, but from c. AD 80 there appears to have been woodland regeneration (Berg 2001: 8). Some changes were probably the result of social transformations in patterns of land use and land tenure, often at a very local level. The extent of Iron Age and Romano-British woodland, cleared areas and human occupation on Coal Measures areas is currently much harder to assess.

3.2.2.5. Across Britain, the warm and dry conditions that permitted Roman viticulture in the midlands may have deteriorated, with wetter, cooler conditions during the 3rd to 4th centuries AD (Knight and Howard 2004: 116; Lamb 1981: 62-63; Simmons 2001: 53). Along the Rivers Trent, Don and Idle and within the Humberhead Levels there were episodes of flooding and alluviation, perhaps caused by loss of vegetation cover and/or more intensive agriculture with deeper ploughing and additional winter cropping, leading to higher surface run-off and soil loss (Buckland and Sadler 1985; Dinnin 1997; Knight and Howard 2004; Macklin 1999). There may also have been further marine transgression in the Humberhead Levels (Van de Noort and Davies 1993: 18). It is not yet known if there is similar evidence of flooding and alluviation from the Rivers Aire and Calder.

3.2.2.6. These long-term changes are still poorly understood, particularly those in the later Roman and immediate post-Roman periods. Although some specific boundaries
and settlements seem to have persisted in certain areas (see section 3.6.1.4. below),
many field systems, trackways and enclosures established and used during the later
Iron Age and Romano-British periods might have been abandoned during the late 4th
or 5th centuries AD. This may imply a large-scale decrease in both pastoral and arable
agriculture at this time, and perhaps a concomitant reduction in the human population.
Alternatively, although these changes might indicate radical shifts in the nature of land
allotment or land tenure, as yet there is no palaeoenvironmental evidence for changes
in land use and agricultural practices.

3.2.2.7. The few ‘ancient’ place-names associated with woodland on
Magnesian Limestone areas may suggest largely cleared landscapes by the late Iron
Age and Romano-British periods (Yarwood 1981: 53), so a lack of Saxo-Norman
woodland names in some areas might also imply little post-Roman regeneration
(Brennand et al. 2007: 405). Some place-name evidence does suggest woodland or
woodland regeneration, however, as at Newland Park between Wakefield and
Normanton (Sanderson and Wrathmell 2005: 13), and documentary references to a
‘forest’ of Elmet. Heath or scrub may have often returned after abandonment though,
rather than woodland, and place-name evidence is often problematic and requires
independent scientific verification. Well-dated palaeoenvironmental sequences for
this period are thus urgently required, but there has been a lack of contemporary
excavated sites and features. Preliminary investigations of the agglomerated
settlement at Wattle Syke near Wetherby identified post-Roman and Anglian ceramics,
and there may have been some continuities of occupation there. Detailed palaeo-
environmental analyses associated with that project may thus provide insights into the
period for that local area at least.

3.2.3. Priorities and implementation

3.2.3.1. The following research questions, problems and priorities have been identified:

• Although recent large-scale developer-funded investigations have increased
palaeo-environmental evidence for the eastern Magnesian Limestone areas of
West Yorkshire, there is still a serious lack of information for the Iron Age and
Romano-British periods.
• The central Coal Measures areas of West Yorkshire lack any reliable palaeoenvironmental sequences.

• The scale, chronology and nature of human changes to the landscapes in West Yorkshire are poorly understood.

• Although the developments during the Iron Age and Romano-British periods are far from clear, there is currently little or no palaeo-environmental information available for landscape changes in the late Roman and post-Roman periods.

• Problems of preservation mean that preserved plant and mollusc remains are often only present in very small quantities on excavated archaeological sites.

• Palaeo-environmental sampling on archaeological sites is still often too small-scale and/or ad hoc in nature, and resources for analyses may be limited.

3.2.3.2. The research priorities can be addressed as follows:

• There needs to be a widespread and systematic research programme of palaeo-environmental sampling and analysis across West Yorkshire, focused in particular on alluvial deposits along the Rivers Aire, Calder and Wharfe; in addition to potentially favourable sites on Coal Measures geology.

• Palaeochannels and alluvial deposits associated with the Rivers Aire and Calder west of Castleford and the River Wharfe near Ilkley, Otley and Pool may be locations where targeted palaeo-environmental sampling may prove particularly productive.

• Specifications for developer-funded projects should stipulate that palaeoenvironmental sampling on-site needs to be much more extensive and systematic, and supported by absolute dating strategies. Sampling for pollen analyses and soil micromorphology studies should be also be more commonplace, even if soil conditions are not optimal.

• On developer-funded projects, multiple samples for absolute dating including AMS $^{14}$C dating and (where geology permits) Optically Stimulated Luminescence dating (OSL), should become routine and along with Bayesian modelling used more extensively to support palaeo-environmental sampling and analyses where possible.

• On larger research and rescue projects, on-site palaeo-environmental specialists should be present to supervise sampling. Large developer-funded projects in particular must take into account the need for the systematic sampling, storage, processing and analysis of palaeo-environmental deposits.
3.3. Field systems

3.3.1. General overview

3.3.1.1. In West Yorkshire, from the middle of the 1st millennium BC onwards the Magnesian Limestone areas were increasingly divided up with field systems and trackways that changed throughout the Iron Age and Romano-British periods. Excavations at South Elmsall, Ferrybridge and Micklefield suggest some earlier boundaries consisted of shallow, discontinuous or segmented ditches or gullies (McNaught 1998a; Richardson 2005a, TVA 2004), sometimes recut by later, continuous ditches. Sinuous long boundaries and trackways appear to have sometimes acted as the ‘axial spines’ for later land allotment and division. Enclosures were often the focus for small groups of nucleated fields, corrals and pens, and ‘clothes line’ enclosures were also appended to boundaries (see section 4.2.3.1. below). At Swillington Common, Ledston and around Micklefield, many of the long landscape boundaries probably date from the mid-1st millennium BC onwards, in a few cases possibly slightly earlier (Chadwick 2008a: Ch. 7).

3.3.1.2. Unlike South Yorkshire and Nottinghamshire, extensive landscapes of co-axial fields such as the famous ‘brickwork’ fields identified by Riley (1980) do not seem to have developed in West Yorkshire. Through aerial photographic studies, however, Deegan has identified smaller blocks of co-axial ‘strip’ fields at Low Common near Castleford and Methley, between the Rivers Aire and Calder, at Went Hill west of Aberford, and as far north as the River Wharfe (Burgess and Roberts 2004; Deegan 1999b, 2007). These were linear boundaries at least 400m long and up to 100m apart with short cross boundaries, arranged in ‘bundles’ of four or more strips (Deegan 2007: 5, fig. 6.5). Sometimes these were also a series of shorter strips arranged end-on. The broadly east-west ‘strips’ were laid out as long boundaries and then subdivided by shorter north-south cross boundaries. Some of the blocks of more regular, co-axial fields were possibly later, laid out from the 2nd century AD onwards. In contrast, ‘mixed’ field systems were much more variable in size, although sometimes fields of similar sizes seem to have clustered together as some GIS analyses by Deegan have indicated (ibid.). There may have been functional and/or social reasons for this.
3.3.1.3. An overview of Romano-British field systems and rural settlement used the terms ‘cohesive’ and ‘aggregate’ to describe these differing field patterns across the wider region (Taylor 2007: 59, 62-66). This is yet another typology, however. It has been suggested that some regular blocks of fields identified to the west of Tadcaster and Newton Kyme were examples of Roman centuriation forming a prata legionis for the fortress at York, this being a tract of land under the direct military control of the legion in order to help supply it (Mason 1988; Ottaway 2003; Ramm 1980). This is rather unlikely. As with suggested examples of centuriation elsewhere in Britain (e.g. Peterson 1990), the apparent regularity of such field systems breaks down when examined in detail and need not imply that Roman surveyors laid out these fields as one planned unit. Elsewhere in northern England, excavation has shown that even very regular appearing co-axial field systems developed over time and with considerable complexity (e.g. Chadwick 1997, 1999, 2008c; Richardson 2008).

3.3.1.4. River valley bottoms often remained unenclosed during the Iron Age and Roman periods, and were probably used for seasonal grazing and later hay cropping. Many hilltops and ridges across the county were also not enclosed, and were probably scrub, heath and moorland, used for upland grazing and other resources. In these areas livestock herders may have used individual enclosures such as Upton and Ackton (Roberts 1995; Yarwood and Marriott 1988a) and small groups of enclosures at South Kirkby and Brierley (Yarwood and Marriott 1988a), perhaps on a seasonal basis (Chadwick 2007, 2008a: Chs. 6 and 7). Although these areas might initially have been used communally, over time specific communities may have claimed rights over them. Larger blocks of field systems were confined to river valley terraces and the level or gently undulating areas of the Magnesian Limestone and (perhaps) the Coal Measures.

3.3.1.5. In the western part of West Yorkshire there are few field systems visible as cropmarks, and in the few areas that have been extensively stripped or where geophysical survey has occurred, little evidence has so far emerged for them. Some stone-built irregular and nucleated fields and paddocks were associated with some upland settlements, but overall enclosure and field boundaries seem to have been less common. On the Millstone Grit and possibly the Coal Measures areas too, any claims over tenure and ownership do not seem to have led to widespread land division and extensive boundary construction. This does not of course imply that noone had claims over these areas, or that they were not used by communities for grazing, other resources or even for cultivation. It is important for archaeologists to draw distinctions
between land use, tenure, land allotment and land division (Chadwick 2008b; Johnston 2001; Kitchen 2001).

3.3.1.6. Why many long boundaries on the Magnesian Limestone in particular were so sinuous is unclear. The ditches might have been dug along the lines of geological bedding planes and periglacial cracks in the limestone bedrock, or may sometimes have followed the edges of cleared parcels of land, and/or the edges of existing woodland (Roberts 2008: 197; Roberts, Deegan and Berg 2007: 7). In other instances, the meandering lines of boundaries and trackways probably reflected the slightly erratic routes taken by livestock moving through the landscape. These irregular routes then became ‘hardened’ over time through repeated movements by people and animals, and eventually were formalised with the construction of sinuous double-ditched trackways.

3.3.1.7. To date, the function or purpose of most of these fields is unclear, as is the extent of either pastoral or arable agriculture. Dating fields is often problematic, particularly where only a few stretches of ditch have been excavated. Even more intensive sampling may not produce much information, however. At Normanton Industrial Estate, a series of co-axial fields and enclosures were excavated (Wylie 2007), but these investigations only produced a few sherds of Romano-British pottery. There were few internal features associated with the enclosures, and the area might have been associated with stock herding and grazing. This largely ‘negative’ evidence is nonetheless crucial in furthering understanding of these Iron Age and Romano-British rural landscapes, and it is important that such areas are sampled intensively. At Normanton, the possible emphasis on livestock could not have been predicted from the cropmark and geophysical survey data, or from field walking and even trial trenching.

3.3.2. Priorities and implementation

3.3.2.1. The following research questions, problems and priorities have been identified:

- Areas of West Yorkshire have not been fully mapped using available aerial photographs.
• The reasons for the many variations in the form, shape and size of field systems and fields are not yet understood, and it is not clear if functional or social factors (or both) were important to this.

• The purpose of most Iron Age and Romano-British fields is not yet known, and the concomitant extent of pasture or arable regimes.

• The nature of land tenure and/or ownership during the Iron Age and Romano-British periods is not known.

• Were some enclosures and fields inhabited or utilised year-round, and others seasonally or even more episodically?

3.3.2.2. The research priorities can be addressed as follows:

• The aerial mapping work of the Lower Wharfedale and Magnesian Limestone projects needs to be extended to cover the whole of West Yorkshire.

• The initial GIS-based analyses undertaken by Deegan (2007) as part of the Magnesian Limestone project proved useful in examining field sizes. This analysis could be expanded across West Yorkshire to examine relations (if any) between field size, shape, soil quality (q.v. Reader 2008), slope, aspect, altitude, date and other factors.

• Linear field and trackway ditches need to be more intensively sampled on excavation projects, both to retrieve more artefacts and \(^{14}\text{C}/\text{OSL}\) samples for dating purposes, but also for potential palaeoenvironmental information through pollen and soil micromorphology analyses.

• The principle deciding factor in determining archaeological evaluation strategies is the need to supply archaeological information to inform the planning process, such as the presence or absence of archaeology, its likely date and importance. Nevertheless, sometimes archaeological investigations do not proceed beyond the evaluation stage, and in such instances more thought should be given as to how to maximise the amount of archaeological information retrieved from such projects. Small-scale projects should be seen as providing potentially important information that will enable much wider landscape stratigraphies and developmental histories to be established.

3.4. Arable agriculture and crop processing

3.4.1. Iron Age

3.4.1.1. During the Iron Age, emmer and spelt wheat were important crops, the latter becoming more important during the late Iron Age and Romano-British periods (Jones 1996; van der Veen 1992). Bread wheat and club wheat became more significant
during the Roman period. Barley was an important crop in northern areas, whilst oats and rye were also harvested, although it is not yet clear if these were deliberately cultivated or not. Peas, beans, brome, vetch and fat hen were either cultivated or tolerated, and the latter two may have provided leafy greens, animal fodder and insurance against harvest failures (Reynolds 1979). Many other plants and trees were used for food, fodder, medicines and to provide fibres.

3.4.1.2. Some authors proposed that following the Roman occupation of Britain cereal cultivation increased and there were improvements in agricultural techniques (Fowler 2002; Frere 1987; Higham 1991; M. Jones 1981, 1991). Although perhaps true for parts of central-southern Britain, evidence for this is largely absent in northern England. Metal ard-share tips pre-date the occupation (Fowler 2002; Millett 1990), and coulters and large ploughshares were not introduced until the 3rd century AD. Early on at least, the main significance of the Roman occupation concerned rights and control over production, the transportation and distribution of produce, and processing and consumption practices (Cool 2006; Meadows 1994, 1997).

3.4.1.3. The poorer quality soils found in parts of West Yorkshire and northern England today led some earlier archaeologists to claim that Iron Age people were primitive nomadic pastoralists inhabiting a marginal region (e.g. Piggott 1958; Rivet 1958; Wheeler 1954). Even supposedly endemic Iron Age warfare was seen as retarding cultivation (Higham 1991: 95), despite earlier support for significant arable farming (Raistrick 1939: 129). More detailed considerations of the regional evidence have concluded that arable agriculture was much more significant in later prehistory (Haselgrove 1984; Huntley and Stallibrass 1995; van der Veen 1992). It has been claimed that after the Roman conquest of northern Britain what little local indigenous cultivation there had been was abandoned, and grain was imported from the south (Branigan 1984: 30; Seaward 1976: 22-23). This assertion is now untenable.

3.4.1.4. The evidence for arable cultivation in West Yorkshire during the Iron Age has recently been reviewed (Chadwick 2008a). Due to poor preservation only limited quantities of charred grains may be recovered, but emmer, spelt wheat, bread wheat, hulled barley and oats have been found in Iron Age contexts at Manor Farm, Swillington Common, Grim’s Ditch North and South, Ferrybridge, Moss Carr Methley, South Elmsall, Stile Hill Colton, Sharp Lane, Leeds and Sites Q and M (Alldritt 2005; Bastow 1994; Carter 2006; Carter, Bunting and Tipping 2001; Druce 2007; Holden
2001a, 2001b; Holden and Hastie 2001; Richardson 2002; Richardson and Young 2001; Simmons 2006). A notable find at Site M was c. 10000 charred barley, oat and wheat grains from the posthole of a four-post structure (Druce 2007: 362). Cabbage, mustard or turnip seeds, vetches or beans and a plum or cherry stone also came from this context, probably a deliberate placed deposit. Unfortunately, Iron Age samples from Dalton Parlours do not appear to have been taken and/or processed. At Roman Ridge, pollen analysis of soil buried beneath the agger of the Roman road found small amounts of cereals and evidence for a largely open grassland periodically disturbed by ploughing (Long and Tipping 2001: 225).

3.4.1.5. Many saddle and beehive quern stones have been found across West Yorkshire, including the western Pennine zone. Even if there was little cultivation in upland areas by the Iron Age, cereal processing still took place. Again, the evidence has been detailed elsewhere (Chadwick 2008a: Ch. 4, Appendix A). Beehive querns remained in use well into the Romano-British period, but large numbers have been recovered from Iron Age contexts at Dalton Parlours, Moss Carr, Methley and South Elmsall (Buckley and Major 1990; Heslop 2002; Howell 1998). Several clay-lined pits with traces of charred cereals at Swillington Common were possible grain storage features (Howell 2001: 65), but similar examples have rarely been found elsewhere in West Yorkshire and this does not seem to have been a widespread practice. Fourpost structures probably used for grain storage have produced mostly earlier Iron Age dates (see section 5.4.2. below), and it is thus not clear how most grain was stored in the late Iron Age and Roman periods.

3.4.2. Romano-British

3.4.2.1. Charred grain has been recovered from many Romano-British sites in West Yorkshire (see Chadwick 2008a), and significant cereal producing sites include Dalton Parlours, Garforth, Parlington Hollins and Swillington Common South (Murray 1990; Pearson 2000; Richardson 2001b; Young and Richardson 2001). Dalton Parlours and perhaps Stile Hill Colton had bread wheat; and these sites also displayed some aspects of ‘Romanised’ architecture or material culture. This admittedly limited evidence might perhaps suggest that some people who were most receptive to Roman influences also more readily adopted these cereals.
3.4.2.2. Flat rotary querns began to be used during the Romano-British period, including lava examples imported from the Niedermendig quarries in Germany, often associated with military sites (Buckland 1986; Crawford and Röder 1955). Dalton Parlours, Parlington Hollins, Apple Tree Close and Wattle Syke all produced significant quantities of beehive, flat and lava querns from Romano-British deposits (Buckley 2001; Buckley and Major 1990; Heslop 2001a). Many were found in fort and vicus contexts at Castleford, Ilkley and Slack (Buckley and Major 1998; Richmond 1925). The Roman occupation saw the appearance of 'corn-driers' used to parch or dry grain prior to storage, though these may sometimes have been used for malting for brewing purposes (van der Veen 1989). A stone built T-shaped corn drier was excavated at Womersley (Buckland and Dolby 1987), and two similar stone-lined structures were recently recorded during excavations at Wattle Syke near Wetherby in 2007. A substantial corn-drier recorded at Ferrybridge also contained charred, processed grain (Martin 2005: 117-121).

3.4.3. Priorities and implementation

3.4.3.1. The following research questions, problems and priorities have been identified:

- The exact nature of Iron Age and Romano-British cultivation in West Yorkshire is unknown. No ard marks, plough marks or other physical traces of cultivation have ever been identified, although some possible plough marks were excavated at Redhouse Farm, Adwick-le-Street in South Yorkshire (Upson-Smith 2002: 23), underneath the agger of a Roman road.

- Can any geoarchaeological or palaeo-environmental evidence be found that Iron Age and Romano-British communities spread midden material or manure from byres and pens onto the land, or were animals grazed on stubble after harvests and over winters?

- Is there any evidence for other forms of soil management practices such as marling or liming?

- A key question for future research is whether or not there was intensification or extensification of arable production during the Roman period.

3.4.3.2. The research priorities can be addressed as follows:
• Possible locations where ard marks, plough marks or other physical traces of cultivation could be investigated. These might include specific upland areas such as small enclosed areas next to settlements, locations where hill wash or colluvium might have formed above buried soils, or old ground surfaces underneath Roman roads or linear earthworks.

• Geochemical analyses for phosphates and soil micromorphology techniques might be able to identify evidence for deliberate manuring, middening or other forms of soil improvement (q.v. Guttman 2005), but only after extensive sampling of enclosures, pens or infields and outfield areas. Modern agricultural chemicals might obviously have affected some of this evidence in lowland areas.

• Future micromorphology analyses of field ditches and pit complexes such as those at Ledston or Ferrybridge may be able to investigate the possibility that these pits were dug for soil management practices such as liming.

• Identifying what archaeological techniques (if any) could be used to identify the intensification and/or extensification of arable production during the Roman period would be useful.

3.5. Pastoral agriculture, animal husbandry and butchery

3.5.1. General overview

3.5.1.1. Most geologies and soils in West Yorkshire are too acidic for bone preservation, and even on Magnesian Limestone bone condition may still be very poor, hindering identification, ageing and sexing; bones from neonates, juveniles and smaller species rarely survive; and yet such information is vital to considerations of past husbandry and butchery practices. Most excavations produce less than 1000 bone fragments (Richardson 2001a), but such samples are considered too small for statistical analyses (Hambleton 1999; Huntley and Stallibrass 1995). More indirect evidence includes dung beetle remains from Iron Age contexts in Grim’s Ditch that suggest the large-scale grazing of animals (Kenward and Large 2001: 231).

3.5.1.2. Animal bone was often not retained during older excavations, or the assemblages were never analysed in detail. Variations in analyses and data presentation mean that even recently published assemblages may not be directly comparable with one another (Dobney 2001; Hambleton 1999; Huntley and Stallibrass 1995). Roman faunal studies have focused on military sites along Hadrian’s Wall, or centres such as York and Carlisle (e.g. Dobney 2001; Huntley and
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Stallibrass 1995). A survey of faunal assemblages from northern England ignored West Yorkshire (Huntley and Stallibrass 1995), and a study of British Iron Age animal remains only examined a few sites in northern England, none in West Yorkshire; as these samples were considered too small (Hambleton 1999: 16).

3.5.2. Overview of Iron Age husbandry

3.5.2.1. Cattle, sheep and pigs were the main livestock raised in Iron Age Britain. Goats are rarely identified, as their remains are too similar to sheep bones. Sheep were once thought to have been the most numerically important, kept mostly for milk and wool (Grant 1984a), but a major analysis of Iron Age faunal assemblages found most had roughly equal counts of sheep and cattle (Hambleton 1999). Cattle were probably exploited for milk, traction, breeding stock and for their manure (Albarella 2007; King 1991; Maltby 1996). Northern bone assemblages are generally more varied than those in south and central England, with cattle and sheep ranging from 20-70% for both species (Hambleton 1999: 47), and this probably reflected a broader range of husbandry practices than Piggott’s ‘Celtic cowboys’ model (Piggott 1958). On most Iron Age sites there was a low incidence of pigs, but the higher percentages of pigs on ‘high-status’ settlements and burials may suggest that pork was a delicacy (Grant 1984a; King 1991; Maltby 1996; Parker Pearson 1999). At the oppidum of Stanwick, over 20% of the late Iron Age animal bones from 1980s excavations were pig (Haselgrove 1984: 18).

3.5.3. Overview of Romano-British husbandry

3.5.3.1. Romano-British faunal assemblages had generally lower proportions of sheep and higher percentages of cattle and pigs than Iron Age remains (Albarella 2007; Grant 1989; Hambleton 1999; King 1991), the latter perhaps due to increased pork consumption. Cattle dominate Roman military assemblages in Britain, with animals killed at the prime meat bearing age (Cool 2006; Dobney 2001; King 1999). Often there were no juveniles represented at all. This reflects changes in consumption patterns and movements of livestock, with military sites and urban centres importing most of their cattle as adult carcasses or live animals. More sheep were killed when sub-adult or adult than in the Iron Age, implying greater meat and wool production. Slaughtering
patterns and butchery techniques changed considerably, particularly within urban centres and forts, and included the hanging of large joints for curing or storage, and the production of smaller portions as 'snack foods' (Cool 2006; Dobney 2001; King 1991; Meadows 1994, 1997).

3.5.3.2. Livestock may have increased in size during the Romano-British period, particularly in south-east England and along the northern frontier during the 3rd century AD (Albarella 2007; Dobney 2001; Grant 1989; King 1991; O'Connor 1988). Small numbers of especially large non-native cattle that have been found could have been draught animals used to pull heavy wagons. The appearance of donkeys, mules and new breeds of horse, dog and domestic fowl in Britain also suggest increased interest in animal breeding. Some writers have suggested that there was an overall increase and density in livestock numbers (King 1991: 17; van der Veen and O'Connor 1998: 134), but the archaeological evidence for this would be extremely hard to identify (J. Richardson pers. comm.). Hay cropping may have been introduced to Britain at this time (Greig 1984; Jones 1991), and this might have permitted greater livestock densities through making more winter fodder available.

3.5.4. West Yorkshire evidence

3.5.4.1. The evidence from excavated faunal assemblages in West Yorkshire has been reviewed elsewhere (Chadwick 2008a: App. C). At Dalton Parlours, sheep/goat dominated the Iron Age assemblage, with far fewer cattle and a very low incidence of pig. Dog and horse were present in low numbers (Berg 1990a). At the various sites along the M1-A1 Link Road, preservation problems meant that sheep and pigs were proportionally under-represented in relation to cattle and horses with larger, more robust bones. Nevertheless, on late Iron Age and earliest Romano-British sites cattle were predominant, followed by horse, and sheep/goat (Richardson 2001a: 216-217). On middle and late period Roman sites, sheep were most numerous, followed by cattle, horse and pig. Parlington Hollins reflected these trends, and age data indicated that most cattle were slaughtered before prime meatbearing age, perhaps to maximise milk production; whilst the sheep mortality pattern indicated older animals were probably retained for wool and manure. A total absence of neonate cattle, sheep/goat and horse bones, preservation issues aside, suggests that animals were raised elsewhere then imported into the settlement (ibid.).
3.5.4.2. The general pattern of cattle being dominant followed by sheep/goat, pig or horse and dog occurred during Iron Age and Romano-British occupation at A1 (M) Sites M and Q, Garforth, Ledston and Ferrybridge (Bates 2007; Jacques 2000; Maltby 2005; Richardson 2005c), but on the sites along the A1 (M) there was a smaller overall ratio of cattle to sheep in Roman contexts. Along with the data from Parlington Hollins and Dalton Parlours, this may indicate husbandry changes taking place on a few settlements during the Romano-British period, with sheep increasing in significance. This is the opposite of the general trend noted across Britain as a whole (Albarella 2007; Grant 1989; King 1991). The 2007 Wattle Syke excavations should provide useful data, as relatively large quantities of animal bone in generally good condition were recovered due to more rigorous sampling procedures.

3.5.4.3. The increases in the size and numbers of Romano-British livestock have been partly attributed to the introduction of taxation and the demands of the army (Branigan 1984). Tanning and related crafts became industrial in scale at this time, as the military in particular required large quantities of hides for equipment. It has been supposed that most leather came from cattle (Grant 1989; Luff 1982; Noddle 1987), but goatskins were more useful. At Castleford goats were securely identified from bones and from waterlogged scraps of leather (Berg 1999; van Driel-Murray 1998). Cattle skins were used for large shield covers and footwear of Roman legionaries, but most other leather was derived from more supple goatskins (van Driel-Murray 1985, 1998). A single tent for eight legionaries required around 70 goatskins. Substantial numbers of goats would thus have been associated with Roman military sites, but their remains may often have been confused with sheep.

3.5.4.4. The Castleford evidence is the largest faunal assemblage in Britain from a 1st century military or 2nd century vicus site (Berg 1999: 223). Rescue excavations during 1974-1985 recovered c. 40 000 bone fragments from two phases of military occupation lasting approximately 30 years, and from the civilian settlement or vicus. Cattle dominated the fort and vicus phases, with age profiles that indicated a majority were killed when mature or senile, the result of a husbandry system that maintained working and breeding stock rather than the production and slaughter of prime meat animals (Berg 1999: 228). Pigs were far more numerous than on rural sites, comprising 12-16% of the vicus assemblage. A relatively high frequency of sheep in early fort deposits may indicate that the military were initially dependent on local resources (Fulford 1989:
After the establishment of secure supply lines, both local native settlements and the military could provide more cattle, and the high proportions of cattle in later phases of the fort and vicus is more typical of Roman military assemblages in Britain (Coy and Maltby 1987; King 1978).

### 3.5.5. Human-animal relationships

3.5.5.1. Economically focused studies do not take indicate the social and symbolic importance of animals to these human communities. To take cattle as an example, they have many attributes that may have lent them particular significance in the past including a gestation period similar to human pregnancies, and herd hierarchies structured by age and sex analogous to human kin relations (Edmonds 1999; Giles 2000). They also had potential social importance as markers of status, as agents in exchange and marriage networks, fine payments, tribute, and for feasts and rites of birth, death and fertility (Coote 1992; Galaty 1989; Kuper 1982; Lucas 1989; Parker Pearson 2000).

3.5.5.2. Sheep, goats, horses, dogs, wild boar, deer and other species would also all have had a variety of different social and symbolic meanings to Iron Age and Romano-British communities. Particularly in rural areas, different age and gender groups of people would have been responsible for different animals, and some livestock and their human herders may have been moved around landscapes on daily and seasonal routines for quite long distances. Understanding these closely inter-linked movements and meanings is crucial to interpreting the everyday lives of people in the past (Chadwick 2007; Giles 2000, 2007b, 2008).

### 3.5.6. Priorities and implementation

3.5.6.1. The following research questions, problems and priorities have been identified:

- There needs to be better standardisation of recording and analytical techniques for animal remains, and better publication and dissemination of the results of the analyses.

- On-site retrieval rates for animal bone need to be improved.
• Can any archaeological, geoarchaeological or archaeozoological evidence be found for possible practices such as stalling animals in pens and buildings, or keeping animals within infield?

• There needs to be further research into butchery practices and the disposal of animal remains, including animal burials and Associated Bone Groups or ABGs. Can any correlations in depositional practices be found with similar contexts or with other objects such as artefacts? Can we discern some social or ideological aspects of how particular animals were regarded in the past?

3.5.6.1. The research priorities can be addressed as follows:

• In conjunction with archaeozoological researchers based in a university department and faunal specialists working in the region, there should be a database maintained and regularly updated on published and unpublished faunal assemblages from West Yorkshire. This should include information on species, overall bone fragment frequencies (NISP, or Number of Identified Specimens) and minimum number of individuals (MNI) recorded. This data should be available online for research.

• More rigorous sampling of features on site with larger numbers of hand-dug sections and the use of machines to excavate controlled spits from ditches will help improve bone retrieval rates and thus the statistical data available.

• Phosphate sampling on settlement and enclosure sites might be able to detect where animals were stalled within buildings or pens. Detailed soil micromorphology on features around enclosures and fields may also be able to identify where animals were kept.

• Improved spatial analysis of faunal remains on site allied to detailed metrical analyses will help to draw out any distinctions and changes in butchery and disposal patterns. In addition, more nuanced ‘biographical’ approaches to faunal remains (q.v. Morris 2008) will help to draw out the life histories of particular animals, their deaths or butchery and the taphonomic and social practices involved in the deposition of animal remains including complete burials, placed deposits and ABGs.

3.6. Rural landscape changes and development

3.6.1. Overview

3.6.1.1. Excavation work along the M1-A1 Link Road indicated an expansion of enclosure in the 2nd and 3rd centuries AD (Roberts, Burgess and Berg 2001: 287). Around Whitwood and Methley too, earlier fields were altered and reorganised during
the 2nd century AD, whilst at Ferrybridge earlier boundaries were removed and a central enclosure was constructed (Roberts 2004: 34-36, 2005a: 216-217; Roberts 2008: 195, fig. 11). Roberts suggests that these changes reflected developments in the rural economy stimulated by the Castleford vicus associated with intensive agricultural production and more efficient and ‘progressive’ Roman improvement.

3.6.1.2. There is a difference between agricultural intensification and extensification, the former raising output per unit area of land by increasing labour or other resources; whilst in the latter output is increased by enlarging the area under cultivation or pasture, without an associated increase in labour or other inputs (van der Veen and O’Connor 1998: 127-129). Many landscape changes visible in West Yorkshire suggest extensification rather than intensification, with areas of open heath or communal grazing gradually enclosed over time. Areas adjacent to forts and vici may have seen more changes, particularly increases in livestock numbers, but overall the archaeological evidence does not suggest that markedly more intensive, centralised modes of production were implemented during the Roman occupation.

3.6.1.3. Social changes may have been equally if not more significant. Traditional Iron Age forms of tenure and inheritance probably changed over the Romano-British period in some locales, with greater emphasis on the individual ownership of land and land as a commodity, and the appearance of landless labourers who worked on other people’s land (Chadwick 2008a: Ch. 7). Recent archaeological work has seen GIS-based analyses, large-scale excavations and better sampling and dating techniques all applied to field systems, and these methodologies are all clearly advantageous to further discussion and debate.

3.6.1.4. A key question for future research is the fate of these landscapes in the post-Roman period. Near Micklefield, an Iron Age or Romano-British boundary formed the township boundary between Ledston and Micklefield from the Norman period (Heawood and Howard-Davis 2007). At Back Newton Lane, Ledston, some medieval ridge and furrow cut across Iron Age or Romano-British enclosures and field boundaries (Webb 2006), but also respected some earlier boundaries. Longterm continuities in the line and orientation of some boundaries were noted at Ferrybridge (Brennand et al. 2007: 400), and some boundaries may have survived as hedges, banks or ditches for considerable periods. Nevertheless, over much of West Yorkshire
the medieval settlement and field system patterns appear very different to those of the preceding Iron Age and Romano-British periods.

3.6.2. Priorities and implementation

3.6.2.1. The following research questions, problems and priorities have been identified:

- Can archaeologists begin to establish ‘landscape stratigraphies’ in certain areas of West Yorkshire, allowing more detailed sequences of landscape development to be understood?

- Archaeologists need to develop better understandings of the inception and development of field systems, trackways and enclosures, in chronological, social and economic terms.

- What changes (if any) to agricultural practices and production, tenure and land allotment can be identified following the Roman occupation?

- Was the end of the Roman period and immediate post-Roman period in West Yorkshire accompanied by a major decline in population and agriculture, or did it reflect tenurial changes? A major theme of future research should be the evidence for continuity or evidence for large-scale abandonment of previous boundaries.

