

**The Rock-art Landscapes of Rombalds Moor,
West Yorkshire:
Standing on Holy Ground**

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Abstract

This study adopts a landscape approach to all the rock-art sites on Rombalds Moor in West Yorkshire, 252 unmoved sites, to consider views of and from the sites. British rock-art is generally believed to date from the later Neolithic to the later Bronze Age, but a case is made for it perhaps beginning in the later Mesolithic.

What is known of environments for the Moor over this whole period provides a basis for a reconstruction of rock-art landscapes. A case is made for the applicability of ethnography from the whole circumpolar region to the personal construction of people's landscapes in prehistoric Britain.

All sites were visited, and the sites and their views recorded, both as written records and as photographs. The data was analysed at four spatial scales, from the whole Moor down to the individual rock.

Several large prominent carved rocks, interpreted as natural monuments, were found to be visible from many much smaller rock-art sites. Several clusters of rock-art sites were identified. An alignment was also identified, composed of carved stones perhaps moved into position, and other perhaps-moved carved stones were also identified. The possibility that far-distant views might be significant was also indicated by some of the findings.

The physicality of carving arose as a major theme. The natural monuments are all difficult or dangerous to carve, leading to considerations of risk, including being seen to embrace risk. Conversely, the more common, simple sites mostly required the carver to kneel or crouch down. This leads to comparisons with what is known of North American rock-art, where some highly visible sites were carved by religious specialists, and others, much smaller and inconspicuous, were carved by ordinary people. This was not an expected finding for British rock-art, and further research is indicated.

Acknowledgements

I came to Archaeology rather late, from a career in NHS Mental Health Services. In retrospect, this is curiously similar to Archaeology, in that the key skills involve listening to people talking about their lives and experiences, and trying to understand them in their own terms, from their own point of view, and not my own. In Archaeology, the remains of material culture become the discourse, and invite us to understand people in the past in their own terms, and not our own.

In 2009, I came to the University of York as a mature student to do a BA in Archaeology; the environment was both intellectually exciting and personally supportive and welcoming. I am particularly grateful to Penny Spikins, whose book *Prehistoric People of the Pennines* inspired me to apply to York in the first place, and to all my teachers, especially Steve Ashby, Geoff Bailey, Mark Edmonds, Kate Giles, Aleks McClain, Nicky Milner, Terry O'Connor, and Kevin Walsh, who taught me to write an essay and have an opinion, not at all encouraged in medical training. For my Dissertation topic, I chose to investigate the rock-art on the hills above the Washburn Valley, north of Wharfedale, and learned a lot from not doing it very well, partly because the sample size was too small, and I don't think I was asking the right questions. It was all so much fun, in a deeply serious way, that I went on to postgraduate work, initially a Masters by Research, which with my supervisors' support, transmuted into this doctoral research project.

I could not possibly have done this on my own, and I have many people to thank.

My husband Phil, and my children, Eleanor, David and Rosy, have seen many stones in fields over many years, and though they may not have been very impressed, they have been immensely supportive. I particularly thank Eleanor Deacon, spreadsheet queen, for help with making the Recording Sheets and making and managing the Excel spreadsheets. My husband Phil Deacon was my field companion throughout, and managed and maintained the photos; I could not have done this without him.

Keith Boughey is the co-author, along with Ed Vickerman, of the most frequently cited work in this thesis, and the champion of the rock-art of Rombalds Moor for this generation. His teaching and guidance on recognising rock-art were invaluable, and I

am also very grateful for his personal interest in this thesis. I am also very grateful to Joy Bannister, whom I have never met, whose sterling but unpublished work on the environments and archaeology of Rombalds Moor deserves to be better known. Like me, she seems to have tramped around the Moor with her husband, working largely on her own, developing a relationship with the Moor as a singular but ever-changing entity.

Louise Brown co-lead the Stanbury Hill work, and then moved on to head up the Rombalds Moor Carved Stones Investigation (CSI), and I am very grateful for her interest in this project, and in making available the preliminary results of the CSI work.

I am also very grateful to David Brown, Senior Forest Manager, Tilhill Forestry Ltd, for access to Rivock, and to Richard Stroud, independent rock-art researcher, who told me that you can see Coniston Old Man from Rivock Nose.

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Mark supervised this thesis from the outset, and came out to the Moor one brisk autumn day early on, as my ideas about natural monuments were just developing. He subsequently left York, and continued to supervise from his home on Orkney via Skype and email, reading and commenting at length on the chapters and their repeated revisions, over the six years that this work has taken. His own work on the Neolithic and Neolithic landscapes has been inspirational, his constant good humour, support and advice have been invaluable, and I am very grateful.

Author's Declaration

I declare that this thesis is a presentation of original work and I am the sole author. This work has not previously been presented for an award at this, or any other, University. All sources are acknowledged as references.

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Accompanying Material: DVD Appendices

A DVD of Appendices too large to print out is attached. Its contents are

- (i) An introduction to the DVD Appendices
- (ii) Excel spreadsheets: Study Main Database and Natural Monuments
- (iii) All Photos: fieldwork photos of the stones and their views, and, where views were obscured, GIS-derived viewsheds
- (iv) All Chapter Maps, allowing them to be zoomed for closer viewing

Preface



Preface illustration: 41/DSS 01 Doubler 1.

Image: P Deacon.

*I can't pass a rock
like you
without being mystified
or hypnotized*

*They represent the
world by their presence
wisdom has no
relationship to size*

*I have heard stories
of rocks
and have known some
rocks personally*

*One time, perhaps many times
a man became a rock
thinking that a fine way
to gain immortality*

Tauhindali (1979; College of the Siskiyous, nd).

Laktcharas Tauhindali, also known as Grant Towendolly (1873-1963), was a poet and artist. His poetry was not published till after his death. The poem is quoted in Theodoratus, DJ & LaPena, F (1994).

The Rock-art Landscapes of Rombalds Moor, West Yorkshire: Standing on Holy Ground

Chapter One: Introduction

1.1 Background to the study

The study of British rock-art is now very much focused on examining rock-art within its landscape context. Bradley (1997), perhaps the first to bring this approach into prominence, was very critical of studies that concentrated only on details of motifs, saying that the study of rock-art should be part of an archaeological approach that illuminates how people in prehistory inhabited their landscapes (1997, 5 & 8).

Chippindale & Nash (2004), discussing studies world-wide, say that the landscape context of rock-art is a key part of any interpretation, and Waddington (2007a), reviewing rock-art studies in Britain, agrees. Jones, a key figure in British rock-art studies, says that the people who made rock-art saw their landscape, including their rock-art, as a unity, and as animate (eg Jones, 2001, 2012; Jones, Freedman, O'Connor *et al*, 2011). The interpretive studies carried out by Bradley (1997), and by Jones *et al* (Jones, Freedman, O'Connor *et al*, 2011) have the landscape position of rock-art at their heart. Bradley's study (1997) mostly concerned Argyll and Northumberland, though it does touch on Rombalds Moor (1997, 95), and more recently, Jones and colleagues' work examined rock-art in its landscapes in Argyll (Jones, Freedman, O'Connor *et al*, 2011). Both these studies consider, amongst other things, views from and of rock-art sites.

They did not, however, consider the views from and of *all* the carved stones in their respective study areas; the Australian rock-art scholar Robert Bednarik has criticised as unscientific many landscape-based studies for this reason (eg Bednarik, 1990, 2000). This study, then, was conceived as an examination of all the extant rock-art within the study area, looking at the views from and of the rock-art sites. This generated a key statement:

British curvilinear rock-art, though probably not all of it, was made in relation to its position within the landscape, particularly in connection with views, both from and of rock-art sites.

A fieldwork-based methodology was developed to interrogate this central statement, based on visiting all the stones in the study area, and recording the views. This study then became almost a journey from the simple original statement into hypotheses and research questions concerning relationships at four different spatial scales of landscape. The question as to whether or not views were even possible required careful exploration. The interpretation of the results led to a number of insights, and also led to a consideration of the physicality of carving and the embodied engagement of the carver with the rock, which have not, to my knowledge, previously been explored for British rock-art.

Many publications in British rock-art studies focus on fully recording both known and newly discovered rock-art sites, but do not offer much interpretation. This work is of course extremely valuable, indeed essential, for rock-art is being lost by processes of erosion, overgrowth of vegetation, field clearance, development and other practices.

Unfortunately, in general, the study of rock-art has always been rather marginalised in British archaeology, although it is both abundant and accessible. Because it cannot be directly dated, and is often quite isolated from other archaeology, it is perhaps seen as lacking in context and inherently unreliable. Yet today, much of it stands in largely undeveloped upland, exactly where it was made in prehistory, in a landscape whose topography is probably not much altered; and something of its environments can be recovered. Many of the spatial relationships which existed in prehistory, between sites and other sites, monuments, settlements, or natural features in the landscape are still there, although rock-art is a more vulnerable resource than it might seem (see below). Rock-art in its landscapes can indeed tell us something of how people lived in prehistory, if we ask the right questions.

This project grew out of a study carried out for my BA Dissertation, examining rock-art on the hills west of the River Washburn, a northern tributary of the River Wharfe; it raised more questions than it answered (Deacon, 2012). The study reported here began as a project for an MA by Research, but after a year, this transmuted into a

doctoral research project on all the rock-art on Rombalds Moor, over 250 sites, adopting a landscape archaeology approach.

Rombalds Moor is a circumscribed and relatively small area, a rock-art landscape which has been widely studied, in terms of its environment (eg Bannister, 1985; Berg, 2001; Boughey & Vickerman, 2003, 6-9; Yarwood, 1981), its prehistoric and later archaeology (eg Cowling, 1946; Keighley, 1981; Vyner, 2008), and specifically its rock-art (eg Boughey & Vickerman, 2003 & 2013; Brown, Boughey *et al*, 2013; CSI Rombalds Moor, nd; ERA England's Rock Art; Hedges, 1986).

As well as a discussion of rock-art studies and Rombalds Moor itself, Boughey & Vickerman's two publications (2003, 2013) include gazetteers of all sites known at that time, and those works made this project possible. Their work covers not just Rombalds Moor but the whole of the old West Riding of Yorkshire, with a discussion of all the sites and motifs, environments, other archaeology, and landscapes of rock-art (Boughey & Vickerman, 2003, 1-46).

During the time the fieldwork for this project was being carried out, the Rombalds Moor Carved Stones Investigation group (CSI) completed and reported their survey of the sites and panels using more modern techniques than had been available earlier (CSI Rombalds Moor, nd); their work is available on the England's Rock Art website (ERA England's Rock Art, nd). Their brief did not cover any interpretative work (Louise Brown, 2014, *pers comm*).

There are no recent environmental studies of Rombalds Moor. However, the comprehensive reviews of West Yorkshire's prehistoric environments (Keighley, 1981) and its prehistory (Yarwood, 1981), cover Rombalds Moor; and Bannister's unpublished PhD thesis (1985) on the vegetational and archaeological history of the Moor, includes the prehistoric period. Rombalds Moor can also be compared to other upland areas where similar work has been carried out, such as the south Pennines (eg Spikins, 1999), and the North York Moors (eg Simmons, 1990; Simmons & Innes, 1996).

1.2 Notes on terminology

Words may come with their own baggage, and it is important to be aware of this so as to avoid perhaps unconscious assumptions. Such terms include ‘marginal land’, ‘settled landscape’ and ‘fertile areas’, which are used in much of the interpretive work on British rock-art, and further terms such as ‘shamanism’ and ‘vision quest’. These are scrutinised very carefully in this thesis, as they may be reflecting modern understandings rather more than they reflect attitudes held in prehistory.

1.2.1 Gendered language

In western USA, some rock-art sites were gendered: some places, especially high places, were reserved for men to make rock-art, with other sites, especially lower places in valleys, being reserved for women (Whitley, 1998). In Britain, though, we do not know if women made rock-art, indeed we do not *know* that men made rock-art either, as there is no specific evidence about the gender of either the carvers or audiences of British rock-art. I have therefore avoided gendered language, although this leads to a certain number of verbal infelicities. I have for example used the pronouns ‘they’ and ‘themselves’ as singular pronouns; although clumsy, this seems to be acceptable particularly in American usage, and increasingly in the UK as well.

1.2.2 Acronyms and Abbreviations

In the text, acronyms and abbreviations are mostly avoided, though occasionally used for brevity, but are used regularly in tables and in maps (Table 1 below). Hyphens, joining strings of words together, have been used to emphasise that the term is different from the sum of its parts, thus *rock-art* and *cup-and-ring*.

In the maps, clarity is paramount, and compromises have to be made; many of the maps are clearer on screen (all the OS maps are included in the DVD Appendices) than in the printed thesis. No label ever covers a symbol for a carved stone, though the legend block may do so.

Abbreviation	Full term
B&V	Bouhey and Vickerman
BA	Bronze Age
CAR	cup-and-ring
CSI	Rombalds Moor Carved Stones Investigation
ERA	England's Rock Art (website)
GCS	Green Crag Slack
GL	ground-level
HER	Historic Environment Record
IMLT	Ilkley Moor Lower Terrace
Meso	Mesolithic
Neo	Neolithic
US	upstanding
WYAAS	West Yorkshire Archaeology Advisory Service

Table 1 Abbreviations used in the thesis.

For the sites, full numbers (B&V number/CSI number, eg 110/SH 13) are used where space permits, but abbreviations, as in Table 1 above, are sometimes used to avoid long labels obscuring other features. The motif symbols are hierarchical (see Chapter Five for a discussion of this decision), and the following terms are used:

All Stones: all carved rocks in the Study Main Database, (or other database as otherwise specified).

Cups only: all cups-only carved stones in the particular database; a stone may have grooves as well.

All CAR: all cup-and-ring carved stones in the particular database; a stone may have cups and/or grooves as well.

1-ring CAR: all carved stones in the particular database where the maximum number of rings in a cup-and-ring is one; the stone may have cups, and/or grooves as well.

2-ring CAR: all carved stones in the particular database where the maximum number of rings in a cup-and-ring is two; the stone may have 1-ring cup-and-rings, and/or cups, and/or grooves as well.

3+ring CAR: all carved stones in the particular database where the maximum number of rings in a cup-and-ring is three or more; the stone may have 2- and/or 1-ring cup-and-rings, and/or cups, and/or grooves as well.

1.2.3 Place and site names, and numbering the stones

Examination of the OS maps for this area show that many areas of Rombalds Moor have names, but one part of the Moor, referred to repeatedly in the text, has no name as such. It is part of Ilkley Moor, the terrace level below Green Crag Slack, and I refer to it as *Ilkley Moor Lower Terrace*, often abbreviated to *IMLT*.

Similarly, several features on the Moor are unnamed. There are three very large round cairns on the Moor top; two of them are the Great and Little Skirtfuls of Stones, but the third, on the very highest part of the Moor, is so overgrown that it seems to go largely unnoticed: I refer to it as the *Moortop Great Cairn*.

The numbering system for the carved stones is discussed in detail in Chapter Five, but essentially incorporates the very different systems of both Boughey & Vickerman (2003, 2013) and CSI (ERA England's Rock Art, nd). Many of the carved stones have well-established names, and I have used them alongside the Boughey & Vickerman and CSI numbering systems; they make the text easier to read. I have not devised names for any of the carved stones, though I refer to 355/GCS 13 Haystack 2, also sometimes called the Little Haystack, as H2 to avoid confusion with 302/PR 05 the Haystack. A single uncarved stone became salient to the discussions in Chapter Seven; as an uncarved stone, it would not be appropriate to give it even a provisional number, and I have named it the *Sentinel* for the purposes of this study.

One previously undescribed carved stone was discovered during the fieldwork, and given a provisional number (224a/CSE 05) fitting in with the schemes used by Boughey & Vickerman (2013, 2) and by CSI to name new stones. The stone has been reported to Keith Boughey, who is reviewing all 'new' stones with a view to adding them to the catalogue if he thinks it is appropriate.

Chapter Eight deals with small clusters of carved stones and two possible alignments. None of these had been named, so names for all of these had to be devised for this

study. All are named after the area in which they stand, or a central, already-named carved stone; they are listed in Chapter Eight.

1.2.4 Words transcribed from other languages

Some anthropological and ethnographic terminology is complicated by the use of words from the languages of non-literate peoples, where different scholars have used different spellings. In this thesis, this is notable when discussing northern Scandinavia. Here, to avoid confusion, a consistent spelling is used, though it is sometimes different from the spelling used within some of the cited works (Table 2 below); the spellings chosen follow the work of IM Mulk (eg 1994), herself a Sami.

Spelling Variants	Definition	Spellings used herein
Sami, Saami	hunter-gatherers of northern Scandinavia and north-western Russia	Sami
Sapmi, Saepmi	area of Lappland inhabited by Sami peoples	Sapmi
seita, sieda, sieddje	a Sami shrine	sieddje

Table 2 Words transcribed from languages of northern Scandinavia.

1.3 Structure of the thesis

In the first part of the thesis, Chapters Two, Three and Four, the academic background to the research is discussed and critiqued, and is followed by Chapter Five, setting out and critiquing the study methodology.

As discussed in Chapter Three, people may perceive landscape at different spatial scales, sometimes different spatial scales simultaneously, and so a methodology was developed which could also examine rock-art landscapes at different spatial scales. The results are presented at these scales in Chapters Six, Seven, Eight and Nine, starting at the scale of the whole moor, and working down through two intermediate scales to the scale of the individual rock. Finally, in Chapter Ten, inasmuch as this is

possible, the results are gathered together in a holistic discussion of the rock-art of Rombalds Moor.

1.3.1 Chapter Two

This begins with some key definitions, then goes on to examine the distribution of sites of British rock-art, and the major motifs. There then follows a discussion of what is known about the chronology of British curvilinear rock-art. Both of these discussions lead to some doubts about how solid our current understanding might be. The probably disproportionate loss of rock-art at lower altitudes makes less secure our conceptualisation of rock-art as a feature of undeveloped upland. The interesting possibility that some rock-art has probably been moved in prehistory is also raised here; also introduced here is the problem of just how visible rock-art sites might have been.

As rock-art cannot be directly dated, there are considerable problems in arriving at a clear or definite chronology. The current position is discussed and explored, including a discussion of why hunter-gatherers have been ignored, perhaps inappropriately, as possible makers of rock-art in Britain.

1.3.2 Chapter Three

This chapter begins with a consideration of theoretical understandings of landscape, including phenomenology, with a discussion of how 'views' might have been construed in prehistory. There is then a critical review of work on environments, inhabitation and movement during the periods of prehistory relevant to the making and using of rock-art.

The next section introduces the involvement of belief systems in the formation of landscape, and it is argued that some ethnographic evidence, despite originating from well outside Britain, is of relevance to an understanding of British rock-art. Ethnographic evidence from northern Europe and beyond shows that people's world view was that ideology and belief were completely enmeshed with the functional aspects of life. Further to this, and with some diffidence, the terms animism, shamanism and vision questing are introduced, and it is suggested that similar beliefs

and behaviours might have been connected to the making and use of at least some British rock-art.

A consideration of routes and views revisits questions around the visibility of rock-art, and whether views were possible, and also introduces the possibility of the active management of sites to provide the required visibilities.

1.3.3 Chapter Four

This introduction to Rombalds Moor covers the geology, and the environments of Rombalds Moor, both present-day and in the past. The discussion of the changing environment of the Moor shows the difficulties of trying to understand the vegetational settings of rock-art sites and rock-art areas, and thus whether views were possible, given the rather general environmental evidence.

There is then a discussion of what is known of the archaeology of the Moor, and its rock-art. Rombalds Moor is now largely moorland, but in the past was used extensively for rock and mineral extraction, and these have left their scars on the Moor, complicating interpretation of prehistoric features. Much of the Moor is now used for countryside leisure, pasturing sheep, commercial forestry, or for grouse-shooting, all of which impact on the modern vegetation.

The study area also includes a lower-lying area around the Moor, mostly cleared rough pasture, in which some rock-art is also found. Many of these sites are obviously survivors of clearances, leading to a consideration of whether rock-art was once more widespread.

1.3.4 Chapter Five

The methodology chapter reviews previous approaches, as well as laying out what was done in this work, both in the field, and how the results of the fieldwork were handled and interpreted. The long discussion of the use and problems of GIS in this chapter should not be taken as implying that this is a GIS study of a rock-art landscape: this is a fieldwork-based study, and GIS was used only to reconstruct impeded views, and to aid in the presentation of the results.

1.3.5 The Results: Chapters Six, Seven, Eight and Nine

The four results chapters reflect the decision to examine rock-art at four different spatial scales, from the scale of the whole Moor in Chapter Six, down to the scale of the individual rock in Chapter Nine. Chapters Seven and Eight consider Rombalds Moor rock-art at two intermediate scales. This approach emphasises that rock-art could be 'working' at several scales simultaneously, with different meanings and relationships at different scales.

Relationships between sites, between sites and natural features, and between sites and monuments are discussed. Also discussed are relationships between motifs, and between motifs and the rocks themselves. A question arising from this is whether some cups were added later in the sequence to already-carved panels; these cups might look extraneous to the main design, and the reader is encouraged to look out for this (and sometimes prompted) throughout the illustrations.

Arising from this is a discussion about the relationships between the carver and the site, and between carvers and audiences, leading perhaps to some insight about social relations as they pertain to rock-art, during the time that rock-art was being made and used.

1.3.6 Chapter Ten

The key findings are reviewed and critiqued, along with suggestions for future research. The approach is to recombine the results previously presented at four spatial scales, to provide holistic interpretations of the rock-art of the Moor.

1.3.7 Appendices

The printed Appendices are found at the end of the printed thesis, and include: CSI locale abbreviations and full names; lists of stones excluded from the Study Main Database from Boughey & Vickerman 2003 & 2013, and from CSI; details of Bannister's pollen findings on Rombalds Moor (1985), including conversion of her dates in radiocarbon years BP to cal BC using CalPal (Weninger & Jöris, 2007); the four

Study Recording Sheets; and details of carved stones with no cups, standing in puddles, and with cracks.

A second group of Appendices are included on a DVD affixed to the inside back cover of the thesis. These include the Excel spreadsheet, too large to print, of the *Study Main Database*, including the *Natural Monuments*; and *All Photos*, too numerous to print, with photos of sites and views taken during the fieldwork, plus viewshed maps when views in the field were obstructed. A further document, *All Chapter Maps*, contains all the smaller scale maps from the chapters, allowing the reader to read the printed thesis whilst viewing the relevant maps on-screen at a rather larger size than possible as a printed illustration.

1.3.8 Bibliography: a note on references to websites

References are made not infrequently to the very large websites, ERA England's Rock Art, and Historic England. The ERA website, only a part of the much larger Archaeology Data Service website, contains details of the carved stones in the database here, as well as details of the Northumberland stones, and very useful background material to rock-art studies in general. It has its own internal search function for the stones, each stone occupying several webpages, and the reader should type in the stone's CSI number, with the locale in full if possible (see Appendix 1 for list of CSI abbreviations and full locale names, eg HS 01: Hawksworth Shaw 01). To avoid a very considerable proliferation of such references, the reader is referred to the ERA homepage, and can then use the menu on the left-hand sidebar or the website's internal search engine. Similarly, the Historic England website contains details of many of the prehistoric sites on Rombalds Moor, and again has its own search engine.

