



RESEARCH AGENDA

THE NEOLITHIC, BRONZE AGE AND IRON AGE IN WEST YORKSHIRE

by Blaise Vyner (Blaise Vyner Consultancy)



BLAISE VYNER
Consultancy

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The West Yorkshire Archaeology Advisory Service,
Registry of Deeds,
Newstead Road, tel:01924 306797
Wakefield WF1 2DE email: wysmr@wyjs.org.uk

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1. THE NEOLITHIC: RESOURCE ASSESSMENT

Introduction

West Yorkshire is an inland area, much of it based on the Pennines; encompassing little of the wide lower river valleys and without a fertile coastal littoral. Human activity in the past has responded to the topographical nature of the area and the resources which it has afforded. Passing east across the West Riding from the millstone grits of the Pennine spine, the undulating slopes of the Coal Measure country are followed by the low Magnesian limestone ridge before reaching the lowlands of the western edge of the Vale of York. To the north-west are the clayey soils of the Craven Lowlands, beyond which, outside modern West Yorkshire is the area of Great Scar Limestone with its fissures and caves. At one time or another in prehistory each of these areas was favoured to a greater or lesser extent for subsistence or ritual activities.

In their conspectus of Yorkshire archaeology the Elgees were able to note only one Neolithic monument in western Yorkshire - the Bradley Moor Neolithic cairn (Elgee and Elgee 1933, 64), together with a few stone axes, then thought to have been imported from areas to the east. The record for the Neolithic as outlined in the *Survey* (1981, 90-92) remained almost equally limited, amounting to fewer than three pages and including no additional monuments. As in other periods of archaeology, however, knowledge of the Neolithic in West Yorkshire has been greatly expanded in recent years. Partly this has been a reflection of extensive excavation, but for the Neolithic in particular, this reflects changing interpretations of the evidence: the Ferrybridge henge and the concentrations of 'rock art' on Ilkley Moor and Rombalds Moor, which featured in the Bronze Age chapter of the *Survey*, are now seen as belonging to the Neolithic. Moreover, the transition from Neolithic to Bronze Age is now viewed as much less clear-cut than a distinction between stone-using and metal-using societies: indeed, one recent review even eschewed any temporal division between 3000 BC and 1500 BC (Bradley 2007, chapter 3). For the present purposes, however, a distinction is made between a later Neolithic which includes the earliest gold and copper items and early Beakers, and an early Bronze Age which begins with the earliest bronze items of the Migdale industry and includes later Beakers, a chronology which follows Manby *et al.* (2001, 58-59).

The earlier Neolithic 4400 – 3600 cal BC

Range of evidence: Enclosures; funerary monuments; pits

Material culture: Stone axes, Grimston Ware (carinated bowl)

Principal sites (*italics* indicate surviving sites particularly worthy of further targeted research): Enclosure: *Castle Hill, Almondbury*; pit: Fairburn

At first sight any phase of the Neolithic is poorly represented in West Yorkshire, and it might be unwise to attempt fine sub-divisions of the period. Closer examination, however, suggests that the area shares many of the

characteristics of Neolithic activity seen in adjacent Pennine areas. Widespread finds of stone axes provide a general indicator of Neolithic activity across Yorkshire as a whole, but these are far from evenly spread, with concentrations of axes in East Yorkshire and the margins of the northern part of the Vale of York. By contrast, only a small proportion, 9%, of axes derives from Pennine areas (Manby 1979, 75) and in West Yorkshire finds tend to relate to discoveries arising from suburban domestic expansion. While the river valley distribution axe finds may be a reflection of discovery through agriculture and gardening, it is tempting to see in this also the preferential location of Neolithic settlement and activity. In the Pennine areas other flint and lithic finds of Neolithic date occur in particular concentration along the valley sides of the middle Wharfe and Aire, their distributions extending across the intervening watershed on which Rombalds Moor and Baildon Moor are situated, locations which were also utilised in the preceding Mesolithic.

While the stone axe is the most common indicator of Neolithic activity in West Yorkshire, the type is generally not helpful in developing a more detailed chronological picture. The Group VI axe, of Cumbrian stone, is the type most commonly found in Yorkshire and in West Yorkshire these have a pronounced distribution along the River Calder, with a few examples also found along the River Aire (Manby 1979, 72-73). Manby pointed out that Pennine axe finds tend to be of axes in mint condition, in contrast to the more numerous damaged examples from areas to the east, suggesting that these had been 'lost in transit' (1979, 72), but this appears fundamentally unlikely and instead suggests distinctions of use and deposition (Vyner 2001, 175; Manby *et al.* 2003, 49). Axes are rarely recovered from informative contexts, but their frequent good condition suggests votive deposition rather than casual loss or discard. The number and extensive distribution of axes, even on the limited scale seen in West Yorkshire, suggests that the area was settled, or at least, regularly traversed, in the Neolithic and it is perhaps surprising that the evidence of the axes is not more strongly reinforced by other finds, and, indeed, monuments.

Bradley Moor, on the north-western edge of West Yorkshire but in North Yorkshire, remains the best nearest example of the long barrow or long cairn type (Raistrick 1931, 252-55, only thinly distributed through the Pennines and along the Magnesian limestone spine on the lowland margins of the Vale of York (Manby 1970). The site has not been the subject of scientific excavation, but may be assumed to have contained multiple inhumation deposits and to belong, like other Neolithic cairns, to the earlier part of the mid-fourth millennium cal BC, the chronology confirmed by a recent dating programme (Bayliss and Whittle 2007). The assumption may be supported by confirmatory dates, in the mid-37th century BC, from burials in a cairn at Whitwell, north Nottinghamshire (Vyner and Wall forthcoming). Like Whitwell and other Neolithic cairns in northern England, the Bradley Moor cairn appears to have had an early Bronze Age mound set on its eastern end. In South Yorkshire long barrows or similar cairns are known at Sprotborough and Dinnington on the Magnesian limestone. On the northern extension of the limestone in West Yorkshire two features in the later Neolithic and early Bronze Age monument complex at Ferrybridge

have been tentatively suggested as possible remains of damaged Neolithic structures (Roberts 2005, 197); and while Deegan has drawn attention to the cropmarks of a possible long barrow on Bramham Moor, their form is not especially convincing (Deegan forthcoming).

The presence of Neolithic material in an early phase of activity at Castle Hill, Almondbury, raises the possibility that there is a Neolithic enclosure underlying the Iron Age enclosure here. No causewayed enclosures of this period are known from West Yorkshire, or indeed, from most other areas of Yorkshire, although the segmented ditch encircling the henge at Newton Kyme, just outside the area to the north-east, may be a comparable site with parallels also at the Thornborough henges in North Yorkshire to the north (Harding and Lee 1987, 310-11). Unexcavated cropmark enclosures at Ferry Fryston, Glasshoughton and Holmfield are at least candidates for Neolithic enclosures (Deegan forthcoming), at Holmfield the enclosure appears to underlie an Iron Age enclosure system (Brown *et al.* 2007a, fig. 27).

The most common feature of Neolithic activity in Yorkshire, and beyond, is the pit. These contain items of material culture as well as evidence for subsistence in the form of plant macrofossils, and appear to be the clearest direct evidence for the location of settlement activity, however transient (Manby *et al.* 2003, 47). Although a concentration of pits is known from Marton-le-Moor in North Yorkshire to the north (Tavener 1996), until recently no Neolithic pits were known from West Yorkshire, but the recent discovery of several examples in widely differing locations confirms the evidence of the axes and the likelihood that more will be found. Two pits in West Yorkshire belong to this early period: at Rothwell, Leeds, a pit contained flint debris and a quantity of Grimston Ware, together with carbonised barley, wheat and hazelnut which produced a radiocarbon date of 4200-3800 cal BC; and from the A1DBFO project Site F-G at Fairburn, on the Magnesian limestone, a pit 0.6 m in diameter and 0.07 m deep contained the charred remains of hazelnuts, cereal grains and crab apples (Brown *et al.* 2007b, 25). The deposit produced a radiocarbon date of 3700 – 3520 cal BC (SUERC4360/GU-12379). The evidence contained in the pits suggests that a semisedentary life of hunting and gathering continued to find favour after the introduction of agriculture and may have continued throughout the Neolithic.

Pottery of this early period, typified by Grimston Ware or the 'carinated bowl' as this material is increasingly termed (Cleal 2004) – though not all of it is carinated - continues to be almost absent from West Yorkshire. Three sherds which are possibly of this material were found in excavations at Ferrybridge Henge (Vyner 1997). Since Grimston Ware is present in pits at Marton-leMoor and Thornborough on the River Ure in North Yorkshire to the north (Manby 1996), it is likely that its discovery on the western fringes of the Vale of York in West Yorkshire is only a matter of time and chance.

The middle Neolithic 3600 – 3200 cal BC

Range of evidence: Barrows; timber circles

Material culture: Towthorpe Ware, Peterborough Ware

Principal sites: Barrow: Ferrybridge

Structural and monumental evidence for the middle Neolithic in West Yorkshire is still lacking and, were it not for the very limited appearance of distinctive pottery of this period, a middle Neolithic would not be recognised in West Yorkshire. There is a possibility, if not a likelihood, of early monumental presence at Ferrybridge, where timber circle 165 is dated to 3520-3100 (GU11050) on the basis of a single date from a cremation burial, and where the henge appears to overlie the ring ditch of a barrow, 22 m in diameter (Roberts 2005, 48). Other early features include a series of pits beneath the mound of Barrow 154. In east Yorkshire the period is typified by the 'great barrows', containing individual burials deposited with grave goods (Manby 1988, 64-66), and by cursus monuments principally associated with Rudston and its monolith, and with the Thornborough henge (Manby *et al.* 2003, 49-51). The absence of a cursus at Ferrybridge is at first sight one of the features which distinguishes the River Aire monument complex from those on the Yorkshire rivers to the north, but it is important to bear in mind that there are considerable differences in the components of all the monument complexes. Potentially early components of the Ferrybridge complex have already been mentioned, and there is a possibility that other elements of the complex may also be early, although the composition of the complex in general suggests a late origin. A number of sites are noted as possibly Neolithic, for example a small trapezoidal cropmark feature at Whitwood and a possible house site at Eccleshill, but the evidence for a Neolithic date is inconclusive.

Changes in ceramic styles are represented by the introduction of Towthorpe Ware, current from the earlier part of the fourth millennium cal BC for perhaps four centuries (Manby *et al.* 2003, 51). This material is rarely found to the west of the Vale of York, but there are a few possible Towthorpe Ware sherds from Ferrybridge Henge (Vyner 1997).

Peterborough Ware, which has a chronological range 3400 – 2500 cal BC (Manby *et al.* 2003, 51), and thus extends through the later Neolithic, is also found in West Yorkshire, although so far seen only as isolated sherds which are residual in their context. The two sherds from excavations at Ferrybridge Henge (Vyner 1997) are now joined by a further sherd from Ferrybridge (Vyner 2005, 127-28) and a sherd from Back Newton Lane, Ledston (Vyner 2008a). This very limited representation in West Yorkshire is extended by further finds in North Yorkshire and, with the instances of Towthorpe Ware, tend to emphasise the early importance of the Magnesian limestone and the fringes of the Vale of York

Late Neolithic 3200 – 2500 cal BC

Range of evidence: Henges; 'hengiform' sites; pit circles; timber circles; stone circles; pit alignments; pits

Ritual: Rock art

Material culture: Peterborough Ware (Rudston and Fengate Ware); Grooved Ware;

Principal sites (*italics indicate surviving sites particularly worthy of further targeted research*): Henge: Ferrybridge; 'hengiform' sites: Ferrybridge; timber circles: Ferrybridge; pit alignments: Ferrybridge; rock art: *Rombald's Moor, Baildon Moor, Askwith Moor, Denton Moor*

It may not have been until this period that activity in the monument complex in the valley of the River Aire at Ferrybridge coalesced. While the cropmark evidence reveals no sign of a cursus, and although industrialisation of the area may have removed even such a large-scale monument (Roberts 2005, 197), the artefact evidence tends to support a relatively late date for the inception of this complex. Although early Bronze Age burial mounds at Ferrybridge were recognised from the 19th century (Roberts 2005, 12), the henge was not identified until 1966 (Feachem 1966), and, probably because of its industrial setting and limited monumental associations, the site has never achieved the modern fame of the monument complexes along the River Ure to the north. Limited excavation has confirmed the nature of the Ferrybridge Henge, but not the detail of its chronology, which is suggested by material sealed in its bank to begin around 3000 BC (Roberts 2005, 235).