- If there was widespread discontinuity, what detailed social and economic explanations can be proposed to explain such radical landscape changes? Phrases such as ‘economic collapse’ are highly generalised and do not easily explain how such changes were manifested at regional or more local levels.

3.6.2.2. The research priorities can be addressed as follows:

- The increasing number of archaeological interventions in certain areas of West Yorkshire should permit the gradual construction of detailed landscape stratigraphies, using information from aerial photographs and developer-funded interventions. This could be supported by targeted excavations undertaken by staff from commercial field units in conjunction with university departments and local archaeological societies, designed to test key landscape relationships and recover dateable artefacts or material suitable for absolute dating techniques.

- Once these basic sequences have been established, project designs for future research and developer-funded investigations should be explicitly designed to add information to these. Even a relatively small evaluation might provide, through better sampling and recording, the chance to examine key landscape relationships.
• For the late Roman and post-Roman periods, particular boundaries and field systems need to be targeted for further investigation, accompanied by extensive sampling for palaeo-environmental and dating evidence.
4. Settlemets

4.1. ‘Open’ settlements and palisaded enclosures

4.1.1. Iron Age

4.1.1.1. As elsewhere in Britain (Cunliffe 2005; Haselgrove et al. 2001), earlier Iron Age occupation is difficult to identify and characterise. Within West Yorkshire, some excavated sites dating to the late Bronze Age/early Iron Age periods were not defined by enclosing banks and ditches as the majority of later Iron Age and Romano-British rural settlements were. Earlier sites are thus almost impossible to identify from aerial photographs and geophysical surveys, and those known have been fortuitous discoveries from large-scale open area excavation.

4.1.1.2. At South Elmsall near Doncaster Road and Field Lane, segmented ditches were associated with three or four post-built roundhouses with ‘porch’ structures (McNaught 2001), that produced $^{14}C$ dates of 1740-1518 BC and 12941006 BC. Ten four-post structures were identified, in two rows probably on either side of a trackway, with a $^{14}C$ date of 918-799 BC obtained from one. The north-south ditched boundary replaced or was itself replaced by a timber fence or palisade, and an earlier Iron Age date of 757-214 BC was obtained from one of the postholes (Burgess 2001c: 264). Occupation thus seems to have spanned the middle Bronze Age to the early Iron Age, but the few $^{14}C$ dates have very wide ranges. Not all roundhouses and four-post structures may have been in existence at any one time. The site is currently unpublished, but post-excavation work is now in progress on all of the South Elmsall sites (Grassam in prep.).

4.1.1.3. Further to the south-west at Area D South Elmsall, geophysical survey located a double-ditched trackway and a series of fields and enclosures (McNaught 1997), but not a palisade slot up to 0.45m wide and 0.36m deep that formed a subrectangular enclosure 60m long and 45m wide. The enclosure had two entrances to the north-east and south-east, both defined by timber ‘porches’, and contained two or three post-built roundhouses (Howell 1998), one of which was further defined by a curvilinear eavesdrip gully. Some coarse pottery of later Bronze Age or, more likely, earlier Iron Age date was recovered. The palisade slot was dated to 1524-1319 BC, but some internal features produced dates in the range of 813-542 BC (Burgess 2001c: 265), so
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the chronology here is also problematic, and it is not clear if this unique enclosure was a 'domestic' settlement at all. This site will be published with the other South Elmsall evidence (Grassam in prep.).

4.1.1.5. At Area A, Swillington Common South, open area excavation revealed an 'open' settlement of at least two post-built Bronze Age roundhouses and two rectangular post-built structures that again did not show up on aerial photographs or geophysical surveys. Two undated four-post structures may have been associated with this phase. To the south and west were three Bronze Age ring ditches or round barrows; the north-south line of Grim's Ditch, of late Bronze Age or earlier Iron Age date (Wheelhouse and Burgess 2001); and a prominent double-ditched trackway (Howell 2001: 54), possibly earlier Iron Age in date. An adjacent excavation by YAT found that the Bronze Age ring ditches formed the focus for at least 14 further fourpost structures of probable Iron Age date (Johnson 2002: 36-41, 2003: 8), along with a roundhouse also thought to be Iron Age. Radiocarbon samples were taken but the site and the dates remain unpublished and post-excavation work has not yet begun.

4.1.1.6. A D-shaped palisaded enclosure 27m long and 22m wide with a south-east facing entrance was built next to the double-ditched trackway, the close spatial relationship between them suggesting the enclosure may have just pre- or post-dated the trackway. This palisade consisted of closely spaced individual posts, and incorporated a four or five-post timber structure on its north-eastern side that was another entrance or even a small tower (Howell 2001: 60-61). Radiocarbon dates of 790-400 BC, 758-261 BC and 397-167 BC were obtained from palisade postholes, suggesting an earlier Iron Age date. Only a few internal features were recorded, one with a piece of tap slag, and these returned earlier Iron Age dates. The function of the enclosure is unknown and once again its form is unique in the region.

4.1.1.7. There is growing evidence from West Yorkshire, South Yorkshire and Nottinghamshire that palisade slots were sometimes associated with earlier phases of settlements later defined by ditches and banks (Chadwick 2008a: Ch. 9). Palisade slots were found in the Phase 1 Enclosure A and Phase 2 Enclosure B at Apple Tree Close, Pontefract (Wrathmell 2001: 5-6) and may have pre-dated the main phase of occupation, although the stratigraphy is unclear. Pre-enclosure, 'open' phases of Iron Age settlement were identified at Dalton Parlours (Wrathmell 1990: 275), and possible earlier palisade slots are also visible on published plans.
4.1.2. Romano-British

4.1.2.1. Some Romano-British rural settlements also appear to have had ‘open’ phases of occupation. The 4th century stone-footed building, oven and associated features at Garforth were not within any identifiable enclosure (Owen 2000: 4-5), and the 2007 investigations at Wattle Syke discovered several sunkenfloored later Romano-British buildings cut into silted up enclosure ditches, suggesting that these boundaries were disused by that time. Some of the roadside settlement remains found at Adel by an amateur archaeological group also do not seem to have been located within enclosures, though the excavation has been somewhat piecemeal and this site is poorly documented.

4.2. Enclosures and farmsteads

4.2.1. Typologies

4.2.1.1. The term enclosure is rather ambiguous (Riley 1980: 27). In this document it refers to a ditched and/or embanked area (usually less than 0.5ha in extent) used for domestic inhabitation or other occupation practices such as animal pens, rather than fields. Sometimes it is possible to distinguish between settlement enclosures, pens, corrals and fields, but a small field and a large enclosure may be hard to tell apart. Typologies of prehistoric and Romano-British enclosures based on enclosure form and size include examples by Stoertz (1997) for East Yorkshire, by Whimster (1989: 28-32) for the Welsh Marches and the Trent Valley, by Riley (1980) for the Sherwood Sandstones of Nottinghamshire and South Yorkshire, and most recently by Deegan (2007: Ch. 6) for enclosures on Magnesian Limestone and Sherwood Sandstone areas of West and South Yorkshire. Although typologies are of some use in comparing enclosure form with other factors such as location, aspect and possible date, our modern categories may not reflect how these features were conceived and understood in the past. Variations in form that we see as important today may not have been regarded as significant. Archaeologists must therefore be extremely cautious and self-critical in how they use such terminology.
4.2.1.2. It has been suggested that across Britain, multi-vallate, sub-circular or irregular middle Iron Age enclosures that sometimes featured two or more ditches became more regular and univallate in the late Iron Age, with single-ditched, subrectangular or rectangular forms in turn becoming common during the Romano-British period (Collens 1998). This may reflect general trends, but exceptions are known. A triple-ditched Romano-British enclosure was excavated at Hook Moor (O'Neill 2001b: 118-119), and the double-ditched enclosure at Site XX8 along the A1 (M) road corridor continued in use until the 4th century AD (Brown, Howard-Davis and Brennand 2007: 54). Attempting to date enclosures from earthwork surveys, geophysical survey plots or crop marks alone is thus problematic. Most of the Iron Age and Romano-British lowland enclosures excavated within West Yorkshire, however, have been single-ditched and sub-rectangular or rectangular in plan.

4.2.2. Earthwork enclosure sites

4.2.2.1. Particularly in upland areas of West Yorkshire, some enclosures survive as earthworks. Those along the western Pennine fringe often seem to have had irregular areas defined by boulder walling added to one another over time. Some are associated with low earth and stone features that mark field boundaries, ‘hut circles’ and cairns. Examples can be found at Green Crag Slack near Ilkley, Brackenall Green and Shipley Glen near Shipley, and on Crosland Moor, Rombalds Moor and Rishworth Moor (Keighley 1981; Raistrick 1939; Raistrick and Holmes 1962), with several noted by early antiquaries (e.g. Colls 1846). Some earthworks have been preserved in later woodlands, such as those in Hirst Wood near Shipley, Kit Wood near Tong and Danefield Wood, Otley (Keighley 1981: 122). Dating such upland earthworks is difficult. In many instances, these features are likely to be Bronze Age in date, but some finds of beehive querns suggest inhabitation persisted into the Iron Age and Romano-British areas, as in other Pennine areas (Barnatt and Smith 1997; Bevan 2000, 2004, 2005). Without absolute dating techniques, excavation may produce little or no dating evidence. Excavation of boulder-walled enclosures at Danefield Wood, Otley and at Crosley Wood, Bingley only recovered a few sherds of Romano-British pottery (Holbrey 2000; Mayes 1967).
4.2.2.2. Other earthworks in West Yorkshire consisted of isolated subrectangular or subcircular enclosures on hilltops, ridges or valley side, with one or two circuits of banks and ditches. Summaries have been published elsewhere (Keighley 1981: 124-128), but examples include Castlestead Ring, Meg Dyke, Round Dykes, Woofa Bank, Royd Edge and Oldfield Hill. Castlestead Ring had a bank with an outer ditch, but also a probable counterscarp bank too (Keighley 1981; Yarwood and Marriott 1988a: 14). Early excavations only recovered lead, coal and iron fragments (Villy 1911). A section across the ditch and bank of Meg Dyke in 1976 only found an undiagnostic iron fragment (Keighley 1981: 124), whilst geophysical survey of part of Round Dykes recorded possible roundhouses and hearths (ibid.: 127). Close by, the enclosure at Woofa Bank has possible circular building platforms visible within it (Yarwood and Marriott 1988a: 14-15), and a linear earthwork nearby may have been a contemporary boundary feature, though it remains undated.

4.2.2.3. Royd Edge and Oldfield Hill is an interesting 'pair' of enclosures. At Royd Edge the ditch was unusually internal to the bank (Toomey 1982), but aerial photographs suggest an external counterscarp bank too. Excavation recorded an early roundhouse followed by a palisaded enclosure, and a later box rampart and inner ditch. Finds included clinker, baked clay and a lead spindle whorl, perhaps indicating a later Iron Age date. At Oldfield Hill, early excavators proposed a Roman date despite no finds (Richmond 1924; Wrigley 1909), and further excavation in the 1960s and 1970s found that an earlier palisaded enclosure was replaced by a later enclosure with a stone rampart and ditch. Furnace linings, ironstone, a quern and stone pot lids were found but no pottery (Toomey 1976: 11). A linear bank and ditch led off to the east and west along the scarp edge, but it is not known if this was contemporary with the enclosure.

4.2.2.4. Most of these isolated enclosures were not closely associated with any field systems and trackways, implying that there were predominantly pastoral agricultural regimes in these upland areas, or that tenure was not marked through archaeologically visible boundaries. Although once again most are undated, it is likely that the majority are Iron Age or Romano-British, some perhaps even post-Roman. The lack of evidence for sustained occupation and the relatively exposed nature of many of these enclosures suggest that they did not see year-round domestic inhabitation, but were probably used on a seasonal basis for practices including upland grazing, metalworking and bracken and peat cutting. Even allowing for the later destruction of enclosures by agriculture, industry and urban development, GIS analyses indicate that
there were significantly fewer enclosures in the western Pennine margin of West Yorkshire than other areas (Reader 2008). Most enclosures have not been recorded in detail, and there needs to be an extensive programme of earthwork survey. Conservation and management plans will have to assess the likely impacts of root and animal damage and the impact of leisure activities.

4.2.3. **Cropmark enclosure sites**

4.2.3.1. ‘Clothes-line’ enclosures (another unfortunate archaeological term) were usually appended to existing linear boundaries or trackways (English Heritage 1989) – ‘hanging off’ the boundaries, and thus usually post-dating them. This suggests that land division sometimes took place before settlement. In other cases, later linear boundaries linked isolated enclosures. The national English Heritage monument descriptions (1989) note them as later Bronze Age or early Iron Age, although most West Yorkshire examples were probably Iron Age and Romano-British. Excavated examples include Enclosure F at Ferrybridge and Roman Ridge (Martin 2005: 124; O’Neill 2001a: 111).

4.2.3.2. D-shaped enclosures, either isolated or integrated with field systems, have been excavated at Upton, Parlington Hollins Enclosure B (Holbrey and Burgess 2001; Howell 2001; Roberts 1995); Area E at Barnsdale Bar (Burgess 2001d, 2003; Grassam and Ford 2008), and Site Q along the A1 (M) road corridor (Brown, Howard-Davis and Brennand 2007). More are known as cropmarks from West Yorkshire, and additional examples have been excavated in South Yorkshire. When associated with field systems or ditched boundaries, D-shaped enclosures were often appended to them like ‘clothes-line’ enclosures (English Heritage 1989). The straight part of the ‘D’ may reflect where enclosures were built against existing boundaries, but where no such boundaries were present the reason for the D-shape is less obvious, although the straight axes may have been aligned along informal trackways that left no archaeological trace (Roberts 1995: 21). Excavated examples have generally produced little evidence of domestic occupation, and were probably associated with animal husbandry and/or small-scale ‘industrial’ activities.

4.2.3.3. Field corner enclosures (Deegan 2007) were probably linked to livestock management or used for storage. ‘Banjo’ enclosures featured funnel-shaped or
‘antennae’ entrances and were often linked to trackways, and in West Yorkshire there are examples at South Kirkby, Ackton and near Methley (e.g. Deegan 1999, 2007; Yarwood and Marriott 1988). In central and southern England, the few excavated examples originated in the middle or later Iron Age, and were probably associated with livestock herding (Cunliffe 2005: 247; Fasham 1987: 8-9).

4.2.3.4. Sub-rounded or irregular enclosures that were either isolated or in small groups were possible ‘corrals’ linked to livestock herding. A few especially large examples such as one near Ferrybridge (Brown, Howard-Davis and Brennand 2007: 58, fig. 27), may have been earlier landscape features. A few enclosures were more irregular in form, as at Dale Lane South Elmsall, Whitwood Common, a Phase 1 enclosure at Methley, and irregular cropmark enclosures near Micklefield and Garforth (Burgess 1998; Burgess and Roberts 2004; Deegan 2001b: figs. 9b, 10f; MAP 1996). Changes of orientation in ditches may have been to avoid pre-existing but archaeologically intangible obstacles, or respect clearance edges (Burgess and Roberts 2004: 33). Occasionally, ditches were dug in discontinuous segments, as at Enclosure C, Swillington Common (Howell 2001: 62).

4.2.3.5. The existence of internal banks can sometimes be inferred from asymmetrical ditch fills, but at Enclosure C at Ferrybridge, remains of a bank 2.5m wide survived (Martin 2005: 102). On some sites, lines of postholes or narrow slots parallel to the inner edges of enclosure ditches indicate timber revetments along the earthen banks, as at Enclosure A, Ferrybridge (ibid.: 96) and an enclosure excavated in 2007 at Wattle Syke. Some enclosures had substantial ditches up to 6m wide and 1.5-2m deep despite subsequent plough truncation, and banks and perhaps fences and/or hedges too would have further defined them. In other cases, however, ditches were shallower and badly truncated by later ploughing.

4.2.3.6. Most of the more regular enclosures associated with field systems had single ditch circuits, but some subrectangular examples with double ditches are known, as with an example near the ‘hillfort’ at South Kirkby (Yarwood and Marriott 1998a: 18), and another on Bramham Moor south of Wetherby (AS WYAS 2005). Several more examples have been identified as part of the recent Magnesian Limestone Project (Deegan 2007: fig. 6.19). Double-ditched enclosures may reflect functional or chronological differences, or may have resulted from variations in social status. Some enclosures had double ditches along only one or two sides of the
enclosure, where the two ditches might have been on either side of a central bank, or there were two banks. Possible examples that have been excavated include Enclosure D at Parlington Hollins (Holbrey and Burgess 2001: 94) and Sub-enclosure B on Low Common (Burgess and Roberts 2004: 11). There are no clear functional reasons for this, and status differences seem less likely in these cases.

4.2.3.7. Many enclosure ditches around settlements were repeatedly re-cut, a pattern noted across Iron Age and Roman Britain (Chadwick 1999: 160-164; Knight and Howard 2004: 93; Rees 2008: 73-77). Many re-cuts took place when the ditches had nearly silted up completely, and do not seem to reflect routine maintenance. Some settlements may even have fluctuated between open and enclosed periods. This more episodic re-digging may have reflected symbolic ideas regarding tenure, household identity or notable social events (q.v. Chadwick 1999: 163; Giles 2000: 183; Sharples 1999: 106). There seems to have been particular emphasis on ditch terminals, particularly by enclosure entrances, and these sometimes formed the focus for placed deposits of artefacts and animal or human remains.

4.2.3.8. The subdivision of enclosures with gullies and fence lines created different functional and social spaces. Some entrances into enclosures were deliberately restricted, elaborated with post settings for gateways, or featured fence or palisade lines leading into enclosures and/or towards buildings. In such cases this suggests that there was a concern to deliberately structure the movements of people and animals around enclosures, and create a series of hierarchically organised spaces where perhaps only close kin were permitted into the most private areas.

4.2.3.9. The Lower Wharfedale and Magnesian Limestone aerial mapping projects have identified hundreds of cropmark enclosures (e.g. Deegan 2007), and have been invaluable baseline surveys of the available evidence, although the former project has not yet been published. There are still gaps in the digital aerial mapping for West Yorkshire, however, despite available aerial photographs, and these areas need to be incorporated into a future National Mapping Programme project. Like earthwork enclosures, many of the enclosures plotted from cropmarks need follow up survey work to include detailed geophysical survey and field walking.
4.3. ‘Agglomerated’ settlements

4.3.1. In the Trent Valley, Whimster (1989: 73-77) described a series of low-lying enclosure complexes that developed accretively over time and often display considerable stratigraphic complexity. These were the foci of both intensive and extensive occupation from the earlier Iron Age through to the end of the Romano-British period, and included many features associated with livestock management such as trackways and possible animal pens and corrals. Following Knight and Howard (2004: 100), a more general and ubiquitous term for these may be agglomerated enclosure complexes (Chadwick 2008a: Ch. 6). At least some were associated with seasonal floodplain grazing, returned to repeatedly year after year by larger communities or clans rather than individual households. They are similar to later Iron Age and Romano-British sites in the Upper Thames Valley such as Farmoor, Claydon Pike and Thornhill Farm that seem to have been specialist seasonal pastoral settlements (e.g. Jennings et al. 2004; Lambrick and Robinson 1979; Miles and Palmer 1990).

4.3.2. In West Yorkshire, there are no directly comparable enclosure groups, although some smaller-scale examples on the Methley gravel terraces are broadly similar and might also have seen seasonal occupation. On the gently undulating Magnesian Limestone between Castleford in the south and Wetherby to the north, however, there were a series of large enclosure groups (Deegan 2001: 15-16, 2007: fig. 6.12). At Hunger Hills Plantation near Aberford there was a sub-triangular concentration of enclosures, pens and pits (Deegan 2001). At Castle Hills near Micklefield a T-shaped trackway junction had sub-rectangular and D-shaped enclosures arranged alongside it. Part of the complex lies within modern North Yorkshire and in addition to cropmarks, upstanding earthworks survive in Highroyds Wood. Geophysical and topographical survey has revealed enclosures, pits and roundhouses (AS WYAS 2001; McNaught 1998b). An earthwork bank and ditch of this complex formed a medieval township boundary, and was investigated as Site R during the A1 (M) road scheme (Brown, Howard-Davis and Brennand 2007: 105-108). This ditch may have first been dug in the later Iron Age.

4.3.3. The A1 (M) work included investigations of enclosures and structures at Site C4SA 400m north-west of Castle Hills; and 300m to the south the enclosures, roundhouses and pit groups of Site M, the latter linked to the Castle Hills complex by a trackway (Brown, Howard-Davis and Brennand 2007: 106). The original geophysical
survey of Castle Hills hints at stratigraphic complexity, but more detailed geophysics at a greater resolution would be useful (S. Harrison pers. comm.). Inhabitation at these inter-linked sites was clearly complicated and long-lived. The Portable Antiquities Scheme has recorded metal detecting finds from the area including a Roman lock and a votive miniature chisel, but the complex has also been targeted by illegal ‘night hawkers’ (see section 8.1.3. below).

4.3.4. At Wattle Syke near Wetherby, another agglomerated complex consisted of three ‘lobes’ arranged around a sub-triangular inner space. This was either a ‘ladder’ settlement, a ‘nucleated’ enclosure complex, a series of ‘clothes-line’ enclosures, or a uniquely hybrid form depending on one’s typological proclivities. Detailed aerial photographic and geophysical survey reveals many roundhouses and overlapping enclosures (Signorelli 2005; Webb 2003). Recent excavations of part of the complex in 2007 found evidence for lengthy occupation, perhaps from the late Iron Age through into the post-Roman period, and in addition to roundhouses revealed subrectangular Romano-British buildings not been identified on cropmarks or the gradiometer survey (though with hindsight some are apparent). Large quantities of burnt stone, animal bone, pottery and higher-status Roman-style items suggest significant consumption on site. The large sub-triangular space may have been associated with large numbers of livestock, and smaller pens led off from this central area. This project represents the most significant investigation of a single settlement since the Dalton Parlours excavations (Wrathmell and Nicolson 1990).

4.3.5. Another large complex has been identified from cropmarks at Bramham Park (Deegan 2007: fig. 6.12). This again featured a series of overlapping enclosures on either side of a central trackway, with part of the complex perhaps being a villa or other higher-status settlement. The other significant agglomerated enclosure complex in the area was Dalton Parlours, where an Iron Age settlement developed into a villa complex during the 3rd and 4th centuries AD (see section 4.5.2. below). Whilst there was an apparent hiatus in occupation between this period and the later Iron Age, as only part of the enclosure complex was excavated it is possible that the focus of occupation merely shifted over the centuries (Wrathmell 1990: 279).

4.3.6. In most instances, although these complexes seem to have developed over time and enclosures sometimes overlap indicating stratigraphic and chronological complexity, they also seem to have been broadly delineated by especially large, well-
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4.5. Ladder settlements

4.5.1. Linear ‘ladder’ enclosures were a distinctive feature of later Iron Age and Romano-British settlements in East Yorkshire (Stoertz 1997), and although some enclosures within these complexes were the focus for ‘domestic’ occupation, their frequent location alongside trackways suggests that they were linked to animal husbandry (Fenton-Thomas 2003, 2005: 60-61; Giles 2000, 2007b: 240-241), although they could also have incorporated small cultivated fields or garden plots (Haselgrove 1984: 18). These seem to have been accretive complexes, with enclosures progressively added to one another like the rungs of a ladder (once again a somewhat problematic term and metaphor).

4.5.2. In West Yorkshire, broadly similar enclosure groups were shorter and more irregular than East Yorkshire examples. At Parlington Hollins East, the early Romano-British Enclosure C had three enclosures progressively added to it (Holbrey and Burgess 2001: 90-102). The north-south linear arrangement was not associated with a trackway, and they were more like ‘clothes line’ enclosures appended to a boundary. West of Aberford another possible ‘ladder’ settlement (Deegan 2001: 19, 26) was c. 350m north of the Hunger Hills complex. A trackway approached this complex at an angle from the south-west, but once again the enclosures were arranged along a sinuous, north-south boundary like a series of ‘clothes line’ enclosures. The West
Yorkshire examples therefore differ in key respects to East Yorkshire ‘ladder’ settlements, and they probably formed another regional tradition. This highlights the problems of using poorly formulated nomenclature and typologies.

4.4. **Roman towns, vici, calabrae and roadside settlements**

4.4.1. **General overview**

4.4.1.1. Several national research agendas have considered the topic of urban development during the Roman period (Burnham et al. 2001; Perring 2002a). These have emphasised key research themes such as the social and economic relationships between town and country, particularly how urban centres and their elites were able to co-ordinate and control the influx of people and goods (Perring 2002a). The role of urban centres in the production, distribution and consumption of resources, artefacts and goods is another consideration. A relatively recent topic of archaeological enquiry focuses on social identity (Burnham et al. 2001: 72). These can be considered along with more traditional research foci such as population size, status, military influence and chronological development. Many of these traditional themes form part of wider academic studies of Roman urbanisation in Britain (e.g. Burnham and Wacher 1995; Greep 1993; Sommer 1984; Wacher 1995).

4.4.1.2. Difficulties may arise in trying to identify Roman forts and settlements according to names in the 3rd century AD *Antonine Itinerary* and the *Ravenna Cosmography* of c. AD 700 (Rivet and Smith 1979). These are both problematic sources, particularly the latter where the surviving manuscripts are themselves much later copies. Both have numerous omissions, spelling mistakes, errors and inconsistencies. Although Castleford was probably *Lagentium* (ibid.: 383), Slack *Camulodunum* and Ilkley possibly *Olicana*, there has been debate concerning the identity of a settlement called *Cambodunum* (Faull 1981: 157-163), though this is hardly the ‘most difficult problem of Roman West Yorkshire’ (ibid.: 157). A reference in c. AD 730 by Bede to a *Campodunum* adds further confusion. This settlement may have been located in the area of modern Leeds and has been largely destroyed by housing and industry, or it may simply represent confusion with *Camulodunum*. It is often fruitless trying to match archaeological evidence to historical texts (Moreland 2001) – they are two separate but sometimes complimentary discourses.
4.4.1.3. There can also be problems with terminology. The terms annexe and vicus have sometimes been used as relatively interchangeable (e.g. Hartley 1980). The Romans themselves often made no clear cut distinctions, with the term vicus applied colloquially to many small settlements rather than just those attached to forts (Rivet and Smith 1979). It is arguable whether even supposedly clear categories such as coloniae necessarily shared the same features over time and space (Millett 2001: 60). This agenda follows basic definitions from Rivet and Smith (1979), with vicus meaning a small civilian settlement that although perhaps possessing some administrative organisation, was nevertheless subordinate to military authority. The term annexe refers to extensions to forts, and these were usually ditched or defended to greater or lesser degrees. They were used for ancillary purposes such as metalworking, stabling horses and often were the locations for the legionary bath houses. They were more properly termed canabae. Of course, some annexes changed from mainly military to predominantly civilian use over time.

4.4.2. Castleford

4.4.2.1. Early antiquarian activities in Castleford have been summarised elsewhere (Fossick and Abramson 1999: 5-14), and mostly consisted of reports on stray finds made during building work. The most significant developments have occurred since 1963, when substantial redevelopment work began in the town. Initial archaeological work was very small-scale and limited in resources, undertaken by local amateurs, staff of RCHM(E) based in York and the Castleford and District Historical Society. During 1974-1989 the West Yorkshire Archaeology Service undertook much larger excavations, and during the 1990s there were further evaluations, salvage excavations and watching briefs carried out by WYAS and other organisations. Much of this work could not be reported in West Yorkshire: an Archaeological Survey (Faull 1981), but the results of many of these investigations have now been published (e.g. Abramson, Berg and Fossick 1999; Cool and Philo 1998; Crockett and Fitzpatrick 1998; Rush et al. 2000). Cool's insightful and evocative synopsis of life in Roman Castleford is especially noteworthy (Cool 1998c).

4.4.2.2. A fort was probably established at Castleford during AD 71-74, during or very soon after the Roman invasion of northern England, dated by samian pottery present
in waterlogged midden deposits sealed by a later turf rampart (Abramson 1999; Dickinson and Hartley 2000). The extent of this early fort is not known and its defences have not been found, but it appears to have had both an annexe to the north, and an extra-mural civilian vicus to the south-west. The vicus had east-west aligned rectangular timber structures and associated plots fronting onto a north-south metalled road. The buildings were of slot, post and wattle construction, with earth or clay floors and hearths. Several external hearths associated with possible copper alloy working were also recorded (Abramson and Fossick 1999: 126-128, 136-138). Concentrations of burnt daub at the south of the area suggest a possible accidental fire. Fort I may have been abandoned for a short while after the mid-80s AD, and the vicus too was affected. When the later Fort II was built towards the end of the 2nd century, the vicus was comprehensively re-built and re-organised.

4.4.2.3. The second phase of fort probably lasted until c. AD 100, but vicus occupation probably continued in the same form with some rebuilding until the mid3rd century. The basic north-south and east-west alignments of metalled surfaces and timber buildings were maintained, with plots defined by ditches, gullies and timberlined drains; but there were some metalled alleyways between some of the buildings (Abramson and Fossick 1999: 129-131, 138-140). Some of the structures contained internal hearths and ovens. Artefactual evidence suggests that there was some civilian presence in the area of the annexe, including finds possibly associated with women (Cool 1998c: 357). They may have been utilising the bath house there, which seems to have continued in use well into Phase II, and a latrine pit.

4.4.2.4. Around c. AD 140 there was another programme of rebuilding in the vicus. Many previous plot divisions were removed, new timber buildings were constructed, including one that subsequently burnt down, leaving charred timbers and a large quantity of burnt samian – a minimum of c. 700 vessels (Dickinson and Hartley 2000: 36-55). This may have been a pottery store room or shop. At least two large stone buildings were excavated from this phase, constructed with wall footings that could have supported upper storeys. One (AW) was arranged around a central courtyard and had a stone and timber granary built into one corner, and this was initially interpreted as a possible mansio. The other stone building (AX) had corridors and wings with a veranda, and was thought to have held a commercial function.
4.4.2.5. A re-interpretation of these buildings sees them as having a ritual role, with building AX possibly being used for cult activities. A high proportion of near complete pottery vessels, glass vessels, tazze incense burners, coins and toilet instruments were found in contexts associated with Buildings AX and AW, including a series of deep pits with possible placed deposits within them (see section 9.2.5. below). A stone dedication to the Nymphs was found in a possible foundation deposit underneath Building AW. This evidence may all suggest that these buildings were within the precinct of a shrine dedicated to healing (Cool 1999: 300-304), and to deities associated with water such as Nymphs and Brigantia.

4.4.2.6. Castleford had strategic significance as a crossing of the River Aire (Bishop 1999), but there may have been an additional reason for its location. There is increasing evidence from across Britain that pre-Roman ritual activity influenced the siting of some Roman settlements (Creighton 2006; Rogers 2008). The evidence for a Roman-period shrine at Castleford (Cool 1999) may imply that there was an earlier, Iron Age ritual centre there as well, possibly focused on rivers, water and the Aire-Calder confluence. At Redhill in Nottinghamshire, for example, there is evidence for Iron Age and Romano-British ritual activity and a possible temple site close to the confluence of the Rivers Soar and Trent (Elsdon 1982; Palfreyman and Ebbins 2003). Appropriating 'native' ritual sites and merging indigenous deities with Roman gods may even have been part of a deliberate strategy of imperial assimilation.

4.4.2.7. From around AD 160-180 part of the Castleford vicus appears to have been abandoned, and was covered with rubbish and midden deposits during the 3rd century AD (Abramson and Fossick 1999: 151). Buildings were robbed for stone, and a small group of inhumation burials was recorded. At least one timber building of uncertain function was constructed in the vicus area. The fort abandoned in c. AD 100 had also been used for stone robbing and rubbish disposal, but from c. AD 250 it was re-occupied by civilian settlement, and a perimeter wall and ditch enclosed the area. The military bathhouse in the Annex was probably still functioning, but was now used by the vicus dwellers (Abramson and Cool 1999: 295). Stone and timber buildings and more insubstantial timber structures were built, some associated with industrial activity as two kilns and a dump of spoon moulds were recorded. One substantial stone building may have been a temple. The last dated coin finds are from the later 4th century AD, although this may reflect a breakdown in the monetary economy rather than abandonment. An undated inhumation at Bradley Street might have been post-
Roman (Crockett and Fitzpatrick 1998: 58). Post-Roman occupation may have been destroyed by later development, and Castleford does not emerge again in archaeological and historical terms until the later Anglo-Saxon period.

4.4.3. Adel

4.4.3.1. In 1702 and 1715 Thoresby recorded the destruction of stone buildings and finds of Roman funerary monuments, statuary and architectural fragments, and pottery, querns and coins at Adel. There were 19th century finds of stone altars, a stone inscribed with a phallus, and stone coffins. Excavations during 1933-1938 and in 1956 found stone wall footings, cobbled or paved areas and hearths (Clark 1934, 1936, 1938; Richmond and Wright 1958). There may well have been a fort here with an associated vicus (Faull 1981: 144). A subrectangular earthwork located approximately 100m to the south of these earlier investigations was excavated in 1913, but the results proved largely negative and unconvincing (Atkinson 1913), although this would be worth investigating again with geophysical survey. The Ilkley to Tadcaster road (Margary 1973, no. 729) ran east-west through the area, and Roman settlement seems to have occurred on either side. There was probably also a cemetery on a hill nearby, where some burials have been recorded.

4.4.3.2. Geophysical survey by AS WYAS revealed what is thought to be a Roman fort and associated vicus on either side of Eccup Lane (Jefferson and Roberts 2006). Plot boundaries and even possible rectangular and circular structures are visible on the survey plot. In 2002 AS WYAS staff and members of a local archaeology society investigated a section of the Ilkley-Tadcaster road west of Eccup Lane. In what would have been a low-lying, marshy area, a metalled agger surface was found supported on a raft of horizontal timbers and brushwood, similar to that at Scaftworth in Nottinghamshire (Dearne 1997). The Adel wood produced a 14C date of 180 BC-AD 30 (Jefferson and Roberts 2006) suggesting that either an earlier, preconquest trackway was re-used by the Roman builders, or that the timbers were derived from another earlier structure.