1.4 The future of British rock-art, and British rock-art research

Whilst carrying out the fieldwork, it became very clear how rapidly erosion is now damaging some of the panels. There are sometimes clear differences between recent photos and those taken less than 50 years ago (Fig 1 below).



Fig 1 Erosion of motifs: 62/RV 18, Rivoock.

Left: photo taken before 1986. Right: photo taken 2013, showing obvious loss and blurring of motifs throughout. Images: Left: Hedges, 1986, 56. Right: Author & P Deacon.

Conservation issues have been much considered and discussed, though earlier attempts at active conservation have unfortunately often involved techniques that either do not work, or make damage to the panels worse (Barnett & Díaz-Andreu, 2005; Darvill & Fernandes, 2014; Goldhahn, 2008; Jefferson & Jefferson, 2010). Space here allows for only a brief discussion of these important issues. Broadly speaking, threats to rock-art come from natural processes including atmospheric pollution, climate change, and vegetation, as well as human behaviour at or around the carved stone itself (Giesen *et al*, 2014; Jefferson & Jefferson, 2010; Fig 2 below).

Scheduling of ancient monuments, including rock-art, gives panels a degree of legal protection from deliberate destruction, development, planning applications and so forth. However, it does not protect sites from casual human interference, whether deliberate, such as graffiti, or accidental or negligent, such as allowing grazing animals in a field with ground level panels (Darvill, 2014; Foster, 2010; Robinson, 2012).

There is also a tension between encouraging public access, and ‘hiding’ rock-art. Increasing public access may increase interest, in general a good thing, but it also exposes rock-art to the risk of being graffitied and casually damaged, for example by people walking over panels (Darvill, 2014; Sharpe, 2014). Sometimes, portables are even stolen; the author is aware of two such cases, one on Rombalds Moor, where a portable has vanished from a cairn on Stanbury Hill.



Fig 2 Problems due to public access.

Top left: Tourists on top of 302/PR 05 the Haystack. It is quite a scramble to get up: scrapes from boots are a hazard to the rock surface.

Top right: Triangular graffito on 384/WB 18, a stone with six cups, one much larger.

Bottom left: Detail of the roughened surface of 212/PC 01 Piper's Crag, which may have been 'cleaned' by scouring, or by chemical agents.

Bottom right: Recent graffiti on 314/CC 06.

Images: Author & P Deacon.

There are no easy answers to these problems; moreover all stone will eventually erode away, and even reburial of panels will only slow erosion and not end it (Jefferson & Jefferson, 2010). Removing panels to a museum is no answer, as it destroys the landscape context, treating a panel as simply art; as Bahn says (2010, 150), 'this kills it'. Some workers suggest that the only realistic approach is to accept the inevitable, and fully record the panels before they are lost (Darvill & Fernandes, 2014; Janik, 2014). This makes ongoing research projects ever more important.

Chapter Two: Encountering Rock-art

2.1 Introduction

When we encounter rock-art today, we perceive it within a 21st century landscape of our own making, both in terms of the environmental conditions in which it stands, and our modern-day conception of landscape (Fig 3 below).



Fig 3 Rombalds Moor environs: view east from HAW 01.

The view extends over the highest part of the Silsden Gap, to the western flanks of Rombalds Moor, mostly cleared rough pasture. The vegetation would have been very different during the time rock-art was made and used.

Image: Author and P Deacon.

All major British rock-art specialists now stress the need to approach rock-art within its landscape, though in the past this was not the case (Last, 2010; Chapter One section

1.1). Antiquarian studies of British rock-art, and some more recent European studies (eg Anati *et al*, 2014), looked in great detail at rock-art motifs rather in isolation, and to the exclusion of other aspects of life in prehistory. Bradley (1997, 5 & 8) has critiqued this approach as sterile and detached from archaeology, saying that the study of rock-art should be a way in to understanding how people in prehistory inhabited and interacted with their landscape.

Drawing on studies from all over the world, Chippindale & Nash (2004) state that the landscape position of rock-art is centrally important in any attempt at interpretation. Waddington (2007a), in his major review of British rock-art studies, simply presumes that rock-art should be approached in its landscape context, and Jones' entire approach (eg 2001; 2012) is that the people who made and used rock-art perceived their landscape as a unity, as animate, and containing, amongst other things, rock-art (Chapter One section 1.1 above). Bahn (2010, 150) goes even further, saying 'it is catastrophic to remove rock art from its original site...this "kills" it'.

However, our modern-day landscapes are not the landscapes of prehistory: any interpretation of rock-art landscapes must rest first on a reconstruction, as far as possible, of the landscapes of the people who made, used, reworked and lived alongside rock-art. To do this, we need to include data on the motifs, sites and distribution of rock-art, with related palaeo-environmental data, and an understanding of the chronology of the making, use, reworking and final going out of use of rock-art.

A full discussion of landscape, how it might have been constructed in the past, and how we might today attempt to understand and reconstruct ancient landscapes, is the subject of Chapter Three. It is a complex issue: the way people perceive, conceptualise and interact with their environment underpins their construction of landscape. Different peoples in essentially the same environment might do this very differently, and thus construct their landscapes very differently.

This chapter sets the scene, beginning with some key definitions. There follows a discussion of sites and distribution, and a consideration of the major motifs and how best to classify these. There then follows a review of the history of rock-art studies in Britain, moving on to consider the first of the major areas of difficulty in understanding rock-art: chronology and time.

2.2 Definitions

I have followed the definitions laid out by Darvill *et al* (2000, 13):

Rock-art: *any artificially created mark that is cut, engraved, incised, etched, gouged, ground or pecked into, or applied with paint, wax or other substances onto a rock surface.*

Site: *a place where rock art occurs (without prejudice to physical size or extent).*

Panel: *any spatially delimited rock surface with symbols or designs (there may be several panels within a site); it provides the main unit of record for the purposes of identification and analysis.*

Motif: *a repeatedly occurring artificial mark within a panel, e.g. spiral, cup and ring; an individual panel may comprise one or more motifs.*

Darvill and colleagues go on to discuss how best to classify motifs, acknowledging the difficulties with this, and opting for a simple, rather than complex classification: cups, cup-and-rings, grooves, and miscellaneous, usually rare, motifs. They acknowledge that some workers think there should be further subdivisions, particularly in the cup-and-ring group. Bradley, and other workers including Jones' group in Argyll, and Boughey & Vickerman, have opted to use more complicated classifications, as does the ERA website, which includes the Rombalds Moor CSI data (Boughey & Vickerman, 2003 & 2013; Bradley 1997, 77; CSI Rombalds Moor, nd; ERA England's Rock Art, nd Freedman *et al*, 2011). This is an issue returned to in Chapter Five, but essentially I have followed Darvill and colleagues (2000, 30), and used a simple classification.

The word 'art' also requires some consideration. Ingold (2000, 111) cautions us against the unthinking use of 'art' in connection with the carvings, paintings and other such work produced in prehistory. Many writers agree, saying that the term 'rock art' is unsatisfactory, and accept the word 'art' only reluctantly: today it implies a matter of aesthetics, most unlikely as the only, or even major, explanation of 'rock art' (Bednarik, 2013; Bradley, 1997, 4; Chippindale, 2001). However, it has become the usual term, and I have followed Chippindale & Nash (eg 2004) in hyphenating it, to emphasise that the term 'rock-art' is different from the sum of its parts. The words 'rocks' and 'stones' and 'boulders' are used interchangeably.

2.3 Sites and Distribution

In mainland Britain, rock-art is mostly found between Strath Tay in the north and the Peak District in the south. There are large concentrations in the north-central and north-eastern Pennines of Yorkshire, County Durham, and Northumberland, and in the North York Moors; in Scotland, in Argyll, Loch Tay and Dumfries & Galloway. These are all areas in which many cup-and-ring motifs are found, as well as cups and grooves, with over 1000 panels in each of Yorkshire, Northumberland, and southern and western Scotland. However, even in areas where cup-and-ring motifs are found, the most commonly occurring motif is the cup (Bradley, 1997, 72; Brown & Chappell, 2005; Freedman, Jones & Riggott, 2011; Mazel, 2007; Morris, 1977; Waddington, 2007a; Fig 4 below).



Fig 4 Distribution of rock-art in Britain.

Areas with major concentrations of rock-art are shown.

In Scotland: Argyll, Loch Tay and Dumfries & Galloway.

In England: Northumberland, North York Moors, the Eastern Pennines including Rombalds Moor, the Peak District.

Image: ©Crown copyright/database right 2016. Ordnance Survey/EDINA supplied service.

Rock-art is rare in England south of the Peak District, and no reports at all could be found for south-eastern England or East Anglia. In rock-art areas where there are very

few, or no cup-and-ring sites, that is, where there are essentially only cups-only sites, the density of sites is lower. There is some rock-art, mostly cups-only, in Cumbria and Wales, in the south-west peninsula of England, and in Scotland, north of Strath Tay in Aberdeenshire (British Rock Art Collection, nd; Jones, 2003; Jones & Kirkham, 2013; Nash, 2007; Nash *et al*, 2005; Ritchie, 1918; Sharpe, 2007, 212).

Rock-art sites are usually classified as outcrop, rock sheet, or earthfast boulder. The carvings are frequently made onto horizontal or near-horizontal surfaces, at, or close to, ground level, and in areas that are themselves roughly horizontal. Some rock-art motifs are also found on monuments, and on small portable stones in cairns (Bougey & Vickerman, 2003, 38; Bradley, 1997, 72; Waddington, 2007a). In practice, it is often difficult to classify ground-level sites as outcrop, rock sheet or ground-level earthfast boulder, a difficulty returned to in Chapter Five section 5.4.3.

Furthermore, some earthfast boulders may not be earthfast at all, and may have been moved in prehistory. Brown, Bougey, Paley *et al* (2013), during excavations on Stanbury Hill, Rombalds Moor, excavated around a moderately-sized carved stone, whose base was found to be uneroded and sharp. They concluded that it had probably been quarried elsewhere, and moved to its site; before excavation, it had appeared wholly naturally placed (see Chapter Four section 4.5 below). This raises the possibility that other apparently earthfast boulders may have been moved as well.

Rock-art is sometimes found associated with ceremonial monuments such as standing stones and stone circles. This may represent the re-use of open air rock-art, such as Long Meg, a standing stone in Cumbria (Frodsham 1996); at other sites, motifs seem to have been made onto the monument itself, for example some of the standing stones at Ballymeanoch in Argyll (Jones & Riggott, 2011). Burial monuments may also incorporate rock-art, such as previously carved slabs in cists, and portables, small carved stones usually found in cairn material. Some larger carved stones are occasionally found as the nucleus of a cairn, or as a cairn kerbstone apparently moved into the cairn. Ancient walling may also incorporate carved stones (Frodsham, 1996; Jones & Riggott, 2011; Waddington, 2007a). Whether the presence of carvings was part of these various choices is unclear, and discussed in Chapters Three and Four.

British curvilinear rock-art is usually described as being found in upland areas of Britain (Beckensall, 2002b; Bradley, 1997, 90; Bradley, 2009, 114; Waddington, 2007a), and

practically all writers make the assumption that rock-art has always been a purely upland phenomenon. None of them seem to have defined 'upland', other than to say that sites are at higher altitudes, often with views down to lower areas, with the implication that rock-art is made in areas not used for growing crops.

Bouhey & Vickerman's survey of 624 carved stones in the old West Riding of Yorkshire (2003, 36) showed that most of them were indeed at higher altitudes, with over 80% at heights of 200m AOD or above, with only about 3% of their sample standing at heights lower than 100m AOD. Lowland areas are less rocky, so there are fewer available rocks for carving, and furthermore, carved stones at lower altitudes are more likely to be lost, as lowland areas are more likely to be cleared for agriculture or development. Thus, of the 33 carved stones now found in the lower land below the moorland of Rombalds Moor, many have been incorporated into walls, or stand in bogs, or the carvings are on outcrop or rock sheet (Fig 5 below).



Fig 5 Rombalds Moor: carved stones in rough pasture which have survived clearance.

Left: 95a/GHW 01, East Morton, standing in a spring, just marshy in summer.

Right: 38/HC 06, High Carr, Riddlesden: a boulder seemingly placed onto outcrop; the rest of the field has been cleared.

Images: Author & P Deacon.

These stones seem to be survivors of clearances in areas where other sites, perhaps many other sites, have been moved or destroyed. Furthermore, carved stones at the bottom of river valleys may also be lost when covered by soils and sediments. For example, in a river valley at Powburn, below the Northumberland Cheviot Hills, an

excavation uncovered a cup-and-ring boulder 3m down in alluvium (Topping, 1997). A search of the *PastScape* website pages (Historic England PastScape, nd) revealed the sites of six carved rocks, all now moved or lost, in the bottom of the Aire valley below or downstream of Rombalds Moor.

In Argyll, a number of sites stand in the valley bottoms, including Baluachraig in the Kilmartin valley, and Torbhlaren in the adjacent Kilmichael valley, where Jones' group excavated around two carved rocks (Jones, Freedman, O'Connor *et al*, 2011; Fig 6 below). Again, these may be survivors: Baluachraig is a rock sheet, and the Torbhlaren rocks are very large.



Fig 6 Torbhlaren.

An excavation around a very large carved rock standing in rough pasture in bottom of the valley. It is surrounded by much higher ground.

Image: Aaron Watson <http://www.aaronwatson.co.uk/torbhlaren/>

As well as presuming that rock-art was *only* an upland phenomenon, writers often presume that it was *only* made in land that is now either moorland, or the improved rough pastures immediately adjacent to these areas, lands often now described as marginal. Fleming (2008, 136) says that 'marginality' may be how archaeologists conceptualise land that is unsuitable for growing crops. In prehistory, these areas

might have offered many other economic attractions, not being seen as 'marginal' at all: this concept may be very unhelpful.

Following on from this, both Bradley and Waddington say that rock-art overlooks, but does not stand in, 'fertile areas', and is virtually absent from areas that are not close to the 'settled landscape' (Bradley, 1997, 86, 90 & 91; Waddington, 2007a). 'Fertile areas' presumably refers to land suitable for growing crops. However, as discussed subsequently, rock-art might have been made as early as the later Mesolithic, without crop-growing; and probably was being made by the earlier Neolithic, when crops were being grown in rather ephemeral plots (Chapter Two section 2.6.1 & Chapter Six section 6.6.2). It is important therefore to explore all the environments and landscapes through the whole period in which rock-art could have been made and used.

2.4 Motifs

British prehistoric rock-art is almost entirely abstract. There are a very few depictions, for example the carvings of animals, interpreted as deer, in a rock shelter at Goatscrag in Northumberland, from which Mesolithic lithics were recovered; this association is far from conclusive however (van Hoek & Smith, 1988; Waddington, 2000b; Fig 7 below). In general, depictions in British rock-art are very rare, and this carving is also atypical in that it is carved on a vertical surface.

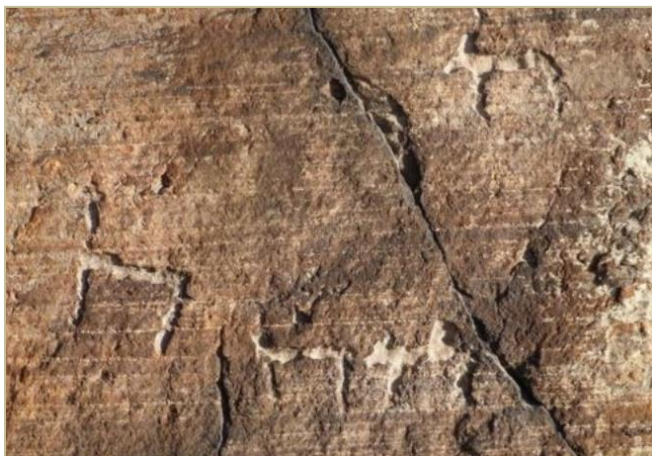


Fig 7 British depictive rock-art.

These carvings, interpreted as deer, are in a rock shelter at Goatscrag, Northumberland.

**Image: Northumberland County Council,
<http://www.bbc.co.uk/news/uk-england-tyne-26952570>**

The key motifs of abstract British curvilinear rock-art are the cup, the cup-and-ring, and the groove, sometimes seen alone but often in combination. Grooves-only panels and cupless rings are very uncommon; I have followed Darvill *et al* (2000, 30) in seeing the cup of a cup-and-ring as part of a single motif. There are also a number of unusual motifs, mostly regionally specific, such as the rosettes of Argyll and the ladders of Rombalds Moor (see Fig 12 below).

Most extant carved rocks are sandstones, relatively soft and easy to carve, including most of the Pennine stones; in other regions such as Argyll, harder rocks such as schist have been carved (Beckensall, 2002b; Boughey & Vickerman, 2003, 31; Jones & Tipping, 2011; Morris, 1977, 30).

Rock-art motifs were pecked out using a hard stone tool (Boughey & Vickerman, 2003, 14; Jones, Freedman, Gamble *et al*, 2011; Jones & Lamdin-Whymark, 2011). Working at Torbhlaren in Argyll, Jones and colleagues have suggested that quartz pebbles were probably used as hammerstones, after finding quantities of these at this excavation (Jones, Freedman, Gamble *et al*, 2011). At the highly decorated site at Ormaig, some 15km away, they again found possible hammerstones, though here not all were quartz (Jones & Lamdin-Whymark, 2011). Excavations elsewhere in Britain have not recovered putative hammerstones. However, they might easily be missed, as many of the experimental hammerstones of Jones *et al* showed no visible damage from hammering; prehistoric hammerstones might be similarly unmarked (Lamdin-Whymark, 2011a).

As part of this experimental work, Lamdin-Whymark, using a hammerstone similar to those discovered at Torbhlaren, made cup-and-rings and cups in an overhand, one-handed technique (Lamdin-Whymark, 2011a, 2011b; Fig 8 below). The Scottish sculptor Andy McFetters, who also makes experimental rock-art, uses a more powerful one-handed technique, the hammerstone held in the fist, making a downward stabbing motion (A McFetters, 2014, *pers comm*).

However, Lødøen (2015), excavating in the extensive hunters' rock-art landscape at Vingen, Western Norway, recovered a hard stone artefact in a Mesolithic context near several rock-art panels. He believes this was a chisel, to be struck with a wooden mallet, as the designs there required the kind of precision not possible with a one-handed technique (Fig 8 overleaf).

Bougey & Vickerman (2003, 14 & 31) also suggest that at least some of the West Riding rock-art was made with a hard stone 'punch' to peck out the motif, which was subsequently smoothed. It should not be assumed though that the same technique was used at all sites, even in a relatively circumscribed area.

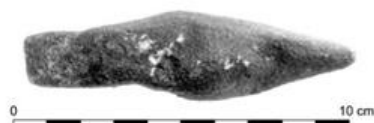


Fig 8 Carving rock-art.

Top: Torbhlaren: Hugo Lamdin-Whymark carving a cup-and-ring: a one-handed technique, in an overhand grip.

Bottom left: the sculptor Morten Kutschera making a copy of one of the Vingen panels, using a two-handed technique with a replica mallet and chisel.

Bottom right: Vingen: a diabase chisel, from an excavation near one of the rock-art panels.

Images: Top: Aaron Watson (Lamdin-Whymark, 2011b, 335). Bottom (both): Lødøen, 2015.

Furthermore, Lamdin-Whymark, McFetters, and Lødøen's sculptor are all working in an essentially comfortable and stable position with regard to the surface to be carved. However, as will be seen when the making of Rombalds Moor rock-art is discussed in detail in Chapter Nine, this was not always the case. Whether a one-handed or two-handed technique was used then becomes of some interest, as some of the sites are very challenging, more so if the carver did not have one hand free to steady themselves.

2.4.1 Cups

Cups are the simplest of motifs both conceptually and in the making, and are found all over the world; they may have arisen spontaneously more than once in any given area (Bradley, 1997, 43; Sognnes, 1998; Tilley, 1991, 95). The category could be subdivided, for example, oval cups or dumbbell-shaped cups are sometimes seen, but these are probably best considered as variants: all are here classified as cups (Fig 9 overleaf).

Fig 9 (overleaf) Variations on a theme: cups.

Top Left: IAG 510, Askwith Moor, North Yorkshire: upstanding boulder with one cup.

Top right: 45/RV 02, Rivock Nose, Rombalds Moor: cliff outcrop site, with two cups at the edge.

Centre Left: Lordenshaw 4d, Rothbury, Northumberland: ground-level boulder, with cups of different sizes, and a single long groove.

Centre Right: Bar19c Barningham Moor, Barnard Castle, Co. Durham: ground-level boulder, with scattered cups, some connected by short grooves.

Bottom Left: IAG 618, Ellers Wood, Washburn Valley, Wharfedale: upstanding boulder, with eight cups in 'domino' pattern, and other cups of different sizes, three with long grooves that run over the edge of the rock.

Bottom Right: Dod Law, Doddington Moor, Northumberland: ground-level outcrop site. Seen in the foreground are a group of scattered cups framed by triple grooves, with a connecting groove running downhill out of the 'box', and a few scattered cups to the right of 'box'; there are two similar panels, not well seen, behind.

Images:

Askwith Moor, Rivock Nose, Ellers Wood: Author & P Deacon

Lordenshaw, Barningham Moor, Dod Law: Chris Collyer, <http://www.stone-circles.org.uk>

Fig 9 Variations on a theme: cups.



Cups are found in a wide variety of situations: alone, seemingly randomly scattered, in different sizes on the same stone, in lines or arcs, in patterns or blocks or 'dominoes', and combined with cup-and-rings and/or grooves. Some cups are found within grooves, or within natural cracks, which have sometimes been enhanced.

2.4.2 Grooves

Grooves are almost never seen alone, and Boughey & Vickerman are very aware of this, specifically saying we might be overlooking them; in their survey of 275 sites on Rombalds Moor, they found only one example of grooves probably without other motifs, 343/LS 08 (Boughey & Vickerman, 2003, 32). During the fieldwork, 344/LS 09, recorded as a cups and grooves stone, was felt to be grooves-only as well, with its cups as natural markings. Interestingly, the two stones stand only about 80m apart.

Thus grooves are often used to create panels, and may be seen enclosing or linking other motifs together, or connecting cups or cup-and-rings to natural cracks (Fig 10 below). If connected to a cup-and-ring, they usually run downhill from the motif.

Fig 10 (overleaf) Variations on a theme: grooves.

Top Left: 283/BB 04, Rombalds Moor: ground-level rock with complex panel of cup-and-rings, cups and grooves.

Top Right: IAG 598 the Tree of Life, Snowden Carr, Washburn Valley, Wharfedale: ground-level rock, with grooves used to create a complex motif, and rather peripheral cups visible at upper left.