Ferrybridge is important not only for its henge, but because excavation and cropmark evidence has confirmed the presence there, also, of a number of other features which have not been recognised at other monument complexes in the north. A pit circle, Hengiform 162 (Roberts 2005, 35), produced a radiocarbon date of 3090 – 2700 BC (GU-11049), but this was the only one of five so-called 'hengiform' features to produce a date. Interestingly, all these were located in a closely spaced group to the west of the henge entrance. Other potential hengiform enclosures are suggested by cropmarks at Methley, where a ring ditch with a wide entrance break was at least partly surrounded by a series of pits, and Pontefract, where two continuous ditch circuits were bordered by pits (Deegan forthcoming). Also on Coal Measures geology of a penannular cropmark ditched enclosure at Manor Farm, Badsworth (Keith and Lowe 1982). This has a ditch 5 m wide and up to 2.40 m deep, upper levels contained Romano-British material, but a Neolithic axe was present in the lower ditch fill.

The distribution of the monument complexes at Ferrybridge and the lower crossing points of the rivers to the north suggests that the Neolithic population was concentrated along the western side of the vale of York and in Yorkshire to its east. The presence of artefacts of Lake District stone indicates that this material was being brought from the west, but Neolithic monuments in the river valleys of the Pennines are few and far between. In North Yorkshire there is a

henge sited on high ground overlooking the valley of the Wharfe near Grassington, but the paucity of monuments elsewhere suggests that the principal movement of people to the Vale of York monument complexes was from the east, and thence to north and perhaps south. An exception may be the lower Wharfe valley, upon which the distribution of rock art focuses, and which may indicate a focal point on a trans-Pennine migration route. Interestingly, this area also saw a relative concentration of Cumbrian axes. A further possible henge, now destroyed, known from documentary references at Mirfield, on the River Calder, is worthy of further research.

The choice of location of the monument complexes on or near the lowest crossing points of the Aire, Wharfe and probably the Nidd, is clearly significant and bears close comparison with contemporary complexes on the major rivers to the north. It appears from the evidence of distinctive artefacts that these were the locations of social gatherings for people who travelled long distances, probably with herds of cattle (Vyner 2007). These people can have been only semi-sedentary – there are no known remains of Neolithic houses in West Yorkshire – or indeed, at any of the complexes, nor any direct evidence for arable agriculture.

It is probably to this period that the numerous earthfast decorated stones – ‘rock art’ – on Rombald’s Moor, and outlying groups, belong to this period. Although the stones are mostly concentrated on Rombald’s Moor, Baildon Moor, Askwith Moor and Denton Moor, other small groups and individual stones extend north and westwards (Boughey and Vickerman 2003). The dating of this activity remains debateable: at Backstone Edge on Ilkley Moor there is a possible association between cup-marked rocks and a stone-walled enclosure. Excavation recovered Grooved Ware pottery and flint, while a mean radiocarbon date of cal 2923 – 2613 BC comes from associated charcoal. The evidence is by no means incontrovertible, but is in line with the suggested chronology of rock art elsewhere in North Yorkshire (Vyner 2008b). Distinctive flint in the excavated assemblage derives from the coast of east Yorkshire and reinforces the evidence for links between east Yorkshire and the western side of England through the Pennine river valleys. The absence of earthwork monuments such as those seen in the Vale of York, however, suggests that only small numbers of people may have been involved in crossPennine travel.

Peterborough Ware continues into this period, but the information from West Yorkshire is not sufficient to add to the brief detail included in the preceding period. Grooved Ware now makes a limited appearance in West Yorkshire, with a pit at Dewsbury containing a small assemblage of pottery (Manby 2008) and one at Lindley-cum-Quarnby with three sherds of Grooved Ware and a radiocarbon date of 2470-22 cal BC. A pit at Swillington Common (1926) contained a single sherd of possible Grooved Ware (Howells 2001, 49; Vyner 2001, 149), and another pit (2002) contained flint flakes and charcoal which produced a radiocarbon date of 2583-2466 cal BC (AA-31493), while a group of early Neolithic flints was found in a pit at Garforth. These finds are all on the Coal Measures, raising the possibility that Neolithic activity was more

widespread across the West Riding than the present restricted range of sites suggests.

Late Neolithic – early Bronze Age transition 2500 – 2300 cal BC

Range of evidence: Barrows, timber circles

Material culture: Beakers

Principal sites: Ferrybridge; Ferry Fryston

The discovery of a beaker inhumation burial at Ferry Fryston, draws attention to another, smaller, area of late Neolithic/early Bronze Age burial activity on the River Aire, only 1.5 km distant from the Ferrybridge complex and separated from it by the Fryston Beck. The grave was very similar to that noted at Barrow 354 at Ferrybridge, although the excavator here prefers to interpret the outline of the grave as a coffin, which contained the body of a male adult which appears to have been wrapped in shroud. The remains of an amber ring were associated with the body, while the body had been deposited with an archer's wristguard, a flint flake, flint borer and part of a beaker vessel. A radiocarbon date of 2210-2030 cal BC (KIA-25326) was obtained (Brown *et al.* 2007b, 30), one of the earliest dates for a bronze dagger. A second burial, associated with a plano-convex flint knife, occupied a grave some 180 m to the north.

To this period must also be assigned Barrow 154 at Ferrybridge, a 15 m diameter ring ditch which encapsulated a sub-circular grave pit, 2 m long and 1.5 m wide. This contained, probably wrapped in animal hides, a crouched skeleton accompanied by a flint dagger and a beaker. An attached annexe contained another crouched skeleton accompanied among other things, by a flint knife and a flint axe nearly identical to the first. Two further burials had been inserted into the surrounding barrow ditch: one was accompanied by a beaker, the other by a flint knife and a single sherd of pottery (Roberts 2005, 43-48). Radiocarbon dates for the burials range from 2630 – 2130 BC (AA54298) to 2020 – 1960 BC (AA-54299). On the Coal Measures to the west, where urban development doubtless obscures much archaeology of all periods, there is a record of a Beaker from Tinshill, Leeds.

Also having a spatial relationship to the henge, but this time symmetrical, Timber Circles 140 and 165 were located to the south-west of the henge, whilst circles Ferrybridge North and Ferrybridge South lay to the south-east (Roberts 2005, fig. 12). Dating evidence is limited and somewhat confusing: Timber Circle 140 produced a date of 2910 – 2580 BC (GU-11037R), but skeletons SK29 and SK16 from Barrow 40, centred on one of the post pits produced dates of 2460 – 2190 BC (GU-11489) and 2470 – 2140 (AA-54297) respectively. The 500 year difference may be explained by the construction use of old timbers, allowing the construction and use date to lie more nearly within the period 2500 – 2100 cal BC. Notwithstanding the early date from Timber Circle 165, the arrangement of the four timber circles at Ferrybridge suggests that they were to a greater or lesser extent co-existent.

Also likely to belong to this horizon is an unexcavated double pit alignment of eight pits lying to the north-west of Ferrybridge henge, comparable to the much longer double post alignment at Dishforth, which produced Grooved Ware and was associated with charcoal dated to 2030 \pm 50 BC, and Boroughbridge, where two post alignments produced dates of 2284 \pm 80 (RCD1596) and 2364 \pm 87 BC (Tavener 1996, 184-86).

Some stone circles may belong to this period, although the field evidence is hardly helpful and none has been subject to scientific excavation. Among the West Yorkshire sites are the Twelve Apostles and the Grubstones (both Burley-in-Wharfedale), a much mutilated circle with possible stone avenue at Bradup, and possible stone circles at Ringstone Edge (Barkisland), Walshaw Dean (Wadsworth) and Bingley.

2. THE NEOLITHIC: RESEARCH AGENDA

The earlier Neolithic appears hardly visible in West Yorkshire, but from the middle Neolithic onwards the importance of the western fringe of the Vale of York appears to be confirmed. Some questions about the distribution of Neolithic activity depend upon the happenstance of excavation opportunity. Awareness of the full range of potential evidence is an important factor in the discovery and adequate recording of earlier prehistoric features.

Questions to be addressed

- To what extent is there an earlier Neolithic in West Yorkshire?
- Is the middle and later Neolithic absent from western West Yorkshire?
- Can the Neolithic use of the Calder valley be confirmed?
- What is the nature of the Neolithic phase at Castle Hill, Almondbury?
- What is the chronology of rock art?
- Is the distribution of rock art completely known?

Priorities outside the development control framework

- Complete the review of rock art distribution in West Yorkshire.
- Complete a review of stone axe distribution and analysis.
- Encourage fieldwork to clarify the archaeology of rock art and enclosures.

3. THE BRONZE AGE: RESOURCE ASSESSMENT

Early Bronze Age 2300 - 1700 cal BC

Range of evidence: Barrows, ring cairns, enclosed cemeteries

Material culture: Beakers, Food Vessels, collared urns, bronzework, jet ornaments, bone ornaments, axe hammers, ?portable 'rock-art'

Principal sites (*italics indicate surviving sites particularly worthy of further targeted research*): Barrows: *Ferrybridge, Ferry Fryston, Stanbury, Manor Farm*

(Garforth); flat cemeteries: Pule Hill (Marsden); ringworks: *Blackheath (Todmorden)*, *Harden Moor (Bingley)*, *Honley Woods (Honley)*

Although evidence for activity in the early Bronze Age is widespread in West Yorkshire, nowhere does it survive well and seldom has it been encountered through recent excavation. Sub-dividing the early Bronze Age of West Yorkshire on the basis of the present evidence is a somewhat pointless exercise, although a chronological succession is visible in the artefacts. The Beaker burials at Ferrybridge and Ferry Fryston have been noted above: other round barrows at these locations show that activity extended into the early Bronze Age, although the evidence hardly survived. Mound 1 at Ferrybridge had been excavated by Greenwell and was re-examined by Pacitto, together with Mound 2, when the power station was constructed in 1962 (Pacitto 1969). Mound 1 covered a stone cist containing a crouched inhumation with a Food Vessel and a flint knife, while a central grave contained a crouched inhumation associated with a Beaker and a bronze awl. Two collared urns were also found by Greenwell in Mound 1, while it is also clear that earlier burials had been disturbed by these interments. Mound 2, which had not been noticed by Greenwell, contained a central crouched inhumation associated with a flint knife (Pacitto 1969, 299). Two further ring ditches at Ferrybridge, Barrows 113 and 114, probably represent the denuded remains of round barrows, although no burials were found (Roberts 2005, 201). These serve to emphasise the concentration of early Bronze Age monuments around the earlier henge site at Ferrybridge, a feature also of the monument complex at Newton Kyme on the River Wharfe, with Howe Hill, North Deighton and other barrows being a pointer to another complex on the Nidd in North Yorkshire.

Also topographically distinctive is the summit of Pule Hill, the narrowest point of the Pennine range, where a flat cemetery contained at least two inhumations, two cremations and two further vessels. The four Food Vessels from the cemetery include a footed bowl of a type otherwise founding East Yorkshire (Manby 1969). Food Vessels are not common in West Yorkshire, to the Ferry Fryston and Pule Hill pots can be added an antiquarian find from Halifax, and a single sherd found recently at Byram Park, to the north of Ferry Fryston (Vyner 2008c).