4.4.3.3. A recent reassessment of the geophysical survey results has proposed that there was no fort but rather ribbon civil settlement along either side of the road, with a band of different geology in the middle of the survey area rendering some features less
visible (S. Harrison pers. comm.). There are no distinctive 'playing card' corners visible on the survey plot that were common to Roman forts such as those at Burghwhallis and Rossington Bridge in South Yorkshire. Further more detailed geophysical survey and trial excavation is necessary to test this, but it might indicate that a fort at Adel was situated elsewhere and remains to be discovered. Alternatively, this was perhaps always a civilian roadside settlement. This question clearly deserves further detailed investigation.

4.4.3.4. Excavations in 1986-1996 by the Adel Excavation Group near Adel Mill Farm uncovered the remains of substantial stone-footed buildings with internal stone paving (Sykes, Hulme and Teal 2006). Unfortunately, no written or drawn records for these investigations were located following the death of the principal excavator, but subsequent work has found Roman pottery, evidence for iron working and a 3rd century coin hoard. These structures may represent a continuation of the ribbon roadside settlement, but their nature and function is unclear. It is perhaps regrettable that such large excavation areas and important structures are being opened and exposed by a small group with rather limited resources. Clearly, there is great potential for collaborative research at Adel, which should include further more extensive and more detailed geophysical survey, and responsible and properly recorded targeted excavation. New prospection techniques such as infra-red aerial photography and LiDAR survey might also prove productive.

4.4.4. Ilkley

4.4.1. Roman Ilkley was located at the junction of two Roman roads (Margary 1973, nos. 729 and 720), and many early finds of Roman material cluster along the east-west modern lines of The Grove and Station Road, south of the fort. It is thought that there was an annexe to the north of the fort, with civilian settlement and cemeteries to the south and east. Ilkley expanded rapidly during 1865-1880, and during this period there were many finds of Roman remains including stone walls, inhumation and cremation burials, pottery, tombstones, altars and quern stones (Collyer and Turner 1885; Woodward 1925; Wrathmell 1991).

4.4.2. The Roman Antiquities Committee of the Yorkshire Archaeological
Society excavated the northern and north-western areas of the fort during 1919-1921. The report on these excavations (Woodward 1925) also outlined earlier finds of inscribed and sculptured stones, including an altar dedicated to the goddess Verbeia and depicting a figure holding two staffs or snakes and another depicting a jug and patera for ritual practices. Several noteworthy tombstones included an uninscribed example featuring images of a man, woman and child all wearing cloaks, and the notable stone dedicated to Vedica of the Cornovii (ibid.: 316-317). Re-development in 1962 prompted additional excavation in the northern fort area under the auspices of the Ministry of Works and Leeds University (Hartley 1966). The full extent of the extra-mural annexe to the fort and the civilian vicus has proved very difficult to establish, however, due to the later buildings established above it.

4.4.3. There have been subsequent small-scale developer-led investigations within Ilkley. Investigations during rebuilding within Ilkley Church in 1982-1983 revealed re-used Roman masonry in the foundations, including an inscribed dedication stone; and an assemblage of re-deposited samian ware (Swann 1995). The construction of a shopping arcade on the old bus depot site to the south-west of the fort led to trenching ahead of foundation construction that discovered the metalled surface of north-east to south-west orientated Roman road, and a site at The Grove revealed a buried soil containing Romano-British pottery and a quern fragment (WYAS 1990a). A series of evaluation trenches at Bridge Lane adjacent to the western circuit of the fort found a disturbed extended inhumation, a late 2nd to early 3rd century stone wall, ditches and a series of partly waterlogged deposits containing worked timbers and stakes in addition to Roman pottery, brick, tile, glass, hammerscale and animal bone (O’Neill 2001d). These were either the deposits within a counter scarp bank or (less likely) upper ditch fills associated with the fort defences. The nature of the building is not known, although it would appear to be located too far south to have been a gate tower. Clearly, there is much work to be done in Ilkley to establish the extent and chronology of extra-mural occupation.

4.4.5. Slack

4.4.5.1. Roman remains had been recorded at Slack since the 18th century, and included tiles, pottery, coins and an altar dedicated to Fortune (Richmond 1925). A hypocaust was removed in 1824, but the Huddersfield Archaeological and
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Topographical Association, later to become the Yorkshire Archaeological Society, first extensively excavated there in 1865-1866 (Barber 1870; Richmond 1925). These investigations were mostly within the area of an extra-mural settlement or annexe defined by a bank and ditch, but unfortunately most of the records have been lost, although some of the pottery was later recovered and catalogued by Richmond. The bath house was situated to the south-east of the fort (Dodd and Woodward 1920: 89; Richmond 1925). There were further poorly documented investigations by Villy in 1893 (WYAAS), but the second major programme of fieldwork focusing on the fort took place in 1913-1915 (Dodd and Woodward 1920). Areas east, north-east and north of the fort described as an annexe were investigated during this phase of work, however, and trial trenches revealed extensive areas of stone paving and numerous Roman artefact finds (ibid.: 36). A small group of inhumation and cremation burials were found in 1923 to the north-west of the fort (Richmond 1925).

4.4.5.2. Excavations during 1958-1961 examined the area north of the fort, and recorded the remains of rectangular timber buildings and an *inter-vallum* road within an area defined by a bank and ditch that were probably not constructed before c. AD 120 (Hunter, Manby and Spaul 1967). This may suggest a relatively informal *vicus* area was later enclosed within an annexe. As with the earlier investigations, most of the pottery recovered dated to AD 80-140, and it is likely that both the fort and its extra-mural settlement were abandoned by the early Antonine period. In advance of the construction of the M62 motorway, further excavations were undertaken to the north of the fort during 1968-1970, under the auspices of the Ministry of Works and Leeds University. Unfortunately, these investigations have only ever been published as interim notes (Hartley 1969, 1970), and may repay further post-excavation analysis and publication in the future.

4.4.5.3. Several small-scale developer funded excavations have been undertaken in Slack, and these have revealed stone walls, road surfaces and possible industrial areas within the *vicus* (e.g. Brown 1996b). Some 4th century tile fragments found during one of these investigations (WYAS 1990b) may indicate that occupation in the area continued in some form beyond the mid-2nd century.

4.4.5.4. Members of the Huddersfield and District Archaeological Society excavated possible stone-lined conduits for supplying water to the fort at Slack in 2007. Although similar in appearance to some early modern land drains, timber recovered from the
base of one returned a $^{14}$C date of AD 210-340 (HDAS Newsletter 15: 3). Recent excavations by HDAS in 2008 in the area of the vicus found additional stone paved areas, hearths and also two ceramic vessels, at least one of which was associated with cremated bone from a burial. The stone paving may have been associated with possible timber buildings and workshops, which may have left little visible trace. Their footings might have been constructed of horizontal timber wall plates resting directly on top of the stone surfaces. Further investigations will have to clarify this. Glass, metal and pottery were also recovered, including late 3rd to early 4th century Crambeck Parchment Ware. Some geophysical survey work at Slack has been undertaken by teams from the University of Bradford (e.g. Vernon and Schmidt 2006), though unfortunately the rather promising results of these have not yet been published. This should be a priority.

4.4.6. Wetherby

4.4.7. As in Ilkley, the nature and extent of Roman period settlement at Wetherby is hard to establish as much of it probably underlies the modern town. During the construction of the railway station in the late 19th century querns, animal bones and a brooch were recovered, but more significant remains were found during 1928-1930 just west of Wetherby Church where a series of ditches, pits and hearths were identified, associated with much material culture including 1st to 4th century pottery and 2nd to 4th century coins (Kent and Kitson Clark 1934: 175). Large tile fragments suggested the nearby presence of substantial Roman-style buildings. At least 11 inhumation burials were recorded, 4 in cists made of limestone slabs, and a fifth in a grave covered with Roman roofing tiles (ibid.). These seemed to be amongst the latest Roman features on the site, and may be late 4th or early 5th century in date (Faull 1981: 145). Several inhumation burials were also recorded in the market place south of the church, and three more examples were recently excavated in this locale (AOC Archaeology 2007).

4.4.7. Other West Yorkshire sites

4.4.7.1. The nature of Roman settlement at Pontefract and Otley is largely unknown, but artefactual finds suggest that it was present. Recent evaluation work in Bondgate,
Otley, recovered Roman pottery from a cobbled streambed and a quern fragment from a ditch (Williams 2008), and this implies nearby settlement. This settlement was perhaps situated upslope from the edge of a large boggy depression known to have existed in the past, a periglacial lake that gradually silted up over time. There may also have been Romano-British occupation at Rastrick and Cleckheaton, but whether these were simply small farmstead enclosures is not clear.

4.5. Villa complexes

4.5.1. Roman-style villas were rare in northern England and most were a relatively late development, the majority dating to the 3rd and 4th centuries AD (Branigan 1980, 1984; Wilson 1997). In West Yorkshire there may have been villas at Gawthorpe near Bingley, Birstall and Ossett (Faull 1981: 147), a suggestion based largely on finds of tesserae and old accounts of tessellated pavements. All these possible sites were destroyed during the 1950s and 1960s by modern development. A few additional sites have also been proposed (Hartley and Fits 1988: 73-74), including possible sites near Garforth and Darrington.

4.5.2. Only the villa at Dalton Parlours has been excavated (Procter 1855; Wrathmell and Nicolson 1990). It was probably inhabited between AD 200-370 (Wrathmell 1990: 279), with the winged-corridor Structure J and the aisled Structure M as the principle buildings. A Medusa mosaic and Roman army-style metalwork including lorica squamata might suggest military connections (Cookson 1990: 150; Cool 1990: 86), though this association may have been over-stressed (Creighton 1992). Tiles stamped with the Sixth Legion mark nevertheless suggest a link to the garrison at York (Betts 1990: 170; Elgee and Elgee 1933: 140). There were some hints during the 2007 Wattle Syke excavations that one or more substantial stonebuilt buildings with tiled roofs may have been located just outside the road corridor excavation, and the cropmark evidence and gradiometer survey also hints at this (Signorelli 2005; Webb 2003). More detailed resistivity surveying might be necessary to confirm this. Recently, another possible villa site has been identified from cropmarks at Bramham Park (Deegan 2007). These locations were all relatively close to roads with access to Castleford and Wetherby (Faull 1981: 148).
4.5.3. It is not clear if villas represented the dwellings of higher status local native lineages that became wealthier under the Roman occupation (Hartley and Fitts 1988: 74; Stead 1980), or if ‘incomers’ such as retired soldiers constructed them (Branigan 1980, 1982, 1984). Of course, there might have been examples of both. The Dalton Parlours cropmark evidence does suggest considerable continuity with the earlier landscape, although conversely the possible military connections might indicate the latter. By the 3rd century AD, however, there is no reason why a Romano-British male from a prominent local lineage might not have served with the Roman military, or alternatively established close links with them as a supplier of goods. Economic factors have been advanced for the scarcity of villas in the north such as a relative lack of ready markets for goods and a supposed absence of largescale arable cultivation, though Dalton Parlours had ample evidence for cereal processing. In West Yorkshire it might reflect social factors such as the apparent lack of pronounced pre-Roman social elites, and/or a degree of implicit or even conscious resistance to Roman material culture.

4.6. Priorities and implementation

4.6.1. The following research questions, problems and priorities have been identified:

- The extent of unenclosed and/or earlier Iron Age settlement is largely unknown. Can archaeological prospection methodologies be refined in order to be able to detect such slight features? Or will they continue to appear as chance discoveries in large developer-funded infrastructure projects and open-area excavations?

- A major programme of earthwork survey is urgently needed in West Yorkshire, to focus on upland and woodland enclosure sites and associated features. This work should also incorporate a Geographic Information System (GIS) to analyse the wider landscape settings and relationships of these enclosures and associated features, as initial analyses have produced promising results (Reader 2008).

- Although aerial photographic mapping of enclosures in West Yorkshire exists for some areas, the numbers and forms of enclosures on Cola Measures and Millstone Grit areas are less well surveyed from the air.

- Ancient woodland should be the focus of systematic search for surviving earthwork remains of enclosures and field systems (as at Castle Hill Woods, Micklefield). Where identified the sites should be surveyed and any threats to them assessed.
• The excellent results of the Lower Wharfedale survey and particularly the Magnesian Limestone project (Roberts et al. 2004, 2007) should be used to inform a project of more detailed geophysical survey of selected enclosures and agglomerated enclosure groups, in addition to suspected villas. Dalton Parlours, Wattle Syke, Castle Hills, Bramham Park, Hunger Hills Plantation and Hook Moor are all obvious candidates for new or additional detailed geophysical survey work.

• Is there evidence that the construction of villas led to any significant reorganisation of land allotment and land division in their immediate areas? Again, more detailed aerial photographic and geophysical survey might be able to elucidate this question.

• There needs to be a major research project targeting vici and other urban and roadside settlements, utilising detailed geophysical survey. At Adel, for example, the extent of the linear roadside settlement is not clear, and gradiometer and resistivity surveying would be an ideal means of trying to establish this. The full extent of civilian settlements and cemeteries around Slack and Ilkley is likewise uncertain.

• In line with national research agendas relating to Roman urban areas, the development of Roman military sites and urban settlement in West Yorkshire requires much further study. Three key chronological foci must be the Hadrianic-Antonine period, the late 3rd and 4th centuries, and the early 5th century and immediate post-Roman period.

• A long-term ‘town and country’ research project in partnership with commercial field units, university departments and local archaeological societies could examine the evidence for economic and social links between urban areas and their rural hinterlands.

• Shops and workshops (tabernae) would have been an important social as well as economic component of Roman settlements (e.g. Mac Mahon 2005). Several reasonably well preserved examples were excavated from the Castleford vicus. Some future work could examine how well these were integrated into the overall Roman economy, and whether in West Yorkshire a monetary economy arrived soon after the Romans in larger settlements, or whether trade and barter remained the norm for many people.

• The nature and organisation of production, exchange and consumption at both Iron Age and Romano-British settlements requires investigation in the future. Did different settlements have concomitantly different ‘signatures’ of production and consumption, and did these reflect social differences?

• The organisation of Roman urban settlements and their streets, public buildings and monuments were essential to how the elites monitored and controlled the movements of people and livestock, and were heavily implicated in the spatial and temporal observance of rituals and processions (Esmonde Cleary 2006). Exploring the dynamic nature of these urban spaces is therefore vital to future work. The re-interpretation of some of the Castleford evidence (Cool 1999) is a cogent example of this.
• What was the ‘ethnic’ composition of the people living in the Roman urban centres in West Yorkshire, and can any age, gender and social differences be identified through material culture (q.v. Cool 1998a)? The extent of settlement by ex-military men in towns, vicī and farmsteads is currently unknown, and although extremely difficult to investigate, some analysis of finds assemblages from rural sites around Castleford, Ilkley and Slack may be able to shed some light on this. In the latter two cases, however, cropmark preservation is rare and the relative lack of development in this part of West Yorkshire has limited the numbers of rural settlements that have been identified and excavated.

4.6.2. The research priorities can be addressed as follows:

• When they are recognised during soil stripping, it is vital that adequate resources are directed towards the investigation of relatively unprepossessing features such as shallow ditches and gullies, as in some instances these might reflect late Bronze Age and earlier Iron Age unenclosed settlement.

• A programme of earthwork survey could be undertaken by English Heritage surveyors, commissioned from a commercial field unit, and/or undertaken in conjunction with a university department and local societies. Local societies could have an especially important role to play in such work.

• There needs to be an assessment undertaken of problems affecting earthwork enclosure sites such as tree root damage in woodlands, bracken and heather damage on moorlands, and also erosion caused by footpaths and leisure activities such as walking, horse riding mountain biking and (especially) from trail motorbikes and other off-road vehicles. This work could be undertaken with the assistance of local societies and volunteers. It should lead to the production of an integrated resource management strategy for such sites across West Yorkshire.

• The aerial mapping of earthwork and cropmark features undertaken for Lower Wharfedale and the Magnesian Limestone areas of West Yorkshire as part of the National Mapping Programme needs to be extended to cover the entire county.

• Agglomerated enclosure and possible villa sites might benefit from very detailed survey employing a combination of fluxgate gradiometry, soil resistivity and magnetic susceptibility techniques with readings carried out at 0.25 by 1m intervals, and caesium vapour magnetometry may also prove rewarding at some of these sites. The results of the 2007 Wattle Syke excavations suggest that on some geologies buildings with stone wall footings may not show up very well on magnetometry surveys alone. This work could be undertaken in conjunction with a university department.

• Scheduled and non-Scheduled enclosure sites, especially agglomerated enclosure complexes and possible villa sites, should be the focus for archaeological metal detecting surveys to remove and record metalwork
artefacts under controlled conditions to prevent them being lost to illegal ‘night hawkers’ and casual metal detectorists (also see section 8.1.3. below).

- Ploughing of many of these cropmark sites should be halted altogether where possible, especially of the agglomerated enclosure groups and possible villa complexes. Even particular smaller examples could have ploughing controlled. Agri-environmental schemes would be the principal curatorial means of achieving this.

- Ground Penetrating Radar (GPR) may be of some use in some areas, particularly in Ilkley.

- Re-examination of older archives and finds assemblages from Ilkley, Slack, Adel and Wetherby could form a useful contribution to research into these military sites and civilian settlements. This can address questions such as chronological development, and military and civilian identities. Once again, local societies could play a leading role in such research.

- On urban archaeological sites, the excavation of numbers of deep pits where large foundation piles will be placed places an unhealthy emphasis on information from sections, and it makes it extremely difficult to link together the different archaeological trenches to form meaningful stratigraphic sequences (see Crockett and Fitzpatrick 1998). The intervening blocks of stratigraphy are very vulnerable to disturbance during construction, and also at a future date during redevelopment when the piles are eventually removed. By prioritising sections over plans, such excavations are more similar to outdated Wheelerian box-section techniques than they are to modern methodologies of open-area excavation. Rather than use these inappropriate techniques, wherever possible building foundations should be re-designed to consist of needle-piling and rafts, but if extensive foundations are unavoidable than full open-area excavation is necessary.

5. Buildings and structures

5.1. Roundhouses

5.1.1. Form and date

5.1.1.1. The Bronze Age and late Bronze Age/early Iron Age roundhouses at Swallington Common South and South Elmsall Areas C and D consisted of rings of posts with four to six postholes forming ‘porches’ (Howell 2001; McNaught 2001). It is not clear if the post rings were outer walls, or inner roof supports – their small size may suggest the latter, with the so-called ‘porches’ actually lined passages through turf walls 1.5-2m thick able to support the weight of thatched roofs (q.v. Pope 2003). The absence of eavesdrip gullies may reflect plough truncation, or might be a feature of roundhouses of the period (q.v. Willis 1997b: 208-209). Quite when eavesdrip gullies
became more commonplace is hard to establish. Structure 3 at Methley (MAP 1996) was also post-built, but may be later Iron Age in date.

5.1.1.2. Most lowland roundhouses only survive as partial ring gullies and/or arcs of postholes, with no floors or internal features due to later plough truncation. Examples were found at Parlington Hollins, Swillington Common Enclosure C, Area B South Elmsall and perhaps Ledston (Holbrey and Burgess 2001; Howell 2001; O'Neill 1998; Roberts 2005b). Circular eavesdrip gullies were probably shallow-dug scoops, perhaps eroded further by run-off from roofs. Gullies were sometimes more irregular as at Methley and Swillington Brickworks (Eyre-Morgan 1992; MAP 1996; Vyner 1992) – these may have been ancillary structures. In a few instances roundhouse ring gullies were within larger penannular ditches, as at Site M (Brown, Howard-Davis and Brennand 2007: 89) and possibly Swillington Brickworks (Eyre-Morgan 1992; Vyner 1992). This may reflect additional drainage, or status differences. Unlike examples in south-central England, most excavated roundhouses in West Yorkshire do not seem to have had pronounced ‘porch’ entrance structures.

5.1.1.3. Deeper, steep-sided ring gullies were probably slots or bedding trenches of plank or wattle and daub walls from larger buildings. Structure 5 in Enclosure C at Ferrybridge was 12.5m in diameter, with a rock-cut, segmented ring gully and post-pits up to 0.50m deep (Martin 2005: 102-105). Large post settings could have supported upper galleries or lofts for sleeping or storage (Pope 2007: 220-221). Additional examples include roundhouses 5 and 6 at Dalton Parlours (17m and 13m) (Sumpter 1990a: 19-24) and the 13-18m diameter roundhouses at Moss Carr, Methley (Roberts and Richardson 2002). Some of the larger structures were possibly middle Iron Age in date, a trend noted in southern England (Cunliffe 2005). The more substantial ‘great houses’ (q.v. Evans and Hodder 2006: 278) might have been the dwellings of higher status individuals and families, larger groups, or had specialised social roles as shrines or the lodges of particular age, gender or social groups. This was suggested for roundhouse 5 at Ferrybridge (Roberts 2005a: 215), which had a large upright timber post next to it, similar to examples in Cambridgeshire (q.v. Evans and Hodder 2006: 247-248). Large roundhouses could also have been used for stalling livestock (Pope 2007).

5.1.1.4. At Dalton Parlours, some roundhouses had post rings outside of the standing walls, either for roof timbers sloping down to the ground (Sumpter 1990a: 729), or
representing repairs. There is evidence for internal partitions at Low Common and Sites Q and M (Brown, Howard-Davis and Brennand 2007; Burgess and Roberts 2004). At Whitwood Common, a linear gully was probably an internal partition rather than an earlier building, or a setting for a bed platform or bench. Additional subdivisions within roundhouses could have been created with moveable hurdle screens or woven hangings. Floors were probably of beaten earth.

5.1.1.5. In contrast to the stone-built roundhouses of the Pennine uplands (Wilson 1997: 9), only a few stone examples have been excavated in West Yorkshire’s lowlands, including a sub-circular building at Site C4SA (Brown, Howard-Davis and Brennand 2007: 112-133). Stone would have been available to people in lowland areas, albeit not as readily as in some upland areas, but they nevertheless almost always chose to build in timber and wattle and daub. This may indicate wider social or cultural differences between upland and lowland folk and different building traditions, or different functional requirements.

5.1.1.6. Most excavated West Yorkshire roundhouses have been later Iron Age in date, but some at Ferrybridge were early Romano-British (Martin 2005), and they continued to be constructed until the 3rd or 4th centuries AD, as at Bullerthorpe Lane, Low Common and Site Q (Brown, Howard-Davis and Brennand 2007; Burgess and Roberts 2002; Wheelhouse 2001). Roundhouses excavated in 2007 at Wattle Syke could date to the late Iron Age or earlier Romano-British period, so postexcavation analyses of these should prove interesting.

5.1.1.7. Some roundhouses may have had two entrances, with the second entrances often more narrow, as at Site M, Low Common, Ferrybridge and Dalton Parlours (Brown, Howard-Davis and Brennand 2007: 87; Burgess and Roberts 2004: 13; Martin 2005: 93, 95; Wrathmell 1990: 278). Sometimes these features were directly opposed, but not always. Harding (2004: 32) briefly noted other examples from North Yorkshire, Cumbria and Dumfriesshire, though there are North Welsh examples (e.g. Kenny 2007). There has been little detailed discussion of this intriguing form. If these were dwellings, then two entrances would have made them very draughty, and might also have had deleterious effects on any internal hearths. In some roundhouses at Dalton Parlours and Ferrybridge, the putative ‘entrances’ may simply reflect symmetrical arrangements of posts, or changes in doorway orientation (Rhys 2008: 240). Examples with two entrances may have had a different purpose to other roundhouses (cf. Roberts
A recent analysis of West Yorkshire roundhouse doorway orientations (Chadwick 2008a) found that most roundhouse entrances facing south-west or west were from structures with two entrances. This may show that they did have different functional, social and/or symbolic significance.

5.1.1.8. More unusual roundhouse forms include the double conjoined roundhouses at Moss Carr Methley Site 1 Enclosure A (Roberts and Richardson 2002: 5-6), where the smaller linked examples were probably ancillary structures; the two or three phases of roundhouses at Moss Carr Methley Site 1 Enclosure B with splayed gully or fence ‘avenues’ leading to them (ibid.: 9); an example with an unusual ‘porch’ structure at Temple Point, Swillington Common (Johnson 2002: 36); and a roundhouse ring gully with ‘scalloped’ semi-circular posthole settings found in 2007 at Wattle Syke. It was not clear during the excavation of the latter if the settings were contiguous with the ring gully or belonged to a different phase of structure.

5.1.2. The social histories and meanings of roundhouses

5.1.2.1. Most of the roundhouses excavated in West Yorkshire need not have been inhabited for more than one to two human generations. The limited stratigraphic evidence suggests that most were abandoned or more likely dismantled, rather than being burnt down. In some cases, however, roundhouses seem to have been completely rebuilt on the same site, as at Moss Carr, Methley Site 2 Enclosure A and at Enclosure B (Roberts and Richardson 2002), and at Enclosure A at Ferrybridge (Martin 2005: 92-95). At Swillington Brickworks several possible roundhouses also overlapped (Eyre-Morgan 1992; Vyner 1992). This does not seem to have been the repair of existing structures but rather the repeated replacement of them, and hints that sometimes there was a need to retain attachments to very specific places. At Moss Carr, Methley, if the settlement was inhabited between c. 500-300 BC (Evans 2002: 26), and this time period is divided up into the number of phases of construction, this suggests rebuilding may have taken place approximately every 5070 years, or every two to three human generations (Chadwick 2008a: Ch. 9).

5.1.2.2. Extended family groups would have been capable of building smaller roundhouse structures within two days (q.v. Percival 1980), but larger roundhouses (and enclosures) probably needed co-operative labour from several different
households (Evans and Hodder 2006: 278; Sharples 2007: 179), reinforcing individual and communal relations. The beginning or end of building may have been important social occasions involving feasts and requiring offerings. Larger roundhouses would have consumed sizeable quantities of timber, coppiced rods, reed thatch and daub (e.g. Bennett 2001, 2002; Darrah 2006; Reynolds 1979), and their construction may have had to be planned years in advance.

5.1.2.3. Determining the makeup of roundhouse inhabitants is difficult. Where there was only one roundhouse, this building was probably inhabited by one extended family, but in enclosures with two or more probably contemporary roundhouses, additional structures could have been ancillary storehouses or byres, or were used by other family members. Ethnography highlights the possibility that there were men’s houses and women’s houses, houses for senior men or women, for young men, or for women during menstrual or post-natal seclusion. Where occupation of enclosures and roundhouses was episodic or seasonal, these buildings may have required extra maintenance when people returned to them (Pope 2003).

5.1.2.4. Researchers in the 1970s and 1980s noted that roundhouses shared similar designs and doorway orientations (e.g. Guilbert 1982; Hingley and Miles 1984; Knight 1984; Reid 1989). The practical reasons advanced for this included a desire to maximise daylight and to face away from prevailing winds. Ideas of central and peripheral areas (Cunliffe 1978; Kelly 1988), private and public space and symbolically male and female, light and dark areas might have existed in the past (Hingley 1990b). Informed by ethnographic analogies, Oswald’s study of roundhouse orientations (1991, 1997) used diagrams to show that the majority faced east or south-east due to cosmological principals of cardinal directions such as the equinoxes and the mid-winter sunrise. Symbolic associations were explored by others (Fitzpatrick 1994, 1997a; Parker Pearson 1996, 1999; Parker Pearson and Sharples 1999), who argued that the movement of the sun around roundhouse interiors influenced where sleeping and craft activities took place; and that in the Iron Age this was a metaphor for the human life cycle from birth through to death. Structured deposits of artefacts and human and animal remains sometimes found within roundhouses reflect these ideas.

5.1.2.5. In an extensive study of over 1200 roundhouse from central and northern England, Pope (2003, 2007) argued that Oswald’s patterns were less clearcut, and that the date and landscape setting of roundhouses was significant. She suggested
that pragmatic environmental concerns were still valid, and proposed a basic front: back and centre: periphery model, stressing the importance of upper storage areas. A subtle exposition of these ideas argued that pragmatic and spiritual ideas were probably in place at the same time (Giles and Parker Pearson 1999). Traditions of architectural techniques, cosmology and inhabitation were passed down the generations through everyday, embodied movements. Trying to separate functional and cosmological concerns may therefore not be appropriate when studying Iron Age and Romano-British communities.

5.1.2.6. A recent study (Chadwick 2008a) examined the entrance orientations of 38 excavated West Yorkshire roundhouses, and found that the majority faced east or south-east, but there were also clustered groups of doorways facing north-east, south-west and due west. Roundhouses with two possible entrances formed a clear subgroup, the two entrances being mostly orientated east and south-east, and west and south-west. The same research examined 112 excavated enclosure entrances from West Yorkshire, but found less evidence for any preferred orientation.

5.2. Rectangular buildings

5.2.1. Rural Romano-British buildings survive as postholes and stakeholes for posts and wattle and daub walls, or linear slots for walls or horizontal timber wall plates. Relatively few have been excavated – examples include Phase 1 of Structure A at Dalton Parlours (Tindall 1990: 35-36), Structure 1 at Parlington Hollins (Holbrey and Burgess 2001: 94) and Structure IV at Stile Hill Colton (Barkle 1995) – the latter a L-shaped structure. Most were probably single-storey structures; some perhaps with standardised timbers that may have allowed the pre-fabrication of frames (e.g. Goodburn 1991, 1995). Traditions of wattle and daub continued, but the Romano-British period saw many changes in carpentry and joining techniques and the increasing use of iron nails, hinges and other fastenings and fixtures. Some buildings now had doors with iron locks and keys, reflecting changing notions of privacy and ownership. Most buildings probably had beaten earth floors, and internal wattle and daub or hurdle partitions. More substantial rural buildings had stone-walled foundations like the apsidal-ended Structure 486 at Garforth Phase 2 (Owen 2000: 56) and many buildings in the Dalton Parlours villa complex such as Structures E, P, Q, X and Y (Tindall 1990: 40-67), some of which had sunken floors.
5.2.3. Sunken floors are known from other Romano-British buildings in northern England (Wilson 1997: 13), and excavations at Wattle Syke by AS WYAS in 2007 found at least ten buildings with sunken and/or partially flagged floors. Some of these were almost certainly used for craft or processing activities, or for storage. Many of the Wattle Syke examples lacked internal posts, suggesting they had quite low roofs supported on stone footings and perhaps turf or cob walls.

5.2.4. At Dalton Parlours there were several buildings with internal hearths and ovens, including Structure P that had a centrally placed hearth but also the flue of an oven or kiln that went through one wall (Tindall 1990: 60-61). These hearths were set on flat tabular stones and/or tiles, and probably survived because they were within sunken-floored structures. Many Romano-British buildings appear to have lacked internal hearths, but as with roundhouses this may sometimes simply reflect later plough truncation across sites. At Wattle Syke, some sunken-floored structures clearly lacked hearths altogether, and these were unlikely to have been used for domestic inhabitation. Others had large internal ovens but these probably fulfilled more specialised functions. At least one stone-flagged building excavated at Wattle Syke without a sunken floor had a surviving hearth built on flat stone slabs.

5.2.5. Narrow post-built buildings such as the 4.1m wide Structure 7 in Enclosure D at Ferrybridge (Martin 2005: 116), the 6m wide example at Garforth (Owen 2000) and the M151 and M103 posthole groups at Apple Tree Close, Pontefract (Wrathmell 2001: 9) were possible barns or byres.

5.2.6. The main villa building at Dalton Parlours (Building J) was a winged corridor villa, a fairly typical form for smaller villas in central and northern England and broadly similar to examples at Langton and Ruston (D.J. Smith 1978; Stead 1980). It was probably occupied between c. AD 200-370 (Wrathmell 1990: 279). It had one square wing and one apsidal wing, the latter featuring a fragmentary tessellated floor and the famous Medusa mosaic found in 1854 (Procter 1855), the latter on display in Leeds Museum. This may have been a dining room, but as this wing had no hypocaust it may only have been used in warmer months. Seasonal dining was a feature of higher-status Roman-style consumption (Cosh 2001).
5.2.7. Structure M at Dalton Parlours is the only rural aisled house excavated within West Yorkshire, and was the largest building in the villa complex (Tindall 1990: 47-58). Other regional examples are Epperstone in Nottinghamshire (Whitwell 1982), and Ockbrook and Roystone Grange in Derbyshire (Hodges 1991; Palfreyman 2001). More are known from the south Midlands (Hingley 1989: 39-45). A study of aisled and developed-aisled buildings in Northamptonshire showed that they shared traditions of spatial organisation, with hearths, corn driers and entrances repeatedly located in the same positions (Taylor 2001: 51-52). During the 2nd and 3rd centuries AD everyday agricultural or craft activities were frequently undertaken within aisled buildings used as houses, but in the later 3rd and 4th centuries domestic areas were increasingly separated from working spaces, reflecting changing attitudes to social space. Subdivision and elaboration can be seen at Structure M (Tindall 1990: 47-58), where the initial ‘open’ aisled building had later extensions, including a bathhouse suite with a hypocaust. The spatial organisation of rectangular buildings and aisled houses developed from or were combined with existing indigenous traditions, rather than the slavish adoption of ‘Roman’ architecture (Hingley 1990b; Taylor 2001).