Centre Left: IAG 581, Snowden Carr, Washburn Valley, North Yorkshire: upstanding boulder, showing long groove with larger cup at top and smaller cups within it, running down rock to natural crack.

Centre Right: Gardom's Edge 1, Derbyshire: near ground-level boulder with grooves enclosing cups (this is a replica: the original has been re-covered in order to protect it).

Bottom: 250/BST 01 the Badger Stone, Rombalds Moor: upstanding rock with long parallel grooves at left, and complex groove motif, perhaps a swastika, at right.

Images:

343/LS 08, IAG 598, IAG 581 & 250/BST 01 the Badger Stone: Author & P Deacon

Gardom's Edge: RL Dixon, <http://www.megalithic.co.uk/article.php?sid=2256>

Fig 10 Variations on a theme: grooves.



Some grooves are enhanced natural cracks. Grooves vary in length from very short to one metre in length or longer; some are 5 cm in width or more, though others are only 1 cm or so wide, perhaps requiring the use of a hammer and chisel for such accuracy.

2.4.3 Cup-and-rings

Cup-and-ring motifs are found throughout much of northern Britain, though there are regional variations (Fig 11 below). Five- or six-ringed cup-and-rings are common in Northumbria and in Argyll, though on Rombalds Moor, there are now only four cup-and-rings with more than two rings (Boughey & Vickerman 2003, 32-35). There are also many variations on cup-and-rings, including various forms of incomplete rings, such as horseshoes or looped-back rings. Commonly seen is a cup-and-ring with a 'comet-tail', a radial groove running from the central cup or outer ring; these usually run downhill from the motif (Jones & Tipping, 2011).

Fig 11 (overleaf on two pages) Variations on a theme: cup-and-rings.

Overleaf:

Top Left: Hunterheugh 2, Northumberland: 2- and 3-ringed cup-and-rings, one with comet-tail, and cups.

Top Right: Cairnbaan 2, Argyll: rock-sheet site, with multi-ringed cup-and rings, several with comet-tails; several of these enter cracks.

Bottom Left: Weetwood 3a, Northumberland: rock sheet site, with multi-ringed cup-and-rings.

Bottom Right: Baluachraig, Argyll: rock sheet site, with 1- and 2-ringed cup-and-rings framed by cracks.

Images:

Hunterheugh: NADRAP, Archaeology Data Service,

<http://archaeologydataservice.ac.uk/era/section/gallery.jsf>

Cairnbaan: BRAC:

<http://ukra.jalbum.net/brac/Scotland/Argyll%20and%20Bute/Cairnbaan%20-Lochgilphead/index.html#>

Weetwood: Aron Mazel,

http://rockart.ncl.ac.uk/panel_image_view.asp?imageid=4002&pi=154

Baluachraig: Author & P Deacon.

Fig 11(1) Variations on a theme: cup-and-rings.



In Hunterheugh 2 picture, at top left, note many cups clustered round worn cup-and-ring motif at top right; also note differential weathering, with area at lower left probably more recently exposed.

In the Cairnbaan 2 picture, at top right, note peripheral cups at top right and bottom right.

Fig 11(2) Cup-and-rings (cont).

Top Left: Millstone Burn 2h, Alnwick, Northumberland: near ground-level boulder, with horseshoe-shaped rings.

Top Right: Allan Tofts, Goathland, North York Moors: upstanding boulder, with cup-and-rings with comet-tails running downhill.

Bottom Left: 66/RV 22, Rivock, Rombalds Moor: large upstanding boulder, with cup-and-ring with three rather irregular rings.

Bottom Right: IAG 533, Askwith Moor, North Yorkshire: upstanding boulder, with cup-and-ring with long groove running downhill.



Images:

Millstone Burn:

<http://archaeologydataservice.ac.uk/era/section/panel/overview.jsf?eraId=534>

Allan Tofts: <http://www.cupstones.f9.co.uk/goatland.htm>

Rivock and Askwith Moor: Author & P Deacon.

In Argyll, where very cracked rocks are common, and seem to be preferentially chosen, comet-tails may connect cup-and-rings to cracks (Morris, 1977, 64 & 101); otherwise, they may just stop, or connect with other motifs (Jones & Tipping, 2011). Cup-and-ring motifs may stand alone, or touch other cup-and-rings, or be enclosed by grooves, or be connected by grooves (Beckensall, 1999, 64; Boughey & Vickerman, 2003, 30; Bradley, 1997, 72; Morris, 1977, 12).



Fig 12 Unusual motifs.

Left: Ormaig, Argyll: Three examples of rosettes, a circle of cups within a cup-and-ring. Right: 253/BS 02 the Barmishaw Stone, Rombalds Moor, with ladder near cup-and-ring motif; another ladder with cup-and-ring glimpsed at back. Images: Author & P Deacon.

Other less-common motifs are also found, some regionally specific, such as the ladders of Rombalds Moor and the rosettes of Argyll (Fig 12 above). These can be seen as embellishments of cup-and-rings, and thus variants of these motifs.

As with cups, cup-and-rings can be found outside Britain. Because they are so simple, cups cannot really be compared across regions, but cup-and-rings, more complex, can perhaps usefully be compared with similar motifs found elsewhere. In Europe, there are many examples of cup-and-rings in Galicia in north-western Spain, and Bradley thought this highly significant, seeing a pattern of rock-art connections all along the Atlantic seaboard (1997, 41). However, essentially there are cup-and-ring motifs only in Galicia, Britain and Ireland; there is some rock-art in Brittany, but mostly cup marks,

found both in the countryside and on burial monuments (*ibid.*: 35, 62, 162). Darvill notes that there are further examples of cups and cup-and-ring motifs in the Alps, centred on Valcamonica and Carschenna (2013; Fig 13 below).

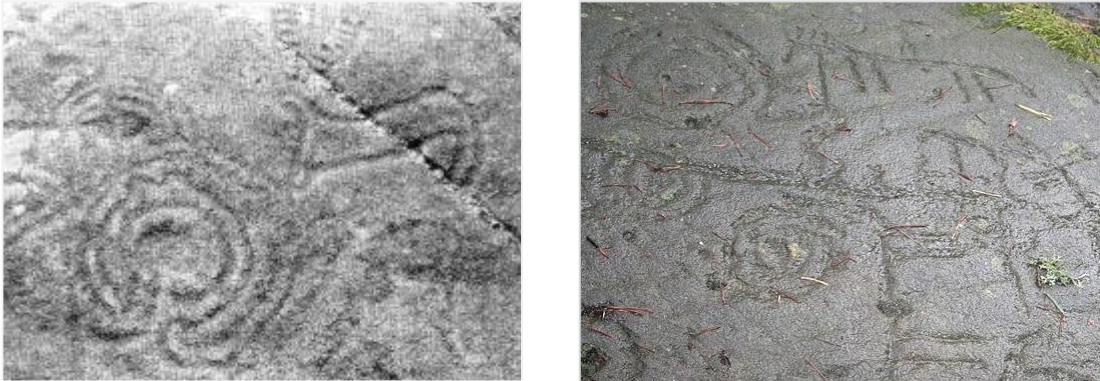


Fig 13 Examples of European cup-and-ring rock-art.

Left: Fentans, Campo Lameiro, Galicia, Spain.

Right: Carschenna rock-art, Sils im Domleschg, Carschenna, Switzerland.

Images: Fentans: Bradley *et al*, 1994

Carschenna: Adrian Michael: <http://commons.wikimedia.org/wiki/Category:Carschenna>

Bradley dismissed Alpine rock-art as unconnected to British rock-art, as it includes sun symbols and mounted figures, whilst seeing Galician art with its animal images, as related (1997, 42); it is hard to see the justification for excluding one but not the other. To my knowledge, no depictions have been reported alongside British cup-and-rings.

2.4.4 Combining motifs

Motifs can be combined in a very wide variety of ways to form panels; many examples can be seen in Figs 9-11 above. These may include motifs that touch other motifs, motifs linked by grooves, motifs that appear grouped together but are not touching or linked, or indeed combinations of these. Cups may appear to be scattered around or among more intricate designs. There are some obvious regional variations, but overall, the similarities in motifs and panel composition are very clear.

2.5 Studies of rock-art in Britain

There is a large body of literature on British rock-art. During the Victorian period, rock-art was studied by antiquarian scholars such as Tate and Collingwood Bruce in Northumberland, Simpson in Edinburgh, and Romilly Allen in West Yorkshire; later by Cowling on Rombalds Moor (Beckensall, 1999, 31; Boughey & Vickerman, 2003, 3; Bradley, 1997, 33; Cowling, 1946, 76). Interest then faltered until the 1970s, with Morris's work in Scotland (1977), and later, Beckensall and others in England (eg Beckensall 1999, 2001; Beckensall & Laurie, 1998; Brown & Brown 2008; Brown & Chappell, 2005; Nash, 2007). Later publications concerning Rombalds Moor include work by the Ilkley Archaeology Group (Hedges, 1986), Boughey & Vickerman (2003; 2013); Brown, Boughey *et al* (2013), and most recently, Rombalds Moor CSI which reported in 2014 and is archived on the England's Rock Art website hosted by the Archaeological Data Service (CSI Rombalds Moor, nd; ERA England's Rock Art, nd). Much of this work includes only limited interpretation, and covers survey, cataloguing and recording; Boughey & Vickerman (2003, 1-46) do offer interpretation, largely following Bradley (1997).

Modern interpretive studies of British rock-art essentially begin in the mid-1990s, and Bradley's *Rock art and the prehistory of Atlantic Europe: Signing the Land* (1997), remains of central importance. His major interpretations from *Signing the Land* are summarised below. Firstly, he says

- i. rock-art dates from the Late Neolithic and Early Bronze Age, and is contemporaneous with local monuments (*ibid*, 92)
- ii. simple designs are usually carved onto rock sheets or earthfast boulders; complex designs are usually carved onto outcrop (*ibid*, 79)
- iii. rock-art sites, especially those with complex carvings, have extensive views of lower ground, and overlook the 'settled landscape' (*ibid*, 85 and 90)

and following on from this,

- iv. rock-art sites, especially those with complex carvings, are placed at the edges of high ground, such that they overlook the entrances to valleys, and overlook, or are along, routes to monuments (*ibid*, 123)

- v. intervisibility of sites is important; complex carvings are intervisible, leading people in and along routes to monuments (*ibid*, 120)
- vi. rock-art is 'a medium of communication', with simple panels addressed to local audiences, and easier-to-find complex panels addressed to outsiders (*ibid*: 9, 79)
- vii. the organisation of motifs on a panel is according to a system of rules, a design grammar (*ibid*, 45)
- viii. incomers 'might need to consult each site in sequence', the complexity of the designs increasing as the monuments are approached (*ibid*, 123)

However, all of these conclusions depend to a greater or lesser degree on Bradley's assertion that rock-art dates from the Late Neolithic and Early Bronze Age, when the monuments were being constructed and used, and furthermore, presume that views were possible, a crucial point which we shall return to subsequently. Before critiquing of Bradley's conclusions, we must begin by examining the evidence for the chronology of rock-art.

2.6 The chronology of rock-art

British rock-art cannot be directly dated; only indirect evidence is available when we attempt to construct a chronology. Bradley and other writers have suggested that dateable remains next to rock-art provide a date for the carving (Bradley, 1997, 57; and eg Edwards & Bradley, 1999; Jones, Freedman, Lamdin-Whymark *et al*, 2011; Jones & Riggott, 2011; Jones, 2012). However, carvings and adjacent remains may or may not be contemporaneous, as Sheridan (2012) has pointed out in her critique of Jones, Freedman, O'Connor *et al* (2011). Furthermore, Sharpe, showing differences between regions, demonstrates that we cannot unquestioningly generalise from one area to another, and that there may be different regional trajectories (Sharpe & Watson, 2010; Sharpe, 2012). These are very important points.

There are three questions to consider when attempting to build a chronology

- When was rock-art first made?
- How long did it continue to be made and used?

- When did it cease to be made and used?

Each of these invites further questions: by whom, and under what circumstances?

The first of these questions is perhaps the most difficult to answer. Waddington (2007a) produced a comprehensive review of British rock-art studies ten years after the 1997 publication of Bradley's *Signing the Land*. Here, he proposed a chronology rather longer than Bradley's, suggesting that rock-art was first made in the Early Neolithic, with carvings on 'living rock' being made for over 1500 years, re-use beginning early, and continuing for perhaps a further 1500 years (Table 3 below).

Period	Context of Rock-art
Early Neolithic	outcrop, bedrock and earthfast boulders
Late Neolithic	outcrop, bedrock and earthfast boulders included in ceremonial monuments
Early Bronze Age	included in funerary monuments only
Late Bronze Age	casually built over

Table 3 Proposed chronology of rock-art.
Table adapted from Waddington, 1998a and 2007a.

This suggests a chronology likely extending over two, or even three thousand years, running through great cultural changes which would have profoundly affected the ways in which people perceived both rock-art and their landscapes. Issues connected with the past in the past, that is, how prehistoric people understood their own past, both remembered and mythic, must have been played out in the ways people made, used, reworked and perceived rock-art.

Thus there may have been changes in the types of sites or motifs that were employed, and in the making, usage and meanings of rock-art. Crucially, it follows that interpretations of rock-art which seem contradictory may all be valid, and we should not necessarily expect to find one overarching 'explanation' for rock-art.

2.6.1 When was rock-art first made, and by whom?

Early workers presumed that rock-art dated from the Bronze Age, but Bradley proposed that it had to be earlier. Firstly, he considered that similarities between rock-art motifs and passage-grave art were very significant, though acknowledging that the overlap between the areas in which they are found is not great (Bradley, 1997, 62 and 63). Waddington (2007a) had serious concerns about this, noting that the time spans of rock-art and passage graves do not fully coincide, rock-art continuing for longer; and in Britain, he says, the areas where rock-art and passage graves are found barely overlap at all. He considers this seriously weakens the utility of the proposed relationship between passage grave and rock-art motifs as dating evidence.

Secondly, Bradley (1997, 57) noted that re-used rock-art panels and fragments are found in dateable contexts from the Neolithic; for example, a cup-marked slab was found within Dalladies Long Mound, Fettercairn, NE Scotland, in a context dated to about 3390 BC (Piggott, 1972). The panel was already weathered, that is, it was already old. Panels have been found in other Neolithic burial contexts, and also incorporated into monuments not directly associated with death, such as stone circles, thought to date from the 4th to 3rd millennium cal BC (Edmonds, 2001, 110; Waddington, 2007a). Bradley's assertion that rock-art is Neolithic is now widely accepted, though it is not really clear why he has ruled out hunter-gatherers as the originators (1994). He shows clearly that rock-art had begun to be made by the Neolithic; but could making rock-art have begun before that?

Laurie, working in the northern Pennines, sees rock-art as Late Neolithic or Early Bronze Age. He notes that the distribution of rock-art sites is broadly similar to the distribution of Late Mesolithic sites, though along the Barningham High Moor watershed, the Mesolithic sites are on the southern part of the ridge, with the rock-art sites along the northern part (Laurie, 2003).

Whilst also agreeing with a Neolithic attribution, Waddington suggested that rock-art began much earlier, at the Neolithic Transition itself, in connection with the profound ideological shift at this time (Waddington, 1998a; 2007a). Looking at rock-art above the Milfield Basin in Northumberland, an area with both extensive Mesolithic and Neolithic remains (1998b, 338, 342), he noted that some of the carved outcrops are the same outcrops that were used in the Mesolithic as rock-shelters (1998a), and suggested that

the carvings were placed by Neolithic people to claim these places as their own. Thus rock-art is found in places linked to both Neolithic and Mesolithic presences.

Working in the same area, on the edges of the eastern Pennines, where a lot of rock-art is found, Harding (2000b) describes this as: 'a boundary...established by communities with a contrasting upland way-of-life', and goes on to say 'this is a form of material culture that could have been associated with practices and beliefs distinct from those commonly ascribed to this period' [the early Neolithic]; he presumably means Mesolithic.

In *Prehistoric Britain*, Darvill briefly suggested that the beginnings of rock-art production could lie in the Mesolithic, but he did not develop this idea, and in subsequent discussions presumed that rock-art began being made in the Neolithic (Darvill, 2010: 73, 122, 200).

Bradley's work on hunter-gatherer rock-art and sacred sites in Europe led him to see this as small-scale monumentality that does not interfere with Nature (1991a; 1997, 198; 2000: 5, 35, 77). In Britain, he saw a Mesolithic sensibility as being within and part of Nature, in a reciprocal relationship, and dismissed the idea that British rock-art could have been made by Mesolithic hunter-gatherers, seeing it as Neolithic (1994). He did acknowledge (1994) that the way rock-art is sited, frequently with extensive views, is reminiscent of Ingold's views of hunter-gatherer territoriality. Ingold describes the relationship of hunter-gatherers with land as tenure (Ingold, 1986, 113, 134, 139 & 156), which might involve large areas, yet simultaneously focus on paths and small places, where certain resources, both spiritual and subsistence-related, might be found.

Bradley (1998a, 34) agreed with Thomas (1999, 49) that the Neolithic approach is about power, their monuments being constructed 'to dominate the landscape': Neolithic monuments were usually very visible in their own landscape, but constructed as bounded spaces, where access could be controlled. Yet much rock-art is made onto small, reticent sites without physical boundaries or limits to access.

Thus it is important to explore this further. A 'Mesolithic' argument is supported by the increasing evidence for Mesolithic monumentality in Britain, including an alignment of 12 post-sockets at Warren Field, Crathes, Aberdeenshire, dated to the earlier Mesolithic, but recut at about 4000 BC (Gaffney *et al*, 2013); a large pit at Little

Dartmouth Farm, Devon (Tingle, 2013); and the well-known pit alignment in the former, now redeveloped, Stonehenge Car Park (Allen, 1995; Allen & Gardiner, 2002).

Also in Wales, Richard Jones, in a preliminary report, describes the discovery of an oak timber in waterlogged peat from Carn Maerdy, Carn Menyn Windfarm, Glamorgan. The timber, 1.7m long and 0.25m wide, was rounded at one end and pointed at the other, suggesting it had been erected as a post. It had been carved with parallel curving chevrons along its side, with an oval motif of concentric rings near the rounded, presumably upper end (Fig 14 below). Radiocarbon dating, he says, gave a σ -calibrated date of 6000-6270 years BP, placing it in the Late Mesolithic or perhaps earliest Neolithic, and making it probably the earliest example of art on timber from Britain (R Jones, 2013).



Fig 14 Multi-ring carving on wood.

The oak timber was found at Carn Maerdy, Glamorgan, and dated to 6000-6270 BP. There is a central boss, not a cup.

Image: Richard Scott Jones, Heritage Recording Service, Wales

<http://www.hrs-wales.co.uk/Projects.html>

Thomas (2013, 205) says that Mesolithic people created places 'of sustained importance', places that were important not just for subsistence but included powerful spiritual aspects. Similarly, Edmonds (1997) says of later Mesolithic landscapes that 'prominent landmarks can be accorded totemic significance'.

Turning to the relationship between rock-art carvings and the rock, Waddington (1996, 1998a) sees the carvings as being applied in a way that respects and enhances the natural shape and beauty of the rock, particularly its natural cracks and grooves. Passage grave art, however, he sees as design imposed onto the rock, which has often

been prepared first; it controls and dominates the rock, changing it from a natural feature into a cultural object (Fig 15 overleaf).



Fig 15 Motifs and rock.

Left: Roughting Linn, Northumberland. The motifs have been made onto the unmodified rock surface, following the natural contours.

Right: The entrance stone of Newgrange Passage Tomb, Bru na Boinne, Ireland. The surface has been prepared to take the carvings: the stone as canvas.

Images: Left: Chris Collyer: <http://www.stone-circles.org.uk/stone/roughtinglinn.htm>

Right: Author & P Deacon.

Thus in general, the ‘personality’ of rock-art seems to be very different from Neolithic monumentality. However, the Neolithic monumentality described here is very much the product of group projects, though the making of some rock-art, particularly the smaller and more reticent panels and sites, might have been the result of individual acts of piety. This is a theme explored in the next chapter, where we consider the incorporation of religious belief into the formation of landscape.

Examining the distribution of rock-art leads to a further strand of evidence that rock-art could have begun in the Mesolithic. In the central and eastern Pennines of West Yorkshire, North Yorkshire, Durham and Northumberland, there are hundreds of sites, many featuring cup-and-ring motifs, but there are no cup-and-ring marks at all to the west of these areas in Lancashire, though there are perhaps a few cups. Lancashire is not mentioned in distribution reviews by either Bradley, in *Signing the Land* (1997), or in Beckensall’s *British Prehistoric Rock Art* (1999). In the Lake District massif, there are a number of rock-art sites, nearly all cups-only (Sharpe 2007, 212). This could relate to

the distribution of peoples, with different groups of people relating to, and marking the land in different ways.

Firstly, the Mesolithic people of the eastern Pennines may have been a different group from those in the west, as shown by studies of the origins of the lithics they used, which suggests a group of people moving between the lowlands east of the Pennines and the Pennine uplands (Jacobi *et al*, 1976; Donahue & Lovis, 2006; Evans *et al*, 2010).

Secondly, the lack of rock-art in the western Pennines might relate to the distribution of Neolithic peoples; the Neolithic was not uniform across Britain, perhaps reflecting the origins of different incoming groups (Sheridan, 2010; and see Chapter Three section 3.2.2 below). We return to this theme via a discussion of how people created landscape, in the next chapter.

This has been a long discussion about the first appearance of rock-art, and does not seek to *prove* a Mesolithic origin: the evidence about the chronology of rock-art is largely circumstantial and indirect. However, if rock-art *could* have begun in the Mesolithic, this needs to be included in any discussions of rock-art landscapes.

2.6.2 How long did rock-art continue to be made and used?

Some carved rocks clearly show differential weathering, and Bradley thought this might indicate that new motifs were being added to rocks over a very long period of time (1994; 2000, 38). However, as rocks at ground level easily get overgrown, some examples of differential weathering might be due to part of the rock becoming covered, whilst other parts remained exposed (Beckensall, 2002b; Bahn, 2010, 152). This is known to have happened on Ilkley Moor, at Hangingstones Rock, where motifs were uncovered by Victorian quarrymen (Hedges, 1986, 12; Holmes, 1885). More recently, Feather (1971, 243), in a very brief report, says that erosion on Green Crag Slack in 1968 uncovered a group of five carved stones; these appear to be some of the stones on Woofa Bank, some with very fresh-looking carvings.

Different types of motifs may not have been contemporaneous or equivalent. Bradley, considering cups in British rock-art, clearly thought that they had been made earlier than more complex designs, saying of an intricate panel, Old Bewick 1a, in

Northumberland: ‘...the images seem to be densely distributed, (but) there is no instance in which existing cup marks were overlaid by large circular motifs’ (1997, 45; see Fig 16 overleaf).

However, because none of the motifs are superimposed on others, it is not possible to say which were made first, or to presume that all the simplest motifs, the cups, predate all the more complex cup-and-ring motifs. Indeed it will be argued herein that some of the cups were made *later* in the sequence, acknowledging earlier carvings.