Away from the Magnesian limestone, Beaker burials are probably also evidenced by sherds associated with three ring ditches at Temple Newsam, Leeds, and with an inhumation at Adel, as well as a Beaker from Tinshill, Leeds, but are not recorded further to the west. Also early and from the Magnesian limestone is a crouched burial with two V-bored jet buttons, a jet ring and flint knife from Bramham (Clark 1933). A slightly later rich early Bronze Age assemblage comes from Stanbury, at the north-western edge of the county, where a chance find comprised a collared urn containing a cremation with an accessory cup, bone belt toggle, a pair of bronze earrings and a stone 'battle axe'. The burial was accompanied by a further two collared urns and has a date in the range 1950 to 1750 BC (Vyner 2008d). The Stanbury collared urns are all in Longworth's north-western style, as are most collared urns from West

Yorkshire. All of these burials are likely to have originally been covered or contained within earthen mounds.

Ringworks are a particular feature of the west Yorkshire uplands and deserve further field investigation, the term currently embraces ring-cairns, earthen ring-banks and some stone circles. The largest is Blackheath Cross, Todmorden, where the bank enclosed an area 37 m in diameter, within which were over a dozen collared urns with cremations (Longworth 1984, 280-81). Harden Moor, Bingley, contained at least four collared urns (Longworth 1984, 278), while another is recorded from a ring cairn on Baildon Moor (Longworth 1969, 278). Other enclosed cemeteries probably include Warley Ovendon, Hawksworth, Honley Woods – where recent walkover survey identified two probable ring cairns (Vyner 2008d) - and Midgeley.

Apparently invariably discovered as stray finds, axe hammers are a distinctive early Bronze Age type which feature in the West Yorkshire HER more commonly than in neighbouring areas. Their distribution must have something to say about their use or deposition.

Flat axes of copper or bronze appear early in the Bronze Age sequence, in West Yorkshire stray finds include a decorated flat axe from Wakefield, a plain flat axe from Norland and two separate finds of flat axes from Silsden.

Round barrows survive as earthworks on the uplands of the western part of West Yorkshire, but on the Coal Measures and Magnesian limestone they are encountered as ring ditches, as at Manor Farm, Garforth, where a ring ditch 7.5 m in diameter enclosed a pit containing an inverted collared urn (Burgess 2005, 75-76), or evidenced as cropmarks (Roberts 2005, 205). In contrast to the burial mounds of north-east North Yorkshire, there is no evidence for a phase of rock-art involving the carving of simple cup-marks on 'portable' stones which were deposited in burial mounds, although this may reflect the limited amount of recorded excavation. Boughey and Vickerman (2003) note a number of instances of cup-marked blocks found 'in cairn material', but these appear to be clearance cairns where the decorated rocks may well have ended up by chance rather than design.

The beginning of deposition of bronze weapons in riverine locations in Coal Measure country is suggested by the discovery of a basal looped spearhead in the River Calder, and another in the River Aire channel at Thwaite Gate. Somewhat later is a side-looped spearhead found in a stream bed at Norland.

Middle Bronze Age 1700 - 1150 cal BC

Range of evidence: Enclosures, field systems, clearance cairns

Material culture: Pottery, bronzework,

Ritual: Riverine deposition of bronzework

Principal sites (italics indicate surviving sites particularly worthy of further targeted research): Barrows: Ferry Fryston; enclosures: field systems and clearance cairns: *Stead Crag (Ilkley)*, *Woofa Bank (Ilkley)*, *Honley Woods*,

Hagg Wood (Honley)

In the middle Bronze Age of West Yorkshire funerary sites are scarce while settlement sites continue to be elusive, but bronzework attests continuing activity in West Yorkshire at this time (Manby *et al.* 2003, 64-65). Enclosures, field systems and clearance cairns are attributed to this period largely 'on suspicion'. Although the results of fieldwork currently suggest that some of the earthworks on Baildon and Ilkley Moors may be associated with rock art of putative Neolithic date, it is likely that some are considerably later. In particular, cairns and walling recorded on Stead Crag and Woofa Bank, Ilkley Moor, may be comparable with sites such as Danby Rigg and Near Moor on the North York Moors (Spratt 1993, 109-15). Although Spratt was unwilling to assign a chronology to these sites, a middle Bronze Age date may be suggested on present evidence. It may be difficult to disentangle the relative chronologies of cairns and banks in the areas of rock art on Ilkley moor and similar areas, and attention is therefore drawn to the instances of small cairns and banks noted in the Honley area, where rock art is absent. Potentially of considerable interest for this period is the excavated pit at Sharp Lane, Middleton, which produced carbonised material and a radiocarbon date of 1460-1290 cal BC (Poz-14344), as well as two sherds of pottery. An adjacent pit contained hazel shell, wild plant and a small amount of wood charcoal (Davies 2006, 44).

Funerary monuments of this period are scarce across Yorkshire as a whole, so, therefore, is pottery. An indication that in places earlier burial traditions extended into this period is provided by concentric monument 2121/2122 in the extended funerary area at Ferry Fryston (Brown *et al.* 2007b, 32-36). Here a penannular gully 10 m in diameter enclosed a cremation in a pit dated to 1740-1510 cal BC (SUERC-4340/GU-12366). The monument presumably retained an upcast mound which enabled it to be recognised, for outside the ditch terminal two pits contained cremated bone associated with fragments of middle Bronze Age-type vessels, at least one of which had finger-nail decoration. The cremations provided radiocarbon dates of 1380-1110 cal BC (SUERC-4342/GU-12367) and 1440-1260 cal BC (SUERC-4343/GU-12368). The features were enclosed within a second ring ditch, 22 m in diameter, although it is unclear which burial deposit this was associated with.

Wallington industry metalwork of this period is particularly prevalent in West Yorkshire – especially palstaves, with the continued deposition of individual items in the River Aire and River Calder (Varley 1977). Founders hoards of bronzework of this period have been found at Brunthwaite, Carr Moorside, Roundhay, Shelf and Smalley Bight. This tradition continued into the succeeding period.

Late Bronze Age 1150 - 750 cal BC

Range of evidence: Palisaded enclosures

Material culture: Bronzework

Ritual: Riverine deposition of bronzework

Principal sites (*italics indicate surviving sites particularly worthy of further targeted research*): Palisade: *Oldfield Hill (Meltham)*; scarp edge enclosure: *Honley Wood*; enclosure: *Buck Wood (Idle)*

Wallington tradition bronzework continued into the earlier part of this period, but later Bronze Age metalwork is much less common. It includes a Gundlingen sword from Aire river gravels at Temple Newsam. This suggests that riverine deposition of bronzework continued into this period.

The few palisaded enclosures known from West Yorkshire are considered under the discussion of the early pre-Roman Iron Age. It is likely that early phases of Castle Hill, Almondbury, belong to this period, and perhaps also the earliest phases of Oldfield Hill, Meltham. A scarp edge enclosure at Honley woods may be compared with Eston Nab, Cleveland (Vyner 1988) and other scarp edge enclosures along the northern edge of the North York Moors, and provisionally assigned to this period. A less substantial oval enclosure in Buck wood, Idle, may also be of this period. These last two sites point up the possibility that sites not otherwise represented in the West Yorkshire archaeological record may be preserved in areas of old woodland. Excavated evidence for this period remains extremely sparse, for West Yorkshire there is only a small quantity of pottery from pits and gullies excavated at Normanton, which may be of later Bronze Age date (Manby 2002).

4. THE BRONZE AGE: RESEARCH AGENDA

The early Bronze Age in West Yorkshire is much more visible than later periods of the Bronze Age, but the whole period has been neglected and, when considered at all, has been discussed in terms of providing data to support interpretations of East Yorkshire archaeology. Many questions relating to early Bronze Age burial, and to later Bronze Age settlement, will only be answered by chance discovery. However, there are a number of distinctive characteristics of the Bronze Age in West Yorkshire, including traditions of enclosed cremation burial, a thin but widespread distribution of rich burials, concentrations of early Bronze Age axe hammers and later Bronze Age metalwork, which would repay more detailed examination.

Questions to be addressed

- Can enclosed cemeteries be distinguished from ring cairns and stone circles?
- Where is the later Bronze Age settlement in West Yorkshire?
- What is the nature of the later Bronze Age phase at Castle Hill, Almondbury?

Priorities outside the development control framework

- Complete a review of axe hammer distribution and analysis.
- Review the pottery from Sharp Lane, Middleton, and Wakefield Road, Normanton.

- Confirm the extent, context and distribution of 'portable' rock art in West Yorkshire.
- Undertake walkover survey in woodland areas where prehistoric earthworks may survive.
- Encourage fieldwork to clarify the archaeology of enclosures and cairnfields.

5. THE PRE-ROMAN IRON AGE: RESOURCE ASSESSMENT

Review of the archaeological evidence from Yorkshire as a whole (Manby 2003) allows the pre-Roman Iron Age to be viewed in three phases: early (750-400 cal BC), middle (400 – 100 cal BC) and late (100 cal BC – 70 AD). The evidence from West Yorkshire, although considerably developed from that available a quarter of a century ago, nevertheless remains limited in terms both of sites and artefacts. Review of the information currently available suggests that there is justification in dividing the period into an earlier (750 – 400 cal BC) and a later (400 cal BC – 70 AD) pre-Roman Iron Age. The date for the transitional Late Bronze Age/Earliest Iron Age now moved further backwards, to between 850 and 750 BC (Needham 2007, 55). For present purposes 750 BC is used as the start date for the pre-Roman Iron Age in West Yorkshire. Here, as elsewhere, the principal evidence for an earlier Iron Age remains the hillfort, while by contrast there is an increasing amount of settlement evidence for the later part of the period. The case for distinguishing between the earlier and the later pre-Roman Iron Age in Britain has recently been reviewed (Haselgrove and Pope 2007, 5-6); the evidence from West Yorkshire suggests that it is a valid one.

In addition to three hillforts, none of which had been adequately examined, the *Survey* of 1981 was able to point to two further sites with undoubted preRoman Iron Age origins: the extensive cropmark sites on Magnesian limestone at Ledston and Dalton Parlours (Keighley 1981, 115-20). Attention was also drawn to further similar cropmark sites on the Magnesian limestone, and to the earthwork remains of enclosures on Millstone grit in the northern part of West Yorkshire between the rivers Aire and Wharfe, some of which were associated with beehive querns. The *Survey* also identified almost 30 sub-rectangular and D-shaped enclosures, together with a short list of fragmentary earthworks, to which an Iron Age or Romano-British date was tentatively ascribed. So far as material culture was concerned, beehive querns were recorded from across the county, with small amounts of pottery from Almondbury hillfort and the settlements at Ledston and Dalton Parlours, while the short catalogue of occasional metal finds was joined by a longer list of coin finds than might have been anticipated.

In some ways twenty-five years of investigation and research has confirmed the intractable nature of the evidence for the pre-Roman Iron period in West Yorkshire, in others, considerable advances have been made. These have largely been based upon the continued examination of the cropmark sites

whose early promise was highlighted by the *Survey*, in particular through the application of air photography, radiocarbon dating, geophysical survey and the identification through excavation of an extended suite of recurrent features which can now be seen to characterise the pre-Roman Iron Age of West Yorkshire.