5.3. **Urban buildings**

5.3.1. Rescue excavations undertaken in the fort, annexe and vicus areas of Castleford from the 1970s to 1990s uncovered a wide range of Roman period buildings. Some of these were ‘classic’ large Roman urban buildings such as the large stone bathhouse and stone and timber granaries, although the principia and praetorium from both Forts I and II have not been identified. The bathhouse in particular was so robust that it probably continued in use for several centuries. The later 3rd and 4th century settlement also seems to have had substantial stone multistorey structures. Other buildings were rectangular timber structures. Earlier examples were of ‘slot and post’ construction, where horizontal wall plates supported stakes and vertical posts infilled with wattling and clay panels (Abramson 1999; Abramson and Fossick 1999). They had floors of beaten earth or clay, and internal hearths and ovens. Other examples were excavated at Slack (Hunter, Manby and Spaul 1967), and were similar to wooden urban buildings found elsewhere in Britain, including London and York (Esmonde Cleary 1987; Goodburn 1991; Perring 1987, 2002b). In the later Roman period some timber building techniques seem to have
changed in Castleford at least, with wall slots replaced by greater numbers of vertical posts (Abramson and Fossick 1999).

5.4. Four-post structures

5.4.1. Four-post structures have long been assumed to represent elevated granary structures, though there is usually no direct archaeological evidence for this. At Sutton Common in South Yorkshire, however, and at Site M in West Yorkshire, excavated postholes of several Iron Age four-post structures produced large quantities of carbonised cereal grains (Druce 2007; Van de Noort and Chapman 2007: 38). These charred remains were in the backfills of the postholes, suggesting that they were primary deposits, perhaps deliberate offerings. Some four-post structures might also have been fodder ricks, more general storage structures, chicken coops or even platforms for the exposure of the human dead. Some of these elevated structures actually consisted of between five to nine posts (Cunliffe 1991).

5.4.2. There were at least eight four-post structures in two rows at South Elmsall – radiocarbon dating of material from one post indicated a late Bronze Age date (McNaught 2001). At Swillington Common, several four-post structures were identified and 14C dates of 409-207 BC and AD 85-385 were obtained from them (Howell 2001: 64-65). They were part of a wider ‘scatter’ of at least 14 such features, some clustered around Bronze Age ring ditches (Johnson 2002, 2003a, 2003b). Three four-post structures were found during earlier excavations at Wattle Syke (Turner 1991b: 1), and two or three more in the 2007 investigations (Chadwick pers. obv.). There were between two to four excavated at Dalton Parlours (Sumpter 1990a: 27, 29), and others including examples with more than four posts were found at Stile Hill, Colton, Ferrybridge, South Elmsall and Ledston (Barkle 1995; Martin 2005; O’Neill 1998; Sumpter and Marriott 2005). One at Sharp Lane, Middleton, Leeds returned 14C dates of 770-410 BC and 790-420 BC (Davies 2006: 17). Several relatively isolated examples were recorded at several sites along the A1 (M) road corridor, but at least 15 were found at Site M near Micklefield (Brown, Howard-Davis and Brennand 2007: 90-92), and a 14C date of 390-180 BC was obtained from the posthole filled with carbonised grain.
5.4.3. Clearly, these structures varied considerably in date, and not all may have had
the same function. Sites with large groups of these structures may have represented
communal storage (if they were all contemporary); whereas other sites seem to have
had few if any of these features. Of the limited number dated so far, only one seems
to have been in use during the Roman period, and this might indicate that they were
mainly an Iron Age phenomenon. How and when they were superseded is not clear,
however, nor what storage facilities replaced them.

5.5. Priorities and implementation

5.5.1. The following research questions, problems and priorities have been identified:

- More evidence is required for the construction and inhabitation of roundhouses and rectangular buildings. At present, it is not even known what materials buildings’ floors were constructed out of. It might prove possible to identify areas where more nuanced evidence could be located, where structures may have been buried by alluvium or colluvium.

- Can any spatial zoning be identified within roundhouses and rectangular buildings in West Yorkshire? If so, did these correspond to different functional areas? Can patterns of internal human and/or animal movement be detected?

- Can any clear traditions of the internal use of space within roundhouses and rectangular buildings be identified in the future, both across and within West Yorkshire? Do any differences apparent across West Yorkshire reflect functional adaptations to different landscapes, or might these have corresponded to social differences between groups?

- No upland roundhouses or roundhouse platforms have been excavated in West Yorkshire, to compare and contrast them with other upland examples recorded from Derbyshire and North Yorkshire, and with lowland examples.

- Following Pope (2003, 2007), is it possible to distinguish between roundhouses (and rectangular buildings) that were occupied on a permanent basis, or that may have only been inhabited seasonally? What archaeological criteria might be used to explore this question?

- Depositional patterns within and around roundhouses and rectangular buildings require more detailed consideration on future projects, especially the issue of whether or not there were deliberate foundation and/or closure deposits.

- At present, it is not known whether most buildings were abandoned and left to decay and fall down, or whether they were deliberately dismantled and
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demolished and the materials used elsewhere. Can archaeological techniques be refined or developed to investigate this?

5.5.2. The research priorities can be addressed as follows:

• Future excavations of roundhouses and rectangular buildings should include phosphate sampling, magnetic susceptibility and other geochemical analyses wherever soil conditions are suitable, in order to investigate patterns of inhabitation within enclosures and roundhouses. Such techniques have produced extremely interesting results elsewhere, indicating where people might have slept, carried out tasks and/or where animals were stalled (e.g. Evans and Hodder 2006: 106-107, 145-146, 272-273; Parker Pearson, Sharples and Symonds 2004: 72).

• Where buildings are suspected from cropmarks or geophysical survey, initial soil stripping over them should proceed extremely gingerly and some topsoil or subsoil might have to be left in place to be excavated by hand, in order to maximise artefact retention.

• Where stone wall footings and/or sunken floors are identified, then deposits within buildings may have to be carefully removed in spits, and all finds three-dimensionally recorded. Microstratigraphic excavation techniques using grids, fine dry sieving and extensive sampling for wet sieving may recover small bone and finds fragments, and soil column samples might need to be taken for micromorphological and pollen analyses.

• Larger finds at least are unlikely to represent the actual ‘use’ of particular areas within buildings, but might provide valuable insights into post-abandonment processes. Much smaller finds may be able to highlight activity foci, however. The cross-joining of pottery sherds during post-excavation analyses may provide insights into abandonment and/or depositional processes.

• Many sites have been too badly truncated by ploughing for such evidence to survive of course, but results from the structures excavated in 2007 at Wattle Syke indicate the potential for this information to exist. Some of the sunken floored buildings in particular had at least c. 0.50m of deposits within them, probably reflecting post-abandonment dumping and silting.

• Roundhouses and rectangular buildings must be planned in detail (at 1: 20 rather than 1: 50), in order to reveal subtleties of construction. Careful hand excavation of areas within and around buildings may find evidence of depressions and wear hollows that might reflect activity areas and human and animal movements. These subtle contours need to be shown on plans. There is an unfortunate tendency on some developer-funded projects to use earth moving plant to ‘grade off’ topsoil and subsoil and then plan features as if they were all originally on the same level.

• Entrance orientation information for roundhouses and rectangular buildings should be recorded on site and routinely incorporated within client reports and
publications. It can be hard to establish accurate bearings from small-scale site plans alone.

- Excavators on developer-funded and research projects should be made aware that Iron Age and Romano-British buildings may often produce few if any finds, but where these do occur it is often in the form of structured or placed deposits of artefacts and human or animal remains within postholes or pits. Some of these examples may have been foundation or closure deposits.

- Unless they fall outside development areas or cannot be further investigated for health and safety reasons, all buildings must be 100% excavated. Very small bone and artefact fragments, details of spatial organisation and possible different activity areas, and the presence of placed deposits might be otherwise missed.

- AMS dating of any charred material and OSL or TL of sediments should be considered where structures produce no dateable artefacts. Archaeomagnetic dating of hearths and ovens within buildings should also become routine.

- Every attempt must be made to obtain multiple dates from groups of four-post structures. These were not unimportant ancillary structures. If a site produced evidence for many four-post structures of approximately the same date, this may indicate storage and social relationships beyond the household level. Similarly, a wide spread of dates may simply indicate that one or two structures were in use at any one point in time. The function of four-poster structures should be explored wherever possible.

- A particularly interesting structure or group of structures could be the focus for a co-operative joint research project between commercial field unit staff, university staff and students and local archaeological societies. Funding for such work could be sought from research grant awarding bodies as well as the Heritage Lottery Fund.

- Some stone-built roundhouses or roundhouse platforms in the Pennine uplands of West Yorkshire could be targeted for excavation, partly to explicitly compare and contrast them to excavated lowland examples. Again, this would be an ideal collaborative project.

6. Conflict and control

6.1. Hillforts and defended sites

6.1.1. Theoretical and chronological problems

6.1.1.1. Iron Age hillforts were once regarded as elite residences and fortified redoubts for the internecine conflicts thought to have prevailed during the period. It was once
supposed that all but the most exposed were permanently occupied. Many were identified as tribal centres that were destroyed by the Romans or abandoned after the conquest, and dating was based on rampart typologies (Cotton 1954). Interpretations during the 1970s and 1980s highlighted the potential role of hillforts as ‘central places’ within territories, and as production, storage and redistribution centres (e.g. Cunliffe 1978, 1984; Gent and Dean 1986; Hogg 1975).

6.1.1.2. Recent interpretations have questioned such assumptions. Debates within anthropology and archaeology concerning violence have noted that with some exceptions wars in small-scale societies are rarely fought to annihilate other groups, and are associated with ideologies of warriorhood, martial display, and young men’s desires for status and wealth (e.g. Abbink 2000; Heald 2000; Mascher and Reedy 1998; Treherne 1995). Warfare is usually not ‘endemic’ but irregular and episodic, and open conflict is often kept in check by social and political strategies. This is not to downplay the presence of warfare in the past or inter-personal violence within communities, including violence directed against women (Boylston 2000: 367; Redfern 2008: 152-153). Despite archaeological debates concerning warfare and violence, the scale and extent of Iron Age conflict is still poorly understood (Avery 1986; Dent 1983; Haselgrove 1992; James 2007; Sharples 1991).

6.1.1.3. Some researchers have stressed the importance of hillfort ramparts in asserting ideas of power, status and community (Bowden and McOmish 1987: 81; Collis 1996: 90-92; Hill 1992: 65-66, 1995c: 54-55, 1996a: 102-103; Hingley 1990a: 100-101). Hillforts were often located to be viewed and to view from, to visually dominate areas such as river valleys and passes, or to control people’s movements. Façades, entrances and ramparts were linked to display, and whilst some hillforts were designed to blend in with natural contours, others deliberately contrasted with them (Driver 2007; Hamilton and Manley 2001).

6.1.1.4. Southern English hillforts were not as frequently associated with high status metalwork or craft production as non-hillfort settlements (Hill 1995b, 1996a), making it less likely they were elite residences. There have also been many critiques of the idea that Iron Age society was hierarchical with powerful chiefs and warrior elites. Recent accounts thus highlight the significance of communal labour and social relations (e.g. Pollard et al. 2006). Hillforts were also not a uniform group of constructions. Studies of hillforts in the Welsh Marches and southern England reveal many variations in the
character of occupation, often at superficially similar sites (Buckland et al. 2001; Campbell 2000; Gosden and Lock 2007; Payne and Trow 1998). The exposed nature of many northern hillforts such as Mam Tor, Ingleborough or Castle Hill, Almondbury suggests that they were either places of refuge and last resort, or had a very different social function and were perhaps only occupied on a seasonal basis. Fieldwork, $^{14}$C dating and better pottery chronologies also indicate that most northern hillforts were occupied between 1000-500 BC.

6.1.2. West Yorkshire hillforts

Barwick-in-Elmet

6.1.2.1. The medieval motte and bailey castle at Barwick-in-Elmet consists of two earthwork enclosures around 6.1 hectares in area, part of an earlier Iron Age hillfort with a possible earlier enclosure and a later ‘annex’. The enclosures are situated on an elevated spur of ground with steep sides to the north, close to a series of springs and becks. Substantial bank and ditch earthworks survive, especially on the northern and western sides of the site (Keighley 1981: 116). There might have been entrances to the north-west and south-east of the larger enclosure. It has been surveyed several times (AS WYAS 2006; Colman 1908) but has not been excavated, and so lacks any associated dates. It is also possible that some banks and ditches may reflect post-Roman and medieval occupation. Recent geophysical survey (AS WYAS 2006) did not identify any significant internal features.

Castle Hill, Almondbury

6.1.2.2. Castle Hill was excavated by Varley during 1936-1939 (Varley 1948) and in 1969-72, but was only published in interim form prior to his death. The hillfort was located on a prominent, steep-sided hill overlooking the River Holme, River Colne and Fenay Beck. There may initially have been a univallate, then a bivallate structure. Once proposed as the ‘headquarters’ of the Brigantian leader Cartimandua (Armitage 1900; Chadwick 1900), this is unlikely in the extreme, as the excavation in 1969-1972 and limited TL dating demonstrated that most occupation was during the earlier 1st millennium BC (Varley 1969, 1976: 121-128). Later study of the ceramics recovered by Varley identified possible early Iron Age pottery (Gilks 1992), but the site probably has later Bronze Age origins. Castle Hill hillfort was destroyed or abandoned by 500 BC, though the sequence and structural interpretation proposed by Varley is suspect.
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(Boucher et al. 1996). Although some Romano-British pottery was also found during Varley’s excavations the site seems to have been largely disused until the medieval re-fortification. The dramatic landscape setting of this site suggests that it held great strategic, social and symbolic importance.

South Kirkby

6.1.2.3. At South Kirkby, a single ditch and bank enclosed an area of 1.8ha (Keighley 1981: 116). The ground slopes away to the north-east and east, but the western part of the site lies on a flat plateau overlooked by a hill to the north-west. A sizeable stream gully now runs past the site, although the original course of this feature is not clear. As it is overlooked by a hill and the bank and ditch were not especially pronounced, the defensibility of the locale is questionable. Unpublished small-scale excavations only recovered medieval pottery (Atkinson 1949), and cropmarks suggest that it has been severely damaged by medieval ridge and furrow. Although infra-red aerial photographs appeared to support the existence of a possible annex to the north-west and a possible entrance to the south (Thorp 1975); a geophysical survey could not identify this (Whittingham 1998). Geophysical survey did confirm the extent of the medieval disturbance and the existence of the bank and ditch where it was ploughed out; but also identified a possible internal enclosure or inhabitation area within the hillfort. This feature could be earlier or later in date.

6.1.2.4. Cropmarks of the South Kirkby area reveal at least ten smaller irregular and subrectangular enclosures including ‘banjo’ forms, as well as trackways and field boundaries. Some of these enclosures may have been used as upland livestock corrals during the later Iron Age and Romano-British periods, and were probably too exposed for domestic occupation. The relationship between these smaller enclosures and the main earthworks is unknown, but some field boundaries respect the NEE-SWW long axis of South Kirkby, and some enclosures appear to cluster around it, implying that they respect and thus post-date the larger earthwork.

Catstones Ring, Bingley

6.1.2.5. This subrectangular enclosure is situated in a commanding position on the south-western edge of Harden Moor. Its large size (c. 6.5 hectares) does not suggest a ‘domestic’ enclosure. The bank and ditch were noted in the early 20th century (Villy 1921), together with a possible outwork, but the enclosure was badly damaged by ploughing and almost completely destroyed by quarrying on its southern side, although aerial photographs taken in 1977 showed some earthworks surviving. A small section
dug through the ditch by an amateur fieldworker did not recover any finds (Keighley 1981: 123). It may have an origin in the later Bronze Age, but without any dating evidence it could have been constructed in many different periods.

**Other possible examples**

6.1.2.6. Enclosures at Lee Hill near Huddersfield (now destroyed) but also at Honley Wood and at Castleberg, Nesfield just across the modern county boundary in North Yorkshire might have had defensive functions, as could several other enclosures noted by Keighley (1981). There needs to be a programme of detailed earthwork and geophysical survey to investigate and record these.

6.1.3. **Priorities and implementation**

6.1.3.1. The following research questions, problems and priorities have been identified:

- Modern archaeological work on these hillfort sites is clearly required, as the existing information is utterly inadequate (*contra* Atkins 2006: 12). Although such work would clearly be of importance in academic terms in helping to establish the date and function of hillfort sites, it should also be seen as a necessary baseline component of informing future conservation and management strategies.

- Viewshed analyses of these hillforts and detailed 3-D modelling of their position and landscapes should be undertaken using survey models and GIS, with a view to establishing why the earthworks and entrances may have been positioned in particular places (*q.v.* Driver 2007). Understanding the likely layout and nature of the contemporary landscape of these earthworks should be one of the goals of this work.

- Barwick-in-Elmet, Castle Hill, Almondbury and South Kirkby would all benefit from targeted excavation, probably as part of one overall research project. The principal aim of this work would be to recover dateable artefacts, and material such as charcoal suitable for multiple absolute dating samples.

- The origins and likely abandonment dates of these earthworks would be a priority for an absolute dating programme. With South Kirkby, the possible internal/earlier/later enclosure within the earthwork should be a focus for some of this work.

- If secure, well-preserved and dateable stratigraphic sequences were found to be present then these should also be intensively sampled for palaeoenvironmental purposes.
6.1.3.2. The research priorities can be addressed as follows:

- Detailed modern topographic survey should be undertaken on previously unsurveyed hillfort and large enclosure sites, or those that were only surveyed in the past. This work could be undertaken by English Heritage, or by surveyors from commercial archaeological units in partnership with universities and local societies. Any LiDAR data that may be available or become available in the future would be of great value for mapping any internal earthworks and earthwork features within the immediate landscape setting of these constructions.

6.2. Linear earthworks

6.2.1. Problems of dating and interpretation

6.2.1.1. Large ditches and associated earthen banks are known from many parts of Britain, and are often difficult to date. Examples such as some of those in East and North Yorkshire and in Wiltshire and Dorset are late Bronze Age and early Iron Age in origin, whereas others seem to have been early medieval in origin. In West Yorkshire, the earthworks of Grim’s Ditch were once thought to be the *agger* of a Roman road (Codrington 1918; Margary 1973; Pope 1958), but small-scale excavations and geophysical surveys established that it was a linear earthwork (Brown 1995; Morris 1998, Webb 1997; Wilmott 1993). Faull (1981: 174) suggested it was part of the defences of the 5th to 6th century AD kingdom of Elmet. Becca Bank, South Dyke and The Rein are collectively known as the Aberford Dykes, and survive as earthworks and crop and soil marks. These have been interpreted as Iron Age earthworks (Alcock 1954; Ramm 1980), or again as part of the defences of Elmet (Faull 1981; Wilson and Hurst 1963).

6.2.1.2. South Dyke and Becca Banks were investigated during the M1-A1 Link Road scheme. Although artefacts were sparse, $^{14}$C dates suggested both were constructed during the later Iron Age. Aerial photographs and excavations indicate that in places Becca Banks overlay earlier boundaries, trackways and enclosures (Daniel 2007; Deegan 2001; Wheelhouse and Burgess 2001). The ditch of Becca Banks was possibly re-cut in the Roman period, and was still extant centuries later when it formed a medieval township, parish and wapentake boundary (Wheelhouse and Burgess 2001: 137, 144, 148). A few radiocarbon dates obtained from samples of ditch fills from Grim’s Ditch suggested an earlier Iron Age origin, with possible redefinition and re-use.
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in the Roman period (Morris 1999; Wheelhouse and Burgess 2001). Additional dates would be useful, however.

6.2.1.3. Recent investigations of another section of South Dyke in advance of pipeline construction found that the bank and ditch followed or ran across an earlier pit alignment or pit complex. No dateable artefacts were recovered from these earlier features, but these pits may have been dug during the middle to later Iron Age (Daniel and Noon 2007: 8-9). Large quantities of burnt stone and some butchered animal bone may suggest feasting was taking place nearby. The South Dyke may have fallen out of use by the Roman period, although a curvilinear ditch containing later Romano-British pottery was dug broadly parallel to it, but curving in towards it. The stratigraphic relationship between these features was not established.

6.2.1.4. Several phases of bank and ditch forming part of the Wetherby township and West Yorkshire county boundaries were investigated at Sites A, B and 9 along the A1 (M) road corridor. More than one ditch was present along the earthwork, and re-cuts were also apparent (Heawood and Howard-Davis 2007: 175178). No dateable artefacts or radiocarbon dates were obtained, but although these features could be of early medieval origin it is also possible that they were much older and were constructed during the Iron Age.

6.2.1.5. Clearly, these linear features had long and locally variable histories. In other parts of Britain, many linear earthworks were constructed during the later prehistoric period, but were re-used and elaborated in the post-Roman period too. It is unlikely that they were functional defensive barriers, and their main role may have been to help define territories and social identities, and perhaps control the movements of livestock and people through the landscape. The construction of these earthworks would have required considerable time and labour from a significant proportion of the population. Co-ordinating this work would have been a challenge, and may imply the existence of hierarchical authority such as tribal leaders.

6.2.2. Priorities and implementation

6.2.2.1. The following research questions, problems and priorities have been identified:

- The dating of these linear earthworks is still not secure.
Detailed survey work is still necessary on some linear earthworks to establish their full extent.

Long-term research focusing on linear earthworks in West Yorkshire would be an ideal project for collaborative work between WYAAS, English Heritage, local commercial field units, local archaeological societies and schools.

6.2.2.2. The research priorities can be addressed as follows:

- Further targeted excavation should be undertaken to try and resolve the chronological development of linear boundaries through AMS radiocarbon dating of multiple samples and where the geology is suitable, OSL analyses.
- In addition to aerial photographs, detailed earthwork survey and targeted excavation, any available LiDAR data might prove useful to help establish the course of very subtle and degraded earthworks.

6.3. Roman forts and military sites

6.3.1. General overview

6.3.1.1. Following their invasion of southern England in AD 43, Roman forces moved north and established forts or vexillation fortresses at Chesterfield, Templeborough, Rossington Bridge and Lincoln during AD 55-65 (Hanson and Campbell 1986; May 1922), creating a frontier along a roughly south-west to northeast line formed by the Rivers Severn, Trent, Humber and Don. In classic culturehistory accounts, north of this frontier was the Brigantian tribal federation (Hanson and Campbell 1986; Hartley and Fitts 1988). Around AD 54, disaffected elements allegedly clashed with Roman forces and this may correlate with the establishment of fortresses at Templeborough and Rossington Bridge, both in South Yorkshire. A supposed Brigantian leadership dispute from AD 69 may then have prompted the final Roman invasion of the north in AD 71, although as with many 19th century colonial situations a minor incident might have been used as a convenient excuse for what was already a planned long-term strategy.

6.3.1.2. According to the Histories of Tacitus, the key instigator of the invasion of the north was Quintus Petulius Cerialis, once commander of the Legion IX Hispana in the Boudiccan revolt of AD 60-61, who returned to Britain as governor with the new Legion II Adiutrix (Birley 1973, 1981; Bishop 1999). During the initial military campaign, Roman
forces might have advanced along one or both of the lines of the later Roman roads – from Lincoln to Brough-on-Humber (Ermine Street), and northwards to Malton and Newton Kyme; and/or between Rossington Bridge to Castleford and Roecliffe. Forts and fortresses were built at these locales. The winter of AD 71-72 may have seen the consolidation of river crossings and roads with forts and stations established at Brough-on-Noe, Burghwallis, Doncaster, York, Adel, Slack, Elslack, Castleshaw, Tadcaster and Ilkley (Buckland 1986; Dearne 1993; Faull 1981). Many early sequences are poorly dated, however.

6.3.1.3. Cerialis was succeeded as governor by Julius Frontinus, who concentrated more on subduing Wales, but he was in turn succeeded by Julius Agricola in AD 78, who took the army north into Scotland until c. AD 84-86. During this time, Castleford, Doncaster, Brough-on-Humber, York and smaller forts might have acted as supply bases and as centres for the acquisition of crops and livestock. Many forts probably continued to act as bases for maintaining and projecting imperial power, and this ‘internal policing’ may have been one of the fundamental purposes of the Roman military (James 2002: 37-38).

6.3.1.4. Many Roman troops were drawn from far-flung regions of the Roman Empire. Memorial stones from Templeborough in South Yorkshire record the Fourth Cohort of Gauls (May 1922: 127), whilst roof tiles found at Slack were marked with the stamp of the Fourth Cohort Breucorum (Dodd and Woodward 1920: 86). Roman writers recorded that the Breuci lived in what is now modern Croatia. These non-Italian men would have had their own dynamics with their commanders, other military units, and with local people. Some Roman soldiers, particularly those of more senior rank, would have brought their own families, servants and slaves to live with them, as happened elsewhere in the Empire (James 2002: 42-43; van Driel-Murray 1995: 910). Some may have lived within the walls of the actual forts themselves (James 2001b: 83; contra Sommer 1984: 30-31). Possible women’s sandals were recovered at Slack (Richmond 1925), a scratched signature of a woman called Sacra was found on a samian dish within the Phase II fort at Castleford (Cool 1998c: 357), and several hair pins were found in the latrines of the Phase II annexe there. Recent academic work on the Roman army has concentrated on the identities of military communities, in terms of non-combatants, ethnic origins, unit identities and as groups of men (e.g. Gardner 2001, 2002, 2006; James 2001b, 2002).
6.3.1.5. The impact of these northern campaigns on indigenous peoples has been little discussed by Roman military historians. Even for people with first or second-hand knowledge of the Roman army, the march of legions through their land may have had profound social and psychological impacts. Armed resistance would have been crushed, but to date there is no archaeological evidence for any destruction of buildings and enclosures at this time. Even where there was no resistance it is likely that livestock would have been confiscated, and stored or standing crops stolen. Turf would have been stripped from pastures to help build ramparts, and woods and copses would have been cut down to provide the prodigious quantities of timber required for fuel and to construct forts and bridges (Hanson 1978; Reece 1997), violating local rights of tenure and depriving local communities of these resources for many years.

6.3.1.6. Smaller fortlets were also established alongside rivers, as at Kirk Sandall, Thorpe Audlin, Scaftworth near Bawtry and Sandtoft, all in South Yorkshire (Bartlett and Riley 1958; Dearne 1997; Deegan 2007), but also at Roall 10km east of Castleford (Bewley and MacLeod 1993). These sites may have controlled river trade, but in the later 3rd and 4th century AD also perhaps served to deter any raiders coming upriver.

6.3.2. West Yorkshire Roman forts

Adel

6.3.2.1. The spacing of forts along roads suggests that there may have been a fort or military station of some sort in the Adel locale (Faull 1981). In 1913 an embanked sub-square earthwork thought to be a possible fort site was trenched (Atkinson 1913), but these investigations recovered only a few scraps of pottery and no evidence for any internal structures. This earthwork may well have been of medieval or later date. This area should be examined through geophysical survey, however, in case the early excavations missed traces of timber buildings. A recent geophysical survey (Jefferson and Roberts 2006) claimed to have detected a Roman fort and extra-mural vicus, but it is possible these features reflected civilian settlement only as no features clearly associated with Roman forts were apparent. The extensive evidence for Romano-British occupation may simply reflect a civilian roadside settlement, but there may still be a fort in the area still awaiting discovery. The heavier soils of the area are not
conducive to cropmark formation so geophysical survey and any LiDAR data available would be useful research tools.

**Castleford**

6.3.2.2. The fort at Castleford was situated on a ridge on the south bank of the River Aire below its confluence with the River Calder. An early fort (Fort I) was thought to have been built and used sometime between AD 70/71 to c. AD 86. The extent of this fort (Fort I) is not known as no defences for it have been found, but it included an annexe to the north that contained a well-preserved stone bath house approximately 25m long and 12m wide. This featured *opus signinum* floors and tile *pilae*, and elsewhere in this annexe part of another stone building was exposed with evidence for hypocaust floors (Abramson and Fossick 1999). Pits, timber buildings with wattle and clay walls, earth floors and wooden planks and other artefacts were preserved underneath waterlogged midden deposits. Evidence for industrial activities included a dump of moulds associated with the manufacture of enamelled metal flasks. Artefact data and extensive midden deposits that probably included much animal dung suggest that an auxiliary unit of infantry and cavalry garrisoned this early fort. There was an extra-mural settlement to the south-west.

6.3.2.3. Following a possible short hiatus in occupation and withdrawal of military units, a second phase Fort II was built and garrisoned between AD 85/90 to c. AD 95/100. Parts of the annexe including the bath house continued in use. This too was abandoned, at the end of the 1st century AD or the beginning of the 2nd century, after which the area saw soil build ups and dumps of refuse within the former fort area during Phase III. There was later civilian occupation of this area between c. AD 250-400 in Phase IV.

**Ilkley**

6.3.2.4. Only the northern part of the fort at Ilkley was investigated during the 1919-1921 and 1962 investigations (Hartley 1966; Woodward 1925), as much of the southern half now lies under All Saints Church and its associated graveyard. Extensive later robbing of structures hampered interpretation. Nevertheless, at least four main phases of fort construction have been identified. The first phase FlavianTrajanic fort had ramparts of earth, turf and timber, with internal timber buildings of continuous wall slot and post construction (Hartley 1966: 29-30). Although the *praetorium* for this phase was identified, the *principium* was probably underneath the site of the church. Several
possible workshops or stables, and the metalled surfaces of the \textit{inter-vallum} and \textit{via principia} roads were also found. Hartley (1966: 32, 1987: 26) has noted the almost complete absence of Hadrianic and Hadrianic-Antonine pottery from the fort, implying that it was not occupied during AD 120-160, and was abandoned and dismantled. Reoccupation on top of the destruction and demolition layers may have occurred during AD 161-169. This fort too had timber buildings, including a granary. Burnt wood, daub and nails suggested that there had been destruction by fire in c. AD 196 (Hartley 1966: 34).

6.3.2.5. The third phase fort was rebuilt around AD 197-198, with stone-faced ramparts and many stone internal buildings, including a substantial \textit{praetorium}. This too seems to have been remodelled (Hartley 1966: 38-39), possibly in the late 3\textsuperscript{rd} century AD, with stone and timber granaries. The defences were altered too, and there was perhaps a free-standing stone wall in the fourth phase. Some of these buildings were recorded in the earlier excavations (Woodward 1925), but details of their construction had been misinterpreted. Other buildings seem to have been in timber. Further alterations have been attributed to a fifth phase (Hartley 1966). The fort was still occupied in the late 4\textsuperscript{th} century AD, but later robbing and disturbance has probably removed much of the evidence for any later use.

\textit{Slack}

6.3.2.6. The ramparts, gateways and large portions of the interior of the north and north-western parts of the fort at Slack were excavated during the 1865-1866 and 1913-1915 seasons. These investigations uncovered the \textit{via principalis} and other metalled internal roads, in addition to a stone built \textit{principia}, granaries, barrack blocks and some timber buildings of post and wall slot construction. The samian and coin evidence suggested that occupation took place between c. AD 85-90 to AD 125130 (Dodd and Woodward 1920: 85). This was broadly confirmed by later rescue excavations in the northern annexe of the fort in advance of the construction of the M62 motorway. The excavators proposed that construction occurred around AD 80, and that the fort was probably abandoned by AD 140-150 (Hunter, Manby and Spaul 1967). Unfortunately, the earlier phases of excavation did not employ modern techniques and it is likely that further traces of timber structures would have been missed. The early development of the fort is thus poorly understood.
6.3.3. Priorities and implementation

6.3.3.1. The following research questions, problems and priorities have been identified:

- The chronology and development of known Roman military sites in West Yorkshire are not at all clear. As with civilian settlements, three key chronological foci must be the Hadrianic-Antonine period, the late 3rd and 4th centuries, and the early 5th century and immediate post-Roman period. The evidence for the withdrawal and/or reorganisation and reassignment of Roman forces during the Hadrianic-Antonine period currently relies far too heavily on historical sources, as does the supposed evidence for widespread unrest or rebellion during the 3rd century. Can more reliable archaeological evidence be found for these proposed events?

- The dates of the ends of occupation at each of the forts and the nature of this occupation are particularly poorly understood. This is not unsurprising, however, given later robbing and disturbance that will have destroyed many later deposits. This must nevertheless remain a key research priority.

- The identities of some of the Roman military units at known sites are unknown, and the extent and nature of any civilian presence at forts is also unclear.

- Many details of the defences and internal layout of the forts at Castleford and Ilkley in particular are unknown at the present time. For example, the extent of the first phase fort at Castleford is largely conjectural.

- It is likely that several smaller military stations have yet to be positively identified, and these might include a fort at Adel, and perhaps one at Thorpe Audlin. Further work attempting to locate these would be welcome.

- Is there any evidence for significant changes in land allotment following fort construction relating to provisioning, or any suggestion that some settlements might have been supplying the forts directly? What was the relationship between forts and their immediate landscape areas?

6.3.3.2. The research priorities can be addressed as follows:

- The detailed re-examination of archives and artefact assemblages from earlier excavations at Ilkley and Slack may assist with many of these research questions and chronological issues.

- Post-Roman ceramics can be hard to distinguish from late Roman wares (see section 8.1.7.1. below), so re-examination of the earlier finds assemblages from the major fort excavations and other interventions may be able to find evidence of 5th and 6th century occupation.

- The re-examination of artefact assemblages may also find further evidence for the potential presence of civilians within forts and annexes (q.v. James 2001b,
2002; van Driel-Murray 1995). The differing military, social and ethnic identities of the units occupying these West Yorkshire forts could also perhaps be investigated through more detailed analyses.

- Detailed geophysical survey may be able to add details to knowledge of the layouts of the fort at Slack. At Ilkley, much of the unexcavated part of the fort lies underneath All Saints Church and the graveyard, but despite this significant disturbance it is just possible that Ground Penetrating Radar (GPR) within the graveyard might be able to add some additional information. This might also be true of parts of the Castleford fort.

- The immediate landscape contexts of the forts at Slack and Ilkley could be examined in more detail as part of a research project examining the relationship between military stations and rural areas.

- A postulated Roman fort at Thorpe Audlin, known from aerial photographs and work by a local society in the 1980s, needs to be further investigated by geophysical survey and trial trenching. This would make a good research project for a university department or a well-resource local society. A possible fort at Adel also needs to be identified or disproved.