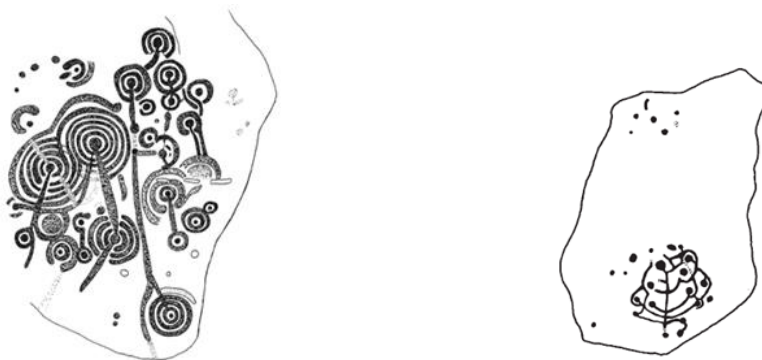


Fig 16 Panel composition.

Most of the cups are on the periphery of the panels.

Left: Old Bewick 1a, Northumberland: this large, roughly cuboid boulder is about 1m high, with a near horizontal carving surface. It also has a horizontal line of cups along the north and east vertical faces.

Right: IAG 598 the Tree of Life, Snowden Carr, Washburn Valley, Wharfedale.

Images (not to scale): Left: drawing by Stan Beckensall,

http://rockart.ncl.ac.uk/panel_image_view.asp?pi=298&imageid=426#contentarea

Right: Boughey & Vickerman, 2003, 143.

Cups are somewhat neglected in much rock-art research; Jones' group even stated that in their analysis, they decided to ignore rocks with only one cup (Freedman et al, 2011). This is highly problematic: firstly it implies that rocks with one cup resemble uncarved rocks more closely than they resemble other carved stones, and secondly it suggests that cups are less significant than cup-and-rings, none of which they ignored.

In a more subtle way, the significance of cups may be further obscured by the way many workers find themselves having to present their data – including in this thesis. Looking at their 275 sites on Rombalds Moor, Boughey & Vickerman present in table form the number and percentage of sites with cups having zero to three or more rings (Boughey & Vickerman, 2003, 34; Table 4 below). This would seem to imply that 34.5% of rocks do not have cups with zero rings (simple cups). But as they observe elsewhere, almost all the carved stones on Rombalds Moor do have cups – 97% of the stones in their full study database (Boughey & Vickerman, 2003, 32). Their table (Table 4 below) refers to the *maximum* number of rings on a cup-and-ring at a given site, ignoring any motifs with lesser numbers of rings. That is, Boughey & Vickerman are giving primacy to cup-and-rings over cups, allowing cup-and-rings to ‘trump’ cups; and primacy to greater numbers of rings over smaller numbers of rings.

Number of rings	Number of sites	Percentage
0	180	65.5
1	72	26.2
2	17	6.2
3+	6	2.2

Table 4 Boughey & Vickerman’s sites with cups with and without rings.

Table adapted from Boughey & Vickerman 2003, 34. The numbers in this study are slightly different, though not materially so.

On Rombalds Moor, nearly all carved stones with cup-and-rings have simple cups as *well*; carved stones with 2- or 3+ringed cup-and-rings frequently have both cup-and-ring motifs with fewer rings, and simple cups as *well*. This means that data on simpler motifs, particularly cups, can effectively be lost. It seems likely that other writers are doing this too – looking at the many photos and diagrams of rock-art in Northumberland and in Argyll (ERA England’s Rock Art, nd; Morris, 1977; Jones, Freedman, O’Connor *et al*, 2011), simple cups are regularly seen on complex panels. This is perhaps the only way to deal with the data without making classification extremely complex, and is further discussed in Chapter Five. In this thesis, although data has to be presented in this way, every effort has been taken not to lose or ignore data on ‘simpler’ carvings.

In areas including Wales and Aberdeenshire, cups are much commoner than cup-and-ring motifs; studying cups here may lead to insights about how they were used, and even a hint of what they meant. There is quite a lot of rock-art in Wales, but with the exception of passage-grave art within tombs, it is mostly cups-only. The cups are mostly found placed either directly onto built monuments, or placed onto outcrop near to these monuments (Nash *et al*, 2005). One of these is Bryn Celli Ddu passage-grave, which is probably a two-phase monument, which Burrow (2010) dated using Bayesian modelling, showing it to have been built between 3074 and 2956 cal BC. However, he further notes Mesolithic postholes near the tomb entrance, and Early Bronze Age activity in the locality as well. Thus temporal relationships between the monument(s) and the cups carved onto nearby outcrop are not at all clear.

In their 2005 paper, Nash *et al* go on to report cup-marks on nearby outcrop near two other Welsh sites, one probably a portal dolmen, the other a complex, very ruinous site they interpret as a Neolithic cemetery. They note furthermore that there are probably over 40 similar examples, and they see the cupmarks as contemporary with the monument-building or later. Darvill (2010, 106) says that portal dolmens probably originate in the earlier Neolithic, but may have continued in use over a long period of time, making the dating of the cups very unclear.

The examples on monuments could be re-used slabs, but Nash thinks not, arguing that monument capstones were left exposed and subsequently cup-marked, often very densely, such as the portal dolmen capstone at Bachwen, Gwynedd, North Wales, where the capstone has over 100 cups; heavily cup-marked sites like this are not recorded in the countryside (Nash *et al*, 2005; Waddington, 2007a; Fig 17 below).



Fig 17 The capstone of Bachwen portal dolmen (detail).

The capstone has over 100 cups. Note the lack of any patterning, and the different sized cups.

Image: Waddington, 2007a

The lack of organisation of the cups into blocks or other patterns, and the different-sized cups, could suggest that they were made on different occasions, and/or by different people.

A similar picture is found in Aberdeenshire, where standing stones and stone circles are sometimes found with cup-marks (there are also a few cup-and-ring motifs) (Jones, 2003; Ritchie, 1918). As some of the monument slabs have cup-marks on both sides, the cups on at least one face were made after the slab was removed from the ground, either as part of the making of the monument, or subsequently. Other cups, though, could have been made before the monuments were first constructed (that is, the rock-art was being re-used), at around the same time, or significantly later. Some of these monuments are recumbent stone circles, which Darvill (2010, 188) places sometime after 2000 BC. Furthermore, no reports could be found of cups-only rocks in the landscape without nearby monuments.

Thus firstly it seems that some cups at least were being made in connection with monuments, indicating that the carver was demonstrating acknowledgement or respect to the monument; and secondly, that this could have begun as early as the earlier Neolithic, and continued into the later Neolithic and early Bronze Age.

There is further evidence of probable Bronze Age construction, use and re-use of rock-art, shown stratigraphically in Waddington's Hunterheugh excavation (2004). Here, a cairn and cist, typologically Late Neolithic or Early Bronze Age, had been built over some very weathered cup-and-ring art, which he suggests had been carved in the Early Neolithic. This earlier art, made onto natural rock, had linked motifs, following and incorporating the natural grooves of the rock surface. A slab of this earlier rock-art had been quarried out, and used in the construction of the cist, cutting through some of the motifs. 'Replacement' cup-and-ring motifs were made on the new surface, but they were crude, and ignored both the rock surface and each other. A cairn was then built over all. Waddington thought that the later makers did not 'understand' the earlier rock-art, and were copying it without understanding it; though by cutting it out and incorporating it into their burial monument, and then replacing it, they showed that they considered it meaningful and probably sacred. He concluded that by the Late Neolithic/Early Bronze Age, rock-art still had significance, and was still being made (albeit badly, at least here), but was losing both its original meaning and connection to

its own rock in its own landscape. We have a glimpse here of how the making, use and understanding of rock-art changed over time.



Fig 18 Achnabreck 1, Argyll.

Examples of nearly circular cup-and-rings with multiple, regularly spaced rings can be seen at top right. At bottom left and centre, note carefully smashed cup-and-ring motifs connected by grooves to less well-made motifs. For detail see Fig 19 below.

Image: Author & P Deacon.

We can also perhaps see this in a more subtle example from Achnabreck in Argyll (Fig 18 above), where there are many beautifully executed cup-and-rings with multiple, near-circular rings. On the same panel, there are also several clumsily made cup-and-rings with fewer rings.

Furthermore, two of the finer examples of cup-and-rings appear to have been carefully damaged by pounding, although neither Morris nor Jones, who have surveyed and

written about Achnabreck, have remarked on this (Jones & Tipping, 2011; Morris, 1977, 30; Fig 19 facing). The damage is itself eroded and thus old. The damaged motifs are connected by long wavering grooves to motifs with irregularly spaced rings and poorly executed central cups. It seems unlikely that these two populations of motifs were made by the same hand, though it is not impossible that they were contemporaneous. It more clearly suggests however that there were at least two phases of rock-art manufacture here, and perhaps a change in beliefs concerning the significance and meaning of the motifs.



Fig 19 Achnabreck 1, Argyll: detail of smashed motif.
The damaged motif seen at bottom left in Fig 19 above is seen here at top.
Image: Author & P Deacon.

Some rock-art is found on rocks small enough to be easily moved. These are known as portables (Fig 20 overleaf), and like the three examples shown, are usually found

amongst cairn material. Many bear cup marks, often a single one, though a few have cup-and-ring carvings; some carvings are fresh, protected within the cairn material; some are weathered; and some have motifs cut through, indicating that they had been quarried for re-use (Boughey & Vickerman, 2003, 16 and 94; Bradley, 1997, 136; O'Connor, 2010).

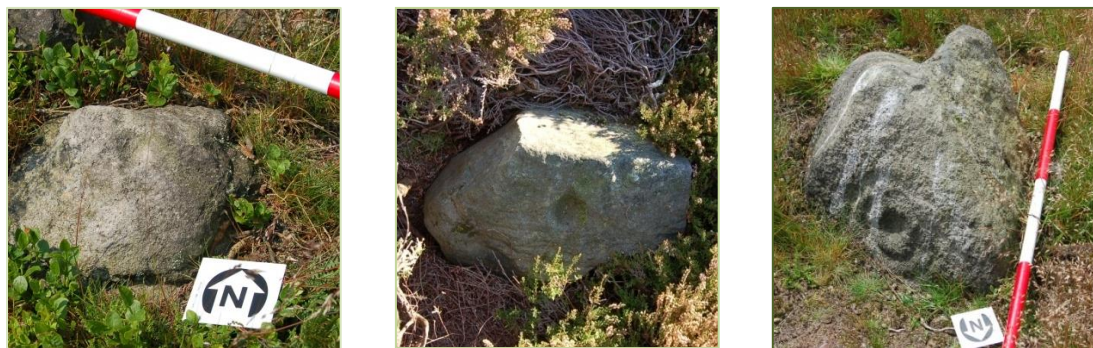


Fig 20 Portable rock-art.

Left: 362b/LSS 02, Little Skirtful of Stones Great Cairn, Rombalds Moor: one cup.

Centre: IAG 566, Snowden Carr, Washburn Valley, Wharfedale: one cup.

Right: 110/SH 13, Stanbury Hill, Rombalds Moor: 2-ring cup-and-ring. Although seemingly deeply set into the ground, excavation showed this to be a fragment, embedded by only a few centimetres, the motif cut through. It has probably been quarried off a larger carved stone.

Images: Author & P Deacon.

Some larger carved stones are also sometimes incorporated in cairns, and here, it may not be clear whether a cairn has been constructed around a carved stone *in situ*, or if the stone has been moved into the cairn; some carved stones are kerbstones and probably have been moved (Vyner, 2007b).

2.6.3 When did rock-art cease to be made and used?

In Late Bronze Age contexts, rock-art seems to have gone out of use, and may be found casually re-used as wall material, or built over. At this time, there seems to have been a major ideological change, from a focus on public ceremonial and the dead in the

later Neolithic and Early Bronze Age, to a focus on houses and bounded fields in the Mid- to Late Bronze Age (Darvill, 2010, 240; Johnston, 2008).

The end of mobile lifestyles, with permanent settlement and agricultural intensification, is seen by Bradley as the point when rock-art ceased to be made; he links rock-art directly to mobile lifestyles, to marking territory, and to pilgrimage, noting that when people became fully settled in the Bronze Age, rock-art went out of use (1997, 7 and 65). This however was not the only change in people's lifestyles and ideology at this time, and *some* of the reasons for making rock-art may not have had to do with mobility at all.

Moreover, it is likely that there was some continuing mobility in the Bronze Age, with people probably practising transhumant pastoralism, such that some people were away from 'home' seasonally, perhaps for weeks during the summer, requiring temporary settlement connected with caring for the animals and perhaps the processing of secondary products: a home away from home (Field, 2008; Mulville, 2008). It is perhaps more likely that rock-art went out of use due to changes in underlying belief systems, rather than functional lifestyle changes as such.

2.7 Discussion

Two key issues arise from this chapter. The first is that our understanding of the distribution pattern of rock-art may need some reconsideration. Bradley sees rock-art as placed on the edges of high ground, overlooking the settled landscape, the entrances to valleys, and routes to monuments (Bradley, 1997: 85, 90, 120, 123). However, there may once have been rock-art, now lost, within 'the settled landscape'. Furthermore, it is also possible that there is more rock-art in the uplands, as yet undiscovered, but well away from the edges and well away from views of the lowlands and settled landscape below, such as some of the rock-art above Loch Tay (Bradley, 1997, 127). Much interpretation rests on rock-art being essentially at the edges of high ground, overlooking the settled landscape; if this distribution were less polarised, these interpretations would not be telling the whole story.

Secondly, the problem of chronology is explored. This is a long-standing difficulty in the interpretation of rock-art, though as it is addressed here, it is argued that there is no single 'explanation' for the making of rock-art. Thus we are perhaps looking, as it were, at multiple, perhaps overlapping reasons for the making and re-using of rock-art, over the long period of time that rock-art was extant, and thus multiple chronologies. Cups, for example, shown as probably beginning early, and finishing late, may not have held the same significance throughout, and indeed, cups may have had different significances at the same time.

Bradley's approach in *Signing the Land* (1997) proposed a relatively short chronology, focussed on the Late Neolithic and Early Bronze Age. His major study areas in Argyll and Northumberland have many monuments from this time, and both he, and Jones and colleagues in Argyll (Jones, Freedman, O'Connor, *et al*, 2011) see a whole landscape as monumentalised by rock-art. They also see the landscape as inscribed by rock-art (Bradley, 1997: 9, 45, 79, 123; Jones, 2001; Freedman *et al*, 2011). I argue that even if some of this is correct, there would be other interpretations for other times in which rock-art was playing an active role in people's landscapes.

Waddington's review of rock-art studies (2007a) proposes a longer chronology, spanning two thousand, perhaps even as long as three thousand years, from as early as the late Mesolithic, through the Early Neolithic, and on to the later Bronze Age. The possibility of a long chronology invites questions about the landscape context of rock-art and its views, both from and of rock-art sites, because these must have changed over this long period of time. A full understanding of the landscape context incorporates both environment and beliefs; a long chronology would probably involve major changes in belief systems during the time rock-art was extant. We now turn to the study of landscape to attempt to tackle these questions.

Chapter Three: Landscapes of Rock-art

3.1 Introduction

It was suggested in Chapter One that what can be seen, both *from* and *of* rock-art sites, may have been an important consideration for the makers of rock-art (Chapter One section 1.1). In Chapter Two, section 2.6, it was shown that the time depth during which rock-art was extant may have extended over two or three thousand years, from perhaps as early as the later Mesolithic, until as late as the later Bronze Age. This must have encompassed significant changes in the environments, lifeways and beliefs of people who were making and using rock-art. In this chapter, we discuss how the landscapes of rock-art might be re-created, albeit very partially. Any attempt to reconstruct these lost landscapes must acknowledge that even in one place, there could be many landscapes of rock-art.

The concept of landscape is highly complex, and is used in different ways by different workers. The word landscape first appeared in the 17th Century, meaning a picture of a view. Later it came to mean the view itself, but it still carried echoes of aesthetic values, of a view that is artistic and perhaps beautiful. It is important to be aware that our modern-day interpretations of landscape may still be coloured by these principles, and thus not reflect at all how people in the past responded to the same sight (Chippindale & Nash, 2004; Cooney, 1994; Edmonds, 1999, 8; Edmonds, 2006; Johnston, 1998; Scarre, 2011).

Key publications in British landscape archaeology were Aston & Rowley's *Landscape Archaeology* (1974) and Aston's subsequent *Interpreting the Landscape* (1985), discussing approaches to fieldwork in post-Roman British landscapes, wanting to incorporate both time depth and a way of looking beyond sites alone, considering also the spaces between the sites. Since then, British landscape archaeology has grown to incorporate a variety of approaches and theoretical standpoints, and is now a very large topic. Space precludes a full overview of landscape studies here (but see, for example, Darvill's review of 2008). Broadly speaking, writers either approach landscape as synonymous with environment (eg Tipping *et al*, 2011), or see it as a personal and

social construction, the result of human involvement with environment (Wilson & David, 2002). Both approaches can be seen as valid, but are very different.

For the purpose of this thesis, it is surely essential to re-create landscape in the terms of the people who lived within, used and moved through these areas; the values and significances that they placed on different aspects of their environment must have been very different from our own. Bender (2006), developing this theme, says that people see the world from their position within it, not as external to it. Thus a landscape may be differently perceived, that is, constructed, by a single observer at different times, or by different observers at the same time; the degree of difference will depend on the mental set of the observer(s), and is never static. Furthermore, she says, landscape is always political: a person's construction of landscape is permeated by their own personal, social and political understanding of the world.

In our own day, we can see this when, for example, large colonising powers encounter much smaller indigenous societies with a view to legitimising taking control of the land (Bender, 2006). For example, Vitebsky (1992), discussing the 20th Century Soviet expansion into Siberia, shows that the larger power may perceive a landscape of natural resources, timber and minerals, ripe for exploitation, whereas the indigenous population sees an ancestral landscape of intermingled religious- and subsistence-based relationships with the land. This kind of dichotomous view could also have happened in the past at times of major cultural shift, and as in Siberia, could result in very different but simultaneous constructions of landscape by people from different cultures. We therefore need to be reflexive and aware of the historical context of our own views, so when we attempt to reconstruct past landscapes, we do so not as we might have seen them, could we stand there in prehistory, but as people of that time saw them (Cooney, 1994; Taçon, 2002).

There are a number of different approaches to incorporating subjectivity into archaeological landscape research. Phenomenology has become an influential but sometimes contentious approach, coming to prominence with Christopher Tilley's book, *A phenomenology of landscape* (Tilley, 1994; see also eg Tilley, 2008; 2010). Other workers using this approach include Thomas (eg 1996, 2006), Cummings & Whittle (eg 2004, 9-16), and Darvill (2008). It has been much critiqued for sometimes apparently

ignoring environmental evidence and having an anti-science stance (eg Barrett & Ko, 2009; Brück, 2005; Fleming, 2006; Johnson, 2012; Walsh, 2008; Walsh *et al*, 2006).

In her critique of phenomenology, Brück (2005) commends both Tilley (1994) and Thomas (1996; 2004, 143; see also Thomas 2006) for wanting to break down the subject-object opposition, accepting that there cannot be a 'pure' object, as perceiving always leads into interpretation of what is perceived; that is, subject and object are always partly intermingled. However, Brück then goes on to highlight some key problems with Tilley's approach in particular.

Tilley does not explicitly describe his phenomenological methodology until his 2010 book *Interpreting Landscapes* (2010, 30); throughout his work, though, he makes it clear that he uses the body, his own body, as the primary research tool, and sees the elicited emotions, his own emotions, as not only valid, but as primary research findings (Tilley, 2004). In terms of walking the land, he focuses on known prehistoric sites, natural features, and lines of movement, but aims, as much as possible, to walk and become familiar with the whole area of interest. However, Brück thinks that Tilley's approach is seriously problematic, strongly rejecting his view that both our physicality and emotionality are the same as those of people in the past (Brück, 2005). The human body, she says, incorporates social and cultural factors, so that even simple actions like walking, running or kneeling may have important cultural significance; we cannot project our own physical experience onto people in the past. Similarly, emotions are culturally constructed and embedded in personal beliefs and experiences. Brück agrees with Tarlow (2000; see also Tarlow, 2010) that it is inappropriate to use one's own feelings as a reflection of the feelings of people in the past. Tarlow points out that many languages contain words for emotions that have no equivalent in English, and thus no equivalent in our lexicon of emotions. We thus cannot presume continuity of meaning from the deep past (Tarlow, 2010).

Thomas (2006) also critiques Tilley's reliance on his own responses to his experiences, cautioning that we need to be aware that our modern Western views of space and place must intrude onto our attempts to recreate ancient landscapes.

Darvill's synthesis of how to approach landscape (2008) incorporates what he sees as the best aspects of Tilley's approach. Darvill includes space, time, change and social action into his understanding of how landscape is made. Space can be perceived at

different scales simultaneously; this is an important point that we return to on a number of occasions. By concentrating solely on land, environment and subsistence, sites and monuments, we miss the wider spaces of people's lives and experiences, including apparently empty space, and we miss the social and religious aspects of inhabiting the land, including the imprinting of memory and myth, spiritual experiences and beliefs, onto landscape. All of this acts as a context for the production and reproduction of identity (Arsenault, 2004a; Darvill, 2008; Edmonds, 1997; 2001, 110 & 114; 2004, 53; Nash & Chippindale, 2002).

When considering the affective component of how people construct their landscape, it is important to include the experiences of threat, danger and fear posed by certain aspects of the lived-in environment, notably forest (Davies *et al*, 2005). Because modern-day British environments do not include large wild animals, it is easy to overlook the impact of sharing one's world with dangerous creatures, for example, aurochs, bears, lynx and wolves, and, perhaps, other people. Bradley (1997: 85, 90, 123) describes rock-art as clearly outside and above the 'settled landscape', and thus, by inference, in these more risky areas – but see below for a discussion of what 'settled landscape' might mean.

An alternative approach, whilst still aiming to incorporate people's subjectivity into the construction of landscape, focuses on social relations, and the production and reproduction of power via control of material and symbolic resources. Workers using this approach include Bradley (1997: 10-14, 81-89), and Jones *et al* (Freedman *et al*, 2011), who see rock-art as sacred sites laid out in a large-scale, coherent system; that is, they (separately) imply the existence of 'a man with a plan', and are also ignoring time depth.

If some rock-art was closely connected to views, then we then have to consider not only if views were possible, but also what features of the landscape were being looked at and referenced. Amongst others, Bradley, Tilley, Cummings and Whittle have claimed that we can do that (Bradley, 1997; Cummings, 2002; Cummings & Whittle, 2003; Cummings & Whittle, 2004, 10; Tilley, 1994); though other writers have problems with this (Barrett & Ko, 2009; Brück, 2005; Fleming, 2005 & 2006).