In West Yorkshire as elsewhere the pace of archaeological investigation was greatly increased by the application of *Planning Policy Guideline (PPG) 16* from 1991. For the pre-Roman Iron Age information has been particularly forthcoming in respect of major linear developments, notably the A1 – M1 Link (Roberts *et al.* 2001), the Holmfield Interchange which provided a new link between the upgraded A1 and the M62 motorway (Roberts 2005), and the upgrade of the A1 from Ferrybridge north to Micklefield (Brown *et al.* 2007). In addition to these major projects, a series of smaller investigations is recorded in 'grey literature' reports on investigations undertaken in response to a variety of planned developments. It should be noted, however, that all the linear and many of the other developments which have given rise to archaeological investigation have mostly been located on the Magnesian limestone belt which runs south – north up the eastern side of West Yorkshire, while other examined sites have been associated with the built-up areas. Upland rural areas in the central and western areas of West Yorkshire have not been the subject of recent investigation. Aside from excavations, investigation in recent years has focused on the transcription of air photographic information from the cropmark-producing areas (Deegan 2007) and the recording of beehive querns as part of the Yorkshire Quern Survey (Heslop forthcoming).

Perhaps not surprisingly, even the limited information available until recent years for the pre-Roman Iron Age in West Yorkshire is not adequately reflected in archaeological literature beyond the region. The earliest edition of the standard review of the British Iron Age included references to Almondbury hillfort, but the inclusion of the settlements at Ledston and Dalton Parlours had to await the production of a third edition some 16 years later (Cunliffe 1991), and this continued to frame the Yorkshire sites in the context of the archaeology of southern England. A pioneering review of the evidence for Iron Age settlement in West Yorkshire and the western Pennine area had been published on the eve of World War II (Raistrick 1939), in which it was proposed that settlement evidence within the area now included in West Yorkshire (an area in which caves and the cited burials are not present) comprised isolated huts and fields, grouped huts or 'villages', forts and earthworks. There was very limited excavated evidence and it is likely that the account, as Raistrick recognised, conflates a number of late Bronze Age and, more likely, Romano-British features. His account is particularly interesting because it was written before the recognition and investigation of the cropmark complexes on the Magnesian limestone of the eastern part of the county. In extending into Pennine areas north of modern West Yorkshire it set the available archaeological evidence into a broader context more successfully than later surveys, which have tended to ignore the earthwork evidence.

Comprehensive mid-1970s survey of the later prehistoric evidence from Yorkshire and the north-east was not able to call upon any pottery assemblages from West Yorkshire, although the excavated information from Almondbury and occasional metalwork finds were noted (Challis and Harding 1975). Later study of the regional later pre-Roman Iron Age tribal group, the Brigantes, included passing references to both the hillfort and the two settlements (Hartley and Fitts 1988), but the most useful short review of Iron Age settlement in West Yorkshire in a regional context published in recent years was that presented by Haselgrove (1984), itself largely based on the *Survey*. This has subsequently been augmented with a volume encouraged by a now-traditional angst at the continued interpretation of northern regional prehistory in the light of southern English evidence (Bevan 1999a). The relevant papers relate to the nature of the ceramic evidence (Willis 1999), middle Iron Age landscapes of East Yorkshire (Bevan and updated review of the regional evidence, Haselgrove 1999). Aside from this, apart from repeated review of the somewhat flawed information relating to the excavations at Almondbury hillfort (Varley 1976), the increasing evidence has for the most part been derived from the Magnesian limestone settlements, noted in the regional resource over-view (Manby 2003), further illuminated in the light of review arising from work undertaken on the A1 – M1 Link road (Burgess 2001) and by a recent wider comparative study (Roberts *et al.* 2007; Roberts forthcoming). Further to these discussions, archaeological exploration of sites and features of pre-Roman Iron Age date in West Yorkshire has continued apace, with a further body of information arising from the investigation of sites and landscapes along the path of the A1, again through the eastern side of West Yorkshire (Brown *et al.* 2007).

Earlier pre-Roman Iron Age 750 - 400 cal BC

Range of evidence: Hillforts; palisaded enclosures; ?sub-circular earthwork enclosures; major boundaries Structures: None recorded Ritual: Riverine deposition?

Material culture: Pottery

Principal sites (*italics indicate surviving sites particularly worthy of further targeted research*): *Almondbury hillfort*, *Oldfield Hill*, *Meltham*, *palisaded and earthwork enclosure*; South Elmshall enclosure system; *Adjacent Site Q*, *Ferrybridge*, *sub-circular earthwork enclosure*; *Aberford Dykes*, *major boundary*; *Site M*, *Micklefield*, *major boundary*; *Newton Lane*, *Ledston*, *subcircular enclosures*

Modest evidence for the potential continuum of settlement evidence from the later Bronze Age into the earlier Iron Age in West Yorkshire has been noted in the discussion of the later Bronze Age. The palisaded enclosure appears to be a site type which bridges these periods, and for which there is now some emerging evidence from West Yorkshire. Palisaded enclosures in defensive locations are a feature of the later Bronze Age in Yorkshire as a whole, best evidenced at Devil's Hill and Staple Howe overlooking the Vale of Pickering from the northern edge of the Wolds (Manby, King and Vyner 2003, 80), and at

Eston Nab overlooking the Tees estuary (Vyner 1988, 65-68). The West Yorkshire examples have sometimes been attributed to later Iron Age horizons, but it may be wondered whether too much reliance has been placed on the somewhat limited excavated evidence. It is true that they have less prominent locations, but this may be a necessary reflection of topography rather than a chronological attribute. For present purposes, the palisaded enclosures of West Yorkshire are suggested to be a feature of earlier preRoman Iron Age settlement, although the possibility remains that they begin in the later Bronze Age.

A site which has the potential to offer yet further valuable evidence is the somewhat overlooked enclosure at Oldfield Hill, Meltham, where excavations revealed a small palisaded enclosure underlying the larger earthwork enclosure (Toomey 1976). Here the palisade had been burnt, probably deliberately, following which a larger enclosure with stone-revetted rampart was constructed. A later Iron Age date for activity on the site is indicated by the presence of a beehive quern, but the sequence is clearly lengthy and there it seems reasonable to include this as a settlement with an earlier preRoman Iron Age beginning. Another site can be found in Coal Measure country, at Swillington Common South (Howell 2001), and allows the attribution of a sub-rectangular enclosure, 27 by 22 m, to the earlier part of the pre-Roman Iron Age on the basis of radiocarbon dates of 790-400 cal BC (AA-31492) and 758-261 cal BC (AA-32008) from posthole 711, and 397 – 167 cal BC (AA-32009) from posthole 935. Here the consistent radiocarbon dates from posthole 711 support an earlier rather than the suggested later horizon for the palisaded enclosure.

A similar palisaded enclosure was present in Area D at South Elmsall, this contained two circular structures associated with 'Iron Age' pottery but without narrower dating evidence (ASWYAS 1998a). Apple Tree Close, Pontefract, is another location with evidence for a palisaded enclosure. This has been suggested to be secondary to an earthwork enclosure, itself dependent on a driveway (Wrathmell 2001). Since palisade phases in the pre-Roman Iron Age generally precede the construction of earthworks (Cunliffe 1991, 285), although not necessarily at the same chronological horizon, the sequence at Apple Tree Close might bear re-visiting. Once again, the excavated evidence is not so clear as it might be, while absolute dating evidence is missing. Beyond West Yorkshire to the south, a low-lying and semi-waterlogged location at Sutton Common on the western edge of the Humberhead levels in South Yorkshire preserved the lower parts of the timbers of a palisaded enclosure which was succeeded by an earthwork enclosure and joined by a second, smaller, enclosure (Parker-Pearson and Sydes 1997). Radiocarbon dates indicate that activity here took place between 550 cal BC and 220 cal BC.

Almondbury hillfort features in any discussion of the pre-Roman Iron Age in West Yorkshire, and as a site type is especially relevant to the earlier part of this period. Other West Yorkshire sites which may be accepted as hillforts comprise Castle Hill, Barwick-in-Elmet, an enclosure which contains a medieval motte and where geophysical survey has failed to recover any convincing

features relating to the hillfort interior (ASWYAS 2006), and South Kirkby (*Survey 116*), where gradiometer survey has also failed to reveal convincing Iron Age features (ASWYAS 1998), although it should be noted that features such as those excavated in the interior of Eston Nab hillfort would be unlikely to be revealed by gradiometer or other geophysical survey (Vyner 1985). Review has drawn attention to discrepancies in the structural interpretation of the fort at Almondbury (Boucher *et al.* 1996), while the excavation account offers no further re-assurance (Varley 1976). There is little justification for the recent suggestion that review of Varley's excavated information and archive should take precedence over renewed fieldwork (Atkins 2006, 12, 2.19), since such review is likely only to confirm the unsatisfactory nature of the record and the continuing necessity for good quality excavated data to provide a context for the existing archive.

While the nature of earlier activity at Almondbury remains unclear, there is little doubt that a late Bronze Age or early pre-Roman Iron Age construction at Almondbury comprised a rubble rampart with timber strengthening which was fired, almost certainly deliberately. In this a comparison may be made with the second phase rampart at Eston Nab hillfort, Cleveland, the burnt timbers of which produced radiocarbon dates indicating construction in the 5th century cal. BC (Vyner 1988, 89-90). The timber-laced rampart at Eston Nab, however, was the second phase of defensive activity at the site, the first of which had comprised a massive boulder wall constructed in the 6th or 7th century BC, which was eventually enclosed by the timber-laced rampart. In the absence of clearer information from Almondbury, or indeed, any other hillfort in the region, but in the light of limited evidence from Boltby Scar, on the western escarpment of the North York Moors (Vyner 1988, 91) it would not be unreasonable to suggest that the evidently extended development and use of the Almondbury fort may begin in the same late Bronze Age chronological horizon as Eston Nab. The apparently parallel sequence of settlement development in the pre-Roman Iron Age through West Yorkshire, North Yorkshire and the Tees valley obviously varied in intensity and the extent of accompanying material culture and, while the detail is still little known, appears increasingly divergent from southern English paradigms.

How long Almondbury hillfort continued in use is unclear, at Eston Nab activity may have ceased by the middle of the Iron Age, and while Gilks has suggested that pottery from the lee of the rampart at Almondbury is of early Iron Age date (1992, 20), none is chronologically diagnostic. In its position the pottery is secondary to the rampart and may well thus represent mid- or indeed, later Iron Age occupation of the site, a likelihood perhaps strengthened by the possible presence of 'salt pots' on the site (Varley 1976, 128). In addition to the potential evidence for Neolithic activity at the site, Almondbury represents one of the best opportunities for investigating the development and use of hillforts in the Pennine region and northern England in general, and might provide useful confirmation that these northern English sites had a different function from those of southern England.

Palisade enclosures and hillforts comprise an overly short list of site types which may be assigned to the earlier pre-Roman Iron Age of West Yorkshire. The range of potentially contemporary monuments, however, currently appears to remain limited to sub-circular enclosures and segmented boundaries. Setting aside the later Neolithic and early Bronze Age features, the complex of cropmark boundaries and enclosures at Ferrybridge for the most part belongs to a pattern which appears to have accrued over the later pre-Roman Iron Age (Roberts 2005). However, one feature, a sub-circular enclosure to the south-east of Site Q, does not fit into this arrangement and appears to have been respected by it, implying an early, perhaps earlier preRoman Iron Age date (Brennand *et al.* 2007, 400). The enclosure is one of a dozen or so sub-circular or curvilinear enclosures noted from air photographic evidence, of which one or two may be palisaded (Deegan 2007, 12-13).

In seeking the full range of earlier pre-Roman Iron Age monuments attention is immediately drawn to the best-surviving earthwork monuments in West Yorkshire, the linear banks and ditches represented by the Grim's Ditch, Colton, and the Aberford Dykes group. Extensive investigation of these monuments was undertaken in conjunction with the construction of the A1 M1 Link road (Wheelhouse and Burgess 2005). Grim's Ditch extends over a distance of 6.7 km from the River Aire to Schole's Park. A number of radiocarbon dates from ditch fills provide limited and sometimes confusing information, although it is tempting to agree with the conclusion that 'the dating evidence suggests that the monument was created in the early to middle Iron Age (Wheelhouse and Burgess 2005, 131). A later prehistoric date is also suggested for Aberford South Dyke (Ibid,134), although attributing the construction horizon of Becca Banks by general association with the South Dyke, now 'unequivocally dated to the later Iron Age' (Ibid, 144), underlines the need for more convincing evidence before any conclusion can be reached.