7. Communications

7.1. Trackways and holloways

7.1.1. Double ditched trackways within the study region were sometimes sinuous, elsewhere regular and rather straight. Until more are excavated it would be premature to establish any chronological significance to this – on the Methley river terrace gravels Deegan (2007) has identified the cropmarks of what appears to be a straight, possible Roman road in a rather ambiguous relationship with a highly sinuous trackway and associated fields and enclosures. On some photographs it appears as if the road was actually truncated by the trackway, whose irregular appearance might otherwise be taken as possible evidence of a prehistoric date.
7.1.2. Some trackways were early components of field system landscapes, possibly originating in the early to middle Iron Age. Many might have followed traditional routes in use since the later Bronze Age, as suggested for late prehistoric trackways in East Yorkshire (Fenton-Thomas 2003, 2005, 2008; Giles 2000, 2007a). At Swillington Common, a major double-ditched trackway ran close to an earlier Bronze Age ‘open’ settlement of roundhouses and pits (Howell 2001). It was broadly parallel to the north-south linear earthwork of Grim’s Ditch, and also effectively separated the roundhouses from a group of round barrows to the west. Although possibly originating in the earlier Iron Age, this trackway might have been a ‘conceptual boundary’ for much longer. Some trackways may have followed relatively intangible traces of previous movement such as different vegetation and trampled ground (q.v. Giles 2007a: 109). They might have only been ‘formalised’ with doubleditched trackways at a later date, when they were then perhaps subject to greater social control and surveillance (q.v. Giles 2000: 179; Fenton-Thomas 2005: 58-59).

7.1.3. Trackways were not necessarily droveways. The orientation of many to watercourses and floodplains, the large width of some and/or their association with livestock-related features such as funnel shaped entrances and narrow ‘crushes’, and what appear to be pens and corrals, does though suggest that many were linked to movements of large numbers of livestock. Some of the large trackways on the Methley gravels and Magnesian Limestone area near Ferrybridge are good examples. They were substantial constructions, used and maintained over long periods. Excavated examples at Swillington Common and Ferrybridge developed into large holloways over time, and some had metalled surfaces laid in them to prevent rutting (Richardson 2005b: 75). On aerial photographs of some trackways the dark marks of such holloways are visible in between the double ditches, as at Ackton (e.g. Yarwood and Marriott 1988a: 22). Several sets of wheel ruts 1.45-1.50m wide were recorded by YAT during excavations of hollowed, double-ditched trackways at Temple Point, Swillington Common (Johnson 2002: 26, 32), likely to be of later Iron Age or Romano-British date. Trackways often made use of subtle folds of ground, as near Ledston where several examples ran down through a natural clough towards the double-ditched enclosure and pit groups.

7.2. Roman roads
7.2.1. The Great North Road was one of two major Roman routes north from Lincoln (Margary 1973, no. 28a; Ordnance Survey 1994). It entered modern South Yorkshire near and ran north-west past the fortress at Rossington Bridge to Doncaster (Buckland and Magilton 1986), then to Adwick-le-Street, where it was recently investigated at Redhouse Farm (Meadows and Chapman 2004; Upson-Smith 2002). It then passed the different phases of forts at Burghwallis – the earliest of these probably pre-dated the road (if only by a few months), as here the road kinked slightly to respect it, before it entered modern West Yorkshire to head to Castleford, Tadcaster and York (Abramson, Berg and Fossick 1999; Margary 1973). Now the A656, this Roman road was investigated during the 1960s (Thackray 1967), but a section was recently excavated at Roman Ridge as part of the M1-A1 project (O’Neill 2001a: 114).

7.2.2. The Great North Road (Margary 1973, no. 28b) ran parallel to Ermine Street to the east (from Lincoln to Brough-on-Humber and Malton). Just before Tadcaster it forked, the one road leading to Tadcaster and York, the other (Rudgate) going past the fortress at Newton Kyme (Margary no. 280; Monaghan 1991: 53) to Aldborough. Another branch of the Great North Road probably diverged just north of Aberford and headed north to Wetherby, carrying on northwards past Walshford and Allerton. Interestingly, although at Wattle Syke the line of this road (underneath the modern A1 (M)) clearly cut across the lines of field system boundaries, it appeared to respect the north-eastern side of the large agglomerated settlement there. This implies that many of the major boundaries in this location, including those of the settlement itself, pre-dated the construction of this road. The ‘three-lobed’ layout of the settlement at Wattle Syke and the orientation of the field boundaries in this area may also imply that there was an older, pre-Roman route running eastwards to modern Collingham and Harewood. Another important route ran from Tadcaster to Ilkley (Margary 1973, no. 729). Recent work west of the Roman settlement at Adel found that a section of this road was ‘rafted’ on wooden timbers where it crossed a low-lying, boggy location (Jefferson and Roberts 2006).

7.2.3. There was a road across the Pennines from the fort at Manchester, protected by forts at Slack and Castleshaw (Margary 1973, no. 712). Award-winning fieldwork by the Huddersfield and District Archaeological Society has traced the line of the road between Slack and Castleshaw across very rugged moorland terrain and excavated sections of it (Booth 2001; Lunn et al. 2008). It carried on to the north-east past Brighouse and Cleckheaton, but its route then becomes uncertain. It may have carried
on to a settlement in the area of modern Leeds, but might also have linked up with another route that passed through Bradford and headed north-west to Keighley, Steeton and Glusburn (Margary 1973, no. 721). There were undoubtedly many more minor roads, some perhaps based on pre-Roman routes. There seem to have been two separate roads between Adel and Tadcaster for example – Margary’s 729 route mentioned above that passed south of Scaracroft and Bramham; and another road (Margary no. 72b) that passed north of Scaracroft and headed to Bramham. There is thus considerable scope for future research by local societies and universities to trace the ‘missing’ sections of major Roman roads, as well as more minor routes.

7.2.4. Roman roads and forts were powerful symbols of Roman imperialist intent (Wilcher 1997). At Burghwallis and Rossington Bridge in South Yorkshire, and Roman Ridge and Bramham in West Yorkshire the Roman forts and roads were superimposed across earlier field systems and enclosures (Buckland 1986: 8; O’Neill 2001b: 110-115; Riley 1980: 94-95). A possible Roman road recently identified on the Methley gravels may have cut across earlier boundaries and trackways (Roberts, Deegan and Berg 2007, fig. 8.4). Although Roman army units built the first roads to assist with the movements of troops and supplies, as elsewhere in the Roman Empire it is likely that forced labour was later used to construct and maintain them (Given 2004: 54; Mitchell 1993: 126-127). This would have been deeply resented by local people. In addition, people unfortunate enough to live alongside roads could have their oxen, horses and other livestock, wagons and food requisitioned at any time by Roman army units and provincial officials (Given 2004: 56-57).

7.2.5. In the decades immediately following the invasion of the north it might have been mainly military units, officials and traders using Roman roads (Petts 1998: 88). In many colonial situations, native people often deliberately ignore the roads built by occupiers (Given 2004: 55). Metalled roads may also have been too hard for unshod native cattle or horses on longer journeys. Many people leading pack animals or driving livestock would have travelled beside Roman roads rather than along them (Mitchell 1993: 134). A rural Roman road excavated in France had sandy tracks on each side of the metalled surface created for this purpose (Chevalier 1976: 93). The road excavated at Roman Ridge had what were interpreted as wind-blown sand deposits on either side of the agger (O’Neill 2001a: 115), and similar layers interpreted as post-abandonment deposits were noted at Redhouse Farm in South Yorkshire (Meadows and Chapman 2004: 13-14). It is possible, however, that these deposits were deliberate dumps to facilitate the movements of unshod animals.
7.3. Priorities and implementation

7.3.1. The following research questions, problems and priorities have been identified:

- Future developer-funded and research projects should give some thought to identifying the physical traces of past human and animal movement through the landscape.

- A research project could focus on trying to identify more of the ‘missing links’ in West Yorkshire’s Roman road system, particularly the minor routes.

7.3.2. The research priorities can be addressed as follows:

- In some places wheel ruts and/or animal hoof prints might survive within trackways. Such features would only survive where trackways were hollowed and/or buried by alluvium or colluvium, and where this is thought likely excavation should proceed much more carefully.

- A trackway entering an area of alluvium could be targeted for excavation, to determine whether or not they did lead out onto floodplains, but also to find possible buried animal hoof prints. Recent excavations in the Flag Fen basin, for example, found thousands of Bronze Age cattle hoof prints and the tracks of other species, sealed beneath later alluvium and peat (M. Knight pers. comm.). Lowland river valleys may offer some broadly analogous depositional environments. Some of the trackways on the Methley gravels, for example, may head out into areas that are now covered by alluvium.

- A research project examining West Yorkshire’s Roman road system would be an ideal collaborative project between a university and local societies. The valuable contribution of local societies has been demonstrated by the exemplary fieldwork undertaken on the Slack to Castleshaw route (Lunn et al. 2008). In addition to traditional techniques such as field survey, geophysical survey, ground probing and targeted excavation techniques, a university might be able to contribute expertise with aerial photographs, aerial infra-red photography and LiDAR data. In addition, where suspected Roman roads enter urban areas, it may be possible in some locations to utilise GPR to detect buried agger deposits.
8. Material culture and identity

8.1. Artefact production and consumption

8.1.1. Metalwork and metalworking

Iron Age

8.1.1.1. In comparison to regions such as East Anglia and even East Yorkshire, there do not seem to have been as many 'high-status' Iron Age metal artefacts manufactured or used within West Yorkshire, perhaps indicating some further socio-cultural differences between these communities and those in adjacent regions. In West Yorkshire, a Hallstatt sword was found in a palaeochannel of the River Aire at Temple Newsam, and two possible iron sickles found near Brackenhall Green and a bronze horse cheek-piece found near Ackworth were also recorded (Keighley 1981: 131). The provenance and date of two putative gold torcs found at Billing and Ilkley is extremely uncertain, and both these finds are now lost.

8.1.1.2. A twisted bronze torc was excavated in the corner of an enclosure ditch at Ferrybridge, a copper alloy dagger chape of probable 1st century AD date was found in a pit forming part of the pit alignment at Ferrybridge (Duncan, Cool and Stead 2005: 152-153) and a La Tène-style decorated bronze sword scabbard was found in the ditch of the Neolithic henge at Ferrybridge. The stylistic similarities of the Ferrybridge scabbard to 3rd century BC examples from Wetwang Slack and Kirkburn in East Yorkshire (Stead 2005: 231) suggest that at least some metal objects from West Yorkshire were made in other areas, which may have added to their cachet (q.v. Helms 1988).

8.1.1.3. The carriage burial at Ferry Fryston included an involuted copper alloy brooch with a red glass stud of 3rd to 2nd century BC date (Boyle et al. 2007: 147). A very rare continental-style Alésia brooch and an Aucissa brooch from the pit alignment at Ferrybridge may date to the mid-1st century BC to early 1st century AD, and the mid-1st century AD respectively. A copper alloy involuted La Tène 2Cb brooch of 300-100 BC is a recent find from near Wentbridge (PAS 1997/1998). Other recent metal detector finds from the late Iron Age/earliest Romano-British period include a copper alloy terret ring and cosmetic pestles and mortars (WYAAS).
8.1.1.4. There is limited archaeological evidence for Iron Age metalwork production. Possible fragments of clay moulds or furnace structures were found in a roundhouse ring gully dated to 381-202 BC within the enclosure at Normanton Golf Course (Timms 2005: 70). No slag was recovered, however. Indirect evidence for metalworking comes from iron slag incorporated as temper into some Iron Age pottery fabrics (see section 8.1.5.4. below). At Ledston, a notable assemblage of tap slags, furnace slags, hearth bottoms and vitrified clay was recovered from ditch contexts associated with Iron Age pottery (Cowgill 2005a: 28-29). Small quantities of smithing slag, tap slag, hearth bottoms and/or hearth linings were recovered from Iron Age contexts at Dale Lane South Elmsall, Manor Farm, Site 2 Moss Carr Methley, the D-shaped palisade enclosure at Swillington Common and the pre-Roman road enclosure at Roman Ridge (Burgess 1998, 2001a; Cowgill 2002; Howell 2001; O’Neill 2001a). At Area C South Elmsall, layers of trampled earth with metalworking slag and hammerscale were separated by cobbled areas and butchered animal bone (McNaught 1998a).

8.1.1.5. At Oldfield Hill undated furnace linings, slag and ironstone nodules were excavated (Toomey 1960-1964, 1976). This settlement was located on a ridgeline, perhaps not for defence but to utilise natural up-draughts for flues, a phenomenon also used in medieval lead smelting in Derbyshire (Barnatt, Bevan and Edmonds forthcoming; Barnatt and Smith 1997: 102). Ironstone was also found in an Iron Age pit at Manor Farm, along with a stone mortar that had crushed ferruginous ore adhering to its upper surface (Cowgill and Heslop 2001: 202), but this was probably for producing pigment. Fragments of clay crucibles and copper alloy droplets from brass production were found at Enclosure A at Ferrybridge, and in nearby field ditches (Cowgill 2005b: 165). These contexts may be of very late Iron Age or very early Romano-British date.

8.1.1.6. Potential iron ore sources include surface/sub-surface nodules of ironstone within shale deposits on Coal Measures and Millstone Grit areas (Yarwood 1981: 43), and perhaps also bog iron ore from low-lying waterlogged areas such as the Humberhead Levels (q.v. Crew 1991; Halkon 1997, 1999). The sources of the copper alloy ores are unknown. No iron or copper alloy furnace structures of Iron Age date have yet been identified in West Yorkshire. The lack of evidence for large-scale production indicates that during the Iron Age iron smelting was probably undertaken by a few skilled people, unlikely to have been full-time specialists. Basic knowledge of
smithe may have been more commonplace, and might have occurred on many settlements. The production of more complex objects may have been undertaken by only a few individuals, and the relative paucity of ‘prestige metalwork’ finds found to date within West Yorkshire might indicate a lack of such specialist skills. Ethnographic evidence suggests that although smelting and smithing are commonly male activities, women and children in their households are also routinely involved. The skills of smiths may have been regarded as magic, desirable yet dangerous, and several researchers have noted the possible symbolism of metalworking and metal objects in prehistory (e.g. Aldhouse-Green 2002; Budd and Taylor 1995; Giles 2007c; Hingley 1997b).

**Romano-British**

8.1.1.7. Hammerscale and small pieces of slag have been recovered on many rural Romano-British sites, indicating similar small-scale production to that in the Iron Age. At Apple Tree Close near Pontefract, iron smiting slag, a hearth-bottom and a crucible associated with copper-alloy working were recovered from a D-shaped, possibly ancillary enclosure (Wrathmell 2001: 24). In one part of the Dalton Parlours villa complex was a shallow ‘working hollow’ contained a stone-lined pit, and all of these features and an adjacent oval pit were filled with coal, slag and hammerscale, indicating that the pit was the anvil base for a small smithy (Tindall 1990: 70-72).

8.1.1.8. Every Roman fort would have had blacksmiths and smithies that produced or mended nails, horseshoes, armour and other equipment. At Castleford, hearths and structures associated with copper-alloy working were excavated within the vicus (Abramson and Fossick 1999: 128). More specialised, industrial-scale metalwork production was signified in a late 1st or very early 2nd pit within the fort where the remains of clay moulds for enamelled metal flasks were found, along with some crucible fragments. In a 3rd or 4th century pit deposit the clay moulds for metal spoons were recovered, adjacent to a circular kiln and rectangular raking pit (Abramson 1999: 96-97; Bayley and Budd 1998). The workshops in Castleford were producing high quality metalwork items that have been found across Europe (Künzl 2008). Although drawing on Roman technology, decorative motifs and distribution networks, these artefacts were also influenced by Iron Age traditions. The assemblages of brooches and military metalwork from Castleford (Cool 1998a, 1998b) was notable, but one special single find was the bronze eagle found near Keighley in 1917 (Butterfield 1922), possibly from some form of official staff or military banner, a projection of imperial Rome in a relatively remote location.
8.1.1.9. The distribution of lead pigs and other evidence suggests that as in the Peak District of Derbyshire, there was Roman lead production in the Yorkshire Dales, including Wharfedale (Raistrick 1973). The nearest actual source of lead ore was probably outside of modern West Yorkshire at Cononley, south-east of Skipton (Yarwood 1981: 40). The scale and chronology of this industry is little understood, however, and once again, extraction and processing sites need to be identified and dated if they have survived later disturbance.

8.1.2. **Coins and coin hoards**

8.1.2.1. There do not seem to have been many/any Iron Age coins minted in the study region, though some finds suggest the movement of some coinage from other areas. A scatter of finds found near Silsden by a metal detectorist in 1998 consisted of 27 gold staters; 19 of Cunobelin who is thought to have ruled over the Catuvellauni and the Trinivantes from c. AD 10-40 (DCMS 1997/1998; Hartley 2001: 35-37). These were struck in or near the tribal capital of Camulodunum, now modern Colchester. One stater was of Epaticcus, thought to have been the brother of Cunobelin and the ruler of the Atrebates. The remaining coins were Corieltauvian issues. Horses and ears of wheat featured prominently on these coins. A 1st century AD Roman iron ring with an intaglio might have been part of this possible hoard.

8.1.2.2. Only two hoards of Corieltauvian coins have been previously found in West Yorkshire, at Honley near Huddersfield and at Lightcliffe near Halifax, but these included some 1st century BC and AD Roman coins in association with them, the Honley hoard having a *terminus post quern* for its deposition of AD 71. A gold stater from Halifax may have been part of the Lightcliffe hoard (Allen 1960: 14-15; Hartley 2001: 38; Keighley 1981: 132). Along with the Silsden find, these have been interpreted as safekeeping hoards from refugees fleeing north from the Roman advance after AD 43, or during the Roman conquest of the north after AD 71 (Hartley 2001: 38). It is possible that the Silsden discovery related to votive deposition at a shrine site or ‘natural’ locale of cosmological significance (Edwards and Dennis 2006: 256). These hoards may even have been a religious reaction to the Roman invasion.
8.1.2.3. The most significant hoards of Roman coins found in West Yorkshire have been outlined elsewhere (Faull 1981; Richmond 1925; Teasdill and Aubrook 1961). There is little space here to go into these in detail, but a major review of the West Yorkshire coin evidence is overdue. The distribution and landscape settings of hoards and smaller finds could be plotted onto a GIS, to see if any broader patterns could be established. The results are likely to be significantly skewed, however, by the depredations of metal detectorists (see section 8.1.3. below), as the majority of coin finds in West Yorkshire are now probably unreported. Chronological changes in coin loss may be significant – many of the hoards found date to the 3rd or 4th centuries, and this may reflect broader social developments across northern England. It is not clear if some or most of these hoards were votive deposits (Millett 1994; Reece 1988a), or if they reflected a desire to bury valuables at times of unrest or social unease in the later Roman period. It is also far from clear at present as to what extent Romano-British settlements in West Yorkshire were integrated into the wider Roman monetary economy. This question is pertinent at both urban and smaller-scale rural sites.

8.1.3. **Metal detecting and metal detectorists**

8.1.3.1 It is outside the remit of this research agenda to comment in detail upon the relationship between metal detecting and archaeology; as well as the wider ethical questions raised by many detectorists wishing to personally own or to sell for profit objects from the past that have archaeological and cultural significance, and which would be better conserved and displayed for public knowledge, benefit and enjoyment. It would be extremely difficult to try and stop the activities of metal detectorists altogether. Finds from metal detectorists reported through the Portable Antiquities Scheme (PAS) have added significant new archaeological information for West Yorkshire and across Britain as a whole in recent years, although the evidence suggests that many small Roman coins are discarded and many detectorists give inaccurate or imprecise grid references for the finds that they do record. When archaeologists have themselves used metal detectors on excavation sites, or have worked in conjunction with responsible individual detectorists and members of local detecting groups, the numbers of metalwork finds have been greatly increased. This is especially true of Roman coin finds on excavations, where the smallest coins in particular may be missed by excavators.
8.1.3.2. Nevertheless, across Britain there remains a significant threat from illegal and irresponsible metal detectorists – so-called ‘night hawkers’. The Yorkshire region as a whole is one of the worst affected parts of Britain (Oxford Archaeology 2009). Night hawkers raid Scheduled sites, trespass on private land and also deliberately target archaeological excavations. In the latter case in particular, their digging activities may destroy or damage archaeological features and vital stratigraphic and contextual information. Many of these individuals are also linked with other criminal activities, and may sometimes be aggressive and violent. In other parts of Britain they have attacked archaeologists, police and landowners when confronted. They sell many of their finds; sadly often in ‘legitimate’ arenas such as through internet websites, auction houses and antiques dealers. These must be as culpable as the detectorists, but are rarely prosecuted.

8.1.3.3. During the Wattle Syke Bramham to Wetherby road upgrade project, for example, metal detectorists repeatedly trespassed onto the road corridor and onto the excavation areas at night and at weekends, until the contractor’s security staff warned them off. When supervising initial machining at Wattle Syke, several night hawksers showed AS WYAS staff members many metal artefacts including Roman seal-box lids and enamelled brooches that had been illegally removed from a Scheduled site nearby. Illegal metal detecting is thus resulting in a continuous loss of invaluable archaeological and artefactual information across West Yorkshire.

8.1.4. Priorities and implementation

8.1.4.1. The following research questions, problems and priorities have been identified:

- Potential Iron Age and Romano-British ironstone extraction and primary working sites in West Yorkshire are still mostly unknown. It is not clear if bog iron ore sources in the Humberhead Levels were utilised for any of the iron objects recorded in West Yorkshire, and indeed the production centre(s) of these artefacts is currently unknown. Copper ore sources for the copper alloy objects found in West Yorkshire are almost certainly from outside of the modern county, but again the source is not known.

- If these iron and copper alloy objects were brought into West Yorkshire through trade and exchange during the Iron Age, then the likely social networks and routes for this need to be established. If exchange did take place, what items or materials from the West Yorkshire went out of the region? Were many
households involved in basic smelting and smithing, or was it the prerogative of only a few skilled individuals?

- Did metal ore sources and the organisation of metalwork production change significantly following the Roman occupation of the north? What influence did the Roman military have on these practices?

- How was the late Iron Age coinage from other parts of England reaching West Yorkshire? How did Iron Age people perceive and interpret this coinage?

- Following the Roman conquest of the north, to what extent did settlements become integrated into a wider monetary economy? Did routine coinage use pass down even into small-scale rural settlements, or did exchange remain commonplace for many people?

- Were Romano-British hoards votive deposits (Millett 1994; Reece 1988a), or did they reflect a desire to bury valuables at times of unrest or social unease in the later Roman period? Can archaeologists develop criteria to try and help distinguish between these interpretations?

- There is a significant threat to West Yorkshire archaeological sites and artefacts, including Scheduled Ancient Monuments, from illegal metal detecting. Urgent action needs to be taken to address this problem.

8.1.4.2. The research priorities can be addressed as follows:

- Using GIS and existing mineral extraction maps, it might be possible to identify and map potential iron ore sources and iron-working areas within West Yorkshire. Although in most cases such sources will have been heavily disturbed by medieval and post-medieval mineral extraction, some of the smallest or remoter sources may still have some traces of early mining and quarrying.

- There needs to be more research on sourcing metal artefacts, using metallurgical analyses. For example, were some of the iron objects manufactured from bog iron ore, ironstone, or higher-grade ore sources from outside modern West Yorkshire?

- All soil samples taken on archaeological sites should be routinely tested for the presence of hammerscale using hand magnets. This simple technique has produced much more evidence for metalworking in recent years (A. Burgess pers. comm.).

- A useful project for local societies and/or university staff and students would be to map and assess the landscape locations of known Iron Age and Roman metalwork finds and coin hoards. GIS-based analyses would allow any chronological or spatial patterns to be more readily deduced. Was there a link between Roman coin hoards and natural places such as rivers, springs and prominent rock outcrops, for example? What were the patterns of Roman coin loss through time?
• One possible pragmatic response to the looting of artefacts may be that as a matter of urgency, a rescue programme of archaeological metal detecting surveys should be initiated on selected sites to remove, record and preserve metal artefacts under controlled conditions to prevent them being lost to illegal ‘night hawks’ and casual metal detectorists. Some Scheduled Ancient Monuments and agglomerated enclosure sites would be candidates for this, amongst others. Only the artefacts in topsoil or ploughsoil would be removed, and they would be three-dimensionally recorded using Total Stations or a differential Global Positioning System (GPS), and entered into a GIS database. This work would be best undertaken by archaeologists, but could involve co-operation with known responsible metal detectorists and metal detecting societies. A full report would be produced on this work. This would have to be an extensive, large-scale project, and funding might have to be sought for this from English Heritage, from whom Scheduled Monument Consent would need to be obtained.

• Building up greater co-operation and trust with metal detectorists might allow future discoveries to be fully reported and donated to appropriate museums, although even the Portable Antiquities Scheme has had somewhat mixed results with this.

• Nevertheless, much greater work has to be undertaken in the future with the co-operation of landowners and the police force to identify, catch and successfully prosecute illegal metal detectorists.

8.1.5. Pottery

Iron Age

8.1.5.1. Until recently there was very little Iron Age pottery known from West Yorkshire with the exception of assemblages from Ledston and Dalton Parlours, but the rise in developer-funded excavations has now begun to expand the available evidence through better sampling and excavation methodologies, although earlier material is still extremely scarce. The depositional contexts of Iron Age pottery are interesting. Although generally scarce, when it is found it tends to occur in specific locations such as ditch terminals or a small minority of pits. There is a tendency supported by informal observation but as yet untested through detailed statistical analyses for it to consist either of a few worn and abraded sherds, or else as large numbers of sherds forming complete or substantial portions of vessels found in pits, ditch terminals and roundhouse gullies. There also seems to have been a tendency, particularly during the Iron Age, to preferentially curate the rims and bases of vessels, a trend that has been noted elsewhere in Britain (e.g. Hill, Braddock and Williams 2006: 180). Such potential patterning clearly requires further detailed study.
8.1.5.2. The origins of Iron Age pottery in West Yorkshire were quite diverse. Pots were probably also moved through networks of kinship and alliance (Hill 2002: 153), and/or patterns of seasonal lowland ‘transhumance’ (q.v. Chadwick 2008a; Evans and Hodder 2006). Wheel-thrown later Iron Age pottery similar to ceramics from Lincolnshire centres such as Dragonby and Old Sleaford (e.g. Elsdon 1997; May 1996) occurred at Ferrybridge (Evans, Wild and Willis 2005: 135). Shell Tempered Wares, usually hand-made and probably derived from sources in Lincolnshire and/or around the Humber estuary, have been found at Ferrybridge and from Site M (Cumberpatch and Robbins 1998; Cumberpatch, Walster and Vince 2007; Evans, Wild and Willis 2005). Shell tempered pottery from Ledston and Dalton Parlours also contained large quantities of limestone, and these were possibly derived from more local clays (Buckland, Runnacles and Sumpter 1990; Runnacles and Buckland 2005).

8.1.5.3. Quartz tempered sherds from hand-made Iron Age pots, including some with a notably ‘soapy’ texture, have been recovered from Moss Carr, Methley; Ledston, and Sites M and CFAT (Cumberpatch, Walster and Vince 2007; Evans 2002; Runnacles and Buckland 1998, 2005). The Vale of York and/or the Humber estuary are two possible sources for these clays. Calcite-gritted fabrics have been found at Bullerthorpe Lane, Dawson's Wood, Ferrybridge, and Sites M and C4SA (Cumberpatch, Walster and Vince 2007: 230; Evans 2001b: 155; Evans, Wild and Willis 2005: 136), and these are characteristic of East Yorkshire vessels from the Vale of Pickering. Some hand-made pots produced using sandstone tempers and found at several sites along the A1 (M) road corridor were probably derived from clay sources in the Vale of York (Cumberpatch, Walster and Vince 2007: 233).

8.1.5.4. Distinctive slag-tempered Iron Age vessels were found in middle or later Iron Age contexts at West Yorkshire sites including Dalton Parlours, Ledston, Ferrybridge and Swillington Common (Buckland 1992; Buckland, Runnacles and Sumpter 1990; Evans 2001b; Runnacles and Buckland 1998, 2005). This slag is likely to have come from smelting rather than smithing (Dugmore 1990: 134), and was unlikely to have been an incidental inclusion (Burgess 2001c: 268). This might have been linked to ironstone working in the Cleveland Hills, or itinerant metal workers (Buckland, Runnacles and Sumpter 1990). There may have been metaphorical associations with the incorporation of iron slag in pottery, including ideas of transformation, fertility and
regeneration (Hingley 1997b: 11). These vessels might have been used by a particular age or status group including metalworkers, or may have had other significance – in some African societies, for example, women potters usually marry male metal smiths (Gallay et al. 1996).

8.1.5.5. Most hand-made ceramics were probably made at a household or domestic scale, and in many small-scale societies it is women who often undertake this production. Pottery production may also have been seasonal, and potential clay sources may have included alluvial clays from river valleys, perhaps dug when people were also tending livestock. The small numbers of pots produced by individuals might have had well-known biographies and remembered associations with those who had made them (Hill 2002: 153; Willis 1999: 90), especially where pots were marked by the fingertips and nails of their makers (q.v. Giles 2007b: 242). Like metalworking, pottery production may not have been a purely technical process but might also have influenced by many symbolic ideas and associations.

8.1.5.6. Most of the Iron Age vessels produced were ‘closed’ forms such as jars, used primarily for the preparation and storage of food rather than its serving and consumption, for which wood and leather vessels and basketry may have been employed. A few ceramic jars were very large vessels, and would have been difficult to transport even when empty (Cumberpatch 2003). Together with its scarcity and restricted patterns of deposition, this suggests that pottery was not a primary part of everyday food production and consumption practices during the Iron Age. It would be productive to undertake residue and lipid analyses on Iron Age ceramics to try and establish their potential uses. Some lipid analyses are now able to distinguish between milk and meat proteins, adding greater resolution to such research. Recent work has also allowed 14C dates to be obtained from fat residues (Berstan et al. 2008), although such analyses are not yet widely available on a commercial basis.

8.1.5.7. In West Yorkshire as in other parts of the wider region, many handmade wares in traditional fabrics and essentially Iron Age styles probably continued to be locally produced into the 2nd century AD or perhaps even as late as the early 3rd century, although there is currently debate concerning this (C. Cumberpatch and R. Leary pers. comm.). Although this has interesting implications for discussions of acculturation and ‘Romanisation’ (see section 8.2.2.), it often makes the dating of sites by ceramics alone extremely difficult. More work is urgently needed on devising means of establishing
better chronologies for this material. Thin-section analyses in association with AMS dating of residues and sooting may provide useful information, and the recovery of relatively large quantities of ceramics from Wattle Syke in 2007 may allow some examples of such vessels to be identified and analysed.

8.1.5.8. Given that local ceramic producers were probably only making small quantities of hand-made coarsewares, the army initially imported much of their pottery from southern England or the continent, but they also established military figlinae or fired clay workshops (Swan 2002: 35). Some early figlinae were set up at Grimescar Wood near Huddersfield during the later 1st century AD, supplying ceramic tiles and vessels to the forts at Slack and Castleford (Betts 1998; Purdy and Manby 1973), the pottery including bowls, cooking jars, flagons and mortaria. No Roman civilian pottery kilns have been identified within West Yorkshire, but some at least probably operated somewhere in Castleford (R. Leary pers. comm.). Even given the ubiquity of wares from South Yorkshire and York during the earlier Roman period and North Yorkshire kilns such as Crambeck in later centuries, this absence is unlikely, as apart from the early years of the occupation it is very unlikely that the Roman army would bring in pottery from a great distance elsewhere. There may well be unknown kiln sites waiting to be discovered.

8.1.5.9. The widespread adoption of Roman pottery did not take place until the early to mid-2nd century AD, although its use was often still limited on many rural settlement sites (Cumberpatch, Leary and Willis 2003; Evans 1998, 2004; Evans, Wild and Willis 2005). There was a predominance of jars in most ceramic assemblages, followed by bowls and dishes. Sooting is often found on the outside of the vessels, typical of many Romano-British rural sites (Cool 2006: 39; Evans 1993). This again suggests pottery was used mainly for cooking and storing food, although greyware bowl forms may have gradually replaced wooden vessels used for eating. Sooting was often most pronounced on pot rims, suggesting that the bases of vessels were imbedded in ash that had accumulated within hearths (Cool 2006: 39). Some Iron Age traditions of food preparation and consumption therefore seem to have continued in rural areas.

8.1.5.10. Hilary Cool has suggested that some West Yorkshire settlements such as Dalton Parlours and Parlington Hollins which had noticeably higher wheat to barley ratios than sites such as Swillington Common were expressing different status and perhaps more ‘Romanised’ identities not only through material culture, which featured
more imported and fine wares, but also through their food and diets (Cool 2006: 79). The increase on some sites in wide mouthed jars and deep bowls during the later 2nd century AD might, for example, have been linked to a greater emphasis on the consumption of stews, casseroles and soups (Leary 2008: 43). Changes in diet and food preparation and dining practices may even have been more important than any visible changes in material culture, of which ceramics were just a part (C. Cumberpatch pers. comm.).

8.1.5.11. It might be productive to undertake residue and lipid analyses on Romano-British as well as Iron Age ceramics, as preconceived notions of what certain Roman ceramic forms were used for may not be correct, and Roman norms may not have reflected local practices in any case. Some mortaria vessels, for example, may have been use to prepare a liquefied meat paste in addition to grinding up plant foods to make gruel-like concoctions. Once again, in the future such techniques may help to identify noticeable changes in food preparation practices over time. Wear analyses may also be important – initial studies of use wear on a selection of samian vessels indicate that some forms were used for the production as well as the consumption of food (e.g. Biddulph 2002, 2007).