Tilley, Cummings and Whittle, all working in Wales, make much of Neolithic monuments referencing mountains such as Carn Ingli and Carn Meini, both in terms of

the orientation of the tombs, and in the shape of the capstone resembling the shape of one of the mountains on the horizon (Cummings & Whittle, 2004, 82; Tilley, 1994, 105). However, the resemblance between capstone and hill shape is not close, and the writers do not give strong evidence as to why these particular mountains should be selected; this is a major difficulty with their argument (Brück, 2005; Fleming 2005 & 2006).

In order to reconstruct rock-art landscapes, however partially, we begin by considering the environment in the areas where rock-art was made, how this changed over time, and whether views might have been possible. We then move on to how people might have created landscape from this, considering their inhabitation and movement through the land, and how they might have perceived the land in terms of its resources and threats, both material and spiritual. Re-creating lost landscapes in all their richness also involves the different scales, including the local area, the site locale, and in rock-art landscapes, reaching right down to the surface of the rock itself (Last, 2010).

3.2 Environments, inhabitation and movement

It was suggested in Chapter Two that rock-art could have been made and used as early as the Late Mesolithic, certainly by the early Neolithic, and then through into the later Bronze Age. In this section, environments, inhabitation and movement are considered in general terms over this whole time period; what is known of the specifics of Rombalds Moor is considered in the next chapter.

3.2.1 Mesolithic

With the end of the last glaciation, the climate warmed, ice melted, and the vegetation changed. The lowlands were always more densely wooded than the uplands, with oak and lime in the valleys, and birch, pine and hazel, later oak as well, on the higher ground (Cummings & Whittle, 2003; Innes, 2006; Simmons, 1990; Spikins, 1999, 96). In the later Mesolithic, hunter-gatherers were increasingly attracted to higher ground, as woodland in the valley bottoms grew more closed and dense, perhaps also marshy and inclined to flood (Bannister, 1985, 20; Simmons, 1995; Spikins, 1999, 110). Dense

woodland is not attractive to large herbivores, and Mesolithic hunter-gatherers are thought to have manipulated their environment, probably clearing woodland by deliberate burning; they might have used other methods of clearance as well, such as ring-barking, which cannot be seen in the archaeological record (Davies et al, 2005; Innes et al, 2013; Simmons, 1990; Fig 21 below).



Fig 21 The effects of burning on woodland: forests in Nebraska, USA.

Left: Woodland at left of path has not been burnt for many years; woodland to right of path was burnt just weeks earlier. In the unburnt area, the growth is very dense, almost no light can reach the forest floor, and visibility is very poor.

Right: A group of ecologists standing knee-high in light, herb-rich, regenerating woodland, burnt four years in a row. The larger trees have survived. The new growth attracts browsing animals; the improved visibility would make them easier to hunt.

Images: Chris Helzer, The Prairie Ecologist

<http://prairieecologist.com/2012/05/15/saving-nebraskas-oak-woodlands-by-burning-them/>

The primeval woodland of the Mesolithic and Neolithic, before clearance, may have looked very different to today's secondary woodland, with trees in primeval woodland growing tall and straight, with the first branches at 10 or 15 metres above ground level (Bell & Noble, 2012). This may have had implications for visibilities in woodland that we would not see replicated today. Moreover, woodland may have been quite patchy, with more open areas being created not just by people but by natural occurrences such as beaver activities, lines of animal movement across passes or at watersides, and natural fires or tree-throws (Brown, 1997; Moore, 2000; Simmons, 1995).

Once established, clearings are likely to have been maintained by grazing animals and further human activity (Bell & Noble, 2012; Davies et al, 2005; Jacobi et al, 1976; Milner, 2006; Simmons, 2001; Spikins, 1999, 107 & 116). Simmons (1995) working in the North York Moors, describes an area which he thinks was deliberately cleared by Mesolithic people and then kept open for some 40-60 years; he thinks that in general, the environment here was patchy open woodland, with areas of open ground and peat bogs. More open areas produce a nutritionally better regrowth attractive to animals; perhaps equally importantly, clearance also promotes the growth of a wider variety of plants that people might have foraged, including smaller trees such as hazel, which was not only an important food source, but through coppicing, an important source of wood (Bell & Noble, 2012).

In the later Mesolithic, people continued to have a mobile hunting and gathering lifestyle, though recent research indicates that they had smaller ranges than in the earlier Mesolithic, and were probably less mobile. They may have stayed in 'base camps', perhaps seasonally, perhaps using different ones in summer and winter, though the notion of a seasonal round visiting the same places regularly may be an oversimplification (Conneller, 2010; Spikins, 2002, 59; Thomas, 2013: 197,198).

Malham Tarn in the high Pennines of North Yorkshire may have been a summer-visited site. Standing at 1230 feet above sea level (about 400m AOD), it regularly experiences strong winds, receiving 58 inches (about 1.5m) annual precipitation; it is often snowbound for long periods during the winter (Raistrick & Holmes, 1962). It is on the shores of a post-glacial lake near the upper waters of the River Aire, and is also accessible by following the River Wharfe upstream; these rivers run immediately to the north and immediately to the south of Rombalds Moor. Malham Tarn was probably visited frequently during the Mesolithic; when the site was investigated by Raistrick & Holmes (1962), a diverse range of lithic tools was recovered, indicating settlement and not just briefly-occupied hunting camps.

The relationship between hunter-gatherers and land is described as tenure by Ingold (1986, 113, 134, 139 & 156). It is focused on paths and on places, often small areas, where particular resources are found: subsistence-related, spiritual, or both. This relationship becomes reflexive in the way it can be renewed by revisiting. Ingold goes on to say that hunter-gatherers do not have a sense of ownership over large tracts of

land; indeed some of the indigenous peoples of Australia say that the people belong to the land more than the land belongs to the people, and 'ownership' is largely focused on animals that have been killed (Bradley, 1998a, 34; Hodder, 1990, 44; Ingold 1986: 113, 134, 139 & 156). Hunter-gatherers may extend tenure over very large areas, so scale within landscapes is an important consideration; ethnographic studies of contemporary hunter-gatherers show that people may specifically look out at micro-features, such as springs, whilst simultaneously looking at the entire world; and moreover simultaneously perceiving each as sources of both sacred and secular resources (Price, 2011; in South Africa, Smith & Blundell, 2004).

Routes probably ran along the shoulders of the river valleys; people may have made use of the flatter hillside terraces, towards the edges, much like many footpaths today, for easier walking and better views down and along the valley. Little has been considered of pilgrimage in connection with Mesolithic people, that is, journeys primarily for religious or spiritual reasons, but we should not rule it out, and some reasons for moving on might have had an underlying non-functional motivation, such as a need to visit certain places for religious reasons (Edmonds, 1997; and in Scandinavia, Mulk & Bayliss-Smith, 2007).

3.2.2 Neolithic

The change from hunter-gathering to farming marks a fundamental shift in people's relationship with the land (Bradley, 1997, 34). Considering this, Hodder sees the Neolithic as involving not only the domestication of plants and animals, but also, and perhaps even more importantly, the domestication of people and society. His concepts of 'domus' and 'agrios', broadly representing respectively the home range and the wild, imply a growing divide between the safe, socialised world, and the increasingly threatening wild world beyond. People owned the land where they lived, and placed their monuments within it (Hodder, 1990: 44, 97, 137).

There may have been significant overlap between Neolithic and Mesolithic peoples, and the Transition may have been marked by conflict (Rowley-Conwy, 2004), though this is controversial (eg Thomas, 2013, 184). In their study of Mesolithic lithics at Malham Tarn sites, Williams *et al* (1987) say that the flint for tools came probably from East Yorkshire, but chert tools were made from local sources of chert, some of it poor

quality. They note increasing use of chert in the later Mesolithic, saying that this is common to other sites in the Pennines, and they suggest that this was because people no longer had access to flint from East Yorkshire due to the Neolithic presence there. Further to this, Conneller (2010) describes a very diverse and regionalised picture for the Mesolithic around the time of the appearance of the Neolithic, also stating that the Pennine uplands see small, briefly occupied Mesolithic camps, dated to 4200-3700 BC.

Could this represent people driven out of their lower range and into the hills by incomers, with rock-art as a boundary phenomenon? This would be a 'Mesolithic' rather than a 'Neolithic' interpretation of Bradley's assertion that rock-art overlooks 'fertile areas' and the 'settled landscape', standing on the boundary between these domesticated areas and the wild (Bradley, 1997: 72, 86, 90, 91; Waddington, 2007a).

In Neolithic Britain, people may have lived in small extended family groups, in a fixed residence with a fixed plot, though perhaps only for a few years or a generation or so; some of the family were probably away seasonally with grazing animals (Darvill, 2010, 88; Schulting 2008; Thomas 2013, 411). Just how mobile, or settled, they were, especially in the earlier Neolithic, remains very contentious. Equally unclear is our understanding of their subsistence base, and the balance between wild and domesticated foodstuffs, both plant and animal. It now seems clear that the Neolithic was far from uniform over Britain (Edmonds, 1997; Sheridan, 2010), and West Yorkshire is not at all well-understood.

Early Neolithic environments, as opposed to their landscapes, were probably very similar to those of the final Mesolithic, with a similar pattern of clearings amongst woodland, with similar implications for views. However, clearings in the Neolithic were made for additional reasons, for perhaps more permanent settlement, crop-growing, and infield pasture, as well as perhaps for wild resources too (Bell & Noble, 2012; Cummings & Whittle, 2003; Robinson, 2000; Waddington, 2007a). There would also have been a need for wood for structures.

Houses were far from simply functional, having a deep ideological significance connecting them both to monumentality and to tombs (Bradley, 2007, 52; Brück, 2008; Cooney, 1997; Sheridan, 2013; Thomas 2013, 285). Larger group identity was expressed via monument building, sometimes on top of an old settlement (Edmonds, 1997; Pollard, 1999; Waddington, 1999, 104). In Britain, remains of houses show

considerable variability in shape, though many houses of the earlier and middle Neolithic were rectilinear (Darvill, 1996), as opposed to the round or oval Mesolithic houses (Conneller *et al*, 2012; Gooder, 2007; Waddington *et al*, 2003; Waddington, 2007b). In the Yorkshire Pennines, no remains of Neolithic houses have been discovered, though the postholes of a rectilinear building, interpreted as a house, were discovered at Driffield, in East Yorkshire (Manby *et al*, 2003). The remains of much more substantial large rectilinear Early Neolithic houses have been found on the other side of the Pennines at Lismore Fields near Buxton, Derbyshire (Garton, 1991).

Considering the Neolithic in Yorkshire more widely, the remains of many monuments and monument complexes are known, such as the Rudston standing stone and cursuses of East Yorkshire, and in North Yorkshire, the Thornborough Henges (Bradley, 2007, 65; Harding, 2000a; Harding, 2013). However, in the Pennines of West Yorkshire, there are very few remains other than flint scatters; there is only one known Neolithic monument, Bradley Moor Long Cairn near Skipton, to the west of Rombalds Moor, which is likely to be Early Neolithic (Vyner, 2008, 3).

Working in Northumberland, Frodsham (2000) thinks that the (few) very large round cairns on hilltops, generally seen as Bronze Age, might be Neolithic as well. One of these stands next to Bradley Moor Long Cairn, and there are three examples reported on Rombalds Moor itself: the Great and Little Skirtfuls of Stones, and the Moortop Great Cairn.

Movement in the Neolithic, as with movement in the Mesolithic, must be considered at different scales, from local movement to long-distance journeys (Whittle, 1997). Although some monuments probably had mostly only local significance, others clearly drew in people from further away. This probably applies not just to highly prominent sites such as the Ness of Brodgar on Orkney, or to Stonehenge, but also to more apparently regional sites; some monuments may have arisen *en route* to more famous places (Barrett, 1994, 139; Noble, 2007).

Noting major henges where each of the major Yorkshire rivers leaves the hills and flows across the central plains, Vyner (2007a) suggests the existence of a major north-south route, with the henges marking both the river crossings and the beginnings of the major trans-Pennine routes, which follow the river valleys. These trans-Pennine routes might also be considered as pilgrimage routes themselves (Harding: 2012; 2013, 216;

Vyner, 2007a), as the finding of hundreds of Cumbrian polished axes in the Yorkshire Wolds in the east demonstrates the importance of bringing axes or rough-outs, across. There must have been well-travelled ways over the Pennines to Cumbria (Bradley & Edmonds, 1993, 45 & 53). The Aire Gap, a major route between lowland Yorkshire and Cumbria, runs up Airedale past the southern side of Rombalds Moor, and on via Skipton and Settle (Yarwood, 1981). This route is also accessible via Wharfedale, running north of Rombalds Moor, and over the pass to Airedale just east of Skipton.

Ostensibly, this seems unlikely to be linked to making rock-art. There are similar monuments at both ends of this route, both from the earlier and later Neolithic (Bradley & Edmonds, 1993, 158 & 196), but along the route, we do not see similar rock-art in the western Pennines. Apart from the very unusual site at Copt Howe, most of the rock-art reported in the Lake District massif, other than that on monuments, is cups-only (Sharpe, 2007, 390; Sharpe, 2015).

3.2.3 Bronze Age

Rock-art was going out of use by the later Bronze Age. English uplands are often marked by frequent cairnfields, often interpreted as Bronze Age, comprising many small cairns, often connected by stretches of walling, and often close to hut circles and small enclosures (Barnatt, 2008; Johnston, 2008; Waddington, 2007a), with carved rocks sometimes found in the cairns or in the walling. Portables, either small, often cup-marked rocks, or what seem to be quarried-off fragments of cup-and-ring marked rocks, have been found in cairns, including a few of those on Rombalds Moor. The quarried fragments and some of the portables, their carvings very fresh, indicate that rock-art was being meaningfully incorporated into the cairns. Larger carved stones are sometimes found used as cairn kerbstones, though whether the carvings are meaningfully incorporated or not is impossible to say (Boughey & Vickerman, 2003, 35 & 40; Deakin, 2007; and see Chapter Six, section 6.5.2 below). When carved rocks are found in ancient walling, it is even more difficult to understand whether the rock being carved mattered to the wall-builders, and the carved rock was merely a handy bit of rubble, or being moved out of the way.

Bradley (1997, 7 & 65) clearly links rock-art to mobile lifestyles, to marking territory, and to pilgrimage, saying that as people became more fully settled in the Bronze Age, rock-

art was no longer relevant. Although the late Bronze Age saw a shift towards permanent homesteads and fields, there was probably still some mobility connected with transhumant pastoralism (Darvill, 2010, 240; Johnston, 2008). The obsolescence of rock-art was perhaps more connected to an underlying change in ideology.

3.3 The involvement of belief systems in the formation of landscape

In the sections above, we have considered the environments in which people were making and using rock-art. We have also seen how Mesolithic and Neolithic subsistence strategies must have been a major part of their construction of landscape, but to reconstruct their landscapes in all their richness requires a fusion of their environment with the ideological framework through which people experienced and understood their world. However, we cannot access the mental states of people in prehistory, including any notion of their religious beliefs, except via evidence in the archaeological record of their behaviour, and if it is available, relevant ethnographic evidence (Thomas, 2011). Clearly, there is no ethnographic evidence available from Britain, but we next consider if some ethnographic evidence, though not from Britain, may yet be applicable to a British context.

Many writers now agree that hunter-gatherers of the whole sub-Arctic, from northern Scandinavia, across Siberia and across the north of North America, had a shared system of animistic and shamanistic beliefs and practices (Layton, 2003). The word 'shaman' was originally used only of Siberian religious practitioners, then of other sub-Arctic peoples, but is now widely used to describe people worldwide with similar roles. It is also used, rather loosely, to describe some contemporary New Age religious practitioners.

This animistic, shamanistic cosmology may go back into the Mesolithic at least, suggesting the possibility of a degree of continuity between relatively contemporary Eurasian shamanism and Mesolithic belief systems (Carmichael *et al*, 1994; Conneller, 2011; Insoll, 2011; Jordan, 2008 & 2011; Mulk & Bayliss-Smith, 2007; Price, 2010, 2011; Scarre, 2008; Thomas, 2013, 194; Tilley, 1991, 129; Zvelebil, 2008). Bradley has observed that there are clear elements of Mesolithic belief systems present in the cosmology of the Sami, a people of northern Scandinavia (2000, 62).

This ethnographic evidence comes first from studies of contemporary and historical northern hunter-gatherers in Siberia, and in Sapmi (Lapland, in northern Scandinavia and north-west Russia). These peoples have an animistic world view, conceptualising the natural world such that elements of it are believed to have human attributes. These elements include animals, trees, and natural features such as mountains, rivers, the wind, lightning and rock; the whole world is seen as animate. Many sub-Arctic indigenous peoples also identify religious specialists, shamans, trained to be able to access other worlds on behalf of others. Price describes how early researchers in Siberia saw ancient rock-art depictions of people, their clothing and drums, that were remarkably similar to the contemporary shamans they were encountering, suggesting continuity over very many generations (Bradley, 2000, 32; Insoll, 2011; Jordan, 2003, 136-137; Lahelma, 2005; Mulk & Bayliss-Smith, 2007; Price, 2011). The cosmology of the sub-Arctic peoples sees the world as divided into three layers, the heavens, the mundane world, and the underworld, often linked by a tree or a river (Bradley, 2000, 12; Guenther, 1999; Jordan, 2011; Mulk, 1994 & 2014; Mulk & Bayliss-Smith, 2007; Price, 2010 & 2011; Tilley, 1991, 130; Zvelebil, 2008; Fig 22 below).

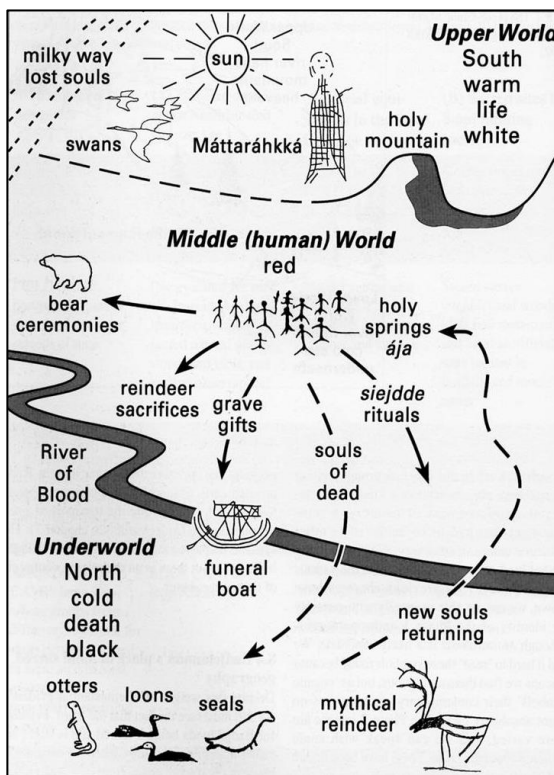


Fig 22 The three-tiered world.

A diagrammatic representation of the Sami cosmos, showing the three layers, the Upper World, Middle World and Underworld. Máttaráhkká is the major female deity.

Image: Mulk & Bayliss-Smith, 2007.

This world view is also seen in the modern-day Siberian Khanty, another of the sub-Arctic peoples, extensively studied by Jordan. He shows that Khanty people do not split the world into secular and spiritual, but see the whole world as inhabited by supernatural beings, connected to all aspects of the natural and human spheres: some are connected to a particular place, but others occupy everywhere (eg 2001; 2003, 135; 2006). Every aspect of life carries spiritual significance. Both Mulk & Bayliss-Smith, discussing the Sami (2007), and Jordan, discussing the Khanty (2001; 2003, 137), note that religious practice is not confined to specialist religious practitioners: shamans are involved in major ritual and observance, but most ritual behaviour is carried out by everyone, all the time, as part of the ordinary activities of daily life.

The key question is whether these belief systems extended into Britain. If so, they could have come in as early as when the country was re-populated after the Ice Age, or at any time after that, with later incomers (or both); the ideology could possibly also have arisen *de novo* in Britain (see below), or a combination of these. Zvelebil (2008) strongly supported the idea that an animistic and shamanistic world view was adopted right across the north of Eurasia in the Mesolithic.

Evidence from the early Mesolithic site at Star Carr, in North Yorkshire near Scarborough, strongly suggests shamanistic belief and practices. At this site, 24 red deer antler-skull frontlets have been found. The antlers had been reduced, perhaps to provide antler for other artefacts, perhaps to make them lighter in weight (or indeed both). Two holes had also been made, presumably so that they could be worn (Conneller, 2004; Little *et al*, 2016; Fig 23 below).



Fig 23 A red deer antler frontlet from Star Carr.

Image: British Museum:
http://www.britishmuseum.org/research/collection_online/collection_object_details/collection_image_gallery.aspx?partid=1&assetid=1613134479&objectid=1362906

Little and colleagues (2016) see the antler frontlets as clear evidence of shamanistic practice, making a strong case for shamanism in the British Mesolithic. They say that wearing elements of an animal, to identify and transform into that species, is well-recognised shamanistic ritual practice.

During the time Star Carr was occupied, Britain remained connected to north-eastern Europe via Doggerland (Innes, Blackford & Simmons, 2011). Elliott (2015), studying antler artefacts, shows the spread of Mesolithic technology across the North Sea Basin; where technologies can spread, clearly ideologies can spread too. It is therefore entirely possible that shamanistic beliefs and practices came into Britain from north-western Europe with Mesolithic people.

This cosmology might have persisted into the Neolithic as well (Price, 2011; Thomas, 2011). Dronfield (1996) says that one of the deeper hallucinatory experiences of trance is the experience of moving in a vortex or tunnel; Thomas (2011) thinks that this might have been enhanced by the carrying out of ritual ceremonies in Neolithic passage tombs, and many motifs carved within these tombs are claimed as entoptic forms, as discussed below (Bradley, 1998a, 52; Lewis-Williams & Dowson, 1988). It is therefore reasonable to consider using northern European ethnology in the interpretation of at least some British rock-art, within both Neolithic- and Mesolithic-based interpretations.

We must also consider just how much world-wide ethnology we can use. Working in southern Africa, Lewis-Williams and colleagues said that depictive rock-art there had been made by shamans in trance. They went on to describe a neuropsychological basis for altered states of consciousness and self-induced or drug-induced hallucinations, in three stages of deepening trance, with a standard repertoire of hallucinatory motifs called entoptics, derived from the human nervous system.

Because these phenomena are a feature of the human brain in general, Lewis-Williams and colleagues see altered states of consciousness, which they see as a key part of shamanistic practice, as not just a phenomenon of the sub-Arctic, but occurring globally: they are effectively suggesting that these concepts readily arise *de novo* (Bradley, 2000, 32; Lewis-Williams, 2001; Lewis-Williams & Dowson, 1988; Price, 2011; for a critique, Thomas, 2011). They go on to say that shamanistic beliefs underlie rock-art depictions in other parts of the world, and there is now a large group of writers supporting their ideas. This group includes Whitley and colleagues in western

North America, who think that this world view perhaps extended down the Pacific north-west and into the USA, and is very ancient indeed (Goldhahn, 2002; Turpin, 2001; Whitley, 2006; Whitley *et al*, 1999). The three-tiered world, for example, is also the underlying cosmology of the Native American peoples of the Mississippi basin, USA (Wagner *et al*, 2004).