Some indication of chronological depth, although unfortunately without any fixed points, is provided by the recent excavation of Becca Banks in advance of the Asselby-Pannal LNG Pipeline (pers. Com. P Daniel, 27.5.08), where the major earthwork was preceded by an alignment of post-holes, itself crossing at the perpendicular what seems most likely to have been an earlier field boundary. While it is possible that these earthworks have widely differing construction dates, on the basis of scale and landscape setting, this does not seem wholly likely. If, as seems likely, these substantial linear earthworks may also be compared with that which marks part of the boundary between Micklefield (West Yorkshire) and Huddleton-with-Newthorpe (North Yorkshire), as well as the modern counties at this point, a date perhaps before the start of the later pre-Roman Iron Age, as defined here as being before 400 cal BC, is perhaps to be preferred.

This latter boundary was examined at Site M, during the recent construction of the A1DBFO (Brown *et al.* 2007, 82-105), where it proved to form the western edge of a settlement established in the later Iron Age. Boundary 1029 appears to be the earliest feature at Site M, and seems to be joined by two smaller

ditched boundaries, 777 and 802/66, which have alignments converging on 1029 perhaps 100 m to the south of the excavated area. Since ditch 777 had become filled before round-house 126/1220 was constructed and occupied, presumably in association with other features of the settlement, in the period 400 – 200 cal BC, the period of construction of the major boundary which it joined is likely to have been some considerable time beforehand. Taking the median of the radiocarbon dates, 300 cal BC, as a date for the settlement, and assuming that the major boundary was constructed a century or more earlier, leads to the working hypothesis – albeit tentative – that it belongs to the earlier pre-Roman Iron Age.

The pre-Roman Iron Age linear boundaries are considered further in the discussion of the later pre-Roman Iron Age. Attention is drawn here to the clear distinction between the scale of the major boundaries, such as Grim's Ditch and Site M 1029, and other former earthwork boundaries in West Yorkshire. Since earthworks seldom survive, comparison is made between ditch width and depth. Although it is noted that agricultural and other erosion will have had a differential effect on the various sites, the scale of the smallest of the major boundaries, Aberford C Dyke, at 4.5 m wide and 1.4 m deep, can be contrasted with that of the largest of the smaller boundaries, Ledston 1996, feature 208, which was 3.2 m wide and 1 m deep (Table 1). As the tabulated figures demonstrate, smaller boundaries rarely exceed 3 m in width, while major boundaries start at 4.5 m width. Smaller boundaries are considered further in the discussion of the later pre-Roman Iron Age.

When the extent and complexity of the cropmark evidence on the Magnesian limestone of West Yorkshire first became evident there were suggestions that some of the features might extend back to the earlier pre-Roman Iron Age, as at South Kirkby, where there are extensive cropmarks of enclosures, droveways and field systems to the west of the hillfort (Yarwood and Marriott *nd*, 19). Now, although some of the evidence from the excavated sites along the A1-M1 Link Road can be used to suggest landscape development from the Bronze Age (Burgess 2005, 266), for the most part this appears to date from some time after 500 cal BC (Roberts *forthcoming*), so it might seem that the earlier pre-Roman Iron Age in West Yorkshire is best characterised by a lack of evidence. Early examples of features which become characteristic of the later pre-Roman Iron Age may be represented by a length of possibly segmented ditch (2501) at Manor Farm, Garforth, which contained carbonised material with a date of 763- 263 cal BC (Burgess 2001, 78), and a four-post structure at Sharp Lane, Middleton, with carbonised remains of 8th to 5th century date (Davies 2006, 17).

Although the evidence noted here is somewhat limited, in fact it does not appear to be proportionately less than that for most other areas of Yorkshire, or adjacent areas of Nottinghamshire, the Tees valley, County Durham and the north-east of England. Not only is the extent of information broadly comparable, but the nature of settlement activity, its archaeological visibility, and its relationship to resources afforded by topography and geology are also broadly

similar. This impression is confirmed by the recently-produced North East Regional Research Framework for the Historic Environment (Petts and Gerrard 2006), whose resource assessment for this period, perhaps unfortunately, conflated the information for the later Bronze Age and the whole of the Iron Age (Ibid, 33-41).

<i>Site and feature</i>	<i>Feature type</i>	<i>Width (m)</i>	<i>Depth (m)</i>
Aberford Becca Banks	Major boundary	8	2.4
Grim's Ditch	Major boundary	6	3
Site M 1029	Major boundary	5.2	1.4
Aberford C Dyke	Major boundary	4.5	1.4
Ledston 1996 208	Principal boundary	3.2	1
Ferrybridge 166	Pit alignment	2.95	1.19
Ferrybridge 118	Field boundary	2.85	1.1
Site M 66	Principal boundary	2.85	0.3
Ferrybridge 177	Principal boundary	2.7	0.8
Swillington Common 101	Droeway boundary	2.5	0.7
Ferrybridge 129	Pit alignment	2.28	0.9
Ferrybridge 103	Droeway boundary	<2*	1.2
Ledston, Back Newton Lane 5	Sinuuous boundary	1.9	0.9
Ferrybridge 117	Field boundary	1.9	0.85
Roebuck Hill, Jump 1656	Droeway boundary	1.8	0.55
Ferrybridge 130	Pit alignment	1.72	1.1
Site M 802	Sinuuous boundary	1.5	0.5
Swillington Common 301	Droeway boundary	1.5	0.7
Roebuck Hill, Jump 1545	Droeway boundary	1.2	0.51
Roebuck Hill, Jump 1516	Droeway boundary	1.08	0.11
Ferrybridge 3140, 3159, 3163	Segmented boundary	1	0.3

*Table 1 Dimensions of pre-Roman Iron Age linear ditches in West Yorkshire (where variable, maximum dimensions are listed; *first phase ditch width)*

As in West Yorkshire, the landscape and settlement record in the wider region is dominated by the evidence for the later part of the Iron Age. In Yorkshire to the east and north hillforts of the early Iron Age are no more common than in West Yorkshire. Beyond the hillforts early pre-Roman Iron Age settlement appears to be evidenced by the few palisaded enclosures, and some of these are likely to be later Bronze Age in date. While it would seem likely that some of the lightly enclosed circular stone-walled house sites of the Pennine uplands should belong to the early Iron Age (*Survey 121-28*), the intractable nature of their archaeology and the limited evidence for chronology is well illustrated by

the programme of investigation conducted by Coggins on the Durham Pennine sites (Coggins 1986, 196-97). Of these, Bracken Rigg proved to be later Bronze Age in date, while sites at Forcegarth Pasture (North) and (South) appear to be late pre-Roman Iron Age.

In the upland Pennine areas of West Yorkshire knowledge of the isolated and lightly enclosed hut groups is hardly advanced on Raistrick's survey (1939), although limited work undertaken in adjacent areas of the North Yorkshire Dales also points to a later Bronze Age date for the initiation of some settlements and co-axial field systems (White 2005, 28-29; Fleming 1998, 123), although the date range extends well into the Iron Age (Fleming 1998, 138). The presence of the hillforts and occasional palisaded sites implies that late Bronze Age and early pre-Roman Iron Age settlement across West Yorkshire and elsewhere in Yorkshire and northern England was widespread, if scattered (Huntley 2007, 140-41), a suggestion supported by the evidence of cereal pollen from peat sample locations in northern England, and this may have been based upon small unenclosed farmsteads of the kind represented by surviving earthworks in the Pennine areas. In adjoining areas of the east Midlands it has been suggested that the earlier Iron Age might have been characterised by dispersed unenclosed settlement, perhaps supported by shifting agriculture, whose wide-ranging subsistence strategies only became proscribed by increasing populations (Knight and Howard 2004, 87).

Material culture

There are few diagnostic items of material culture relating to the earlier preRoman Iron Age in West Yorkshire. Elsewhere in the region there are pottery assemblages from the palisaded sites bordering the Vale of Pickering, as well as from the palisade and hillfort phases at Eston Nab, so it is clear that a cultural preference against the use of pottery was present across parts of West Yorkshire from the beginning of this period, if not before.

Although there may be some undiagnostic sherds among assemblages, only four vessels may so far be identified as possibly of earlier pre-Roman Iron Age date. Two vessels are similar in fabric and decoration, one represented by a number of joining pieces from a large jar containing inclusions of shell and limestone from a pit at Ledston, where the cropmark complex is thought to develop from the mid- to later Iron Age (Roberts 2005, 30). The vessel has a plain vertical rim, decorated along its upper surface with a series of fingerprint impressions (Evans 2005, 21-22). A very similar vessel is represented by a similarly decorated rim sherd in an assemblage from the cropmark complex at South Elmhall (incorrectly illustrated in the report, ASWYAS 1998b). A third assemblage, from St Aidan's Remainder, Methley, contained one sherd with finger-nail impressions and another with a scored line. There are few comments that can sensibly be made about such a small quantity of material but the remarks made about later pre-Roman Iron Age pottery assemblages apply equally here.

Chronology

In this account considerable reliance has had to be placed on site morphology and external comparisons. It would seem justifiable, however, to assume that sites in West Yorkshire which have no direct chronological information, but which are comparable with well-dated sites in adjoining regions may belong to a similar chronological horizon. It is suspected that early phases of some cropmark complexes may be being assigned to a later period of site histories because of the combination of limited material culture and a reliance on radiocarbon dates, which, for the pre-Roman Iron Age in particular, offer only a broad chronology. This issue is discussed further in relation to the later preRoman Iron Age.

Environment and subsistence economy

Given the paucity of confirmed earlier pre-Roman Iron Age sites, it is not surprising that there is little direct evidence for environment and subsistence economy for the earlier part of the Iron Age. The enclosure on Sutton Common, South Yorkshire, which has waterlogged preservation of timbers and plant material as well as carbonised material, serves to illustrate the probable environmental background to many of the West Yorkshire settlements of this period. In addition to the chronologically undiagnostic saddle quern fragments, which are present on West Yorkshire sites, the Sutton Common site produced evidence for spelt wheat, hulled barley and a small amount of bread wheat (Boardman and Charles 1997, 248-49). The more extensive evidence from north-east England suggests, however, that the Sutton Common grain evidence may belong to the later pre-Roman Iron Age. In the north-east spelt wheat replaced emmer wheat by around 300 cal BC, and perhaps somewhat earlier, although not necessarily much earlier, while bread wheat may not appear until late in the pre-Roman Iron Age (van der Veen 1992, 157). Perhaps more convincingly early is a four-post structure at Sharp Lane, Middleton, the post-holes of which contained carbonised remains of hulled barley, wheat, glume wheat chaff, oat, large grass seed, wild plant seeds and wood charcoal dated to 770 – 410 cal BC (Poz-14325) and 790 – 420 cal BC (Poz-14326). For the present Sutton Common points up the potential rather than the reality of palaeoenvironmental information in the earlier pre-Roman Iron Age.

Ritual activity

There is little evidence for ritual activity which may be assigned to the earlier pre-Roman Iron Age. The possible continuance through the pre-Roman Iron Age of deposition of metalwork in rivers, a feature of the Bronze Age (Burgess 1980, 350-51), may be reflected in the presence of a Hallstatt C sword in gravels of the River Aire at Temple Newsham, south-east of Leeds. Such activity is well-evidenced along the River Trent in Nottinghamshire, while occasional finds from the rivers Tees and Tyne in northern England show that riverine deposition of votive offerings was widespread at least from the later Bronze Age, and probably much earlier, although how long it continued into the

Iron Age is unclear. In contrast to the later pre-Roman Iron Age in West Yorkshire, but in common with most other areas of Britain, there is no evidence for the nature of burial practises in the earlier pre-Roman Iron Age, although it seems probable that some at least were associated with river rituals.