8.1.5.12. Imported samian vessels from south-central and eastern Gaul reached some sites in small numbers from the 1st century AD onwards, including Parlington Hollins East and Ferrybridge (Evans 2001b: 159; Evans, Wild and Willis 2005: 139-141; Willis 1997a: 42). East Gaulish samian eventually superseded these vessels. On many small-scale rural sites, where samian was present then decorated samian was disproportionately represented (Willis 1997a: 39-41). At Dalton Parlours, decorated bowls but no plain wares were recovered (Sumpter 1990: 130). Decorated samian may have been attractive to ‘native’ people because it was so different in colour and texture to any ceramics they had experienced before. The ‘samian shop’ that apparently burnt down within the vicus at Castleford around AD 140-145 (Dickinson and Hartley 2000: 64) produced a notable large samian assemblage, and may be an indication that in larger centres at least, some Roman-style consumption practices were in place by the mid-2nd century AD.

8.1.5.13. This may not necessarily have been a case of local people becoming more Romanised over time either. The initial vicani (vicus dwellers) may not have been natives in any case, and were probably soldiers’ families, traders, doctors and other
already ‘Romanised’ people. Indeed, during the first generations of Roman rule at least, *vicus* dwellers might have actually have become *less* Roman with time, as they inter-married with locals and local people began to trade with the *vicani* or settle in the *vicus* (R. Leary pers. comm.). In areas with a virtually aceramic Iron Age, the late 1st to early 2nd century ceramic assemblages at forts and associated settlements are often almost purely Roman types, but during the 2nd century the pottery assemblages usually become more mixed and provincial in their composition.

8.1.5.14. Interestingly, the decorated samian from the shop at Castleford was from worn moulds or had become ‘blurred’ during removal from the moulds. It has been suggested that this implies either that near ‘seconds’ were being sold in Castleford, or that only the poorer stock was left at the time of the fire (Dickinson and Hartley 2000: 52). Given the large numbers of vessels represented, the latter suggestion is unlikely, but the concept of ‘seconds’ is also problematic, and may not have become established until the post-medieval or early modern periods (C. Cumberpatch pers. comm.). Instead, it may be that substandard samian could be sold in a provincial settlement because of its still novel appearance to many people.

8.1.5.15. Black Burnished Ware from Dorset, Nene Valley colour-coated vessels, Mancetter-Hartshill wares, vessels from Oxfordshire and Cambridgeshire, mortaria from the Radlett-St Albans area and amphorae from Spain were all imports into northern England (e.g. Buckland 1986: 25), but usually in very small amounts and they remained uncommon vessels on most rural settlements. Some colourcoated wares from the Rhineland may have accompanied shipments of lava querns, or the latter may have acted as ballast for these pottery cargoes. In the later 3rd and early 4th centuries AD, Dorset Black Burnished Ware, Dales Ware, Crambeck Ware and Calcite Gritted Wares manufactured in East and North Yorkshire either appeared or became much more prevalent (Leary 2007, 2008; Rush 2000). This pottery may initially have been traded through the existing market networks that had become established, but by the later 4th century significant changes in the distribution of Crambeck Ware in particular suggest that the Roman military might have somehow been involved in its circulation (Evans 1991).

8.1.5.16. One informative avenue of research involves the detailed analysis of pottery assemblages via sherd count, weight and vessel representation, in order to identify meaningful patterns of discard *within* and around settlement sites; changes over time,
and also analyses of patterns between different settlements (e.g. Cooper 2000; Evans 1995a, 2001a; Gwilt 1997; Leary 2008; Meadows 1997; Pitts 2004, 2005; Robbins 2000; Willis 1997b). One study of Roman-period rural settlements in North Africa identified variations in the proportions of different vessels that were used and discarded (Fincham 2002a: 39-41), linked to differences in status between the inhabitants and the settlements. Such studies require reliably quantified assemblages, however, and these are still lacking for some older or smaller-scale projects. Once again, a major re-assessment of older assemblages from military and vicus sites excavated before such quantitative techniques and theoretical approaches were developed could prove illuminating (Evans and Willis 1997), potentially allowing such research themes such as military supply, identity and Roman-native interactions and acculturation all to be examined.

8.1.6. Stone

8.1.6.1. One major regional source of beehive and flat quern stones was the Millstone Grit outcrops at Wharncliffe Crags near Sheffield (Challis and Harding 1975; Wright 1988; Wright and Brown 2000). Many of these querns were distributed widely across Yorkshire, probably as roughouts to be finished elsewhere. Part of the quern manufacturing site was surveyed in more detail in 1999, when over 2300 quern roughouts were identified, of which 1960 were flat disc querns, and 272 beehive forms (Pearson and Oswald 2005). Closer Coal Measures sandstone sources in West Yorkshire included outcrops near Moss Carr, Methley, Woolley Edge near Barnsley, and Thornhill Rock on the west bank of the River Aire near Leeds. Occasionally, querns may have been sourced from Millstone Grit outcrops further away near Harrogate and Spofforth (Heslop 2002: 31-32, Heslop and Gaunt 2004: 20; Wright 1988).

8.1.6.2. Across northern England, saddle querns probably began to be replaced by beehive forms during the mid-1st millennium BC, but West Yorkshire finds suggest that some saddle querns probably survived in use until the later Iron Age. Excavation data indicate that beehive querns persisted in use well into the 3rd century AD (e.g. Buckley 2001, Heslop 2001, 2005), and whilst many ostensibly ‘native’ sites would have carried on using beehive querns, some beehive querns have also been found in Roman military contexts such as in Ilkley. In the past it has even been claimed that there was
a ‘Legionary Type’ (Curwen 1937, 1941). Such typologies have been challenged though (Caulfield 1977), and a major study of Yorkshire querns has been underway by the Yorkshire Archaeological Society (Buckley and Major 1998: 241). The information needs to be plotted onto a GIS and associated database and stored on a freely accessible, regularly updated website, perhaps with the Archaeology Data Service. The role of querns in placed deposits and the fragmentation of these artefacts all require further research.

8.1.6.3 In the Romano-British period, flat basalt lava quernstones were imported from the Niedermendig quarries in the Mayen region of Germany, and may initially have been associated with the Roman military (Buckland 1986; Buckley and Major 1990; Crawford and Röder 1955). In the south and east of England they became part of civilian trade, especially in areas where there was no suitable local stone for quern production, but in the north their distribution was more restricted. They may have come into the region as ballast for lighter cargoes (Buckland 1986: 22), perhaps with colour-coated wares imported from the Rhineland. Whilst many were found at Castleford and Doncaster in fort and vicus contexts (Buckland 1986: 22; Buckley and Major 1998: 243-245), only a few fragments were recovered from the villa complex at Dalton Parlours (Buckley and Major 1990: 117), despite its possible military associations. In contrast, some Mayen lava querns were found at Parlington Hollins East (Heslop 2001: 201), which may again hint at a more ‘Romanised’ status for this place. The import of querns from outside the region may have disrupted traditional stone-working practices and exchange networks.

Beads

8.1.6.4. At Ferrybridge, eight glass and two stone beads were recovered from a series of different contexts including an early Bronze Age barrow and the pit of a hengiform monument, from several pits in the pit alignments, and from Enclosures C and D, including features that were part of roundhouse 5 (Duncan 2005: 162-163). The specialist thought that the glass and stone beads were all intrusive, and that the method of construction of the stone and glass beads and the chemical content of the glass beads was all indicative of a post-medieval origin for these objects. It is clear, however, that there was considerable debate with the excavation staff concerning this (ibid.: 163). It also seems highly unusual for so many beads to all be intrusive, especially given the rather specific contexts of some. Even if all of the beads were
indeed post-medieval in date, than their deposition in much earlier features still requires archaeological explanation.

8.1.6.5. A black stone bead similar to two found at Ferrybridge was recovered from beneath the ribs of an Iron Age inhumation at Site M near Micklefield, however (Brown, Howard-Davis and Brennand 2007: 99-100) – this example would be extremely difficult to interpret as an intrusive item! This indicates the possibility that at least some of the Ferrybridge beads might have been incorrectly dated, and they thus need to be re-examined in the light of this additional evidence. It may be that Iron Age and Roman stone and glass bead production was more sophisticated than has previously been presumed.

8.1.7. Priorities and implementation

8.1.7.1. The following research questions, problems and priorities have been identified:

- There needs to be a detailed comparative study of prehistoric ceramic forms and fabrics from across the region. The few thin section studies that have taken place have tended to be site or project specific, limiting their usefulness for wider comparative purposes (C. Cumberpatch pers. comm.). Fabric types and ceramic forms need to be published more widely.

- Very little is known about the production and distribution of Iron Age vessels, yet evidence for such practices may be key to understanding how intracommunal and inter-communal social relations, identity, exchange networks and movements through the landscape were constituted (e.g. Gosden 1989; Moore 2007). The possible gendered nature of pottery production also requires further research.

- Although pottery styles may be indicators of identity, it is interesting that West Yorkshire had such apparently varied sources of ceramic production and exchange during the Iron Age, including several sources outside of the region. How does this equate with classic (clichéd?) culture-history notions of the Brigantes as an identifiable tribal entity? Might this indicate a more complex situation?

- The dating of later prehistoric ceramics and pottery of Iron Age tradition is currently extremely problematic, and there are still too few reliably dated examples. This is especially true for the late Bronze Age and earlier Iron Age periods, although some later Iron Age forms and fabrics are now being recovered more frequently, albeit still in small quantities. Site sampling strategies must therefore be designed to maximise the recovery of as many sherds as possible, as such limited quantities have been recovered in the past.
• The nature of materiality and social attitudes towards pottery in the study region need to be explored. West Yorkshire was one of several modern regions (including South Yorkshire and Derbyshire) where non-perishable material culture seems to have been relatively scarce during the Iron Age, and this was notably different to neighbouring regions such as East Yorkshire, Lincolnshire and parts of Nottinghamshire. Some of these attitudes seem to have persisted into the Romano-British period.

• Can locations be identified where the preservation of possible organic artefacts made of wood or basketry might survive, such as underneath alluvium or peat deposits?

• The Iron Age to Roman transition is a potentially fertile area for further artefact research. How long did it take for locally produced handmade vessels to be superseded by Roman-style wares, and in what social contexts did ‘native’ style wares persist?

• Can any differences in function, status and/or identity be discerned from the pottery assemblages found on rural settlements? Are there any ceramic indications of sustained or seasonal/part-time occupation?

• Regular fabric analysis needs to be undertaken on Romano-British coarsewares, to assess the local contribution to pottery assemblages. Exactly where and when the distribution of South Yorkshire grey wares starts falling off is unknown, and there are differences between Castleford and Doncaster in terms of their supply of Black Burnished BB1 wares, perhaps indicating differences in quarter mastering and supply (R. Leary pers. comm.). Unpublished assemblages from Castleford and Doncaster need to be published to facilitate such comparative work, and published and unpublished material from Castleford needs to be fully characterised.

• Initial work by Ruth Leary and the late Alan Vince indicates the presence of Romano-British pottery fabrics that seem to originate in West Yorkshire – grey wares similar to but not the same as South Yorkshire kiln products and which might be locally made, and a group of Dales-type jars which again might have been manufactured in West Yorkshire (R. Leary pers. comm.).

• Very late Roman and post-Roman pottery traditions are also poorly understood, and to date few reliably stratified examples have been found in West Yorkshire. Cool (2000) has also argued that some elements of 5th century material culture were deliberately harking back in style to earlier centuries, making such artefacts hard to date. More work is required on understanding and dating such artefacts.

• Fragmentation seems to have been an important component of prehistoric and Romano-British depositional practices. Querns, pottery, animal bone and even some human remains seem to have been broken down, some of this material later being reconstituted in novel combinations. With fragmented querns for example, it is rare that all of the pieces are found on site, and the rest must be taken off elsewhere. Where did these fragments go, with whom, and what were
they used for? Why were such practices carried out? Some Iron Age and Roman pottery and glass and shale bracelets also seem to have been deliberately fragmented, but once again, only some pieces are usually recovered. Other researchers have commented upon similar practices of fragmentation for different periods and places (e.g. Brück 2006; Chapman 2000; Chapman and Gaydarska 2007; Pope 2005).

8.1.7.2. The research priorities can be addressed as follows:

• Multiple radiocarbon dating samples, AMS dating of residues, TL dating of pottery minerals and other techniques should be considered and used wherever possible whenever Iron Age pottery or ceramics of Iron Age tradition are encountered. This needs to be integrated with wider research as destructive techniques may potentially conflict with other legitimate research aims. The presentation of Iron Age pottery in reports needs to be accompanied by photographs of thin sections where possible, and full publication of petrographic and chemical data along with detailed drawings and photographs for comparative purposes. This should be the case for unpublished ‘grey literature’ reports as much as final publications in books or journals. Publication on the Internet could be a relatively low-cost means of bringing this information to the widest possible research readership.

• Accessible databases need to be established for Iron Age, Romano-British and post-Roman ceramics and querns. These could be published online via the Internet, and provision made for their ongoing updating and revision. The West Yorkshire Historic Environment Record would be the preferred institutional host for this information once collated.

• A prehistoric pottery reference collection should be established that encompasses late prehistoric ceramics from the whole of Yorkshire, particularly East Yorkshire, and should also include examples from Lincolnshire, given the importance of determining the nature and extent of contacts with these other regions. Again, this must be regularly updated.

• Any finger impressions surviving on Iron Age and Romano-British handmade vessels could be examined to try and determine whether these match average finger sizes for women or men, or even whether individual fingerprints can be detected in some instances.

• There need to be more intra-site and inter-site comparative analyses where the evidence permits, which will particularly apply to Roman-period pottery. Quantitative statistical analyses of the numbers and proportions of different vessels that were used and discarded on individual settlement sites could examine the differences in assemblages between different sites. It may become possible using such techniques coupled with theoretical approaches to establish any differences in status, function, identity and/or degree of ‘Romanisation’ between the communities dwelling in them.
• There needs to be considerably more research undertaken on the production and distribution of Romano-British ceramics, utilising fabric analyses and quantification, and incorporating older assemblages and unpublished material.

• Late Roman pottery or other artefacts should not be the sole means of dating sites or features. Where possible absolute dating methods should be used to help establish whether and to what extent late Roman culture continued in use in the post-Roman period.

• Organic residues on the insides of ceramic vessels need to be identified and analysed wherever possible, along with lipid analyses to search for milk and meat proteins preserved within the fabric of the pottery. In addition to Romano-British vessels, excavated Iron Age material from sites such as Dalton Parlours, Ledston, Ferrybridge, Site M, Moss Carr Methley and others could be the subject of a future research project focusing on residue analysis. These techniques must also become readily available on a commercial basis.

• The Ferrybridge stone and glass beads need to be re-examined in light of the evidence from Site M, Micklefield. Some or all of them may be Iron Age or Romano-British in date after all.

8.2. Identity, social structure and ‘Romanisation’ or acculturation

8.2.1. Iron Age social structure

8.2.1.1. Based on Roman literary sources such as Tacitus, traditional culture-history approaches to the archaeology of the region have long held that the native peoples belonging to the West Yorkshire area were part of the Brigantes tribe, a large tribal federation thought to hold sway from modern South Yorkshire up to Northumberland and County Durham (Hanson and Campbell 1986; Hartley 1980; Hartley and Fitts 1988). There are many problems with this assumption, not the least being that the ‘Brigantes’ may not have existed as a single identifiable social or political entity, and may be more a product of Roman misunderstandings and simplifications (Collis 2003; James 1999; Jones 1997). Many small-scale societies do not draw such clear-cut ethnic distinctions, or only do so in times of social stress. The very presence of the Romans following their first incursions in 54 and 52 BC and following the invasion of Britain in AD 43 may have had a galvanising effect on many previously loosely connected communities, causing them to assert or invent a common identity.
8.2.1.2. Although an apparent lack of many ‘high status’ sites and material culture may not necessarily equate to a less hierarchical society, it is possible that during much of the later Iron Age, most rural communities were relatively unstratified, where differences in social status were relatively minor, or else not expressed through material expressions of wealth such as larger and more imposing settlements, or richer and more varied material culture. Family, kinship and clan might have mattered far more than any more widespread notion of ‘tribal’ identity. These may not have been markedly hierarchical societies, without a pyramid of power stretching up from a base of farmers to some small social elite (contra Cunliffe 1984: 560-562; James 1993: 53). This contrasts with some of the evidence from areas such as modern East Yorkshire, North Yorkshire, Lincolnshire and the Midlands, but is similar to South Yorkshire, northern Nottinghamshire and the Peak District. Nevertheless, existing models of hierarchical organisation in Iron Age societies have themselves been subjected to more recent critiques (e.g. Hill 1995b, 1996, 2005; Sastre 2002).

8.2.1.3. A few key individuals such as the man buried with a carriage at Ferry Fryston seem to have been of recognisably higher social status, but even in such instances this status might have been a result of their origins in other regions of Britain and/or their achievements in life rather than their birth into stratified social elites. Some of the agglomerated enclosure groups on the Magnesian Limestone of West Yorkshire nevertheless do seem to have represented particular families or clans that had achieved some form of economic, political and social success by the very late Iron Age. There is a tension here, however, in that the earlier Iron Age hillforts and linear earthworks seem to imply hierarchical authority to organise (and if necessary, enforce) the labour. Perhaps such an interpretation is wrong though, and communal endeavour was actually more important. Alternatively, perhaps there were social elites, but for whatever reason some of these had broken down by the later Iron Age. More research is clearly needed on such issues.

8.2.1.4. Confusion, rejection and fear might have characterised many initial native responses to the Roman occupation of the Midlands and the later invasion of the North, but the occupation would have also brought the potential to construct or renegotiate new identities. As has been noted (Hill 2001; McCarthy 2006; Reece 1988b), these would have been far more complex than the generic ‘villa owners’ and ‘farmers’ that normally feature in discussions of Romano-British people. Although for some people large extended families and kinship ties may have remained essential, stresses
created by the Roman occupation might have crosscut existing kinship ties and social obligations. For some people, smaller social networks centred on individual households might have become more important over time. For others, traditional kinship links and allegiances remained.

8.2.2. **Approaches to ‘Romanisation’ and acculturation**

8.2.2.1. Theories of ‘Romanizing’ (sic) (Mommsen 1885) and ‘Romanization’ (sic) (Haverfield 1905) have taken two main approaches. Authors such as Haverfield saw it as a progressive, essentially benign civilising process. Conquered peoples adopted Roman material culture and lifestyles, as they were self-evidently beneficial and superior to anything that the ‘natives’ of north-west Europe had previously enjoyed. His ideas influenced many subsequent scholars (e.g. Collingwood and Myres 1937; Frere 1987; Salway 1981). An alternative view is that Roman culture was a thin ‘veneer’ over a basically unchanged native society, particularly in northern England and rural areas (Vinogradoff 1911). Researchers such as Reece (1988b), Burnham (1995), Cunliffe (1995) and Millett (1990) have to one degree or another argued that native tribal leaders adopted aspects of Roman culture to reinforce and expand their own social status, a process of emulation that then gradually ‘trickled down’ the social hierarchy.

8.2.2.2. More recent theoretical studies of Roman Britain have taken a more critical approach to the two-way relationship between conquerors and conquered (e.g. Barrett 1997; Freeman 1997; Hingley 1996; Mattingly 1997, 2006; Scott 1993; Webster 1997; Woolf 1995). The basis of these ideas is that ‘Romanisation’ and Roman imperialism were complex processes that actually took different forms across the Empire. The Roman Empire was not a monolithic power but was socially and ethnically diverse, and power was exercised in many different ways. The occupied peoples of Britain themselves wrought many subtle changes upon the occupiers. A more neutral term than Romanisation that acknowledges that these were two-way cultural processes might therefore be acculturation.

8.2.2.3. How can these academic theories assist interpretations of West Yorkshire’s late Iron Age and Roman archaeology? Prior to the invasion of the North when the Romans established their temporary northern frontier along the Don, Idle and Humber, there would have been a series of complex two-way social, economic, political and
military interactions taking place that may have shared some similarities with those found on 19th century colonial frontiers such as eastwards moving Imperial Russia and westwards moving United States. There would probably have been Roman mapping and spying expeditions, diplomatic missions and small scale raids.

8.2.2.4. At the same time, native groups would have been endeavouring to manipulate Roman understandings of their communities in order to further their own interests, and there may have been pro- and anti-Roman factions. There may have been official gifts and trade in both directions, and sexual relationships between Roman troops and locals – officially tolerated, illicit or violent and abusive. Many ‘Romans’, especially auxiliaries, would have actually been auxiliaries from Gaul, Germany and southern Britain, and they would have been engaged in complex interactions with their own Roman commanders, and with local people.

8.2.2.5. Cosmetic grinders and sets of toilet instruments have been identified as key signifiers of changing attitudes to the body and identity in late Iron Age and early Roman Britain (Carr 2003; Hill 1997, 2001), purportedly signifying a concern with hair removal and personal grooming. ‘Traditional’ or ‘native’ appearance might have been more hirsute for men, women might not have routinely used cosmetics, and there may have been painted, scarified or tattooed designs on the skin of men and women. The appearance of tweezers, ear scoops, nail probes and ‘cosmetic grinders,’ in very late pre-Roman Iron Age and earlier Romano-British contexts may indicate a desire for a more ‘Romanised’ appearance. A finely enamelled bronze chatelaine set was found at Castleford (Cool 1998b), along with cosmetic grinders, tweezers, scoops, probes and nail cleaners; but these items have also been found in more limited numbers on some rural sites, including as the villa complex at Dalton Parlours (Cool 1990). Recent metal detector finds reported through the Portable Antiquities Scheme have added to the known examples in West Yorkshire.

8.2.2.6. Brooches are another key artefact type pertinent to these discussions. In the late Iron Age and early Roman period, there was a significant increase in the styles and numbers of brooches worn and deposited across Britain (the so-called ‘fibula horizon’), perhaps reflecting changes in how people expressed their self identities (Hill 1997; Jundi and Hill 1998). Individual rather than communal identities may have become more important for some people by the 1st century AD, signified through brooches and other personal ornamentation (q.v. Jundi and Hill 1998: 129130).
Dragonesque brooches and some other forms may have even been a means of expressing non-military allegiance during the years immediately following the Roman conquest. Native people would have exercised choices as to which brooch forms to adopt, but in general many Roman-style brooches would have resonated with existing indigenous trends towards personal ornamentation. If brooches were important as expressions of people’s personal identities, then their deposition might have sometimes been for ritual purposes.

8.2.2.7. Some excellent archaeological studies have begun to develop these ideas concerning identity, in some cases using the evidence from West Yorkshire (Cool 1998c, 2006; Swan 1992, 2002). As the available dataset of such artefacts and assemblages from excavations and the Portable Antiquities Scheme grows, more detailed analyses driven by such theoretical ideas should be undertaken to try and establish how different individuals and communities might have identified themselves within the region.

8.2.3. Priorities and implementation

8.2.3.1. The following research questions, problems and priorities have been identified:

- More holistic approaches to post-excavation and artefact analyses are required.
- Where have the earliest Roman artefacts been found in West Yorkshire? Is there any evidence that these might have reflected pre-conquest contacts?
- How did individuals and communities identify and define themselves in the West Yorkshire region during the Iron Age and Romano-British periods? Can archaeologists in fact distinguish ‘tribal’ groups at all in the region? Can any possible social groupings be identified within West Yorkshire? Is there any evidence for such groupings persisting into the Romano-British period?
- Can we identify any status differences between Iron Age and Romano-British individuals and settlements? How were such variations manifested?

8.2.3.2. The research priorities can be addressed as follows:

- Detailed statistical analyses of finds assemblages are necessary, and publication has to produce standardised data sets that can be compared and
contrasted with others. If this proves too expensive for conventional monographs or journal papers, then publication on the Internet should be considered instead.

- Intra-site and inter-site artefact comparisons should be encouraged. Appropriate research questions and goals should be clearly identified at the assessment stage, although there must also be flexibility and scope for pursuing unexpected concordances and relationships when these emerge from analyses. At present, it is often the case that different individual material specialists are sent finds with little or no information regarding their context, and what other categories and quantities of material were recovered from the same features.

- Particularly on larger developer-funded projects, all of the external specialists must be involved in regular round table discussions with excavation and postexcavation staff in the field units concerned from an early stage.

- The re-examination of older finds assemblages would prove useful in attempting to pursue some of these questions.

9. Depositional practices, cosmology and ritual

9.1. Patterns in artefact deposition

9.1.1. Archaeologists study the evidence in the present with all of the subjective influences of a modern, post-Enlightenment world, and although we can assess how people may have moved around settlements, trackways and through fields based on the characteristics of these *spaces*, it is much more difficult to try and establish what these *places* actually meant to people in the past. They were living in a world where concepts of ancestry and community, memory, tradition, oral history and cosmological, spiritual and religious ideas were probably a much greater part of everyday life than today. Their relationships to animals and material culture may also have differed significantly from those of our own modern culture. Iron Age beliefs are largely lost to us, and we can only speculate on the physical remains of prehistoric ritual practices, drawing in a self-critical manner on some ethnographic and ethnohistorical analogies. Although this is also true for much of the Romano-British evidence, some written sources surviving from the Roman period nonetheless hint at profoundly different rationalities and ways of understanding the world. Their landscapes may have been perceived in equally different ways.

9.1.2. Several studies have examined the spatial and temporal distribution of artefacts across excavated Iron Age and Romano-British enclosure sites. This work has begun shown that there were often patterns to this discard (e.g. Hill 1995a, 1995c, 1996b;
Hingley 2006; Willis 1997; Woodward 2002). The spatial location of activities within and around enclosures seems to have been structured by common cultural understandings of the use of domestic space and the socially 'correct' contexts in which to deposit particular materials including 'refuse' such as broken pottery, animal bone and burnt stone (q.v. Cumberpatch and Robbins n.d.; Robbins 2000: 87). The corners of enclosure ditches, ditch terminals (especially by enclosure entrances) and pits were the focus for such deposition, which although probably reflecting everyday waste disposal might nevertheless indicate unconscious beliefs or habitual practices concerning boundaries, cleanliness and pollution.

9.1.3. Examples have been described elsewhere (Chadwick 2004a; 2008a), but include Bullerthorpe Lane where most of the 2nd century AD pottery was found around the south-east facing enclosure entrance (Wheelhouse 2001: 41), and Apple Tree Close where just one section through the southern enclosure ditch produced 23% of the entire Romano-British pottery assemblage (Wrathmell 2001: 15). At Moss Carr, Methley Site 2 there was a notable concentration of charcoal, burnt stone and artefacts within a recut of the south-western corner of the enclosure (Roberts and Richardson 2002: 15-16). There was a concentration of 4th century Romano-British pottery including substantial portions of vessels in the south-west corner of a recut field boundary ditch at Swillington Common South (Howell 2001: 65). The distribution of quern stones and quern fragments is particularly interesting, and whole querns or fragments of them seem to have been deposited in the ring gullies of roundhouses, as at Moss Carr Methley Site 1 (Roberts and Richardson 2002: 10), or were deposited in the palisade slots or gullies of sub-enclosures, as at Apple Tree Close (Buckley 2001: 19-20), Dalton Parlours (Buckley and Major 1990: 106-107) and at Wattle Syke (Chadwick pers. obv.).

9.1.4. Such evidence is an important record of everyday practices and social mores in the past, yet is overlooked in most archaeological publications. In order to identify, compare and contrast such depositional practices, it is important that quantified data regarding finds distributions is routinely presented in both publications and unpublished client reports from research and developer-funded excavations. As has been done elsewhere (e.g. Robbins 2000; Willis 1997), in excavation reports the quantity of different artefact categories (such as pottery, quern stones and burnt stone) needs to be plotted by weight and/or sherd/fragment count according to feature or excavated sections. This could be in the form of multiple histograms or scaled findspots.
associated with plans of the sites. It might then be possible, for example, to assess any differences between the location of fine ware and coarseware deposition on a particular Romano-British site; to analyse spatial differences in quantities of burnt stone deposited around an enclosure to see how cooking and consumption foci might have varied over time; and to compare and contrast such patterns between different sites and through time.

9.2. Placed or structured deposits

9.2.1. Sometimes there is evidence that deposition was more deliberate. ‘Structured’ or ‘placed’ deposits (Chadwick 2004a; Hill 1995a) may sometimes be hard to identify, though criteria for their recognition can be established (Chadwick 2008a). These deposits included human and animal remains, pottery, querns, metalwork and other artefacts. In some cases these represented the deliberate burial or discard of objects, parts of people and animals and/or food items, perhaps formal offerings to gods, spirits or ancestors. Some remains may have resulted from relatively informal, small-scale practices associated with notable events in human lives and the agricultural calendar. Other deposits may have been the residues of feasting, and might be hard to discern from everyday discard. It is unhelpful to separate many deposits into neat categories such as ‘rubbish’ or ‘ritual’, however, as people in the past do not seem to have made such distinctions (Brück 1999).

9.2.2. These practices have been discussed in both Iron Age and Romano-British studies (e.g. Aitchison 1987; Clarke 2000; Cunliffe 1992; Fulford 2001; Hill 1995a; Hingley 1992, 2006; Merrifield 1987; Reece 1988a; Willis 1999; Wilson 1992; Woodward and Woodward 2004), but archaeological research into such practices has only recently begun for West Yorkshire and the wider region (e.g. Chadwick 2004a, 2008a). There is already evidence for considerable continuity in these deposits from the Iron Age into the Romano-British period, perhaps reflecting a mixture of Iron Age and Classical Roman traditions, and the beliefs of those who came to northern England from across the Roman Empire. The locations of these deposits included ditch terminals and pits and postholes within settlements, the remains of older prehistoric monuments within the landscape, pit complexes and wells, and ‘natural’ features such as springs and rivers.
9.2.3. Published and unpublished archaeological evidence for Iron Age and Romano-British placed deposits within West Yorkshire, South Yorkshire and Nottinghamshire has been compiled and tabulated elsewhere (Chadwick 2008a: Ch. 11, App. F), but some examples are worth noting here. At Area D South Elmsall, one pit contained late Iron Age or early Romano-British pottery, animal bone and several metal objects; but also 66 fragments of beehive quern from at least 12 separate quern stones (Howell 1998), deposited in distinct bands along with slag, charred cereal grains and large quantities of charcoal. A nearby pit contained part of a saddle quern, hammerscale and charred cereal remains. Significant amounts of late Romano-British pottery including large sherds were found in two pits at Parlington Hollins East Enclosure E, together with a quern fragment in each feature (Holbrey and Burgess 2001: 101). The La Tène-style sword scabbard found in the ditch of the late Neolithic henge at Ferrybridge (Stead 2005) and the Hallstatt sword found in a River Aire palaeochannel at Temple Newsam (Keighley 1981) were probably both deliberate offerings.

9.2.4. Across Britain, evidence indicates that querns formed part of placed deposits during the Iron Age and Romano-British periods (e.g. Brown 1994; Buckley 1979, 1991; Hill 1995a; Hingley 1992; Willis 1999). Sometimes whole querns were discarded despite little evidence for use and wear, whilst at other times they seem to have been deliberately fragmented. They are often found in topsoil or the uppermost fills of features, suggesting that these were tertiary or closure deposits, and they have also been found in roundhouse ring gullies as at Dalton Parlours and Moss Carr Methley (Buckley and Major 1990: 106-107; Roberts and Richardson 2002: 6, 21).

9.2.5. Three deep pits within the vicus at Castleford contained substantial fragments of ceramic, glass and metal vessels, crucibles and other artefacts (Abramson and Fossick 1999: 140; Cool 1999); animal bone featuring many dog remains, and plant species that included foods, herbs and also purging flax, opium poppy, deadly nightshade and hemlock (Bastow and Boardman 1999: 173). Large quantities of willow, lime and meadowsweet pollen may indicate honey. These may have been deliberate backfill deposits linked to healing at a shrine.

9.2.6. At Ledston, up to 280 limestone-cut pits were identified from aerial photographs, and excavation of c. 60 of these showed that most contained no finds at all, or just a few scraps of pottery and/or animal bone (Sumpter and Marriott 2005: 10-12). A small number, however, contained placed deposits of animal remains, Iron Age pottery, quern fragments, and other artefacts. Few pits cut one another, indicating that they
were either largely contemporary, had above ground markers, or were still noticeable as shallow depressions or vegetation changes. Initially considered analogous to Iron Age grain storage pits in southern England (Keighley 1981: 119), there is no palaeoenvironmental evidence for this (Roberts 2005b: 32). At Ferrybridge, pit alignments and small clusters of pits respected the position of the henge and other earlier monuments (Richardson 2005a: 54-70). Most had few if any finds, but some contained animal bone, pottery, metal objects and human burials spanning a wide date range from the later Iron Age to the post-Roman period. The pits themselves were recognised, respected and re-used centuries after they were first dug. At Site M, in addition to human and animal burials a pit complex was the focus for placed deposits of animal remains and artefacts including structured dispositions of Iron Age pottery (Brown, Howard-Davis and Brennand 2007: 93-97). Some features may have been ‘charnel pits’ where human and animal remains partially decomposed before being re-incorporated in deposits elsewhere.

9.2.7. Although some pits were a focus for placed deposits and/or animal and human burials, this does not ‘explain’ the majority where little or nothing has been found. It is possible that some were extraction pits for the production of lime to enrich the soil, but there is no archaeological evidence for this. Some other pit complexes have been identified on aerial photographs (Deegan 2007), and require more detailed study. If any are excavated in the future this work should perhaps include soil micromorphology and geochemical analyses.