The time depth here is very great, but McCall (2007) suggests that although details of practice are changeable, the basic cosmological concepts of the animistic and shamanistic world-view remain remarkably stable over time. These belief systems often include a 'master of animals' living inside a mountain, who sends animals to the hunters (Conneller, 2011; Ingold, 1986, 244; Jordan, 2008). In South African rock-art, there are carvings showing 'half' animals, which Morris (2010) interprets as animals entering or leaving the rock. These are very reminiscent of the stags emerging from curvilinear motifs in Galicia, Spain, cited by Bradley (1997, 55; Fig 24 below), demonstrating how very similar ideas can arise *de novo* in areas geographically and culturally very widely separated.

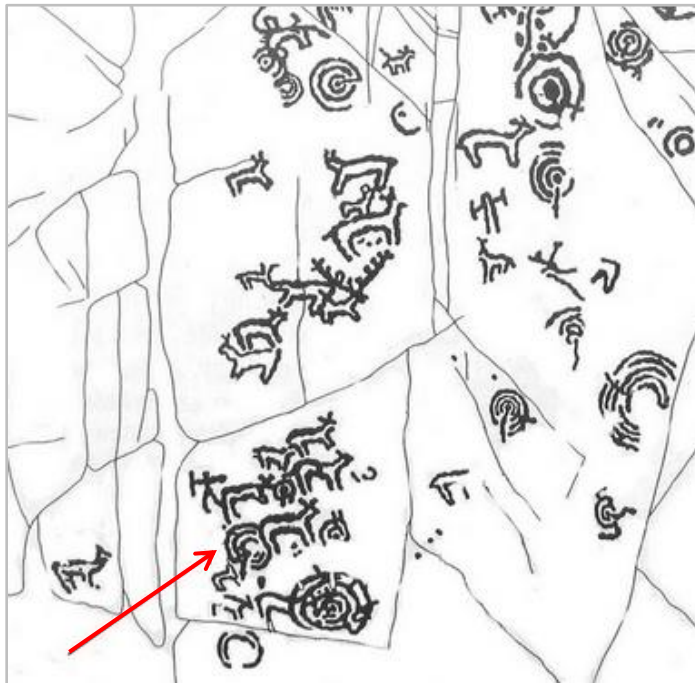


Fig 24 Cup-and-rings with animals: Galicia.

Drawing of part of rock-art panel at Pedra Boullosa, Campo Lameiro, Galicia. Note animals closely associated with cup-and-rings (arrowed).

Image: Antonio de la Peña, http://jlgalovart.blogspot.co.uk/2010_11_01_archive.html

A key initial finding of the work of Lewis-Williams and colleagues was that without ethnography, depictive ancient art could be entirely misinterpreted. For example, they said that depictions of eland, previously interpreted as hunting magic, could be shown via ethnography to have been depictions connected with shamans in trance states (Lewis-Williams & Dowson, 1988).

Worldwide, most rock-art areas have many depictions (though there may be abstract motifs as well), showing, for example, images of people, foot- and hand-prints, animals and birds, boats, weapons, and supernatural beings. British rock-art, however, is almost entirely abstract, though clearly depictions are not always the boon to interpretation that they might seem.

However, the ideas of Lewis-Williams and colleagues about shamanism as the world-wide earliest religion, based on altered states of consciousness, trance and hallucination, remain contentious. Other writers, such as Bahn, Helvenston and Bednarik, reject the entire concept of altered states of consciousness and entoptic phenomena, saying amongst other things, that the ethnological reports have been misrepresented, the neurophysiology and neuropsychology are wrong, and the plant-based drugs that might cause such hallucinations are not even found in the Old World (Bahn, 2010, 67-115; Bednarik, 1990 & 2013; Helvenston & Bahn, 2007; Helvenston, 2014).

This has led to a protracted and sometimes unseemly discussion in the literature (for discussions of this, see for example, Layton, 2000 and Price, 2011), though both Lewis-Williams (2003) and Whitley (2011) have adopted a more moderate attitude, accepting that even in areas where shamans were active, non-shamans might also make rock-art, and that some rock-art was made in areas where shamanism was not practised. Some Australian rock-art, for example, is known to have been made by people whose world view was not shamanistic (Layton, 2001).

However, we really do not need to become involved in the debate as to whether some carvers were using altered states of consciousness as part of their religious, ritual, or carving behaviour. For our purposes, it may not matter whether the carvers drew their inspiration for making, let us say, cup-and-rings, from their own internally generated hallucinations, or, to draw a random example, from raindrops in a puddle. What

matters is the meaning and significance they gave to carving, to motifs, to landscape, and the inter-relationships between them.

A further strand of ethnographic evidence that we may wish to consider when interpreting the rock-art landscapes of Rombalds Moor comes from western North America. Near the Columbia River in the Dalles-Deschutes region of the north-western USA, for example, there are thousands of images, both painted and carved, 400 in one rock shelter alone, many made by people engaged on a vision quest (Keyser *et al*, 2005,60-78; Turpin, 2001).

This term, like 'shaman', is also much over-used in a modern context. It arises from the religious practices of the indigenous people of north-western America, meaning a journey into the wild, taken alone, in search of spiritual enlightenment or the acquisition of a spirit guide.

Although it is part of religious practice in a shamanistic religious framework, people going out on a vision quest were frequently not shamans, vision questing being regularly undertaken by youngsters as part of their puberty rituals, or adults experiencing a personal crisis. Almost everyone would go on a vision quest at least once in their life (Keyser *et al*, 2005, 101).

Keyser *et al* (2005, 72-73) found that the rock-art made by ordinary people and by shamans was very different, with the 'private' art of ordinary people usually being at small reticent sites, low down and not readily visible, often requiring the maker to crouch, kneel or lie down; these carvings were often made by clearly less-skilled people, and were perhaps not meant to be viewed. Motifs made by shamans were found to be very different: this 'public' art was much bigger, made more skilfully, and made onto vertical surfaces that were readily visible from some way off, though sometimes very difficult to access by the maker (*ibid*, 62, 70, 73-76; Fig 25 facing).



Fig 25 Tsagagl'alal (She-who-watches), The Dalles, NW USA.

This pecked and painted image has been moved from above the Columbia river, where The Dalles dam now stands. Many of the natural edges of the rocks have been chipped away, as the rock was believed to have medicinal power.

Image: Peter Faris

<http://rockartblog.blogspot.co.uk/2012/12/chipped-rock-edges-at-washington-state.html>

This has been a long discussion of the possible applicability of far-distant ethnography to the interpretation of British rock-art. Even if this ethnography can help us to understand how and why rock-art might have been made and used in Britain, it may very well not be applicable to all of it. British rock-art, including that on Rombalds Moor, was probably being made and used for over two thousand years. It is unlikely to have been made for the same reasons throughout, and we should expect to find a palimpsest of sites, times overlying times, reflecting a palimpsest of reasons for carving, using and re-using rock-art.

3.4 Encountering the sacred: rock, natural monuments and sacred geographies

Edmonds (2001, 110 & 114) thinks that both the carving and the viewing of rock-art were spiritual experiences, and that both rock and the wider landscape were themselves deeply spiritual. The built monuments of the Neolithic and later periods had profound religious and ideological importance, acting as symbolic resources, whilst having considerable social and political importance as well. In northern Scandinavia, this has also been shown in the ways people treated *natural* monuments, the *siejdde*s (see below), using them as places for deposition, and places that were visited even though some were away from the usual routes (Bradley, 2000, 5-10; Mulk & Bayliss-Smith, 2007).

3.4.1 Rock

Earlier studies of rock-art panels often focussed entirely on the motifs, ignoring the stone on which they were carved. However, many writers argue that in prehistory, stone was perceived as far from just a simple, neutral carving surface, but as sacred, animate, and having agency. Rock, being hard, resilient, and long-lasting or even everlasting, could represent bone, people and ancestral forces; the colours, textures and physicality of rock could carry meaning, and these qualities could be part of the choice of which rock to carve (Cooney, 2008; Jones & Tipping, 2011; Waddington, 1996).

For us, rock is rock-solid and rock-hard, but ethnographic evidence shows that in hunter-gatherer belief systems, the rock surface can be a permeable membrane, with holes and cracks in the rock understood as ways into the spirit world. This has been reported from as far afield as South Africa, North America and Australia (Lewis-Williams & Dowson, 1990; Morris, 2010; Ouzman, 2001; Vinnicombe, 2010; Whitley, 1998; 2010; 2011).

Working in Britain, Tilley & Bennett (2001) suggest that people believed that ancestral beings used fissures and caves to move between worlds. Even today in the West, people may believe that supernatural beings inhabit large rocks (Duell, 2015; see Fig 26 facing).

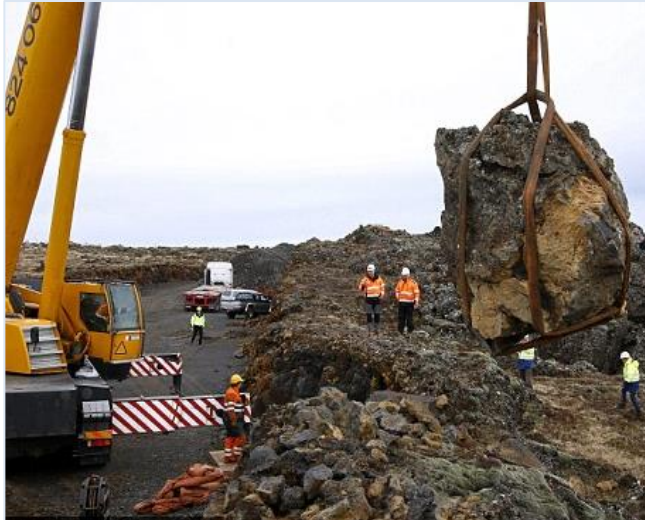


Fig 26 Ófeigskirkja rock, Garðabær, Reykjavik, Iceland. A large rock, believed to be an elf-church, being moved to a fresh site away from a new road. Image: E Jóhannesson, Morgunblaðið. <http://www.dailymail.co.uk/news/article-3002096/Elf-safety-Road-developers-Iceland-ordered-giant-rock-route-believed-ancient-elven-church-Icelandic-folklore.html>

Furthermore, Jones (2015) suggests that even for us, the physical world is not inert. In this paper, considering the philosophical underpinnings of his approach to interpretation, he describes how he and the other excavators at Torbhlaren ‘intra-acted’ with the rocks around and upon which they were working, saying ‘our fieldwork felt much more like an intra-active dialogue with another entity: rock.’ This is an important point, returned to in Chapter Ten.

3.4.2 Natural monuments

In some cases, largely or wholly unmodified natural features may have been seen as monuments. These are places which were treated as sacred and special, perhaps perceived as ancestral, that is, something that had been made, but made by supernatural agency (Barnatt & Edmonds, 2002; Bradley, 1991a, 1998b, 2000; Davies & Robb, 2004; Ruggles, 1999, 120 and 153; Scarre, 2008; 2011).

Bradley’s case study of siejddes, Sami sacred sites, in what is now called Sapmi, showed that the sites chosen were striking features in the landscape (Bradley, 2000, 3-13; Fig 27 overleaf).

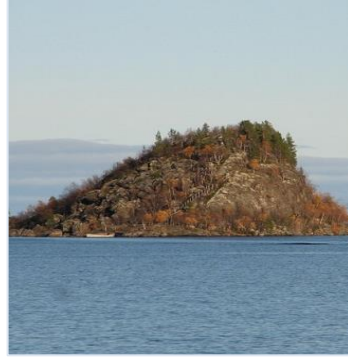


Fig 27 Sami sacred sites, Sapmi, Finland.

Top left: Astuvansalmi, Mikkeli, lakeside cliff resembling a face, Finnish Lapland.

Top centre: Ukonsaari island, with a sacred cave, Inari Lake, Finnish Lapland.

Top right: Crag Siejdde, Finland.

Bottom: three siejddes, after an engraving by Picart, 1724. One resembles a bird, another a human head. Note the antler deposited beneath the 'bird'.

Images: Top left: Ismo Luukkonen,

<http://www.bradshawfoundation.com/finland/gallery.php>

Top centre: <http://www.pasvik-inari.net/neu/images/religion/Ukonsaari%20Island.html>

Top right:

[http://www.luontoon.fi/Retkikohteet/historiakohteet/muinaisjaannokset/taatsinseitajataat sinkirkko/Sivut/Default.aspx](http://www.luontoon.fi/Retkikohteet/historiakohteet/muinaisjaannokset/taatsinseitajataat%20sinkirkko/Sivut/Default.aspx)

Bottom:

<http://Samiblog.blogspot.co.uk/2009/07/ancient-gods-of-Sami-de-gamle-Samiske.html>

Many sites were identified as siejddes because they resembled birds, animals or people, and the sites were almost never modified, though sometimes a different coloured rock was placed on top (Bradley, 2000, 3, 6 & 9; see also Mulk, 1994 and Lahelma, 2005).

As these sites were treated in much the same way as built monuments, being places for deposition, for meeting other groups of people, or as special places on the seasonal round, it is reasonable to call them natural monuments, although in *An Archaeology of Natural Places*, Bradley himself did not like this term if the site remained unmodified (2000: 5, 6, 13 & 34).

Amongst the Sami people, these unmodified or barely modified striking natural features clearly filled the role of monuments: some were in places set apart, difficult to find and difficult to reach, while others were visited regularly. Many were rocks or caves; some were trees. Sami people also made rock-art (Mulk & Bayliss-Smith, 2007).

This is not an isolated finding; Bradley went on to show that striking natural features were treated similarly in the Mediterranean, for example in Crete and mainland Greece (2000, 18), and in Britain, he cited the dramatically shaped tors of south-west England as further examples (1998b). Tilley (1996) thinks that these strangely shaped but natural hilltop rocks were treated as special places; Rough Tor on Bodmin Moor, for example, was enclosed in a stone-built enclosure with no entrance, as if walled-off.

Considering British rock-art, Bradley described the sites chosen for carving as natural monuments, but was not always clear about what made them monumental (Bradley, 1991a; 1997, 105). As we shall see on Rombalds Moor, some sites are indeed quite impressive, large and highly visible, but many are so small that they cannot easily be seen from even a few metres away, small ground-level sites in an open tract of land, hardly monumental by any criteria (Bradley, 1991a; 1997, 105).

Ruggles (1999, 120 and 153) suggests that some rock-art was made to mark places that were already sacred. Sacred sites were often worked and re-worked, so that the sites remained sacred, but for changing reasons, the original reason even perhaps lost or mutated into myth (Arsenault, 2004a; Ruggles, 1999, 120). Taking this further, a rock could have been perceived as a natural monument, as sacred, perhaps because it was a significant shape, but also simply if it had been marked by pre-existing rock-art,

the marks seen as ancestral (Bradley, 2000, 68; Chippindale & Nash, 2004). Jones (2003) also thinks that motifs were perhaps added to intricate panels over a long period of time, as what he calls 'repeated memorialisation'. Given the long period of time over which rock-art was extant, a natural place might have been perceived as sacred; marked by rock-art because it was sacred; and carved again, perhaps repeatedly, because the rock-art had become sacred, perhaps ancestral, in itself.

3.4.3 Sacred geographies

The concept of a sacred geography implies that the world is animate and holy, that the whole land has agency, and that people have a reciprocal relationship with the land (Jones, Freedman, O'Connor, *et al*, 2011; Ruggles, 1999, 120). Sacred geographies have been studied in many areas of the world, including Britain, and include both hunter-gatherer and later prehistoric landscapes (Carmichael *et al*, 2004; Jordan, 2008; Scarre, 2008).

Working in North Yorkshire, Harding (2013, 216) describes the Thornborough Henges of the Neolithic as 'a landscape where the air was thick with religion'. He sees this area, standing by an entry/exit of a major pass over the Pennines, as a site visited by Neolithic people journeying between the lands east of the Pennines and the sources of greenstone Cumbrian axes in the west. He goes on to say that these journeys are pilgrimages, important not only for religious reasons, but for social and political reasons as well, for the negotiation and construction of identities at both individual and group level, and at both secular and spiritual levels: the whole landscape is sacred, but has strong functional, social and political aspects too. Ritual, religion and the sacred are completely enmeshed with the routine functional activities of daily living, as well as the social and political worlds.

3.5 Moving through the landscape: routes and views

In prehistory, people were likely involved in both short- and long-distance mobility, that is, they moved around their regularly visited home range, but might also make trips to less-frequently visited places, perhaps sometimes well outside their usual round. Thus

we are considering not only the people who regularly inhabited Rombalds Moor, but also the people who might have been just passing through, for they were also constructing landscape. Both sets of people may have been constructing landscape in a physical way too: by making rock-art. Rocks may have been carved in a planned way, on or readily visible from regularly-used paths (Bradley, 1997: 78, 88, 124, 153; Freedman *et al* 2011; Jones, 2001); close to paths but hidden (Waddington 1996); or set apart from paths, at special places. It might also have been made without any thought of who might see it later, made by the carver for personal reasons, without consideration of, or need for, any subsequent audience.

If some rock-art was made on routes, demonstrating this would be difficult, for as Bradley remarks, ancient routes are notoriously difficult to identify. Moreover, Ingold notes that routes are often not single main highways, but a plait of intersecting tracks like a braided river. Even so, it is probably true to say that, as today, terrace edges and ridges make good pathways, simultaneously giving good coverage of the land along the terrace, and the land below (Bradley, 1997, 81; Ingold, 1986, 153).

The salience of views is similarly difficult to demonstrate. In some cases, rock-art may not have been made with any intention that it be viewed: in Australia, modern Aboriginal rock-art makers say that sometimes what matters is the making, not that the art is seen, or that it endures (Flood, 1997, 21).

As we have seen, ethnographic evidence cited by Whitley (1998, 2010, 2011) and by Arsenault (2004a) in North America suggests that carvings were made not as part of a regional plan, but by individuals; they often chose sites which were in liminal places such as rocky outcrops, rock-shelters and caves, springs, or mountain tops. Some of these places, by their nature, might have extensive views, but in many cases, the views were probably not the reason for the choice of site. Also in North America, Turpin (2001) describes Algonkian youngsters on vision quest awaiting spiritual guidance, whilst sitting on narrow ledges beneath rock-art sites. If they were concerned with a view, it seems that the view of the pre-existing rock-art site was its focus.

If some rock-art was made and used in connection with views, then all the people actively involved with the site, both around the time of carving, and subsequently, must have made decisions about the visibilities that they wanted for the carvings. In Britain, much rock-art stands in areas of high rainfall, the natural vegetation is woodland, and

without clearance and maintenance, carvings may rapidly disappear under moss and vegetation, paths becoming overgrown, and views may be very restricted or lost altogether, even in winter (see Fig 28 below).



Fig 28 Vegetation and views

Left: Woodland about 1km from Ormaig rock-art site, Argyll, in summer.

Right: View north in winter from 236/PW 05, Rombalds Moor, immediately above Ilkley.

Images: Author & P Deacon.

However, it is not just trees that must be considered; in the field, some carved stones are so low-lying that thicker bushy growth such as heather, bilberry, crowberry, or even just grass, can impede visibility; some stones may become overgrown, disappearing entirely. The management of rock-art sites in prehistory has perhaps not been considered as much as it deserves.

3.6 Moving through the landscape: is rock-art a text?

One of Bradley's key reasons for seeing rock-art as Neolithic was that not only did he see it as connected to, and contemporaneous with, Neolithic monuments, but that also he agreed with Tilley that material culture could be seen as communicative (Bradley, 1997:10, 78, 113, 124; Tilley, 1991). Tilley suggested that in effect, people were 'writing' on land. Working at a set of riverside rock-art sites at Nämforsen in northern Sweden, he was impressed by the relationship between the sites and the violent rapids (Fig 29 below; and see also Fig 152 below). The Nämforsen carvings were made by hunter-fisher-gatherers, and Tilley suggested that these, along with material culture in general, represented a form of text (1991: 17, 44).



Fig 29 Nämforsen, Sweden.

The river flow is much diminished by a dam for the hydroelectric station upstream; the rapids were previously much more violent.

The rock-art was painted by Swedish heritage authorities to make it more visible.

Image:

<http://www.bradshawfoundation.com/scandinavia/sweden/introduction.php>

However, despite examining thousands of the carvings in detail, in terms of the designs (all figurative: elk, boats, shoe prints, people, tools, fish), the site types, and how these were combined, he was not able to come to any real conclusions other than that elk might relate to female, and boats to male (ibid, 53, 113 & 182).

Although Tilley's work was inconclusive, Bradley thought this an idea worth pursuing. From his work in Argyll, he suggested that rock-art has an underlying 'design grammar', and that the carvings were put together incorporating a system of rules, though at no

point was he able to say what these rules were (1997, 45 & 72). He went on to say that we should consider 'entire groups of carvings as a unitary system extending across a wider area [of land]', and that people 'may have needed to visit a whole sequence of ... petroglyphs' (1997, 47 & 123). Essentially, he thinks that rock-art is a coherent system of communication that can be read; Jones agrees with this, saying that because rock-art is both readily visible and accessible, it is 'essentially communicative', and its purpose was to define territory and rights of access to areas of land (Jones, 2001). Later, Jones and co-workers stated that the entire regional rock-art landscape of Argyll was laid out as a means of communicating information, presumably about rights of access, directed to people coming in (Jones, 2001; Freedman et al, 2011).

Other workers profoundly disagree; examples from ethnography include Jordan's work in Siberia (2003, 21), where he says simply that in general, material culture is not a form of text. Ouzman (1998), working in southern Africa, also says that rock-art is not a language and it is not a text, though it can still carry meaning. Further problems include the huge variety of ways in which the motifs were combined, and their individual variability, making it hard to understand how complex information could be represented and conveyed. Furthermore, both Bradley, and Jones and co-workers are ignoring the very long duration of time over which rock-art was probably being made, implicitly presuming that this happened in a relatively very short time and in an unchanging ideological system.

3.7 Discussion: recreating the lost landscapes of rock-art

Because of the complexity of rock-art landscapes, it is important to examine them in their entirety; even small and apparently insignificant carved stones have something to tell us about the way some of the features of a rock-art landscape might have related to each other. Thus research projects that ignore these, concentrating on the larger and more intricately carved stones, may only be telling us part of the story. Secondly, it is important to be constantly aware of time depth, and to consider what other archaeological features (including but not limited to rock-art) might already have been present when a particular carving was made, and how the carving might relate to these features, and relate to these and other features over time.

Rock-art sites include a wide range of landscape settings, site-types and motifs, so including all the sites, and the long expanse of time over which rock-art was made and used, makes it highly unlikely that there will be one neat explanation for the making of rock-art. We should expect to see interpretations that might cover only some of the sites during a particular time, or different understandings of the same site, implying that over time, people treated sites in changing ways.