6. THE EARLIER PRE-ROMAN IRON AGE: RESEARCH AGENDA

The identification of an earlier pre-Roman Iron Age horizon in West Yorkshire is a useful exercise in that it focuses attention on a very different range of problems from that presented by the very much more extensive and complex evidence for the later pre-Roman Iron Age. Faced with such limited evidence as there is for this period it is difficult to put forward a research agenda which extends much beyond an emphasis on the need to know more. The principal issues are landscape sequence, settlement morphology, the origins of the structural features which dominate the later part of the period, and the origins of cultural distinctiveness which also become clear in the later pre-Roman Iron Age.

Excavation attention should focus on sites which appear to be early in the Iron Age structural sequence – palisade enclosures, segmented ditches and major boundaries. In areas of extensive cropmark systems sub-circular enclosure components may have more potential to contribute than excavated droveway and other ditch sections.

In the upland areas attention should focus on survey of earthwork sites with the aim of identifying potential sequences which might be confirmed by limited excavation, an approach which should also be applied to earthworks surviving in woodland areas on Coal Measures and Magnesian Limestone.

Evaluation excavations which produce evidence of probably early pre-Roman Iron Age date should be extended to encompass an adequate structural, artefactual and ecofactual sample and these results should be fully analysed.

Priorities outside the development control framework

- Further analysis of pottery assemblages from South Elmsall and St Aidan's Remainder, Methley.
- Specialist assessment of existing pottery assemblages to identify the potential for grouped analysis and to refine future strategies of analysis.
- Discoveries of palaeoenvironmental deposits, human remains and other appropriate material likely to be of early pre-Roman Iron Age date should be subject to radio-carbon dating if no better chronological information is present.
- Palaeoenvironmental deposits, which are scarce in West Yorkshire, should be the subject of full analysis and reporting.

- Finds of possible early Iron Age date should be fully assessed and reported upon, to include appropriate illustration.

Later Pre-Roman Iron Age 400 cal BC - 70 AD

Landscape features: Pit alignments; droveways; enclosed farmsteads; fields and field systems; unenclosed settlements

Structures: Gullied and post-set round houses; four-posters

Ritual features: Rectangular structures; pit burials; pit deposition; square barrows; ?carved stone heads

Material culture – production and consumption: ‘Tall’ beehive querns; pottery; salt containers; iron working, coins; Roman pottery and other imported items including iron swords, armour and brooches

Principal sites (*italics indicate surviving sites particularly worthy of further targeted research*): *Ledston, droveways, field boundaries, enclosures, pits, shrine*; Ferrybridge, segmented ditches, pit alignments, droveways, field boundaries, enclosures, round houses; *Honley Wood field boundary; Idle Buck Wood, field boundary; Micklefield Castle Hills, fields and field systems*; Micklefield Site M, sinuous boundaries, round houses, four-posters, pits, shrine; Ferry Fryston, chariot burial, shrine

As a result of a number of large-scale excavations undertaken largely since the *Survey* of 1981, the later pre-Roman Iron Age in West Yorkshire now contains a bewildering variety of landscape and settlement features, but the precise chronology of the individual landscape components, and the sequence in which they have accrued, often remains unclear. Initial results of the excavation of the cropmark complex at Ledston were noted in the *Survey*, although final reporting of the site only took place in 2005. As previously observed, Ledston is one of the few West Yorkshire sites to have been noted in regional and national literature and it is perhaps ironic to note that, even today, the site may be regarded not only as an exemplar of early settlement activity on the Magnesian limestone, but also of the problems inherent in the interpretation of the archaeology of these plough-damaged areas.

Landscape and settlement

In dividing the pre-Roman Iron Age of West Yorkshire between an earlier and a later phase, Ledston is an appropriate place to begin an exploration of the characteristics of the later phase since, although the chronological placement is not always clear, the site includes almost the full suite of later pre-Roman Iron Age features, a pit alignment being the obvious absence. At the risk of oversimplifying what is a complicated but largely undated sequence it is suggested that a sub-triangular earthwork enclosure appears to be an early focus around which a large number of pits and at least one circular structure were established. The pits had a general size range of 1 – 2.5 m by 0.7 – 2 m by 0.1 – 1 m deep and were haphazardly located but rarely intercut one another, leading to the suggestion that they may belong to one phase of activity (Roberts

2005a, 10): it might also be inferred that they must either have been open or otherwise made visible by fencing, mounds or some other marker. The enclosure ditch contained fragments of human bone, while two of the pits contained complete human inhumation burials, that in Pit 704 produced a radiocarbon date of 390 cal BC – cal AD120 (HAR-2805). Another pit contained part of a cow skeleton.

For many years it was proposed that the Ledston pits were intended for storage, for which a further northern example, at Catcote, Cleveland, was also put forward (Haselgrove 1984) in answer to the well known evidence from sites in southern England (Cunliffe 1991, 375-76). Radiating from the pit complex at Ledston a pair of droveways, linked across the edge of the pit complex, extended northwards. The spatial relationship between the enclosure, pits and droveways suggest that they were at least partly coterminous. The enclosure system was extended with the addition of further axial boundaries, and also sub-divided to form smaller 'fields'. More substantially ditched sub-rectangular enclosures, perhaps the location of settlement, were attached to a number of the axial boundaries (Roberts 2005a). Beehive querns confirm that at least some of the pits belong somewhat later in the pre-Roman Iron Age, while the presence of 2nd and 3rd century Romano-British material indicates that activity here continued into the Roman period.

The development sequence of the Ledston landscape proposed here differs only slightly from that offered in the excavation report (Roberts 2005a, 30), in suggesting a stronger degree of co-existence of the various components. The absence of inter-relationship between the pits and the boundaries to Fields II and III and D-shaped Enclosure A suggests that these features pre-date the pits, but these principal fields and the enclosure could be more-or-less contemporary. The dated human burial provides an unhelpfully broad horizon for activity associated with the pits, indeed, the radiocarbon date is useful only in suggesting that activity could have been taking place as early as the beginning of the fourth century BC, but accepting this would be to accept that activity here extended over a period of some 600 years and this would seem over-long in the absence of any other early material. The beehive querns may be a better indicator of the period of use of the pits, with activity beginning perhaps in the second century BC and discontinuing before the Roman pottery and rotary querns, found elsewhere on the site, were introduced. As well as the repertoire of site features on the Magnesian limestone, Ledston also introduces some characteristic aspects of the later pre-Roman Iron Age in West Yorkshire, not least the limited take-up of pottery and other durable items of material culture, and a pre-occupation with the maintenance of activity areas in such a way that successive pits and other features did not intercut or otherwise impinge on each other

Landscape elements of the recently excavated complex at Ferrybridge are in many ways comparable with the evidence from Ledston (Roberts 2005b). The first, or at least one of the first, of the later prehistoric features at Ferrybridge comprised a meandering alignment of generally sub-rectangular pits. The pits

served to demarcate a boundary between the area occupied by the later Neolithic henge and an associated complex of later Neolithic and early Bronze Age features. They contained a range of artefacts which included residual material as well as finds which suggested that they had remained a boundary feature during the Roman period. The pits contained inhumations of various dates, suggesting continued ritual use. Of particular interest is the fact that the four earliest inhumations have produced radiocarbon dates which, with varying start and end points, in common span the period 160 cal BC – cal AD 90 (Roberts 2005b, table 1), suggesting a likely origin for the pit alignment fairly late in the later pre-Roman Iron Age, and imposing a fairly short period for the complex development sequence which is visible.

There is limited evidence to suggest that pit alignments preceded the establishment of ditched boundaries in a number of agricultural systems. Fragments of an undated pit alignment, in places superseded by a ditch, were recovered during road construction south of the M62 at Knottingly. This is suggested to be late pre-Roman Iron Age or later (Brown *et al.* 2007, 53), while a possibly somewhat earlier date, 410-200 cal BC (SUERC-3444) was derived from carbonised plant material from an alignment of 18 pits at WWBP to the east of Wetherby (Brown *et al.* 2007, 115).

Consideration of an early pre-Roman Iron Age origin also has to be given to some of the lesser landscape boundaries, in particular the few more sinuous and apparently early elements of the geometric systems. At Micklefield Site M ditches 777 and 802/66 may be contemporary, while 777 is certainly earlier than roundhouse 126/1220, but they may not predate 400 BC, the suggested beginning of the later pre-Roman Iron Age in West Yorkshire. At Ferrybridge three short lengths of segmented ditch, 3140, 3159 and 3163, preceded the cutting of a continuous ditch on almost the same alignment, but there is no evidence to suggest that these features were not contemporary with the pit alignments which are of later pre-Roman Iron Age date (Richardson 2005a, 72). At Holmfield Site XX15 a segmented boundary is suggested to have been in place before an inhumation burial was placed close to it (Brown *et al.* 2007, 404).

The Newton Lane, Ledston, complex has at least three extensive ditches which pursue a markedly sinuous course, the principal one extending from Back Newton Lane north-eastwards (Ditch 5, ASWYAS 2006b), and contrasting with the geometric elements of enclosure there. Although there is neither direct nor indirect chronological evidence, a semi-circular enclosure is dependent on its south-west side, with a concentric boundary placed at some distance outside it, suggesting a phased development. While the very similar scale driveway ditches at Swillington Common are attributed to the early Iron Age (Howell 2001, 54), the excavated evidence is not fully convincing and sinuosity in itself is clearly not necessarily an indicator of an early date, as confirmed by a boundary ditch excavated at Roebuck Lane, Jump, in the Coal Measure landscape of South Yorkshire, which proved secondary to a settlement enclosure of latest pre-Roman Iron Age date (NAA 2007, 7).

Subsequent to the pit alignments at Ferrybridge a series of earthwork boundaries was established, creating four conjoined units whose northern boundary ran parallel with, and close to, the pit alignment, creating a potential droveway which linked with double-ditched droveways which separated the major bounded units (Roberts 2005b, fig.60, 210). The arrangement of the droveway, and its relationship to the adjacent earlier activity, is strikingly similar to that seen at Ledston. There is no specific dating evidence for the Ferrybridge droveway boundaries beyond their probable secondary relationship with the pit alignment. This suggests a slightly later date, but within the period 2nd century BC to 1st century AD. The bounded units were further subdivided by less substantial ditches and gullies into smaller 'fields', with settlement enclosures appended to some of the boundaries. Settlement activity appears to have continued well into the Roman period, with Enclosure A containing in its third phase three successive post-founded circular structures. Enclosures C, D and E succeeded each other, with a circular round-house gully in Enclosure C likely to belong to the later pre-Roman Iron Age, and activity at Enclosure D and E extending well into the Roman period.

In terms of structural information, Micklefield Site M on the recently completed A1 DBFO motorway project is among the more important Iron Age sites excavated in West Yorkshire in recent years. As noted in the discussion of earlier pre-Roman Iron Age features, it can be argued that the earliest feature here was a major boundary which in places survives as an earthwork to this day (Brown *et al.* 2007, 83-84, fig. 53). The somewhat later sinuous boundaries have no dating evidence, but boundary 777 had been filled by the time round-house 126/1220 was constructed. The confluence of the major boundary and a sinuous boundary at Site M defined a settlement area which contained four zones of activity. To the south, between the boundary ditches, was what has been described as a habitation zone which contained two phases of a circular structure, north of this, beyond a demarcatory ditch, an extensive scatter of pits had been set along the major boundary to the west. North of the pit zone another circular structure suggested a further habitation zone, while to the east of the pit concentration a further zone contained at least 15 four-post structures. These varied considerably in size, but were generally small, with sides on average 3 by 2 m. An exception was structure 10251, which measured 6 m square. This was set to the south of the main group of four-posters, against the ditched boundary to the zone, and it has been suggested that this may have had some other function, such as a shrine (Brown *et al.* 2007, 93). A rich assemblage of charred barley and wheat from a posthole of structure 2070 produced a radiocarbon date of 390-190 cal BC (GU-12382).