9.2.8. Another key context for placed deposits seems to have been wells, which during the Romano-British period may have assumed some of the symbolic associations that pits had been imbued with during the Iron Age (Webster 1997). Although wells inevitably acted as ‘traps’ for stray artefacts on the surface or for small animals falling into them, across Britain there is evidence for more unusual deposits including human remains, animal remains (particularly dogs), whole or near complete artefacts and plants and plant products. Many would be incompatible with actual use of the wells for drinking water, and may have been ‘closure’ deposits considered to be appropriate once a well fell out of use. At Shiptonthorpe in East Yorkshire, for example, a waterhole contained partially articulated animal remains and skulls, quern fragments, most of the decorated samian sherds found at the site, leather shoes, metal objects, plants including holly and mistletoe and the remains of wooden writing tablets that may originally have had votive dedications (King, Millett and Dickinson 2006; Millett and Taylor 2006: 56-57), and the feature formed a focus for animal and human inhumation.
burials. A Romano-British well at Oakridge in Hampshire contained the remains of up to 23 human adults and three children (Oliver 1992).

9.2.9. There are several West Yorkshire examples. A reassessment (Richardson 2004) of a poorly recorded 1977 excavation at Rothwell Haigh noted that a Romano-British well had contained a human skull in addition to wooden objects and leather shoes (Mould 1990). Although scraps of leather are often found in wells, shoes and sandals may have formed part of Roman rites of termination (van Driel-Murray 1999). A leather shoe was at the base of a well in the fort at Slack (Dodd and Woodward 1920: 82). A well at Dalton Parlours included wood and iron remains of buckets and ceramic jars in primary fills, no doubt from accidental loss (Sumpter 1990c: 236); but upper fills also contained quern stones, iron objects, silver and copper alloy rings and coins, and leather scraps and shoes. Animal remains included numerous sheep and cattle skulls, foetal or neonatal pigs, horse skulls, up to 31 dogs; and the partial remains of three adult humans (Berg 1990b). Plants included deadly nightshade, henbane, hemlock, purging flax and self-heal (Bastow and Murray 1990: 263-266). This highly unusual combination of materials may have been linked to closure deposits, and the plant remains in particular were similar to some in placed deposits within a Romano-British pit in Silchester (Fulford 2001: 206).

9.3. Animal burials and animal remains

9.3.1. As noted above, it has been recognised for some time that animals and animal remains often formed part of placed deposits during the Iron Age and Romano-British periods (Grant 1984b, 1991; Hill 1995a, 1995b, 1996b; Merrifield 1987; Morris 2008; Wilson 1992). Again, distinguishing these deposits (sometimes called Associated Bone Groups or ABGs) from more mundane patterns of animal bone disposal can be difficult, and within West Yorkshire there is clear potential for future research regarding this, despite the many problems caused by generally poor bone preservation on most soils and geologies. For example, on many rural Iron Age and Romano-British sites in West Yorkshire sheep/goat bone is mainly found in roundhouse ring gullies, postholes and pits, whilst cattle and horse bones tend to be more frequently found in ditches (Berg 1990a; Richardson 2001a). This may reflect functional choices in where animals are killed and butchered, but perhaps also aspects of wider social beliefs regarding
these different animals or implicit cultural conventions governing these butchery and disposal or depositional practices.

9.3.2. In many cultures, animals are an integral part of 'ritual' activities as offerings to gods, spirits or ancestors. Animals might also be sacrificed to accompany human dead into the afterlife, or consumed as part of feasts held to celebrate or commemorate births, marriages, deaths and events in the agricultural calendar. In Iron Age Britain and Europe, iconography suggests a particular regard for wild boar, deer, and more rarely, horses and domestic cattle, especially bulls (Green 1992); yet deer and wild boar bones are rare on Iron Age settlements (Grant 1981; Hambleton 1999). Cattle are the most numerous animals thought to derive from ritual or sacrificial activity in the Iron Age (Woodward 1992: 80). In Classical religious traditions certain gods and demi-gods were associated with particular animals and cattle were again considered especially pleasing to the gods (Derks 1999). Animals were also used in augury, including birds such as ravens (Jameson 1998: 93-8). Dogs have been used for ritual purposes in many human societies, and some recent research suggests that they were the animals most commonly found as part of Romano-British ABGs (Morris 2008).

9.3.3. Published and unpublished evidence for Iron Age and Romano-British animal burials and placed deposits within West Yorkshire has been detailed and tabulated elsewhere (Chadwick 2004a, 2008a). Only some examples will be noted here. Complete or near complete adult cattle were buried in Iron Age pits at Methley and Ledston (MAP 1996: 23-24; Sumpter and Marriott 2005: 12). At Area B South Elmsall, three pits each contained partially articulated cattle remains (O'Neill 1998). Within the Iron Age pit complex at Site M on the A1 (M) road corridor there were partial and semi-articulated cattle carcasses, and the complete skeleton of a young cow along with a neonate calf (Brown, Howard-Davis and Brennand 2007: 97). At the Romano-British site at Garforth, pits contained a complete pig, an articulated goat leg, and the hind leg of a horse with a cow skull (Jacques 2000). At Dalton Parlours, the partially articulated skeleton of an old dog was found within a pit deliberately lined with sheep and pig leg bones (Berg 1990: 177). There were small bird bones within the Romano-British cremation urn at Upton (McKinley 1995: 18), and at Garforth there was a partial bird skeleton, possibly a raven, in a posthole (Jacques 2000: 26).

9.3.4. Notable Iron Age or Romano-British animal burials found in 2007 at Wattle Syke included a complete cattle skeleton whose neck had been broken in at least one place
to fit it into a pit (A. Hammon pers. comm.), and a complete but decapitated horse with its head underneath the body. Another deposit or series of deposits included a cattle skull, disarticulated cattle bone, a complete sheep, two complete pigs, a complete but fragmented pottery vessel and a human infant.

9.3.5. Another dramatic example of deliberately deposited animal remains in West Yorkshire is the carriage burial at Ferry Fryston, where the partial remains of up to 25 adult cattle, including five skulls, were found just above the base of the square barrow ditch and dated to 410-200 BC. The weathering and orientation of these bones suggest that they were originally placed on the barrow mound (Boyle et al. 2007: 158). Many centuries later in the mid-3rd or 4th centuries AD, the butchered and burnt remains of over 162 further cattle were deposited in the barrow ditch, the result of several seasonal episodes of feasting. Interestingly, isotope analyses of these later cattle bone deposits proved that none of these beasts had been raised on Magnesian Limestone areas, implying people and animals travelling some distance.

9.4. Temples and shrines

9.4.1. Terminology

9.4.1.1 This research agenda distinguishes between ‘shrines’ and ‘temples’ – the former term loosely refers to relatively small-scale structures and features generally recorded on rural sites, and possibly the settings for relatively small-scale and informal ritualised practices; and the latter describes structures forming part of Greco-Roman architectural traditions and perhaps also more formalised ritual practices. This may well be an artificial division, however. Furthermore, as with other indicators of ‘ritual behaviour, there are considerable theoretical and methodological difficulties in recognising any archaeological features as shrines, and/or attributing a specifically ritual function to them. In many cases this may simply result from negative evidence, in terms of what they are not rather than more positive identifications. Nevertheless, more recent developer-funded excavations within the region have revealed some features with intriguing aspects of location, form or depositional evidence that may suggest some ritualised practices were taking place.
9.4.2. Temples and altars

9.4.2.1. Castleford lay at the confluence of the Rivers Aire and Calder, and elsewhere in northern England, as at Redhill in Nottinghamshire (Bishop 2001; Elsdon 1983; Palfreyman and Ebbins 2003), there are indications that both Iron Age and Romano-British populations imbued such locales with cosmological and ritual significance. Several contexts and finds from the Castleford vicus indicate that there was a shrine or temple complex somewhere in the settlement. Building AX had a courtyard surrounded by three ambulatory wings and was regarded as a mansio by the excavators (Abramson and Fossick 1999: 147), but nearby pits contained a series of ‘unusual’ deposits including honey and medicinal plants. The pits also produced substantial portions of ceramic and glass vessels. Contexts associated with Building AX also contained a gold amulet case and a gold ring, several intaglios including one of Jupiter, coins, seal boxes, brooches and graffito (e.g. Cool 1998a, 1998c; Cool and Price 1998; Henig 1998). There was a concentration of tazze or ceramic incense burner fragments from this area of the vicus (Cool 1999: 301-302). An inscribed stone dedicated ‘To the Nymphs’ was found underneath adjacent Building AY (Tomlin 1998: 353), and apparent abandonment layers within both buildings nevertheless produced a large number of copper-alloy toilet instruments (Cool 1998b; Cool 1998d: 367-368).

9.4.2.2. Nationally important finds from elsewhere in Castleford include the relief sculpture of a Mercury figure, two near-identical siren statues and a fragment of a once larger monumental relief slab depicting an altar (Blagg 1998: 247-250). The siren sculptures are the only known examples from Roman Britain, but are also extremely rare finds throughout the former western provinces of the Empire. This suggests that at Castleford there was an important temple complex associated with nymphs, water and healing, perhaps linked to the goddess Brigantia who also had watery associations (Cool 1999: 302-303). Most of the Phase III dog remains found in the vicus were recovered from pits near Buildings AX and AY, and a perforated dog canine pendant was found elsewhere in Castleford (Greep 1998: 279). Dog remains and/or representations of dogs were associated with some Roman springs and shrines (Green 1992), as at Lydney and Springhead.

9.4.3.3. In West Yorkshire, three altars including one dedicated to the goddess Brigantia were excavated at Adel in the early 19th century, along with a stone inscribed
with a phallus (Faull 1981: 144), together with building remains that might have been linked to a temple or shrine. Two altars, including a small ‘portable’ or domestic example, have been found in Ilkley (Collyer and Turner 1885: 30; Woodward 1925: 320). Further altars to the Mother Goddesses, Victoria Brigantia, Fortune, Bregans, Apollo, and various emperors have been found at Altofts, Chapel Allerton, Elland cum Greetland, Harewood, Huddersfield, Longwood, Scarcroft and Wike (Collingwood and Wright 1965: nos. 627-629; Eastwood 1974; Faull 1981: 167; Ramm 1966a: 329; Richmond 1925; Wright 1965: 221; Yorkshire Philosophical Society 1891: 45). Most of these finds, however, probably reflect military or domestic occupation rather than the presence of more formal temples and shrines.

9.4.3. ‘Shrines’

Iron Age

9.4.3.1. At Manor Farm near Garforth, close to a small Bronze Age barrow and an earlier Iron Age segmented ditch boundary, six pits and postholes were excavated that contained cremated human and possibly animal bone ¹⁴C dated to 800-410 BC, 390-30 BC and 370 BC-AD 20 (Burgess 2001a: 74-80). At a later date, an unusual sub-triangular feature was constructed nearby that cut at least two of the group of pits and postholes. This sub-triangular structure consisted of two phases, the first of which was defined by a shallow gully with a possible north-facing entranceway forming a structure or area 11m across (Burgess 2001a: 78-79). A ¹⁴C date of 380-10 BC was obtained from the gully. The entrance may have been associated with two lines of undated pits and postholes orientated north-east to south-west forming a 2m wide ‘avenue’. A Group VI Neolithic stone axe or adze was found in one pit (Edmonds and Davis 2001: 198), and although this feature might have been Neolithic in date it is also possible that it was a curated artefact deposited in the Iron Age.

9.4.3.2. The sub-triangular gully was later re-cut, forming a feature 14m across with no apparent entrance. A ¹⁴C date of 380 BC-AD 20 was obtained from this phase (Burgess 2001a: 79). A group of 15 postholes may have formed a later east-west line across the northern side of the sub-triangular feature, and one of these postholes produced a ¹⁴C date of AD 80-390. These postholes might have been a deliberate formal ‘blocking’ or closure of the earlier entrance. Further pits and postholes to the north-west and south-
east produced artefacts including Bronze Age pottery and flints, an Iron Age pottery sherd, and a stone mortar used for producing powdered iron ore (Cowgill and Heslop 2001: 201-202).

9.4.3.3. It is unlikely that the sub-triangular feature was a roofed building such as a roundhouse (cf. Burgess 2001b: 265-266), and it was located at the end of an exposed ridge, bounded on three sides by watercourses. It may therefore have been a small shrine, located in a relatively liminal place within the landscape, but making reference to earlier features such as the Bronze Age barrow and the possible earlier Iron Age structure or marker posts containing cremated human bone, as well as to earlier materialities such as the stone axe and flints. Perhaps this was perceived as an ancestral location. The possible fence lines running to it suggest the deliberate structuring of movement around the feature.

9.4.3.4. Some aspects of Manor Farm such as the apparently long chronology of use, the presence of small amounts of early Iron Age cremated bone, the insubstantial structures and the landscape location have similarities with an enclosure excavated at Normanton Golf Course. This was subrectangular in plan with a pronounced ditch re-cut on many different occasions, and roughly 46m long, 42m wide. There was originally an east-facing entrance causeway 11m wide, and the first phase ditch had a pronounced narrow, steep-sided slot in its base, interpreted as a channel for drainage (Timms 2005: 33), but perhaps a timber palisade slot. In early phases large posts by the eastern ditch marked a timber entrance structure, and two gullies or palisade slots and lines of postholes formed a 'funnel' leading into and then opening out into the enclosure. This suggests a desire to structure movement and create a highly formalised approach into the enclosure. Many of the postholes of this possible entrance structure(s) were later sealed by a cobbled surface that formed part of another entrance into the enclosure, probably in later phases when there was a continuous ditched enclosure circuit. Later Iron Age and Romano-British pottery and a bronze finger ring were found in the fills of the final re-cut.

9.4.3.5. Within the enclosure were a series of pits, postholes and curvilinear gullies, the latter probably open-roofed, semi-circular screens rather than roundhouse eavesdrip gullies. Some pits, gullies and postholes produced burnt stone, carbonised plant remains and charcoal. A shallow scoop cut by one gully contained cremated
sheep/goat bone and charcoal, $^{14}$C dated to 1206-917 BC (Timms 2005: 49). The southernmost gully contained six sherds of later Iron Age pottery, and one of the entrance postholes produced a $^{14}$C date of 402-265 BC. A large pit contained burnt grain and other plant remains, calcined or cremated bone and charcoal, and was sealed by an additional layer of charcoal or ash, burnt hazelnut shells and burnt and heat-shattered stone (Timms 2005: 60). Three $^{14}$C dates of 167 BC-AD 16, 347-94 BC and 350-119 BC were obtained from charcoal in different layers within the pit.

9.4.3.6. A roundhouse ring gully c. 9m in diameter was excavated in the southeast corner of the enclosure, and it may originally have had two opposed entrances. Lumps of fired clay in the ring gully were possibly fragments of moulds or furnace structures (Timms 2005: 70). A $^{14}$C determination of 381-202 BC was obtained from charcoal within it. A possible break in the southern palisade slot at this point suggests one of two entrances into a largely screened structure, situated within its own subcompound with another west-facing entrance. Stakeholes west and south-east of the roundhouse suggest additional or different phases of fenced screens.

9.4.3.7. Activity within and around the Normanton enclosure took place intermittently from the earlier to late Iron Age and until the early Romano-British period, but was apparently ‘non-domestic’ due to the lack of animal bone and artefacts. It was situated on a slightly raised area of drier ground bounded by Whin Beck and two further streams, within a shallow valley bottom that may have been a marshy depression or seasonal mere. This might suggest that it too was a small shrine. Alternatively, it may have had another specialised social function such as metalworking, although this too may have had strong symbolic meanings (q.v. Aldhouse-Green 2002; Budd and Taylor 1995; Hingley 1997, 2006).

9.4.3.8. At Site M along the A1 (M) road corridor near Micklefield, a group of seven postholes (10251) formed a possible shrine structure 6m square. No finds were associated with it, but it was separate to the four-post structures on the site and was close to a series of Iron Age human pit burials (Brown, Howard-Davis and Brennand 2007: 93). Similar Iron Age or Romano-British structures are known from Danebury, South Cadbury Maiden Castle, Uley, Chelmsford and Westhampnett, and these have been interpreted as shrines (e.g. Alcock 1972; Barrett, Freeman and Woodward 2000; Downes 1997; Drury 1980; Fitzpatrick 1997b; Wait 1985). Closer to
W. Yorkshire, a small wooden structure within the agglomerated settlement at Moor Pool Close, Rampton in Nottinghamshire (Thomas 2005: 62) and another immediately outside Enclosure 8 at Redhouse Farm, Adwick-le-Street in South Yorkshire (Upson-Smith 2006) are also intriguing in terms of their possible function.

**Romano-British**

9.4.3.9. At Topham Farm, Sykehouse in South Yorkshire, AS WYAS recorded a continuous circular 12m diameter gully containing burnt animal bone and fired clay or briquetage and a ^14_C date of 60 BC-AD 180. This was replaced by another unbroken ring gully only 5.5m across which produced a similar date, but contained two shallow rounded postholes within it. These two ring gullies do not seem to have been roundhouses, and could have been small shrines (Roberts 2003: 29-30). A large proportion of the Romano-British pottery at Topham Farm was associated with the earlier structure. These might alternatively have been haystack stands or fodder ricks, though this does not preclude their use for more structured deposition.

9.4.3.10. A similar feature was excavated in 2007 at Wattle Syke near Wetherby, also c. 5m across, but in plan consisting of eight stretches of gully forming a rounded octagon rather than a true circle. At least two shallow postholes were recorded within it. Post-excavation analyses of Wattle Syke are still ongoing at time of writing, but this feature was certainly very similar to that at Topham Farm. The Wattle Syke example again contained little material culture other than a Roman coin placed underneath a rock in the base of the gully, although some small pits or postholes nearby contained animal remains. Again, however, the evidence seems to be ambiguous. At Ferry Fryston, a possible square shrine structure was excavated adjacent to the carriage burial – see paragraph 10.1.13. for discussion.

9.5. **Priorities and implementation**

9.5.1. The following research questions, problems and priorities have been identified:

- Criteria should be developed to assess depositional practices on Iron Age and Romano-British sites, and to try and identify placed deposits in particular.
- To understand the significance of deposition, archaeologists need to examine the ‘grammar’ of these practices, through detailed contextual approaches and examining the evidence for the presence, absence or co-occurrences of
different artefact types, animal and human remains. Future research also needs to consider the evidence from West Yorkshire and perhaps the wider region as a whole, rather than the somewhat site-focused and insufficiently synthetic studies that have been undertaken to date.

- Such research will require detailed study of the contextual data from the archives of both published and unpublished sites, and the compilation of detailed spatial and statistical information regarding the distributions of artefacts across excavated sites. Although an initial study has been made of some of this evidence (Chadwick 2008a), this utilised published information only that rarely incorporated the detailed information necessary for such comparative analyses.

- Possible locations of shrines or temples should be the subject of further research.

9.5.2. The research priorities can be addressed as follows:

- The on-site excavation and recording of examples of possible placed deposits should be more detailed and rigorous. Post-excavation analyses should incorporate detailed geospatial and statistical analyses of artefacts and bone groups wherever possible to compare and contrast intra-site and inter-site patterning.

- Contextually based ‘biographical’ approaches to artefacts and Associated Bone Groups (q.v. Morris 2008) may help determine their pre-depositional and depositional histories.

- Adequate time and resources must be allocated so that the material specialists examining different components of assemblages (such as pottery, human bone, animal bone, metalwork and palaeo-environmental remains) have the opportunity to see each other’s data. Deposits and features need to be studied as complete groups.

- The publication of excavated Iron Age and Romano-British sites must include detailed breakdowns of the spatial and contextual distribution of artefacts and other materials according to volume, weight and/or number of individual elements, in the form of plans and histograms or pie charts. The Internet or CD-ROMs accompanying reports may be an acceptable means of presenting this data.

- Deegan (2007) has identified several possible Iron Age or Romano-British temple or shrine sites through her aerial photographic mapping and GIS-based analyses. Detailed geophysical survey on these sites and targeted excavation to try and determine their age and character would be welcome.
10. Death and burial

10.1. Iron Age

10.1.1. Until comparatively recently there was little archaeological evidence for Iron Age burial practices in West Yorkshire, due in part to the lack of excavated sites and significant problems with bone preservation in the often acidic soils. In many other areas of Britain, however, from the late Bronze Age onwards formal burials largely seem to ‘disappear’ from the archaeological record (Brück 1995), and the majority of people were possibly excarnated, exposed on timber platforms or on the ground surface (Carr and Knüsel 1997: 170-171), or disposed of in rivers, lakes and bogs. In contrast, disarticulated human remains found on some late Bronze Age or early Iron Age settlements seem to have been selected and circulated amongst the living (Brück 1995). During the middle Iron Age southern England had inhumation burials within storage pits and other ditches, but even these were still only a handful of the living populations. East Yorkshire had the square barrow and inhumation rite. Only in the later Iron Age did cremation and inhumation rites become more frequent in southern England (Pearce 1997).

10.1.2. Much of northern England was once regarded as having isolated pit or cist burials (Whimster 1981). As elsewhere in Britain though (Haselgrove et al. 2001: 12), this generalised overview is being altered by PPG16 funded archaeological projects and more frequent radiocarbon dating of human remains. The recent upsurge in developer-funded projects within West Yorkshire has provided examples of individual and group Iron Age burials, and so although the general trend still follows the national pattern, these burials are not now as rare as was once thought.

10.1.3. There is very limited evidence for cremation as a late Bronze Age and earlier Iron Age rite. At Manor Farm, six pits and postholes contained cremated human and possible animal bone $^{14}$C dated to 800-410 BC, 390-30 BC and 370 BCAD 20 (Burgess 2001a: 78). A later sub-triangular feature nearby may have been an Iron Age and Romano-British shrine (see section 9.4.3.1. above). At Normanton Golf Course, a large pit within another possible ‘shrine’ contained calcined or cremated human or animal bone along with charred plant remains, burnt and heat-shattered stone and charcoal (Timms 2005: 60), and was sealed by additional charcoal, ash and
burnt hazelnut shells. Three $^{14}$C dates of 167 BC-AD 16, 347-94 BC and 350119 BC were obtained from charcoal within the pit.

10.1.4. The archaeologically visible Iron Age burial practice in West Yorkshire consisted of crouched or flexed inhumations within pits in corners of enclosures, just outside enclosure ditches or next to field ditches. The social meanings associated with boundaries may therefore have been important. Some people had simple artefacts such as iron rings associated with them, and this burial rite persisted into the Romano-British period. Most members of the Iron Age population are still clearly missing from the burial record, however, and as has been suggested for Britain as a whole the majority of people might have been exposed and excarnated; placed in rivers or lakes; or buried in shallow graves that have not survived later ploughing. Those women and men who were buried might have been community leaders or elders, or may have been considered to have died ‘before their time’ or to have met inauspicious ends. Alternatively, some individual, isolated burials might even have been of people who were reviled or socially excluded.

10.1.5. At Dalton Parlours, an adult woman in a crouched position was $^{14}$C dated to 355-94 BC (Sumpter 1990a: 17). Two pit burials were found at Ledston, both of flexed adult males. One man with an iron finger ring was associated with cattle bone and a possible timber mortuary structure (Sumpter and Marriott 2005: 12). The burial may have been placed next to a four-post structure, or the latter was constructed after it next to the grave. This may have represented deliberate symbolic associations being created between the human dead and community ancestors, food and fertility. The dead person may have been guarding the food store and ensuring future crop growth and harvests, and the four-post structure was seen as more efficacious due to its position close to an earlier burial. Alternatively, the dead man might have been placed near to an earlier food storage structure so that he could be reborn in an afterlife. The second inhumation was dated to 390 BC-AD 120. Both bodies had had limestone rubble placed on top of them.

10.1.6. At Area D South Elmsall, three grave cuts contained the remains of four individuals (Howell 1998). A possible adult man and a woman were crouched in pits and were $^{14}$C dated to 380 BC-AD 70 and 390-10 BC (Burgess 2001b: 268). The third burial has not been dated but was different in form to the other two, and also contained
partial remains of a fourth individual. This suggested it was not contemporary, but unfortunately these remains were not dated. An incomplete but partially articulated adult human skeleton, possibly a woman, was found at the base of a pit at Dale Lane, South Elmsall (Burgess 1998). An abraded possible human long bone fragment was recovered from a secondary ditch fill nearby. At Area C South Elmsall, an undated skeleton was recorded on its right side in a pit outside the settlement area (McNaught 1998). Another undated crouched inhumation from Area A, Barnsdale Bar Quarry (Brown and Morris 1997; Burgess 2001f) could perhaps also be later Iron Age. The ambiguous character of these burials highlights the need for the adoption of radiocarbon dating as a routine analytical technique on sites producing human remains.

10.1.7. During the 1990 Wattle Syke investigations three inhumation burials were found. One seemed to be within a ring ditch (Turner 1991), but it is unclear whether this was a Bronze Age, Roman or post-Roman barrow, or a sub-square feature similar to the square barrow excavated in 2007 at Wattle Syke. Another inhumation had a ‘pillow’ of stones, with the disarticulated remains of a dog underneath. No dating evidence was recovered, and the identification of these as Iron Age burials is contentious (Burgess 2001c: 268). At Ferrybridge, a post-Roman burial $^{14}C$ dated to AD 540-720 within Enclosure D had a small dog near the person’s head, possibly used as a pillow (Martin 2005: 121). The ongoing post-exavcation work at Wattle Syke will hopefully permit radiocarbon dating on these earlier inhumations to determine their likely date. The 2007 Wattle Syke excavations found several crouched and flexed inhumations that could be either Iron Age or Romano-British, and these also require $^{14}C$ dating.

10.1.8. At Ferrybridge, three or four crouched or flexed adult inhumations in the pit alignment and pit groups were probably Iron Age (Richardson 2005a: 70). Only one contained artefacts, a mature woman (SK14) dated to 200 BC-AD 60 associated with Iron Age pottery, a flint flake, red deer bone and a pig canine (ibid.: 65-67). In life this woman may have held some different or special social status.

10.1.9. Burials along the line of the A1 (M) included a single inhumation in a pit next to a boundary ditch at Site XX15, $^{14}C$ dated to 340-50 BC. Two burials in pits cut into silted up ditches associated with the D-shaped enclosure at Site Q were dated to 90 BC-AD 60 and AD 0-130 (Brown, Howard-Davis and Brennand 2007: 6162, 75).
Site M there were eight human pit burials, with the spatial positioning of the graves suggesting some were related. In the north-western group there were two young women and a mature adult male, all crouched, on their left sides and with iron brooches. One woman also had an iron bracelet, and there was a black stone bead beneath the man’s ribs (Brown, Howard-Davis and Brennand 2007: 99-100). There were two young men and a mature man in the south-east group, a mature woman, and one individual who could not be sexed. All were on their left sides, bar one young male on his right side. The other young male and the mature woman both had cattle bones placed with them that were probably joints of meat, and the woman was interred with an articulated arm from another individual. All were flexed.

10.1.10. Strontium isotope analyses indicated that with the exception of the woman with the iron bracelet, these people had probably spent their earlier lives outside the region. Whilst it has been suggested that they could have been slaves (Brown, Howard-Davis and Brennand 2007: 103), the presence of grave goods and joints of meat may argue against this. They could equally well have migrated into the area. The radiocarbon dates for these individuals all fall within the same range, but the plateau on the $^{14}$C calibration curve results in dates of 400-200 BC (Brown, Howard-Davis and Brennand 2007: 99-102). Perhaps significantly though, this is within the date range (380-110 BC) proposed for the man in the Ferry Fryston carriage burial. It is thus possible that these people formed part of his retinue, or were part of a group of immigrants who came with him from the same lineage or clan.

10.1.11. The Ferry Fryston carriage burial was a (so far) unique find for West Yorkshire but was widely reported as an example of the East Yorkshire rite – even English Heritage suggested it marked a hitherto unknown expansion of the Parisi (N. Redfern in Wainwright 2003). This ignored the significant differences between it and many Wolds carriage burials, where the carriages were completely disassembled for example, and where pig bone was associated with burials. At the same time, there are associations between the sword scabbard deposited in the Ferrybridge henge ditch (Stead 2005) with East Yorkshire examples; and between some Iron Age pottery from Ferrybridge and Site M with East Yorkshire ceramics. The burial may be a slightly imperfect local rendition of an East Yorkshire ritual, but given the somewhat equivocal isotope results (Boyle et al. 2007: 129) it is also plausible that the man was from North Yorkshire or Scotland. This might explain the differences with the majority of excavated East Yorkshire carriage burials, but perhaps also some similarities between the Ferry
Fryston carriage burial and that at Newbridge near Edinburgh (Carter and Hunter 2003; Carter, Hunter and Smith forthcoming).

10.1.12. One remarkable aspect of the Ferry Fryston burial was the considerable period of 200-400 years between the primary carriage inhumation and initial deposition of some cattle bone, and later feasting and deposition focused on the burial (Boyle et al. 2007: 158). By this date, the mound and ditch were probably not obvious landscape features, and so local communities must have retained some persistent memory of the original event through stories or myths. The man may have held great political and/or spiritual status, and/or his death may have been considered especially unlucky or tragic (Chadwick 2007: 142). This might have been a process of honouring an ancestor and re-establishing a link to the past.

10.1.13. A square enclosure 30m south-west of the Ferry Fryston burial was defined by a shallow ditch and lines of postholes with possible entrances on the west and east sides. This was probably an unroofed, palisaded structure. No dating evidence was found, but this could have been a mortuary enclosure to lay out the body for display, conduct the necessary rites, and prepare the body through washing, anointing and dressing; or a slightly later shrine (Boyle et al. 2007: 158159). Smaller square and rectangular structures were excavated at Westhampnett in West Sussex, associated with an Iron Age cremation cemetery (Fitzpatrick 1997b: 12-18). A similar sized square enclosure was found at Kirkburn in East Yorkshire, close to square barrow burials and earlier monuments (Stead 1992: 25-28, fig. 24).

10.1.14. Excavations in 2007 at Wattle Syke found a small square barrow, but the ditch only produced a few fragments of animal bone and there was no evidence for any central burial, only a possible shallow tree bole hole. Human remains might have been placed directly on the original ground surface under a small mound truncated by later ploughing. Alternatively, this feature was more like a symbolic cenotaph without any human remains or central grave. There are East Yorkshire examples of both practices (M. Giles pers. comm.; Stead 1992: 179-180). The burial found in 1990 at Wattle Syke might also have been within a sub-square barrow, but requires 14C dating. Another possible West Yorkshire square barrow is identifiable on old aerial photographs underneath the line of the M62 motorway (e.g. Brown, Howard-Davis and Brennand 2007: 58, fig. 27), but this feature was not investigated at the time and is probably now destroyed. Further examples from within West Yorkshire may well be discovered in the
future. Small square barrow features are also known from the Trent Valley of Nottinghamshire (Knight and Howard 2004: 9899; May 1970; Whimster 1989: 25), and from lowland Scotland (Armit 1997: 97-98). They are thus a poor guide to tribal identities and the extent of Iron Age ‘territories’ (contra Mackey 2003: 118; Manby 2003: 122).

10.2. Romano-British burials

10.2.1. Though relatively more frequent in West Yorkshire than Iron Age inhumation, it is clear that many (if not most) of the Romano-British dead are still missing from the archaeological record. Taphonomic factors may sometimes play a part – at Methley (MAP 1996: 19-20, fig. 10) regular but ‘empty’ pits might have been grave cuts, where the acidic soil has removed all traces of any human bone, as suggested for the Romano-British enclosure at Billingley Drive, Thurnscoe in South Yorkshire (Neal and Fraser 2004: 88). Social factors were probably also important, however, and it may be that on rural settlements people were exposed as a funerary rite, or placed in rivers and lakes. Few cemeteries have been excavated within the region, and on rural settlements small groups of burials were the norm. Romano-British inhumation graves were often within enclosures, located in corners or parallel with boundaries, and occasionally lined with stone slabs. They occurred singly or in small groups, and although the crouched rite sometimes persisted, most bodies were flexed or extended. Most inhumations did not have artefacts, although occasionally brooches, pottery vessels and possibly associated animal remains have been found.

10.2.2. Inhumation burials sited next to enclosure ditches include two adults and two infants at Dalton Parlours (Manchester and Bush 1990: 172-174), and three adults at Parlington Hollins West in Enclosure D (Holbrey and Burgess 2001: 96-97). Alternatively, there were burials actually within boundary ditches or internal gullies of enclosures, as at Dalton Parlours, where the remains of one adult and five infants were found in enclosure ditches or gullies (Manchester and Bush 1990: 172-174), and at Site XX8 between Pontefract and Knottingley where a foetal or neonate was found in a ditch (Brown, Howard-Davis and Brennand 2007: 57) Four infants were also buried in a ditch at Womersley (Buckland and Dolby 1987).
10.2.3. A few inhumations occurred in more isolated positions next to or within boundary ditches, as at Parlington Hollins West (Holbrey and Burgess 2001: 96), and at Area B Barnsdale Bar Quarry (Burgess 2001c). At Site XXI5, a grave cut into a ditch was for an adult woman with a copper-alloy necklet and an almost complete ceramic jar, her bones dated to AD 70-230 (Brown, Howard-Davis and Brennand 2007: 76-77). Romano-British inhumations were associated with the pit alignment and pit groups at Ferrybridge (Richardson 2005a: 70) – one of an adult male dated AD 20-340 was associated with a copper-alloy brooch (ibid.: 67).

10.2.4. At Parlington Hollins West, two late Roman inhumations were inserted into the ditch terminals of the earlier phase Enclosure C (Holbrey and Burgess 2001: 101-102). These were orientated east-west, which might indicate an early Christian rite, but skeleton 880 in grave 883 (an adult woman) had been decapitated, and the head had been placed between her feet. Hobnails were also recovered from around the feet. A decapitated, possible female skeleton dated to 160 BC-AD 90 and missing its skull was found in the pit alignment at Ferrybridge (Richardson 2005a: 64-65), and a decapitated male skeleton was found in a stone coffin at Paper Mill Garth, Pontefract, again with its head between its feet (Faull 1981: 166). Decapitation is another relatively well-known rite in Roman-period burials (Philpott 1991), and although uncommon is not rare and does not seem to have been a punishment. Associated with both male and female individuals, the reasons for it are not known but it may have symbolised an unlucky death, and/or indicated different religious beliefs of the deceased or variations in social status or identity.