A major focus for this study is the investigation of views, both from and of rock-art sites. How people perceived and used features of the natural world, including rock, must have been very different from our own. Ethnographic information from places and peoples very distant both in time and space has been discussed in this chapter, going on to include the terms 'shamanism' and 'vision quest', both of which might seem exotic and sensational if applied to Yorkshire and Rombalds Moor. Nevertheless, a case has been made that this ethnographic evidence might be appropriately used in the interpretation of at least some British rock-art, including that on the Moor.

In the next chapter, Rombalds Moor is examined, looking at both the environments and archaeology of the study area, and applying the ways of thinking about landscape, chronology and rock-art that have been discussed here. It is important to consider rock-art within the wider context of how land was occupied and understood, with an awareness of how this must have been in a constant process of change throughout the long period of time in which rock-art was being made and used.

Chapter Four: Rombalds Moor

4.1 Introduction

Rombalds Moor is in the West Yorkshire Pennines, between the Rivers Wharfe to the north, and Aire to the south. The Guiseley Gap in the east separates it from a lower hill, the Chevin; to the west, the Silsden Gap separates it from the higher Pennines. In the south-east, it is separated from Baildon Moor by a pass (Fig 30 below).



Fig 30 Rombalds Moor.

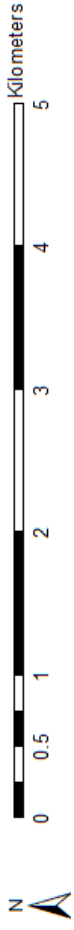
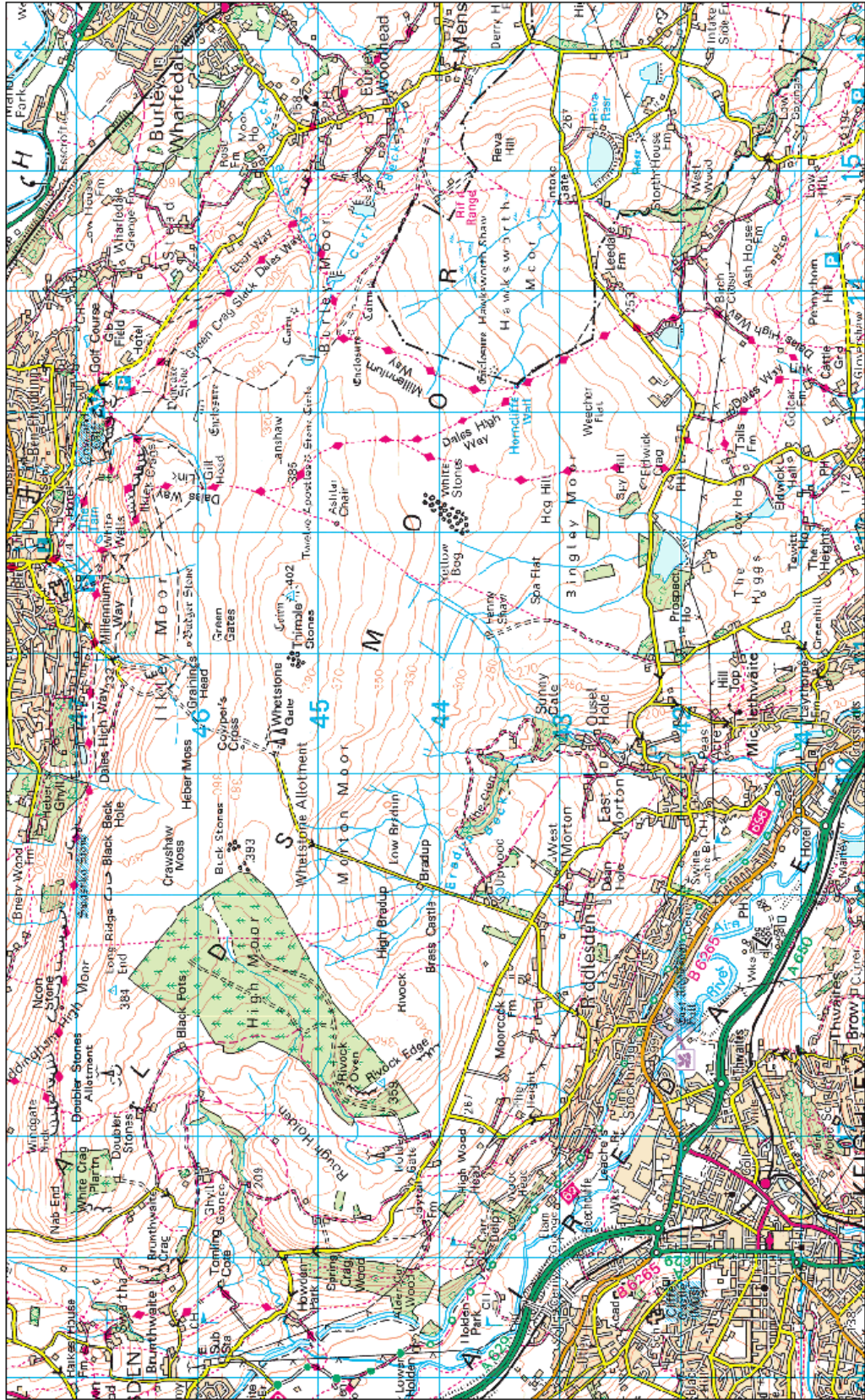
Top: Map of Britain, showing position of detail map below.

Bottom: Central northern England, showing position of Rombalds Moor.

Facing: Map of Rombalds Moor and environs.

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The Moor itself is mostly heather and bracken open moorland, with some areas of natural and commercial woodland. It is made up of Ilkley Moor, Burley Moor, Hawksworth Moor, Bingley Moor, Morton Moor, Rivock, the Doubler Stones Allotment and Addingham High Moor (City of Bradford MDC, 2008, 16). It is about 9km from east to west, and 6km from north to south, covering about 50 km² in all. It varies in elevation from about 150m AOD, to a maximum of 402 metres AOD at the Moortop Great Cairn; most of it is over 275m AOD.

It is now entirely ringed by cleared land mostly used as rough grazing, with some small towns, villages, farms and fields. The Moor's annual rainfall is over 1.27m (Bannister, 1985, 4; Boughey & Vickerman, 2003, 5; Deegan, 2004, 4; Faull & Moorhouse, 1981, Map 2; Ordnance Survey, 2010).

The aim of this chapter is to establish an understanding of the carvings in the context of Rombalds Moor, that is, the environmental conditions and, as much as possible, the social conditions and ideological frameworks in which the carved rocks were created, reworked, viewed and understood. Following on from this, we can apply the general principles of approaching ancient landscapes, as laid out in Chapter Three, to the specifics of Rombalds Moor and its rock-art, and generate research questions.

4.2 Geology

The underlying rocks of Rombalds Moor are largely sandstones, which stretch across most of western and northern Yorkshire, lying in strata occasionally separated by narrower bands of shale. There are infrequent bands of limestone in the shales, with a limestone stratum coming to the surface at Backstone Beck, and coal-bearing strata at the western end of Rombalds Moor at Rivock (City of Bradford MDC, 2008, 5; Bannister, 1985, 4; Hedges, 1986, 7; Yarwood, 1981).

The way the harder sandstones and softer shale strata lie and erode produces steep scarp slopes facing north and west, and gentler dip slopes to the south (Bannister, 1985, 4; Berg, 2001). In the north, Ilkley Moor and Burley Moor consist of three flattish terraces below the fairly flat moortop plateau, all separated by steeper scarp slopes (Boughey & Vickerman, 2003, 5; Yarwood, 1981; see Fig 31 facing). Below Rivock in

the south-west, there is a further extensive terrace, Rough Holden, above the Aire Valley and the Silsden Gap.



Fig 31 Two views of Rombalds Moor.

Top: View west from the Chevin hill, across the Guiseley Gap to north-eastern Rombalds Moor. At left is the relatively flat summit and then the two fairly flat terraces, Green Crag Slack and Ilkley Moor Lower Terrace, all separated by steeper slopes.

Bottom: View from Denton, across the Wharfe, to northern Rombalds Moor, looking towards Ilkley Moor Lower Terrace, which is at the level of the top of the cliffs. The Cow and Calf Rocks are prominent at centre, with Green Crag Slack above but over the horizon.

Images: Author & P Deacon.

Many boulders are still scattered over uncleared areas of the Moor. There are a number of rocky landslips and outcrops at the terrace edges, including the Cow and Calf Rocks, the Hangingstones, the Doublers, and Rivock Nose (Bannister, 1985, 4).

There is no naturally occurring flint anywhere in West Yorkshire, the closest sources being in the Yorkshire Wolds to the east. There is some chert, originating in Dales limestone and found as glacial drift on the Moor (City of Bradford MDC, 2008). Thus all finds of flint on Rombalds Moor represent imported material, and are evidence of human activity (Yarwood, 1981) – though visitors should be aware that recently imported footpath material also contains flint and chert.

4.3 Environments

Most of Rombalds Moor is now open, overgrazed peat moorland, with a few areas of thin acid soils, especially around the rocky outcrops. There is commercial woodland in the west at Rivock and a few small areas of woodland in sheltered valleys (Deegan *et al*, 2004, 4). Much of the Moor, still boulder-strewn, was apparently never cleared of rocks; the margins of the Moor, also within the study area, have been cleared for rough grazing.

Acidic soils are largely very hostile to organic remains. Pollen may survive well however, and in anaerobic waterlogged conditions, plant macrofossils and insect remains may be recovered (Chadwick, 2009, 13).

The only palaeo-environmental studies from Rombalds Moor itself include the comprehensive review by Yarwood (1981) and Bannister's unpublished PhD thesis (1985), with much of the later work (eg Boughey & Vickerman, 2003; Berg, 2001) relying on them. We can also take into account work on comparable areas such as the southern Pennines (eg Spikins 1999) and the North York Moors (eg Simmons, 1990; Simmons & Innes, 1996).

These can only give us a broad-brush picture of Rombalds Moor environments; what is really needed is detailed environmental evidence, including, and particularly, at rock-art sites. This would help us understand the vegetation in which rock-art was standing,

and the changes in this over time. It would also help to answer a crucially important question: where, and when, were views possible?

There is some work at this level of detail for a few British rock-art sites, for example by Jones, Freedman, O'Connor, *et al* (2011) in Argyll, though their main excavation site at Torbhlaren is atypical, being in rough pasture at the bottom of a river valley at only 20m AOD. Also in Scotland, Bradley and colleagues (Bradley, Brown & Watson, 2010; Bradley & Watson, 2012) excavated around a carved stone at Ben Lawers above Loch Tay, showing that the stone had stood in woodland which had been cleared and replaced by grassland 'some time before the designs were made'.

Unfortunately there is no comparable work for Rombalds Moor. A study at Crawshaw Moss on the top of Rombalds Moor (Yarwood, 1981), found evidence of pine, alder, and oak closed woodland in the sand and clay soils beneath the peat levels, dating to about 5500 BC (uncal).

A recent study of the Stanbury Hill area of the Moor included taking samples for environmental studies (Summers *et al*, 2013). Unfortunately, these were contaminated with modern material due to frequent recent episodes of burning.

Bannister's work on Rombalds Moor (1985) is now reviewed in depth, as it is the only detailed study of the environments of Rombalds Moor. Her survey covered the whole range of vegetational evidence from the immediate post-glacial period to the present day. Here I consider only the range between the middle Mesolithic to the Iron Age, which must include the times during which rock-art was being made and used.

Bannister (1985) obtained radiocarbon dates from some of her pollen cores. These dates are expressed in radiocarbon years BP, not as cal BC, so in order to understand her findings and interpretations for the purpose of this study, it is necessary to convert her dates to cal BC (Renfrew & Bahn, 2008, 143; Millard, 2014).

Various methods of converting radiocarbon years BP to cal BC have been devised. I have used CalPal Online (Weninger & Jöris 2007), which uses the calibration curve CalPal2007_HULU: all the cal BC dates in this section have been derived from Bannister's radiocarbon years BC using CalPal Online.

Bannister took pollen cores from ten sites on Rombalds Moor (1985, 9). These sites are shown in Fig 32 below. Three of the sites, at Lanshaw, are very close together; only Lanshaw 2 is discussed here, as eight radiocarbon dates came from this core, but none from the other two Lanshaw cores. Furthermore, the pollen record from Lanshaw 2 covers the entire prehistoric period, whereas all the other sites on the Moor provided only partial coverage. Bannister's Lanshaw 2 pollen diagrams (*ibid*, 182-185) and her correlation diagram of all the sites (*ibid*, 152) are included in Appendix 3. In order to interpret these, Appendix 3 also includes a list of the uncalibrated to calibrated dates, and a glossary of plant names from the Latin terms.

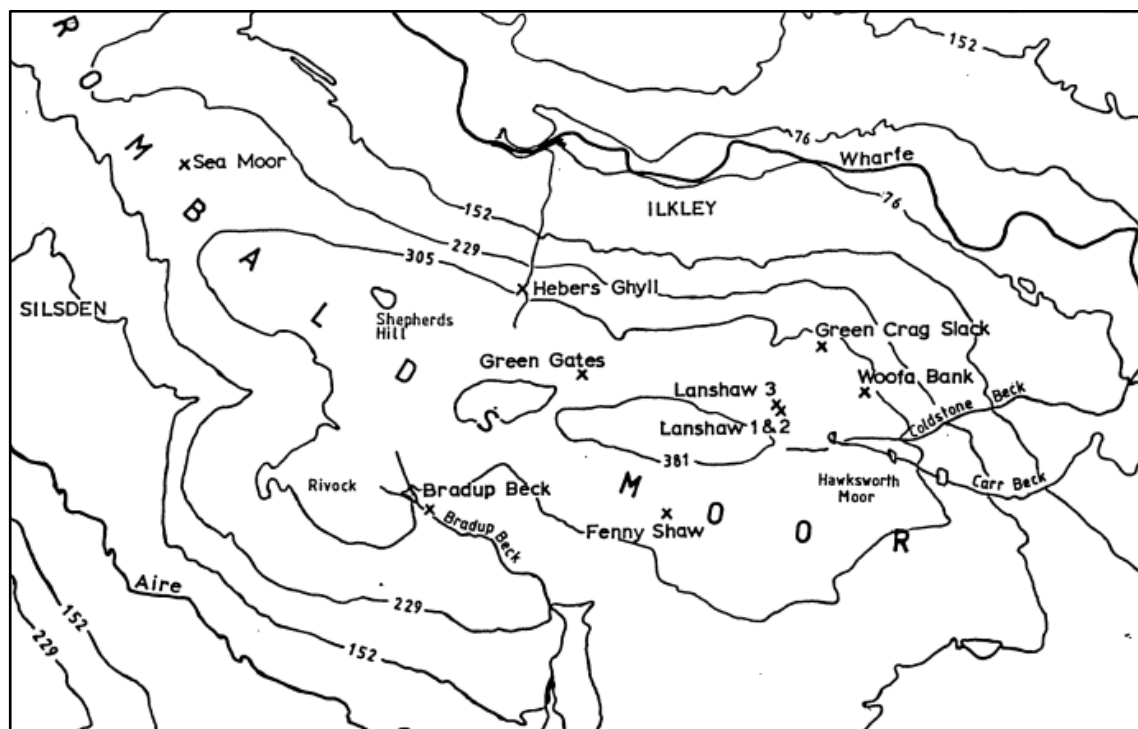


Fig 32 The sites of Bannister's ten pollen sites (1985, 5).

There are thus eight sites considered here. Only the data from Lanshaw 2 on the eastern moortop, and Sea Moor, in lower ground in the north-west, go back to the immediate post-glacial levels, with clay including few or no plant remains, as the earliest deposits (Bannister, 1985, 48, 120).

The following discussion of the pollen core from Lanshaw 2 begins with Zone F, as Zones A-E are from the earlier Mesolithic (see Appendix 3 Fig A2 below). Zone F, showing woodland, is dated 8160 \pm 90 radiocarbon years BP (Bannister, 1985, 51), calculated with CalPal to 7191 \pm 118 cal BC. *Corylus* and *Alnus* were predominant, and a wide range of small amounts of other arboreal pollens were also found. Non-arboreal pollens were at low-level, but included a wide range of species including *Filipendula* and *Pteridium*.

Lanshaw 2 Zone G, dated 5840 \pm 80 radiocarbon years BP (*ibid*, 52), calculated with CalPal to 4698 \pm 97 cal BC, also shows mixed woodland. This zone ends at 5250 \pm 50 radiocarbon years BP (*ibid*, 52), calculated with CalPal to 4096 \pm 87 cal BC. Thus Zones F and G originate in the Mesolithic to Final Mesolithic.

Lanshaw 2 Zone H (*ibid*, 53) without radiocarbon dating evidence, but probably representing the Neolithic, still shows mixed deciduous woodland around Lanshaw 2, with evidence of a drier climate. Bannister thinks that there is evidence in both Zones G and H for some clearance of trees (*ibid*, 68-69) with a rise in non-arboreal pollens such as Gramineae, but any clearances were limited, and the predominant vegetation remained *Alnus* and *Corylus*.

Lanshaw 2 Zone I is dated at 3670 \pm 50 radiocarbon years BP (Bannister, 1985, 53), calculated with CalPal to 2176 \pm 91 cal BC, putting it in the Early Bronze Age. Bannister describes *Alnus* remaining predominant, but says that rises in Gramineae, and the appearance of *Plantago*, *Artemisia* and *Rumex*, clearly indicate that some clearance was occurring.

Major clearance, with major loss of trees, appears in Zone J (*ibid*, 54) dated at 2170 \pm 50 radiocarbon years BP, calculated with CalPal to 247 \pm 89 cal BC, placing Zone J much later, in the Iron Age, with the vegetation dominated by Gramineae, and increasingly through this zone, by *Calluna*.

Lanshaw 2 is on the moortop. There are two sites nearby but lower, one on Green Crag Slack towards its eastern end, with another site, relating to the excavation of one of the Woofa Bank cairns, 700m from the GCS site (1985, 92, 140). From the point of view of studying Rombalds Moor rock-art, these are important sites, both at the eastern

end of Green Crag Slack, where a great deal of rock-art is found, though the actual sites are not close to many rock-art sites (see Fig 42 below).

Bannister's GCS site (1985, 92) unfortunately consisted of only two pollen zones, the earlier one, Zone A, without radiocarbon dating. Zone A shows woodland: *Alnus* and *Betula* predominantly, with some *Corylus* (*ibid*, 93). Zone B begins at 3320 \pm 40 radiocarbon years BP (*ibid*, 93) calculated with CalPal to 1603 \pm 56 cal BC, putting it into the Bronze Age. Zone B is divided into sub-zones, with Zone B(i) showing a fall in arboreal pollens, which Bannister thinks could be due to clearance, or perhaps increased wetness, though a band of charcoal in the deposit might be suggesting clearance activity (*ibid*, 93). Zone B(ii) is dated at 1300 \pm 40 radiocarbon years BP (*ibid*, 94), calculated with CalPal to 714 \pm 42 cal AD, making it post-Roman.

The Woofa Bank cairn itself, a sample for radiocarbon dating taken from underneath the central stone, gave a date of 2480 \pm 90 radiocarbon years BP (Bannister, 1985, 140) calculated with CalPal to 605 \pm 132 cal BC, putting it into the Iron Age. A pollen core comprising three pollen zones was taken from close to the cairn. No radiocarbon dates were obtained from it, but Bannister correlates this pollen core with that from the nearby site at Green Crag Slack (*ibid*, 142; Appendix 3 Fig A1; and see above).

Woofa Zone A shows woodland with *Corylus* and *Alnus*; Zone B again shows woodland, but with evidence of some clearance, with a rise in Gramineae and other non-arboreal pollens (*ibid*, 141-142). Zone C shows major clearance of trees, and the development of heathland with *Calluna* as the major pollen found. Bannister thinks that Woofa Zone C relates to similar findings at Green Crag Slack Zone B(ii) (above) and is thus post-Roman, and suggests that the Woofa Zone B clearance relates to similar findings at GCS Zone B(i), that is, probable clearances in the Early Bronze Age (*ibid*, 142, and see above).

There were two further sites in the north, Green Gates and Heber's Ghyll, both on Ilkley Moor. Green Gates (Bannister, 1985, 100) produced only one radiocarbon date, in Zone C, dated at 2170 \pm 80 radiocarbon years BP (*ibid*, 101), calculated with CalPal to 226 \pm 111 cal BC. Green Gates Zone A shows woodland, almost entirely *Alnus* and *Corylus* (*ibid*, 100); Zone B shows a more mixed woodland, with *Alnus* and *Betula*, and some *Corylus* and *Quercus*, plus a small but increasing amount of non-arboreal pollens

including Gramineae. There was also charcoal in the peat in Zone B, suggesting some clearance (*ibid*, 101, 104).

Bannister thinks that the Green Gates A/B boundary is equivalent to the Lanshaw 2 H/I boundary (above) which was dated at 3760 \pm 50 radiocarbon years BP (*ibid*, 53, 102) calculated with CalPal to 2057 \pm 72 cal BC, in the Early Bronze Age.

Green Gates Zone C, dated at 2170 \pm 80 radiocarbon years BP (*ibid*, 101), calculated with CalPal to 226 \pm 111 cal BC, is dominated by Gramineae and Calluna (*ibid*, 101, 104). This is about the same date as the major clearance seen at Lanshaw 2 Zone J.

Heber's Ghyll (Bannister, 1985, 106-108) produced one radiocarbon date in Zone B, dated at 2470 \pm 50 radiocarbon years BP, calculated with CalPal to 606 \pm 117 cal BC (1985, 107), in the Iron Age.

Heber's Ghyll Zone A showed woodland, with *Alnus*, *Betula* and *Corylus*. Zone B, in the Iron Age, also showed woodland, with only a few non-arboreal pollens at low level. Evidence for extensive clearance at Heber's Ghyll did not appear until later pollen zones. This is very different from other areas of the Moor for which there is data from the Iron Age, which show a loss of trees and a shift to grassland and then heathland.

The two remaining pollen sites were in the south of the Moor, at Bradup Beck and Fenny Shaw. The Bradup Beck site (Bannister, 1985, 124-129) did not produce material for radiocarbon dating, and the site was on a slope above a stream. It was thus potentially subject to both erosion and deposition especially in flooding events, with possible mixing of pollen deposits (*ibid*, 130). However, by correlation with similar pollen zones from her other Rombalds Moor sites, Bannister interprets the pollen zones here as showing woodland, until clearance in the Iron Age, again with charcoal in the peat at this time (1985, 132; Appendix 3 Fig A1).

Fenny Shaw (*ibid*, 134-136) also did not produce material for radiocarbon dating. Bannister correlated Fenny Shaw Zone B to the Green Gates clearance dated to 2170 \pm 80 radiocarbon years BP, calculated with CalPal to 226 \pm 111 cal BC, in the Iron Age (*ibid*, 101, 138; Appendix 3 Fig A1). Both Fenny Shaw Zone B and Green Gates Zone C showed major clearance, with Calluna and Gramineae predominating. The single earlier Fenny Shaw Zone A, undated, showed mixed deciduous woodland, with *Alnus* and *Betula* (*ibid*, 136).