Some 336 pits were excavated at Site M, the majority, and all the deepest, being set north of the ditched boundary 738 lying between the habitation zone and the pit zone. Pottery was present in 18 pits, all but one in the pit zone, and is suggested to have been a purposeful placement since pits containing human inhumations did not contain pottery. A number of pits contained bones of animals, including pit 2058, which had partial articulated cow carcasses in lower

fills and a complete cow and neonatal calf in the upper fill (radiocarbon dated 360-120 cal BC, KIA-25338). Eight inhumations were found in pits, almost all placed crouched and on their left sides. Pit 700 contained the skeleton of a woman, buried wearing a brooch and iron bracelet, radiocarbon dated to 400-200 cal BC (KIA-25331), a nearby male skeleton in pit 741 also had an iron bracelet.

Excavations on the site of a new sewage works at Micklefield, on limestone and 0.5 km or so to the north of Castle Hills, recovered evidence for a field system demarcated by gullies which were relatively small, with widths less than 1 m wide and depths no more than 0.30 m, although truncated by later agriculture. One east-west running boundary gully was composed of sections but is thought to have been more nearly continuous when originally cut, although even then probably discontinuous, a feature noted in respect of the slight segmented ditches at Ferrybridge, noted above. An early component of the Micklefield sewage works system appears to have been a small enclosure set against a scarp edge in such a way as to suggest that topography may have assisted in its demarcation. Limited molluscan evidence suggests the use of the enclosure for kitchen garden or allotment use (TVA 2004), 16).

Just to the north of West Yorkshire's current boundary, on clay lands in the north-east of West Yorkshire, an enclosure ditch underlying medieval settlement at Site 16/WW6 Wetherby Lane, Ingmanthorpe, contained nativestyle pottery and a beehive quern. Since the ditch was later cut by one containing Romano-British pottery a pre-Roman Iron Age date for the earlier ditch is likely (Brown *et al.* 2007, 117)

The antiquity and longevity of droveways and other boundaries is repeatedly in evidence in West Yorkshire. At Castle Hills, Micklefield, two ditches form the entrance to a droveway, the western ditch (2536) having been re-cut on three occasions, with 2nd century Romano-British pottery present only in the final re-cut and thus, in all likelihood, originating in the later pre-Roman Iron Age. The eastern ditch (2535) extends southwards to become the major boundary ditch 1029 at Micklefield Site M, where it survives to this day as slight earthwork, dividing Micklefield from Huddleton-with-Newthorpe and marking the boundary between the present-day counties of North Yorkshire and West Yorkshire (Brown *et al.* 2007 106-109). As has been pointed out (Brown *et al.* 2007, 400 and fig. 194), many of the probable pre-Roman Iron Age droveways and boundaries remained in use through the Romano-British period and well beyond, in some cases to the present day.

Pits and their contents are clearly important in establishing a chronology and identifying patterns of settlement use, but further consideration also needs to be given to the linear features which form the principal landscape component of Iron Age settlement in West Yorkshire. Attention has been drawn to the need to review strategies for the excavation of linear features in order to potentially maximise the recovery of information relating to their construction and use (Chadwick 1999, 160-64), but review of the excavated evidence from the

Ferrybridge excavations suggests that, for the pre-Roman Iron Age at least, it is difficult to identify the most probable locations of deposits (Roberts 2005b, 210), although for later periods an element of prediction may be possible (Chadwick 2004).

In the absence of finds there is the possibility that dimension may offer an indication of character and date, as suggested above in respect of the major landscape boundaries which may belong to the earlier pre-Roman Iron Age (Table 1). This would be particularly useful where only short sections of linear features are selected for excavation or revealed in small-scale excavations. Unfortunately, the evidence for other linear features is considerably less clearcut. For what it is worth, at the bottom of the scale the segmented ditch at Ferrybridge, suggested to be an early feature, has a width of only 1 m (Table 1). There is little variation in scale between principal boundaries and field boundaries, or indeed, pit alignments (widths between 1.9 and 2.95 m). However, driveway boundaries, at between 1.08 and 2.5 m wide, and sinuous boundaries, with widths between 1.5 and 1.9 m, appear to be more clearly characterised in terms of dimension

Settlement structures

The range of structures present on the later pre-Roman Iron Age sites is limited and there are surprisingly few house sites given the extensive arrangements of boundaries and enclosures. At Ferrybridge Structures 1, 2 and 3 in Enclosure A were built using double circles of standing timbers, whereas Structure 5 in Enclosure C had a near-continuous wall-groove (Martin 2005, 89-105). At Dalton Parlours further variation is visible in

Roundhouse 3, which had four separated segments of wall trench, while Roundhouse 4 was represented only by two pairs of elongated pits, suggested to mark the posts of opposed entrances (Sumpter 1990, 16). A further style of construction is exhibited by house 126/1220 at Micklefield Site M, which had a continuous wall-trench surrounded by a concentric eaves-drip trench, a style not seen on the Magnesian Limestone but commonly found on clay and alluvial areas of the Vale of York and elsewhere (Heslop 1987, 11718). Despite the current absence of chronological information, it may be anticipated that in Pennine areas of West Yorkshire there were stone walled or composite stone and timber round-houses of the kind observed as earthworks in the Craven uplands, and excavated at Forcegarth Pasture in the Durham Pennines (Fairless and Coggins 1980, 32-34; Fairless and Coggins 1986, 25-32).

Four-post structures, often interpreted as the foundations for granaries (Cunliffe 1991, 376) are an occasional feature of West Yorkshire Iron Age settlements. At Church Farm, Darrington, one was located adjacent to the entrance from a field onto a driveway (Brown *et al.* 2007, 48-49). Due to the limited extent of excavation it is not clear if this was an isolated structure, but at Micklefield Site M at least 15 four-post structures occupied a specific area – the north-west sector – of the settlement. The settings ranged in size from 2.4 by 2.15 m to 4.5 by 3.25 m, many being rectangular rather than square in plan. A post-hole in

structure 2070 contained carbonised wheat and grain, but the presence also of branch wood suggests that the remains did not necessarily relate to the original function of the structure (Brown *et al.* 2007, 90-93). At Swillington Common four similar four-post arrangements are present, with sides measuring between 2.5 and 3 m (Howell 2001, 64-65), but, as suggested elsewhere, alternative interpretations are possible in this instance. In particular, interpretive caution is aroused by the slightly trapezoidal plan of structures 8 and 10, by the fact that the structures are dispersed across the site, and by the similarity of the layout of structure 10 (for example) to that of the four-post construction of the porch to circular structure 2. The Swillington four-post arrangements also fall into the bottom end of the size range of those at Micklefield Site M, as do the two putative four-posters at Ledston (Roberts 2005, 11). Micklefield Site M is thus important as confirming the presence of four-post structures in Iron Age West Yorkshire, and in demonstrating their preferential placement within the settlement.

Ritual

The evidence for ritual is to some extent inter-twined with that for human burial, but is worth considering separately because there are a number of structural features which are sufficiently commonly associated with burial and ritual to allow their identification where no other evidence in the form of bones (human or animal) or artefacts is present.

Timber structures

Timber structure 10251 at Micklefield Site M, isolated from the other rectangular structures and set against the north-west edge of ditch 738, had sides of 6 m length (Brown *et al.*, 2007, 93). This building was close to pits containing human burials and is suggested, like other rectangular timber structures, to have been a shrine (Cunliffe 1991, 510-14). At Ledston, pit 424, one of two containing inhumation burials, was flanked by trenches which suggest a rectangular structure around 4 m square (Roberts 2005a, fig. 5). A further rectangular timber structure was present some 30 m south-west of the Ferry Fryston chariot burial site. This comprised a trench-based structure some 17 m square, the interior seemingly lined with wide-spaced vertical posts (150-52). The structure is undated, but its proximity to the chariot burial, and similarity with an enclosure at Kirkburn, East Yorkshire, suggests a late Iron Age date (Boyle *et al.* 2007, 150-52).

Pits

The focus of activity at Ledston appears to have been a concentration of almost 300 pits, some 60 of which were excavated, varying in size from 1 to 2.5 m in diameter and, though truncated, up to 1 m deep. Two of the pits (424 and 704) contained complete inhumation burials, while others held a complete cattle carcass (pit 107), animal bones and artefacts which appear to have been especially selected, notably the upper and lower stones of a quern (pit 332). An arrangement of pits at Parlington Commons West, of unknown overall plan, included one (2066) containing a large quantity of animal bone (Holbrey and Burgess 2001, 90). Micklefield Site M also included a concentration of pits, of

which 336 were excavated (Brown *et al.* 2007, 93104). These varied in size from 0.20 to 3.44 m in diameter and were between 0.5 and 2 m in depth, concentrated in a wide cluster along the eastern side of the ancient boundary 1029. The pits thus occupied a westerly zone which contrasted with the zone of four-post structures to the east. Three of the pits contained relatively large quantities of pottery, which was largely absent from the others, while animal bones were occasionally present, notably one complete and other semi-articulated cow carcasses from pit 2058. Eight inhumation burials were also contained within the deepest pits.

While the primary function of pits has for long been suggested to be storage, this interpretation is simply not supported by the evidence from either Ledston or elsewhere in West Yorkshire, as Roberts has pointed out (2005a, 32-33). Roberts cites the deposition of human and animal burials, and the possibility of structured deposition of these and artefacts in pits, and their presence in areas of geology unsuited to below-ground storage, and he might also have pointed out the way in which the pits appear to have been carefully managed so that they rarely intercut. In proposing a primary ritual function for the pits, in the current absence of evidence for structured deposition in the pits, it might be better to refer to the preferential deposition of human burials, selected animal parts, and artefacts.

A further aspect of ritual which, although poorly dated, appears to belong principally to the pre-Roman Iron Age is the cult of the head (Ross 1974, 94106), manifested in the distribution across Pennine West Yorkshire and westwards of carved stone heads (Jackson 1973) and perhaps also by the headless female inhumation in pit 5209 in the Ferrybridge pit alignment (Richardson 2005a, 65). Although the carved stone heads were produced over a greatly extended period of time (Billingsley 1998, 14-15; Swain 1995, 224), some clearly have considerable antiquity and the distribution in West Yorkshire is more intense than elsewhere.

Burial

There is an increasing amount of evidence for a wide range of burial practices in the later pre-Roman Iron Age in West Yorkshire, in fact burial is more obvious in the record of the Iron Age than anywhere else in Yorkshire and the north of England outside of East Yorkshire. The record has been reviewed in recent years, and includes the Ledston inhumations noted above, as well as possible Iron Age cremation burials placed in postholes at Manor Farm (Burgess 2001, 267-68). One of the earliest burials may be that from Holmfield Site XX15, where an inhumation radiocarbon dated to 340-50 cal BC (KIA-25322), appears to have been placed close to a pre-existing segmented boundary (Brown *et al.* 2007, 75), the boundary potentially being an early feature which survived to be regarded as a suitable location for burial. The deposition of complete inhumations in pits at Micklefield Site M and Ledston has been noted above, while nine incomplete inhumation deposits were found placed in the major pit alignment at Ferrybridge (Richardson 2005a, 70). The contrast between whole inhumation deposits and partial corpse deposition

suggests a common interest in pit burial, but marks some distinction between individual pits and linear boundary pits.

The now famous Ferry Fryston chariot burial, set within a square barrow, appears to have been deposited in the late 3rd or early 2nd century BC (Boyle *et al.* 2007, 152-54), and while this may be viewed as a 'one off' in West Yorkshire, other potential square barrows are known in the eastern part of West Yorkshire, including Wetherby, making square barrow burial a feature, however uncommon, of the later pre-Roman Iron Age of eastern west Yorkshire. Cremation burial in earthen barrows, known from Ampleforth Moor on the eastern side of the Vale of York (Wainwright and Longworth 1969) appears also to be an occasional feature of the Iron Age in the Pennines, noted at Roomer Common, Masham (Waterman *et al.* 1954), and perhaps also at Bedale, where geophysical survey has recorded a small mound adjacent to a settlement enclosure of Iron Age type. These latter locations are not far north of West Yorkshire and highlight the likelihood of barrow burial traditions extending further south.