10.2.5. Although grave goods have been recovered from both inhumation and cremation burials within West Yorkshire, these do not occur in the same overall frequencies, and not in the same quantities within each grave, as artefacts found in Roman-period burials in central-southern England. The objects themselves are more often pottery vessels and/or relatively simple items of jewellery. This may simply be due to the relative paucity of high-status sites and material culture in general within the region, although some higher-status objects would have been available. It may thus reflect a regional variation in burial practice and religious beliefs amongst the Romano-British population.

10.2.6. In addition to the examples already noted above, excavations at Wattle Syke in 2007 recorded one burial of an adult associated with a near-complete but
fragmented greyware vessel, possibly smashed *in situ*; another with an iron brooch, and one possible juvenile with several coins placed by the hands and two copper-alloy bracelets, in a double inhumation with an adult individual. Fragments of a carved bone pin were found in another, seemingly ‘empty’ grave. Animal remains were associated with some of the inhumation burials excavated at Wattle Syke, including a chicken placed by the feet of one individual. The astralagus bone from a cow found near the feet of one person in another burial may have been incorporated by accident into the grave backfill, but could have been a deliberate deposit. These cattle bones are used as gaming tokens and/or divining instruments in many different cultures, and these might be possible associations for this example. Post-excavation analyses will have to explore such possibilities.

10.2.7. Some Romano-British burials continued the crouched Iron Age tradition, and there were also many infant burials in ditches (Esmonde Cleary 2000; Philpott 1991). The graves cut into enclosure ditches suggest that, despite silting up, these were liminal zones that remained symbolically potent after they had ceased to be functional barriers (Esmonde Cleary 2000: 138). It might have reflected the use of the dead to protect the living, and to reiterate notions of tenure and ownership through ancestral legitimation. The preponderance of infant burials may be further evidence of this – infants may not have been fully socialised members of Iron Age communities, and in Roman legal codes neonates and infants were not regarded as separate individuals like older children and adults (Scott 1991). Placing neonates and infants in the base or upper fills of ditches may have reflected this ambiguous social status, but this need not suggest either infanticide or a lack of care for the deceased. On the contrary, it might have demonstrated great love and affection, at the same time emphasising enclosure ditches as important social boundaries.

10.2.8. At Wattle Syke there were over a dozen infant burials carefully tucked against the sides of ditches, within small pits cut into ditch fills or sides, and in at least two instances placed underneath possible small stone cairns within ditches. Here, the infant burials were marking the edges of domestic space, perhaps defining the boundary between the familial world and that outside, reinforcing communal identity. One infant burial at Wattle Syke may have been associated with a curated prehistoric flint flake, and another two with deposits of animal bone. Detailed postexcavation work will have to examine these possible relationships.
10.2.9. Small groups of Romano-British burials found near Adel, Castleford, Ilkley, Slack and Wetherby were probably from small cemeteries associated with these settlements (Faull 1981: 145, 153; Richmond 1925). These included stone coffins and cists found in Wetherby, along with three recently discovered inhumations (AOC Archaeology 2007; Kent and Kitson Clark 1934: 171-174; Faull 1981: 144-145, 166). Stone funerary monuments were found at Ilkley (Woodward 1925: 316-317), including one of a woman named Vedica. The inscription on her tombstone read ‘To the spirits of the departed and to Vedica, thirty years old, daughter of Virico of the Cornovii, she lies here’ (Collingwood and Wright 1965: 639). This woman may have moved into the West Yorkshire region from the area of what is now modern Cheshire or Shropshire. Details of the hair and dress of the figure on the tombstone suggest a more ‘native’ rather than ‘Roman’ style appearance, and this is a rare, fascinating window into a past life.

Cremation

10.2.10. Cremation was a relatively common rite across Britain in the early part of the Roman period, with human remains buried in pottery vessels, usually jars. It has been suggested that there were metaphorical links between ceramics associated with food and drink consumption, and their use as containers for the bodies of people ‘consumed’ by the fires of the pyres (Philpott 1991: 35; Williams 2004: 419). The vivid experiential nature of cremation, the different stages of preparing the pyre and the body, the cremation and the retrieval of some or all of the bone, ash and artefacts may all have intensified processes of remembering and/or forgetting the dead (q.v. Downes 1999; Fitzpatrick 1997b; McKinley 2000). Why certain people were cremated and others buried as inhumations is not clear. It may reflect persistence of local traditions such as individual or community preferences and/or differences in their religious beliefs during life, and/or aspects of social identity such as status, gender and lineage.

10.2.11. In West Yorkshire, cremation does not seem to have been a common Romano-British rite, at least in rural areas. In addition to some older isolated finds of urns, including some near the fort at Slack (e.g. Faull 1981: 166-167; Richmond 1925), urned cremations have been found in isolated pits within enclosures, as at Parlington Hollins West Enclosure D (Holbrey and Burgess 2001: 97-99), in the ditches of enclosures as at Upton (Roberts 1995), or in small stone cists (Faull 1981). At Site
XX15, a cremation burial in a 2nd or early 3rd century greyware jar was found adjacent to an inhumation cut into a field ditch (Brown, Howard-Davis and Brennand 2007: 76-77; see above). Cremated bone that may be human and Romano-British in date has been recovered from a variety of contexts including a pit at Swillington Common North described as Bronze Age, but given its location is perhaps more likely to have been late Iron Age or Romano-British (cf. Howell 2001: 52); and also from the ditch of Enclosure E at Parlington Hollins East (Start 2001: 212). At Wattle Syke, excavation in 2007 recorded two cremation burials within small pits, cut into a gully dug around a subrectangular building. The cremations were not associated with urns, but one assemblage of burnt bone was 'nested' within burnt stones, and this also contained a well-preserved enamelled Roman brooch that had clearly not been on a pyre. Possible cremation urns have recently been excavated at Slack (HDAS Newsletter 15: 3).

10.2.12. Philpott (1991) suggested that cremation was primarily an earlier Romano-British practice, with inhumation becoming common later in the period. The Enclosure D cremation at Parlington Hollins was within a 3rd or 4th century vessel, however, with a \(^{14}\text{C}\) date of AD 254-511 (Holbrey and Burgess 2001: 99). The cremation at Upton was in a possible Huntcliff ware jar, probably of later 4th or early 5th century in date (Rush 1995: 16), and a cremation burial at Adel was also found in a similar vessel (O'Neill 2001c: 279). This evidence suggests a more complex situation, perhaps even a regional variation.

Disarticulated remains
10.2.13. During the Iron Age and Romano-British periods, fragmentary remains of the dead were sometimes dispersed across settlements, deposited in pits and boundary ditches, or underneath buildings (Esmonde Cleary 2000: 136; Philpott 1991: 97-102; Scott 1991; Wait 1985). Many bones may have been residual remains accidentally incorporated into later features, but some might have been deliberately collected and curated as mementos of the known deceased, or as more general ancestral relics. There is widespread ethnographic evidence for such practices.

10.2.14. Disarticulated human remains of possible Iron Age date were found in the outer ditch of the sub-triangular enclosure at Ledston (Sumpter and Marriott 2005: 8), and in the ditch of the D-shaped enclosure at Site Q (Brown, Howard-Davis and Brennand 2007: 62). At Site M, disarticulated human bone was found in two Iron Age pits, and some pits may have functioned as charnel features. Disarticulated human
remains were also found at Garforth (Jacques 2000: 22) and at Dalton Parlours, including remains from at least three individuals in the excavated Romano-British well (Berg 1990b: 253; Manchester and Bush 1990: 172), whilst a human skull was recovered from the well at Rothwell Haigh (Richardson 2004b). Human remains have been recovered from many Romano-British wells across Britain.

10.3. Priorities and implementation

10.3.1. The following research questions, problems and priorities have been identified:

- In West Yorkshire, most Iron Age inhumations and many Romano-British examples consisted of isolated burials, and most lack dateable artefacts. This makes their dating and phasing relative to other archaeological features extremely problematic.
- Why were only some people buried during the Iron Age, and who were these individuals?
- Can archaeologists identify the possible deliberate retention and curation of human bones in archaeological contexts?
- Can archaeologists identify any movements into the West Yorkshire region during the Iron Age and Romano-British periods?
- What was the genetic contribution to the existing indigenous population by non-British people during the Romano-British period? Will archaeologists ever be able to identify individuals from specific areas of Europe, Africa or the Middle East?
- In addition to general information about age and health, can archaeologists identify different dietary habits and lifestyle information from skeletal remains?
- Why was cremation not more common during the earlier Romano-British period? Does this reflect the persistence of local beliefs and traditions?
- For how long did later Roman burial traditions persist into the post-Roman period? At what point did burial traditions change?

10.3.2. The research priorities can be addressed as follows:

- All inhumation and cremation burials must be radiocarbon dated as a matter of routine, and also disarticulated human remains wherever possible. A programme of $^{14}$C dating of undated human remains from archives would be extremely welcome.
• Where bone preservation allows, human remains of Iron Age or Romano-British date should undergo isotope analyses to investigate the likely origins of the dead person, in order to assess if they spent much of their life in the local area or were ‘incomers’ from elsewhere. It may also prove possible to identify the relative importance of cereals versus animal proteins in their diets.

• Where preservation allows, ‘biographical’ approaches to human remains should be adopted. This could include the identification of non-metric traits such as ‘squatting facets’ to try and establish possible tasks or even genderspecific activities performed by the individuals in life. Where groups of inhumation burials are found, possible familial links between individuals should be sought.

• If any exceptionally well preserved human remains are ever encountered, (perhaps in stone or lead coffins, or in waterlogged contexts), DNA sampling and analyses might prove possible. Along with isotope analyses, such work might be able to begin assessing the contribution to local populations by nonindigenous individuals during the Romano-British and post-Roman periods, and assess movements amongst Iron Age people.

• In the future, more detailed study of well-preserved but disarticulated remains may be able to identify patterns of weathering from exposure and/or defleshing marks, in order to determine if these bones were derived from excarnation practices and/or the partial retrieval and deliberate curation of human remains, or if they were accidentally incorporated into later contexts.

11. Implementation and conclusions

11.1. Research-led and independent archaeology
11.1.1. There is considerable scope for future research by university departments, local societies and enthusiastic ‘amateurs’ within West Yorkshire. Many examples of potential research projects have been identified within this agenda, but include the characterisation, surveying and monitoring of earthwork enclosures; large-scale geophysical survey, field walking and metal detecting projects; establishing the ‘missing’ courses of Roman roads; and some targeted excavations in collaboration with other key stakeholders with the guidance of WYAAS. Excavation, however, is best not attempted unless there are suitable excavation and recording methodologies employed, and appropriate resources of staff and post-excauation funding can be guaranteed.

11.1.2. If funding can be identified and the agreement of a landowner obtained, curatorial archaeologists could select one or two Iron Age and Romano-British enclosures and field blocks for longer-term research projects undertaken in conjunction with local commercial field units, material specialists, university archaeology departments and local archaeological and historical societies. This would not only stimulate research into these landscapes, but would provide welcome opportunities for creative dialogues between ‘academic’, ‘unit’, ‘specialist’ and ‘independent’ archaeologists. Collaborative projects should be encouraged wherever possible, and funding from English Heritage, academic grant awarding bodies, the National Lottery and other sources should be sought to implement such work. Appropriate post-exavcation and publication funding would need to be assured from the earliest stages, and materials specialists able to bring their own expertise and research questions should be involved in such projects from the beginning.

11.1.3. Such projects could serve as community and open access projects, allowing members of archaeology societies, school groups and the general public to take part in archaeological excavation and research within their areas. Educational and outreach projects such as the Romans on the Don initiative in South Yorkshire (e.g. Bevan 2006) should be actively encouraged and supported. In addition to full academic publication but never a substitute for it, ‘popular’ publication in the form of booklets, CD-ROMs and on the Internet should also be undertaken to bring the results of this work to the notice of a much wider, non-specialist readership.
11.2. **Developer-funded archaeology**

11.2.1. **On-site excavation and recording methodologies**

11.2.1.1. When sites are stripped of topsoil prior to excavation, it is often the case (particularly on river terraces sand and gravels) that they need to be left for a week or more before archaeologists record and excavate them, allowing time for archaeological features to ‘weather out’ and become more obvious through the effects of rain and sunshine. On clayey soils though, features need to be recorded and marked as soon as possible, and subsequently areas may need to be dampened to allow the identification of further features.

11.2.1.2. Phosphate sampling, magnetic susceptibility and any other appropriate geochemical analytical techniques need to be regularly undertaken to investigate patterns of inhabitation within enclosures, roundhouses and rectangular buildings where conditions are suitable. This may be able to identify areas where people ate and/or slept, or areas where animals were stalled, in addition to possible activity areas within structures and enclosures.

11.2.1.3. On both research and developer-funded excavation projects, at least 20-25% of all field and enclosure ditches need to be sampled through hand-dug sections. The total excavation of enclosure ditches in controlled spits by machine after hand-dug sections have been excavated should be adopted as standard practice, as it has produced very positive results. When this was undertaken during the excavations at Wattle Syke in 2007, much greater quantities of animal bone, pottery and other artefacts were retrieved, larger numbers of human neonates were found, and unsuspected placed deposits of pottery and animal remains were found. The greater the length of ditches excavated, the more chance there is that such deposits will be encountered, and thus better understanding of depositional practices will be achieved. Instead of limited 2-3m wide hand-excavated sections it is also more productive to employ 4-6m wide sections near enclosure entrances and corners. Again, this maximises artefact and bone recovery.

11.2.1.4. On many Iron and Romano-British sites, it is often difficult for excavators to discern individual layers within ditches and other larger features during initial stages of excavation, as these interfaces are often most apparent only once a large part of each section is exposed. As some of these features may have been open and/or recut for
decades if not centuries, and the residuality of pottery sherds in often a factor on many rural and urban sites, than it is important that the finds recovered from these features can be attributed to the correct contexts. In such instances, it might be productive for excavators to remove soil in rough horizontal spits and record any finds accordingly, until the different layers and interfaces become apparent. Experienced excavators usually do this on an informal basis anyhow, but the practice could perhaps be made more explicit. This would allow even inexperienced fieldworkers to produce a greater degree of stratigraphic and chronological resolution for their finds than might otherwise have been the case.

11.2.1.5. Fieldwork staff should have much greater on-site training in how to recognise stratigraphic interfaces and distinguish between different contexts on the often difficult soils within West Yorkshire. In particular, the often subtle physical traces of recutting episodes need to be identified and recorded in much greater detail than at present. Examination of several section drawings in both unpublished client reports and published monographs and journal articles suggests that in some instances excavators did not recognise recuts from differences in the profiles of ditches, and/or that they had drawn layer interfaces that were highly unlikely to have been present, even from deliberate dumping of material into features (such as the markedly ‘convex’ layers sometimes illustrated as bulging out from ditch sides).

11.2.1.6. Roundhouse ring gullies and other structural features need to be completely (100%) excavated. Where features such as pit groups are encountered, each feature needs to 50% sampled as an absolute minimum, and if any placed deposits or Associated Bone Groups (ABGs) are encountered than sampling needs to be much more rigorous. Possible placed deposits and ABGs need to be excavated and recorded in much more detail, in recorded spits if necessary.

11.2.1.7. During the machining of suspected ‘domestic’ enclosures, some topsoil or subsoil could be left in place and intensively sampled by hand and metal detector for artefacts that might otherwise be machined away. Possible middens and artefact spreads might be detected in this way, and if the initial results proved disappointing the remaining soil could always be machined down to undisturbed natural subsoil as usual. This might be especially productive on sites that might not have been deeply ploughed or where colluvium or alluvium has formed above archaeological deposits. When excavating funnel-shaped entrances, trackways on slopes or those surviving as
holloways, once again some topsoil or subsoil could be left in place, perhaps in strips 5-10m wide. These strips could then be hand excavated in order to find any wheel ruts or animal hoof prints that might survive.

11.2.1.8. Excavation staff, students and volunteers on developer-funded and research projects should be encouraged to take innovative, self-critical and reflexive approaches to excavation and recording (q.v. Chadwick 2003). The potential of enclosure and field entrances and/or features near these to contain placed deposits; and the usefulness of more detailed recording and plotting of artefact distributions in reports to provide potentially valuable information about everyday practices in the past, needs to be recognised more widely.

11.2.1.9. Artefact, animal bone, human bone and other specialists should be much more closely involved with project planning, excavation and initial postexcavation analyses from their early stages, and on larger projects should be present on-site to inform, implement and manage appropriate sampling strategies. Field units should also ensure that small numbers of site staff are to be sent on training courses in the identification and excavation of artefacts and human and animal remains although these personnel should not be used by units as substitutes for the involvement of the experienced specialists who will undertake much of the postexcavation work. Curators should ensure that those involved with archaeological work closely follow the appropriate management guidelines for historic environment research.

11.2.1.10. During archaeological watching briefs and groundwork monitoring, it is imperative that developers and their on-site contractors should only use toothless ditching buckets on the mechanical excavators. Outside of areas of known archaeological remains, 360° excavators with toothless ditching buckets must also be used to remove topsoil, rather than toothed buckets and/or box scrapers. Dumper trucks must be loaded behind the machines and the area being stripped, rather than tracking across the stripped area. On several previous road and pipeline infrastructure projects in West Yorkshire, the use of toothed buckets made it virtually impossible to spot any archaeological features.

11.2.2. *Palaeo-environmental sampling*
11.2.2.1. Despite the widespread adoption of palaeo-environmental sampling techniques, there remain problems with this on many developer-funded projects. Samples may not be taken systematically and projects may lack clearly framed sampling policies and research strategies. All too often, palaeo-environmental analyses may be casualties of cutbacks in post-excavation funding, and consultants may try to reduce the amount of sampling that takes place on-site. The lack of standardised approaches can cause problems when trying to compare palaeoenvironmental assemblages from different sites (Huntley and Stallibrass 1995; van der Veen 1992).

11.2.2.2. Many excavation staff in field units are still not adequately trained to recognise the archaeological deposits most likely to produce productive results, and may only sample features that ‘look interesting’. Consequently, although concentrations of carbonised grain or waterlogged plant material may be identified, smaller ‘background’ quantities of palaeo-environmental evidence can be missed. On larger projects in particular there should be on-site specialists present to inform and monitor the sampling process, and to take more specialist samples for pollen and soil micromorphology analyses.

11.2.2.3. The long-term storage of samples until such time as assessment and publication analyses commence is also a significant issue. A large project may generate hundreds if not thousands of soil samples; and even if these are within stackable plastic tubs (which is good practice), this comprises a huge volume and weight of material. For larger excavations therefore, curators, consultants and clients must give much more serious thought to the on-site processing of samples before such major projects commence, and the water sources, flotation tanks, silt traps and drying facilities that are required for this. Alternatively, adequate storage space needs to be assigned beforehand, and field units may find it necessary to rent additional commercial storage space for this.

11.2.2.4. All soil samples taken on archaeological sites should be tested for the presence of hammerscale using hand magnets (A. Burgess pers. comm.). This is a relatively quick and cost-effective technique that has nevertheless expanded the evidence for Iron Age and Romano-British iron working.
11.2.3. Post-excavation analyses and report presentation, dissemination and publication

11.2.3.1. During post-exavcation analyses, specialists should play a key role in round table discussions, as part of recursive dialogues concerning stratigraphy, site formation processes, dating, function and depositional practices. They should not merely be sent the artefacts or bones to examine with little or no accompanying contextual information, and must be provided with the appropriate stratigraphic information and site drawings. Such holistic approaches and discussions would not allow many existing research questions to be addressed, but may also identify new and productive areas for additional research.

11.2.3.2. There is a major problem with the dissemination of developer-funded archaeological client reports – so-called ‘grey literature’, although this problem is not merely confined to West Yorkshire (e.g. Holbrook and Morton 2008). Some reports may take years to be submitted to the HER, and in some cases these are interim publications rather than full reports with final specialist analyses. Key sites with Iron Age and/or Romano-British archaeology such as Temple Point, Colton (Johnson 2002, 2003) and Stile Hill, Colton (Barkle 1995) have not had their post-excavation analysis completed and languish as unpublished interim reports. Assessment reports need to be produced much more rapidly after fieldwork has been completed to ensure that funding is available to carry out the further analyses identified as necessary and appropriate actually occurs.

11.2.3.3. Although when finally submitted unpublished client reports may be accessed at the HER, the consultation of many such reports by researchers can be a protracted process. In the future, developer-funded client projects and reports should be available digitally to all researchers, either by supplying copies to the Archaeology Data Service or by HERS having digital copies that can be downloaded from a webbased HER. University-led research projects and the work of independent or ‘amateur’ groups and individuals should also aim to abide by these requirements. Some time lags may be necessary in a minority of cases to take into account issues of client confidentiality and commercial sensitivity, although the actual need for such confidentiality should be set out to the satisfaction of the curators, and there should still be a clear and unambiguous onus on the much greater dissemination of reports. On-line publication should also not be seen as a full substitute for academic presentation in monographs or archaeological journals.
11.2.3.4. For many pre-PPG16 sites, including Iron Age and Romano-British settlements and fields investigated on the Methley gravels on the low-lying AireWharfe interfluve, there is simply no money available to allow the excavating unit (in most instances what was the West Yorkshire Archaeology Service (WYAS), now Archaeological Services WYAS (AS WYAS) to undertake detailed post-excavation and publication work. Although approaches have already been made to English Heritage concerning this backlog, a concerted effort should be made by WYAAS and AS WYAS to obtain HEEP funding to allow the writing up and publication of these various sites as part of one overall integrated post-excitation and publication project. English Heritage should also be much more proactive in responding to such publication problems.

11.2.3.5. Another potential problem arises with projects such as quarries or industrial estates where there may be many different phases of work (aerial photograph analysis and desk-based assessments, geophysical survey, evaluation, excavation and watching briefs) undertaken by more than one archaeological organisation and commissioned by more than one developer. It is obviously desirable to have these different phases integrated into one overall report and final publication on that particular landscape, but how would such a synthesis be funded and who would actually undertake the work? One commercial unit could be selected to write up the results from all of the different investigations, including those undertaken by other organisations, but they would need ring-fenced funding in order to do this.

11.2.3.6. Minimum standards of data presentation need to be drawn up by WYAAS for developer-funded reports within West Yorkshire, and those carrying out research-led projects must also be encouraged to apply these same standards. As outlined above, one key area of recent research into the Iron Age and RomanoBritish periods concerns artefact, animal bone and burnt stone deposition in and around settlements (e.g. Chadwick 2004a, 2008a; Willis 1997). Understanding the spatial patterning of such practices and any changes over time has become an important consideration in attempting to understand social life within these past communities. Within evaluation and excavation reports, the location of so-called ‘small finds’ such as quernstones, brooches, bracelets, whole or substantially complete pottery vessels, human and animal burials and possible identified placed deposits all need to be shown in relation to recorded features, as distribution plots. The use of digital technology both on-site
and during post-extraction such as Total Stations, differential GPS and AutoCAD and Illustrator would mean that such twodimensional distribution plots would take relatively little time to generate.

11.2.3.7. The distribution of pottery and burnt stone in terms of sherd weight and sherd numbers should also be plotted against the actual hand-excavated interventions from which they were retrieved, as was done for the Romano-British enclosure excavated at Scrooby Top in north Nottinghamshire. At Scrooby Top, it was found that the bulk of Romano-British fine wares by weight and numbers were deposited in the northern part of the enclosure ditch, whereas the majority of coarse wares, sooted pottery sherds and greatest quantities of burnt and heat-shattered stone were all found in the south and south-eastern parts of the enclosure ditch (Robbins 2000). This analysis not only indicated a focus of cooking and heating activities in the southern part of the enclosure and a possible domestic emphasis to the north, but also that patterns of deposition varied according to material type and may have reflected something of the social attitudes to material culture and even cosmological beliefs of the inhabitants of the enclosure. Generating similar histograms for excavated ditch segments, pits and other features would be relatively simple given developing technologies, and would allow both the archaeological units excavating such sites and also academic researchers to interrogate the data and identify any spatial and chronological patterns. It would be extremely useful for such analyses to be routinely incorporated into the client and archive reports produced by fieldworkers and commercial field units.

11.2.3.8. More comprehensive and rigorous post-extraction analyses and data presentation has many practical and financial implications that must be considered. As already noted in section 11.2.3.1., these include the provision of the necessary contextual data to specialists, along with sufficient resources and time to undertake such work, and closer co-operation between specialists and technical staff in the client units for the production of plans, drawings and full stratigraphic matrices. Wherever possible, specialists should be involved with a project from start to finish rather than being allocated specific time slots to carry out analysis of whatever class of data is involved. For larger projects at least, this should involve participation in project planning and the development of sampling strategies before fieldwork commences, regular visits to the site during excavation, assessment of the material recovered and round table dialogues with the director/project manager, supervisor staff and other specialists concerning the research potential offered by the assemblage. The basic
identification, cataloguing, spot dating and the selection of material for scientific or
other analysis should follow this, and only then full analysis of the data garnered during
assessment to examine whatever research questions have been identified as critical.
This work might include detailed examinations of distributions across the site, cross-
context links, links between different artefact classes and other similar analyses. Only
then should preparation of final specialist reports be undertaken. What still happens in
practice, however, is that specialists are often just sent the material to be examined
with little or no accompanying stratigraphic and contextual data, and there is usually
little or no opportunity to consult with fieldwork staff and the other specialists involved.

11.3. Conservation and management

11.3.1. There remains a considerable and on-going threat from agriculture, quarrying
and development to cropmark features across the study region. The damage to
cropmark sites should be regularly assessed and monitored using past aerial
photographs in conjunction with new flying sorties. The WYAAS Historic Environment
Record is currently developing GIS-based mapping with an associated relational
database, utilising the results of the Upper Wharfedale and Magnesian Limestone
projects (Roberts et al. 2007) and other commercial aerial photograph analyses. In the
future, this may be an invaluable tool for the mitigation of future development within
West Yorkshire, and for research.

11.3.2. It may become necessary through countryside stewardship initiatives and agri-
environmental schemes to encourage a halt or reduction in ploughing of particular
cropmark complexes. Some archaeological sites may have vanished altogether in 5-
10 years time, simply because they will have been completely ploughed out. On some
Iron Age and Romano-British sites in West Yorkshire, enclosure ditches that would
have once been at least 1.5-2m deep are now only 0.20-0.30m in depth. The remains
of timber buildings and internal features rarely survive such degradation. This problem
is particularly marked on ridgelines, hilltops and the brows of slopes, and GIS could be
used as a predictive technique to identify those sites most at risk. At Wattle Syke near
Wetherby, for example, the minimum ploughsoil depth was sometimes only c. 0.15m.

11.3.3. Although some future mineral extraction proposals must be resisted in some
instances, and some existing permissions monitored closely through ROMP (Renewal
of Mineral Planning Permission) schemes, long-term mineral extraction may provide
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valuable archaeological opportunities to establish large-scale landscape research-led rescue projects.

11.4. Changes in climate, agriculture and energy production

11.4.1. It is generally accepted amongst the international scientific community that major climate changes are now underway across the planet, although it is not yet clear what the regional and local impacts of such changes will be. Nevertheless, national organisations such as the Environment Agency, English Heritage and the Council for British Archaeology are engaged in studies and discussions concerning these potential problems. In terms of climate and weather changes, there could be milder but wetter winters, and hotter, drier summers (Brown 2008). This may in turn cause increased flooding within river valleys following heavy periods of rain, and some reclaimed low-lying former alluvial areas may need to be returned to water meadows, osier beds and wetlands (Challis et al. 2008). Some upland areas, hill slopes and peat deposits may experience increased run off and erosion from greater precipitation, but also potential summer desiccation and falling water tables. Such processes would undoubtedly affect surviving archaeological remains in peat and alluvium, and perhaps also the development of cropmarks and soil marks. A study of the potential impact of such changes on the archaeology in West Yorkshire would be most useful, perhaps in conjunction with English Heritage and the Council for British Archaeology.

11.4.2. Climate change and long-term changes in energy production and consumption may also have wide-reaching effects upon agriculture. Different crops and/or crop regimes may be required to cope with wider climatic changes, whilst in the future increasing quantities of crops may be planted for the production of biofuels and also to be used in biomass generators. These new crops or crop regimes may have different impacts upon buried archaeology than those previously in use, and once again a scoping document could be produced to establish the possible archaeological implications of these changes.

11.4.3. The need for renewable energy sources may require the construction of wind and solar generation stations. Several wind turbine schemes have already been proposed for West Yorkshire in the Pennine uplands and other hilltop areas, and have led to archaeological investigations to inform the planning process. Careful planning and mitigation is required to ensure that any negative impacts of future energy
production on archaeology are minimised. Future demand for housing and the proposed development of 'eco-towns' might also have considerable archaeological implications and impacts.

11.5. Towards a Research Framework

11.5.1. Cadw and the Welsh archaeological trusts have recently sponsored a series of public seminars and consultations whereby a national archaeological research framework for Wales and individual county research frameworks have been drafted. A series of consultations concerning the proposed East Midlands research Framework are currently ongoing, prompted by the publication of an archaeological resource assessment and research agenda for that region (Cooper 1996).

11.5.2. It would be highly desirable for such a more consultative Research Framework to be developed for West Yorkshire. The current research agendas commissioned by WYAAS could act as the starting points for a public debate involving WYAAS, English Heritage, commercial field units, artefact, faunal, palaeoenvironmental and geoarchaeological specialists, university staff and research students, archaeological societies, independent researchers and other key stakeholders to discuss the issues and decide on the future research questions that need to be addressed for particular periods. This could create a series of exciting multi-disciplinary, pluralistic and inclusive agendas that could transform archaeological investigation within the county, and build dynamic links between different groups and areas of expertise. The current marked separation of 'academic' from 'fieldworker', 'professional' from 'amateur' is proving highly divisive within British archaeology, and there is great potential for future collaborative multi-lateral projects.

This document may prove to be an initial tentative step towards this process.

11.6. Final conclusion and key meta-themes for future research

11.6.1. This document has proposed ten thematic areas considered crucial to future research on the Iron Age and Romano-British periods within West Yorkshire. For each of these thematic areas, and based on the current state of knowledge, specific research questions, problems and/or priorities have been identified where further archaeological work is imperative or desirable to increase the available data and fill in
gaps in understanding. Many problems and priorities are common to several thematic areas, such as the need for better dating and chronologies, and more integrated analyses. Means of addressing or implementing these research questions have also been proposed, including changes to or developments of archaeological practice that would be beneficial. More detailed methodological suggestions particularly pertinent to developer-funded archaeology in West Yorkshire have also been in outlined section 11.2. above.

11.6.2. As outlined in section 1.1.1., a key aim of this document is to inform and support future curatorial project specifications and decisions, whilst identifying key research aims for other relevant stakeholders, and ensuring that research opportunities brought about by developer-funded, university or research-led and independent archaeology are fully realised. In order to structure the research aims and thematic areas effectively, it would be productive to establish some broader research aspirations that could inform future archaeological work on the Iron Age and Romano-British periods within West Yorkshire.

11.6.3. The following topics therefore represent very broad, overlapping research aspirations or ‘meta-themes’ that could be used to structure some of the future archaeological work on the Iron Age and Romano-British archaeology within West Yorkshire. These are intended to articulate with the more specific research questions, problems and priorities identified in the appropriate thematic sections throughout this document. The key meta-themes are:

- Chronology – creating better dated typologies for pottery and other artefacts, establishing better chronologies for the construction, inhabitation and abandonment of key sites such as hillforts, agglomerated settlements, Roman forts and civilian settlements, and targeting the earliest Iron Age and very late Roman/post-Roman periods in particular for future research;

- Understanding key landscape changes over time, but also trying to establish what meanings and associations different landscapes might have held for Iron Age and Romano-British people (q.v. Barrett 1999; Gosden 1997);

- The economic practices and the material provisioning of Iron Age and Romano-British societies, and the key infrastructures and social institutions and practices that allowed these to function;

- Materiality – coming to better understandings of the production, distribution, use and deposition of artefacts, and the complex functional and social meanings they may have held in Iron Age and Romano-British societies;
• Belief and social practices – including understanding physical and social processes of fragmentation and dispersal, investigating depositional practices and examining possible ritual sites;

• The past in the past – the re-use or referencing of earlier monuments and other features in the landscape by Iron Age and Romano-British people, and trying to understand the concepts of historicity and time that were held by people in these societies (q.v. Gosden and Lock 1998);

• Town and country – the economic and social links between Roman urban settlements and the surrounding rural areas;

• Changing bodies and changing identities – including personal, communal, military, civilian, age, gender and other identities;

• Agency and social structure, change and stability – how were traditions of social practice and beliefs and ideologies maintained over time, and how and why did these change over time? What key social changes took place during the 1st millennium BC and the 1st-5th centuries AD, and what were the sources of these changes?

• Acculturation – examining the responses of native societies to Roman expansion and occupation, first south of and then within the West Yorkshire region, studying the varied trajectories of ‘Romanisation’ across West Yorkshire, and seeking to explain any differences. Possible social and population changes in the immediate post-Roman and early medieval period of the 5th-7th centuries AD should also be a key focus for such research (Sanderson and Wrathmell 2005).

12. Bibliography

N.B. Copies of the unpublished client reports listed below are held in the West Yorkshire Historic Environment Record, and are available to view by appointment.


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An Archaeological Research Agenda for West Yorkshire

The Iron Age and Romano-British Periods


Chadwick, A.M. forthcoming. Fields for Discourse: Landscape and Materialities of Being in South and West Yorkshire and Nottinghamshire during the Iron Age and Romano-British Periods. To be published online with the Archaeological Dating Service.


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