Material culture: production and consumption

In terms of material culture the later pre-Roman Iron Age continues the pattern of limited take-up. Although the range of items present is extended, very small numbers of artefacts are present – a bronze dagger chape and a torc from Ferrybridge pit alignment, a bronze scabbard from Ferrybridge henge ditch, a weaving comb from Ledston. Pottery is present in small quantities at many sites, but beehive querns are almost as common from excavation as well as being retrieved as surface finds.

Pottery

Despite the increasing number and scale of excavations of later pre-Roman Iron Age sites in West Yorkshire, pottery assemblages remain very limited and a number of factors conspire to make inter-site comparisons difficult to the extent that it may be suggested that knowledge of West Yorkshire preRoman Iron Age assemblages is not so good as it should by now be. In summarising some comparative information from recent analyses of pottery assemblages it is immediately clear that basic information such as the probable minimum number of vessels present, and the relative proportions of each fabric represented is not always clear, while some information quoted is at best useless and at worst positively misleading. The frequent reference to limited assemblages from South Yorkshire and the north Midlands makes use of a very restricted body of material by comparison with assemblages from the northern Vale of York and other adjoining areas of North Yorkshire. Perhaps it is for this reason that reference has rarely been made to the presence or absence in West Yorkshire assemblages of distinctive features such as carbonised accretions (present on a rim sherd from Ferrybridge, Vyner 2005, 130), salt containers (which may be present at Sykehouse, South Yorkshire (Cumberpatch and Roberts 2003, 24-25), or ceramic evidence for metalworking (suggested for some fired clay debris from Normanton, Vyner 2000). Understandably, many

small assemblages contain limited chronological information, but it is important to state clearly whether and on what basis pottery is likely to be of pre-Roman Iron Age date or Roman date. Since later pre-Roman Iron Age styles continue in use well into the Roman period referring to this material simply as 'Iron Age' needs further qualification if the evidence is not to be misunderstood.

Querns

Beehive querns are a characteristic later pre-Roman Iron Age type, although their chronology has yet to be refined. The horizon of their introduction is likely to be late in the 4th century BC and they remained in use until replaced by Roman rotary querns, perhaps from late in the first century AD, a process which may have extended over at least a century, although, again, the chronology has yet to be clarified (Heslop forthcoming). In West Yorkshire querns are important as an indicator of the general distribution of later preRoman Iron Age settlement, subject to the usual caveats regarding the presence or absence of fieldworkers and museums, and other variables affecting their discovery and reporting. Unfortunately the Yorkshire Archaeological Society Quern Survey has yet to develop a computer database for West Yorkshire, so the presently-available data is somewhat generalised, nevertheless, it shows that beehive querns are widespread across West Yorkshire. Querns are particularly prevalent in the valleys of the rivers Wharfe and Aire, the distribution thinning out on the Pennine uplands and in the lower parts of the Vale of York. This pattern presumably reflects limited populations, but the thinning of the distribution in South Yorkshire may be a function of observation and recording. Within the general distribution pattern it is of particular interest to note the differing distribution of 'tall' querns with sides of greater than 70 degrees to base and 'hemispherical' querns with sides of less than 60 degrees to base. While hemispherical querns are particularly found in North Yorkshire and the Tees valley, 'tall' querns are a feature of West Yorkshire, suggesting a cultural distinction which may also be reflected in the ritual and burial traditions noted above. How long it took flat rotary querns to supplant beehive querns remains unclear, but it is likely that the use of beehive querns did not extend into the 3rd century AD.

Palaeoenvironmental, faunal and plant macrofossil assemblages

There remains a dearth of palaeoenvironmental material for the Iron Age in West Yorkshire, while plant and animal remains are also limited. In discussion of the faunal assemblages from sites along the A1-M1 Link Road it was concluded that patterns of production and deposition were insufficiently clear to allow more than the statement that the inhabitants of the area reared cattle, sheep and pigs (Richardson 2001, 217). Excavated Iron Age components of the Holmfield Interchange sites also produced only limited faunal assemblages where only the larger bones tended to survive. Broadly speaking, cattle account for 50-60% of the assemblage, sheep for 20-25%, pigs for 1-5% and horses for between 2 and 10%. A pattern where cattle were more likely to be present in ditch fills, and sheep in pit fills, was also observed (Richardson 2005b, 182). By comparison, the Iron Age phases at Dalton Parlours produced rather different

proportions of animal remains: 71% sheep/goat, 24% cattle and 5% pig, but here also cattle were more likely to be present in ditch fills while sheep bones were more commonly found in pit fills (Berg 1990, 175-77). In respect of Dalton Parlours Berg made the pertinent observation that ditches contained the remains from primary and secondary butchery waste while pits contained non-random assemblages including dog burials and selected sheep elements (Berg 1990, 188). Partial dog burials were also present in pits at Micklefield Site M, as were articulated cattle burials (Bates 2007, 339), while Pit 107 at Ledston contained a near-complete cow burial (Sumpter and Marriot 2005, 12). The variability in representation of animals on Iron Age sites in West Yorkshire clearly reflects a high degree of selection and ritual and at present it may not be possible to advance further than the statement that cattle, sheep and pigs were reared and their remains selectively deposited. Additional comment would note that pigs appear to be under-represented in the record, although whether this reflects dietary choice or selective deposition remains unclear, while dog burial also had a part in ritual.

A very small quantity of carbonised plant remains was present in the Iron Age features at Ferrybridge (Alldritt 2005, 184-85), where a single fossil of *Vicia fabia* (broad or 'celtic' bean) and two seeds of *Vitis vinifera* (grape-vine) were notable finds from the pit alignment. At the Site Q settlement, Holmfield, pit fill 59 contained charred grass and seeds of plants from damp ground which may represent bonfire activity, while a considerable quantity of charred cereal grains from the post-hole of a four post structure at Micklefield Site M included barley, oat and wheat – the last two not confirmed as cultivars (Druce 2007, 361-62). Sites along the A1-M1 Link road also provide some carbonised plant evidence: at Swillington Common four grain-rich deposits included emmer wheat and barley, at Parlington Hollins east a limited amount of wheat and weed remains was present together with chaff which may indicate a producer function for the site (Holden 2001, 221). While the plant remains record for Iron Age West Yorkshire is now greater than it was, at present there is insufficient evidence to allow the analysis of crop husbandry practices such as has been done for north-east England (Huntley 2002, 85).

Iron working

The use of iron slag, probably from smithing, as a tempering agent in vessels of late pre-Roman Iron Age or native style Roman pottery was noted at Dalton Parlours (Buckland *et al.* 1990, 132-34), and has since been observed in sherds from Ledston, Ferrybridge and Swillington (Evans 2001, 173). Although an example of slag-tempered Iron Age pottery has recently been found at Scorton, North Yorkshire (Manby 2007), the comparative abundance of this material in West Yorkshire suggests either that the industry may have been based in West Yorkshire or that there was a local preference for the use of slag as a tempering agent in pottery.

Chronology

A series of large-scale excavations has provided a body of information relating to the chronology of pre-Roman Iron Age settlement in West Yorkshire.

Radiocarbon dating confirms that much of the evidence for preRoman Iron Age activity can be assigned to the latter part of the period, although further structural and artefactual information is required to confirm the sequence.

Absolute dating

Site M at Micklefield produced a range of C14 determinations which cluster within 400 – 200 cal BC range. As with many radiocarbon dates from features sampled in the A1DBFO, Holmfield Interchange and other projects, this period corresponds with the lengthy plateau on the calibration curve (Brown *et al.*, 2007, 83 and fig. 192; Stuiver 1998; Roberts 2005, 194). This presents a problem in establishing a precise chronology for the period 400 BC to around 70 AD, after which time the small quantity of Romano-British material allows a more precise chronology to be established (Roberts 2005, 194). As has also been suggested by the EH Regional Scientific Advisor, radiocarbon dating programmes need to be carefully considered and explicit with regard to the nature, amount and context of the dated material. Radiocarbon dating should particularly focus on sequences which internal site evidence suggests may be anticipated to belong to the earlier pre-Roman Iron Age. Pottery and querns have been considered above, opportunities to maximise artefact recovery should be accompanied by related radiocarbon dating strategies.

Relative dating

An apparent predilection to avoid intercutting pits and other features on settlement sites of the Iron Age can make it difficult to establish excavated feature sequences and analysis shows that in a number of cases alternative interpretations can be validly proposed. The possibility of establishing site sequences should be considered as a primary objective when examining sites of probable pre-Roman Iron Age date, and that might include not only examining junction points, but also the excavation of extended sections of cut features so as to maximise the retrieval of artefacts. Opportunities to examine surviving earthworks may also exist, notably in areas where there has been limited intensive agriculture, such as woodland or moorland pasture. The possibility of earthwork survival as part of, or beneath, existing earthwork boundaries should also be considered, while the full range of artefactual evidence should be assessed when reviewing the evidence for structural sequence.

7. THE LATER PRE-ROMAN IRON AGE: RESEARCH AGENDA

An over-arching consideration is the possibility of a later pre-Roman Iron Age in West Yorkshire which might differ in a number of ways from that of surrounding areas.

The sequence of enclosure history extending from segmented ditches through pit alignments to gullies and ditches needs to be tested, while the extent of enclosure and its relative distribution and history across the variant geological zones of West Yorkshire remains to be established.

Settlement morphology retains many puzzling aspects: to what extent is enclosed settlement typical? How much unenclosed settlement was there? And how do these two settlement types relate to the 'zoned' sites at Ledston and Micklefield Site M, where settlement seems very limited in comparison with the number of pits. If ritual can be separated from settlement in this period, are these sites settlement or ritual? At present there is not sufficient evidence to establish site function on the basis of morphology, but the presence of recurrent suites of features may inform excavation strategies.

Ritual and burial appears to be a significant feature of the pre-Roman Iron Age in West Yorkshire, while quern typology also suggests cultural traits which are particular to the area. Can similar traits be seen in enclosure and settlement features such as the pit alignments?

Strategies for the excavation of linear features need to be reviewed: enclosures, droveways and fields appear to have been accorded different depositional patterns while attention may have focused on particular locations, for example junctions and entrances.

Excavation should have regard for the possibility of the slight survival of above ground earthwork evidence as well as surviving stratification: this should be properly excavated with prior recording of earthwork profiles. In particular, the possibility of better survival beneath existing field boundaries should be considered.

To what extent is the pattern of use of pottery and other artefacts similar to, or different from, that seen in adjoining regions? In addition to extra-regional comparisons, specific retrieval and analysis techniques may be necessary in order to make best use of the evidence.

Despite the extent of recent excavation there has been very limited recovery of palaeoenvironmental evidence, a reflection of cropmark sites and well-drained soils. There may be opportunities for the recovery of better information from buried soils on earthwork sites. Faunal assemblages from ditches, pits and other features may differ significantly and should be processed so as to identify differences. The possibility that plant macrofossil assemblages may share these differences should also be borne in mind.

All reports on pre-Roman Iron Age pottery assemblages should include clear definitions of fabric types and their relative proportions by sherd count and weight and if possible minimum number of vessels. Reports should contain illustrations of all diagnostic pottery and other finds.

Priorities outside the development control framework

- Complete the Yorkshire quern survey for West Yorkshire.

- Review the earthwork evidence with a view to identifying potential pre-Roman Iron Age sites.
- Targeted excavation of selected earthwork sites with a view to recovering ecofact and artefact assemblages.

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