Putting together Bannister's work, above, and evidence from similar upland areas of northern England, such as the North York Moors (eg Simmons, 1990; Simmons & Innes, 1996) and the southern Pennines (eg Spikins 1999), we can conclude that Rombalds Moor was wooded throughout the later Mesolithic. Bannister notes a widespread increase in *Corylus* on the Moor during the Mesolithic, perhaps due to the efforts of people to encourage this important resource (1985, 1, 156, 158).

By the Final Mesolithic and earliest Neolithic, Bannister shows that at Lanshaw, there was some opening of the tree cover, perhaps representing some clearance, with stronger evidence of limited clearances in the Early Bronze Age (Bannister, 1985, 68-69). There is also evidence of some Early Bronze Age clearance at Green Gates (*ibid*, 53, 102), and perhaps later in the Bronze Age at Green Crag Slack (*ibid*, 93), and probably also at Woofa (*ibid*, 142).

Thus Bannister is saying that major clearances, with replacement of trees by Gramineae and *Calluna*, are not seen till the Iron Age: cereal pollen does not appear in the record until the Iron Age or later (Bannister, 1985, 54, 70, 94, 101, 108, 114, 122, 129, 136). However, there is some evidence for limited clearances perhaps at the Final Mesolithic and early Neolithic, with clearer evidence for limited clearance in the Early and later Bronze Age (there is an unfortunate lack of clear dating information for the Neolithic). Limited clearance, perhaps representing clearings, either natural or human-made, might have persisted due to animal grazing (wild or domesticated animals) and possible further human intervention (Fleming, 2008, 120; Kirby, 2004; and see Chapter Three section 3.2.1).

In the absence of agriculture, it is usually suggested that land was cleared to facilitate animal grazing. However, Berg (2001) suggests that some clearances on the Moor might have been related to the making of ritual sites requiring an open landscape, implying visibility and views; this reason for clearance has also been suggested, for elsewhere in Britain, by AG Brown (2000).

4.4 The archaeology of Rombalds Moor

In studying the archaeology of the Moor, we are looking firstly for evidence of Neolithic and Bronze Age activity and perhaps Mesolithic as well, in which rock-art had a part. Secondly, it is important to be aware that the Moor is a palimpsest of human activity, from Mesolithic microliths to recent graffiti defacing cup-and-ring carved stones; from the remains of the Roman road, and quarrymen's tramlines, to the 1971 gas pipeline which runs right over the Moor (Keighley News, nd; Moorhouse, 2007). Since the last glacial period, Rombalds Moor has been exploited for its resources, including stone, minerals, peat and wood, and all this work has left its mark.

The first study of prehistory on Rombalds Moor was Cowling's *Rombalds Way* (1946), which also included reviews of earlier antiquarian work, such as Holmes (1885). In the 1980s there were three important reviews and studies of the environment and prehistoric archaeology of the Moor. JJ Keighley's comprehensive review (1981), in ML Faull & SA Moorhouse's *West Yorkshire: an environmental survey to AD 1500* (1981) has never been superseded and is still frequently cited (eg Berg, 2001; Deegan, 2004). Hedges' study of Rombalds Moor rock-art also includes a review of the environmental findings (1986, 8), and Bannister's unpublished PhD thesis, analysing pollen cores on the Moor, also reviews the archaeology (1985). The prehistory of the Moor is included in Vyner's review of West Yorkshire prehistory (2008), with some discussion of Mesolithic Rombalds Moor in Spikins' West Yorkshire review (2010). The area has also been covered in the Lower Wharfedale sector of English Heritage's National Mapping project, but they found few new features on the Moor, due to vegetation cover (Deegan *et al*, 2004, 16). Most recent investigations of the archaeology of the Moor have focussed largely on the rock-art for which the Moor is now famous (Brown, Boughey *et al*, 2013; CSI Rombalds Moor, nd; ERA England's Rock Art, nd).

There are over 300 Scheduled Ancient Monuments on Rombalds Moor, mostly the carved rocks on which this study focuses, but also various burial monuments and stone circles. The archaeology of the Moor is here discussed by time period, though there are few accurately dated finds, and much of the presumed dating is typological. In order to construct the maps below, data was gathered from the West Yorkshire Historic Environmental Record (2010), which is held and maintained by WYAAS, and only available by visiting their Wakefield office; it has not been published, and is not

available online. Further information was obtained from the *PastScape* website (Historic England PastScape, nd). Some of this data is old, with only 3- or 4-figure grid references (rounded up to zeros for plotting). Bannister also constructed maps showing archaeological sites (1985: 18, 24, 27, 40), but they do not show grid lines. Furthermore, she does not cite the sources of the data, nor give grid references except for a very few sites, and it is unclear which of her sites are also HER sites as well. It was therefore not felt possible to incorporate her data into the maps here, without risking significant inaccuracies, so they are shown alongside.

4.4.1 Mesolithic

West Yorkshire has a very high density of Mesolithic lithic finds compared to the rest of England and Wales (Manby, 2003; Spikins, 1999; Figs 33 & 34 below). Rombalds Moor itself has been regularly searched for lithics, though findspots have not always been well recorded, and Bannister (1985, 21) cites 10,000 in a single private collection.

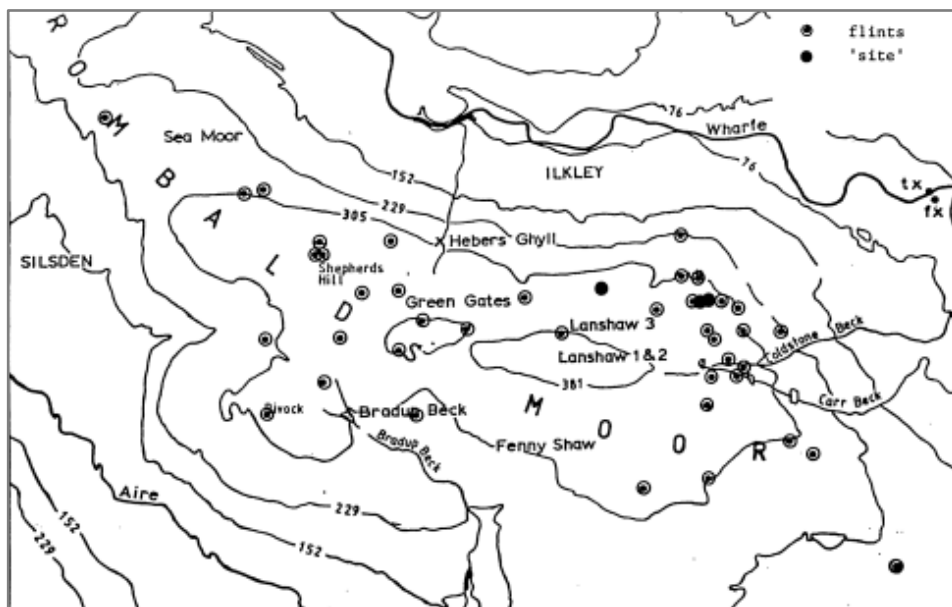
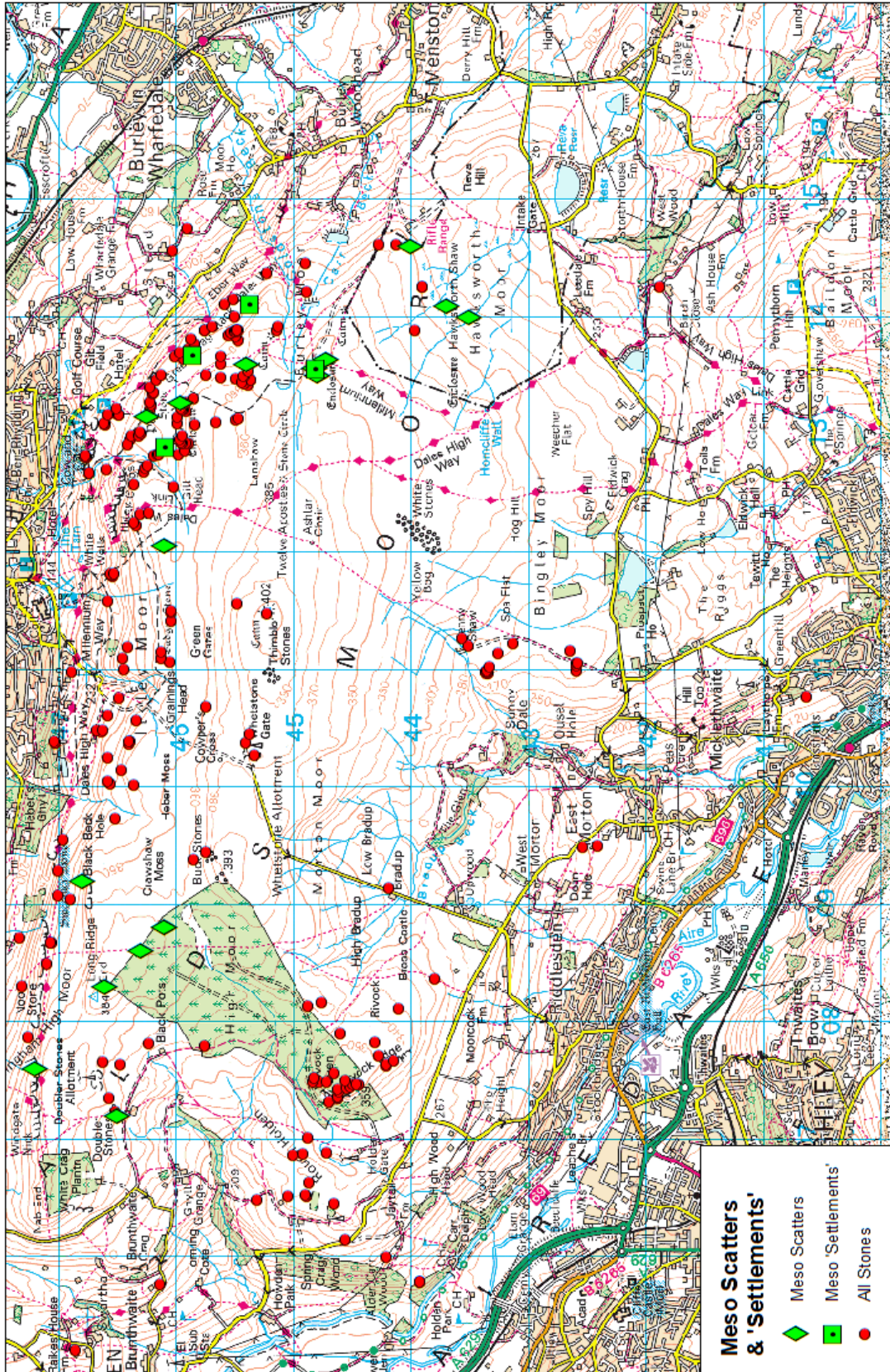


Fig 33 Mesolithic scatters & 'settlements' (Bannister, 1985, 18)

Fig 34 (facing) Mesolithic sites from HER record, shown with all rock-art sites.



Substantial diverse assemblages of Mesolithic lithics have been found in the valleys below Rombalds Moor: down the Wharfe at Sandbeds, Wharfemeadows and Washburn Foot; and down the Aire at Charlestown. These have been interpreted as occupation sites (Bannister, 1985, 21-22; Cowling, 1973; Keighley, 1981). Malham Tarn Mesolithic site, in the high Pennines, may also have been a part of a territory used by the same people: Rombalds Moor might have been on a well-trodden way between upland and lowland sites (see Chapter Three section 3.2.1).

On Rombalds Moor itself, large numbers of Mesolithic flints have been found, with two concentrations of lithics very close together at the eastern end of Green Crag Slack, and a further concentration nearby, on the moortop at Lanshaw Delves. Finds at all three sites include scrapers and burins as well as microliths, so these can probably be considered as occupation sites (Bannister, 1985, 17; 20; Keighley, 1981). On Cranshaw Thorn Hill, overlooking the western end of the Slack, a further collection of lithics including debitage suggests tool-manufacture (Bannister 1985, 18). Discussing these finds, Bannister remarks that there may be some bias (*ibid*, 20), as lithics are most likely to be found eroding out of the edges of the steeper slopes such as these, and they are well-visited places, so people are more likely to pick up lithics from here; she is implying that there may be more sites that we do not know about.

4.4.2 Neolithic

The findspots of Neolithic lithics on Rombalds Moor are shown in Figs 35 & 36 below. Other than lithics, there are very few Neolithic remains from anywhere in West Yorkshire, although there are considerable numbers of Neolithic monuments in the lowlands of northern and eastern Yorkshire, and the Yorkshire Wolds. There were major Late Neolithic/Early Bronze Age henges further down the Aire at Ferrybridge; further down the Wharfe at Newton Kyme; near the Ure at Thornborough; and probably at Catterick near the Swale. These are all at the lowest crossing points of the rivers flowing out from the Pennines into the Humber basin, perhaps marking the origins of trans-Pennine routes following these rivers upstream (Harding, 2012; Vyner, 2008, 6).

In the gritstone Pennines of Yorkshire, there is only one known large Neolithic monument, Bradley Moor Long Cairn to the west of Rombalds Moor near Skipton

(Vyner, 2008, 3). Vyner adds that it probably dates to the earlier Neolithic, although it has not been excavated in modern times, and is now very ruinous.

On Rombalds Moor, Neolithic lithic finds again cluster in the north-east, particularly on Green Crag Slack (Bannister, 1985, 23; Boughey and Vickerman, 2003, 9; Vyner, 2008, 3; Yarwood, 1981). Keighley (1981) thinks that the extensive and diverse range of Neolithic tool types from sites on Green Crag Slack and Hawksworth Moor suggest settlement, as with the Mesolithic. Edwards and Bradley's excavation near some carved rocks on the Moor at Backstone Beck, at the western end of Green Crag Slack, recovered Late Neolithic Grooved Ware potsherds, some fine Late Neolithic/Early Bronze Age lithics, and one or two hearths, all within a J-shaped rubble-walled enclosure (Edwards, 1986; Edwards & Bradley, 1999). There was no evidence of a house as such; the reconstruction on this site now includes a 'house', not shown in Edwards' site plan (1986), though I have been unable to discover the provenance of this reconstruction. The enclosure itself had previously been considered typologically as Bronze Age (Bradley, 1997, 95; Boughey & Vickerman, 2003, 41; Edwards, 1986; Edwards & Bradley, 1999; Manby *et al*, 2003).

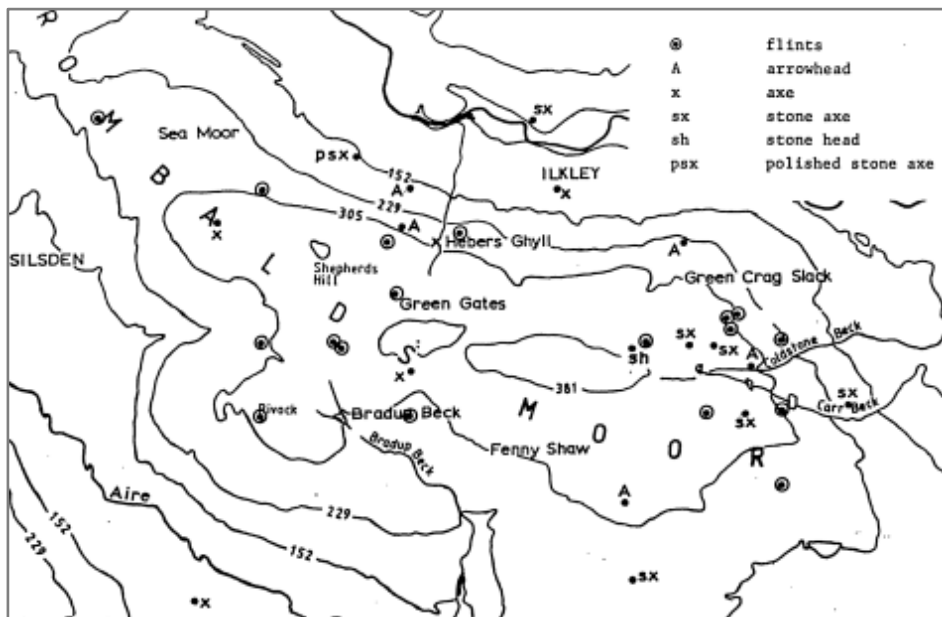
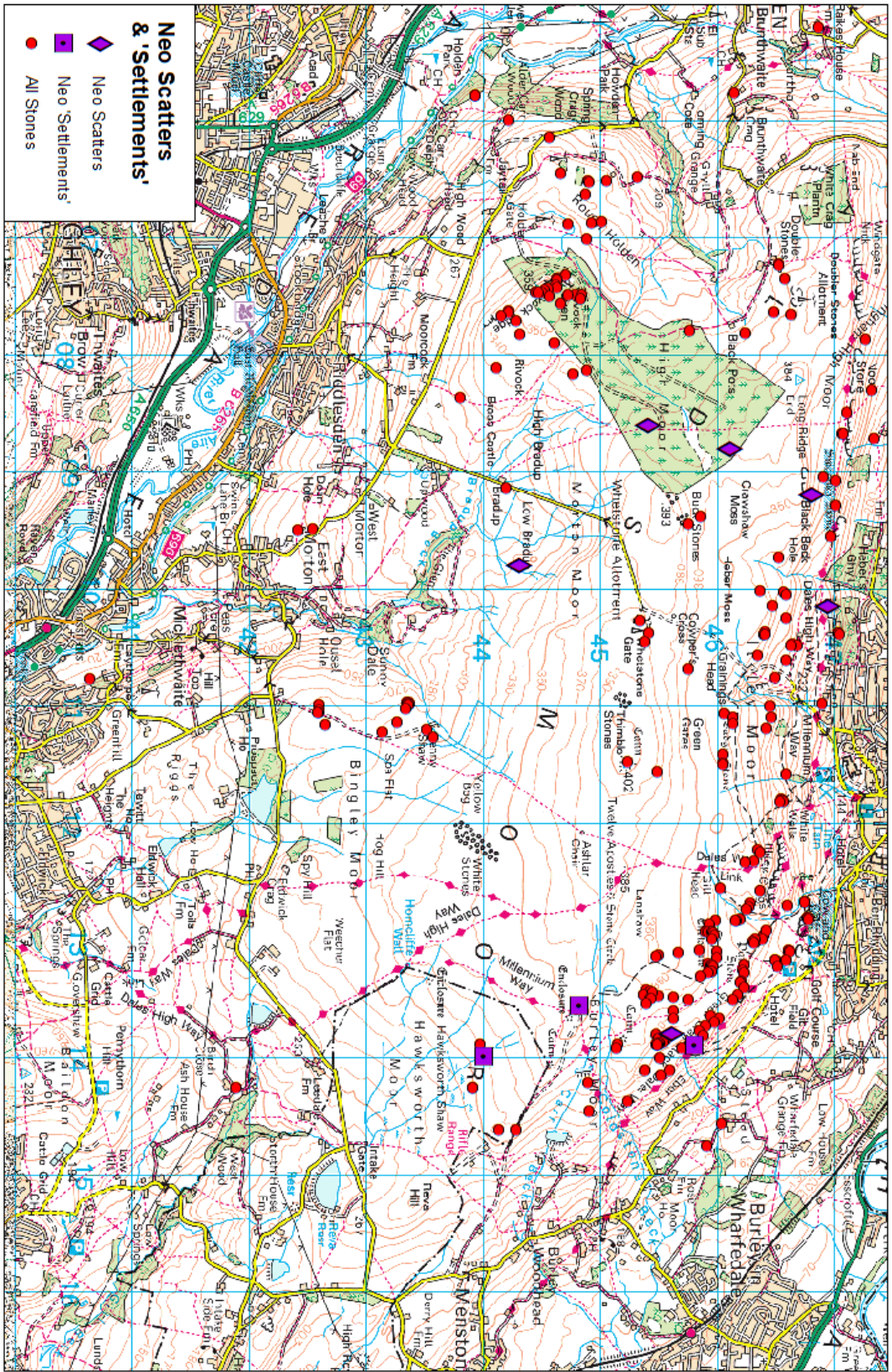


Fig 35 Neolithic scatters & 'settlements' (Bannister, 1985, 24).

Fig 36 (overleaf) Neolithic sites from HER record, shown with all rock-art sites.



A number of Neolithic axes have been found on the Moor, usually as isolated finds near streams (Bannister, 1985, 26). Also on the Moor are a number of stone circles, which Vyner considers could be Neolithic/Early Bronze Age (2008, 8), though as discussed below, other writers consider that they are more likely to be from the Late Bronze Age.

4.4.3 Bronze Age

There are considerable remains of Bronze Age activity on the Moor, with many lithics found, though little metalwork. There are many cairns or barrows, walling and enclosures, as well as ring works including ring cairns, earthen ring banks and some of the embanked stone circles (Keighley, 1981; Vyner, 2008, 10-11; Figs 37 & 38 below). The lithic finds are concentrated in the east of the Moor, again in the north-east at Green Crag Slack and Lanshaw Delves; there is much less evidence for Bronze Age activity in the west of the Moor (Keighley, 1981).

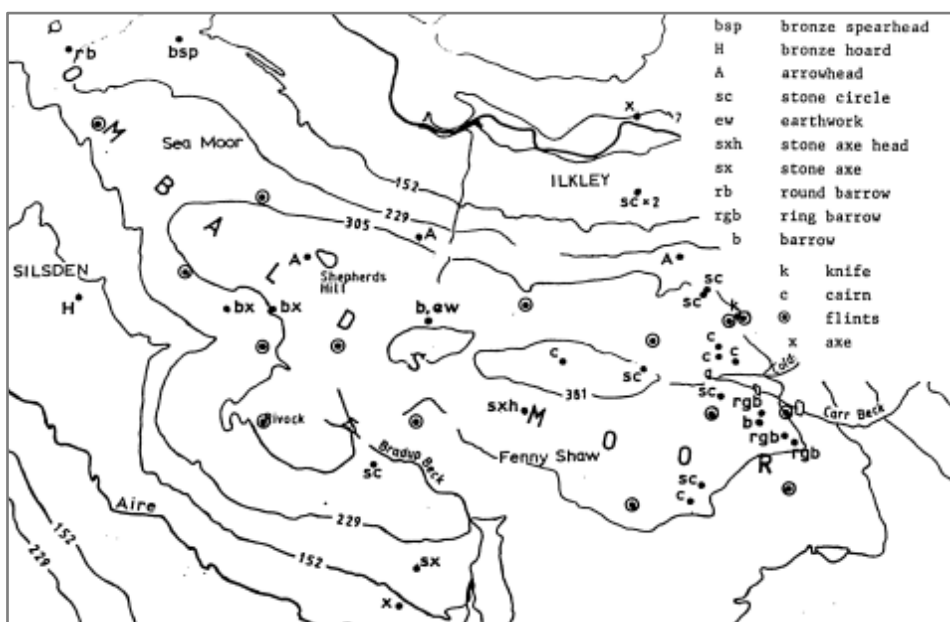
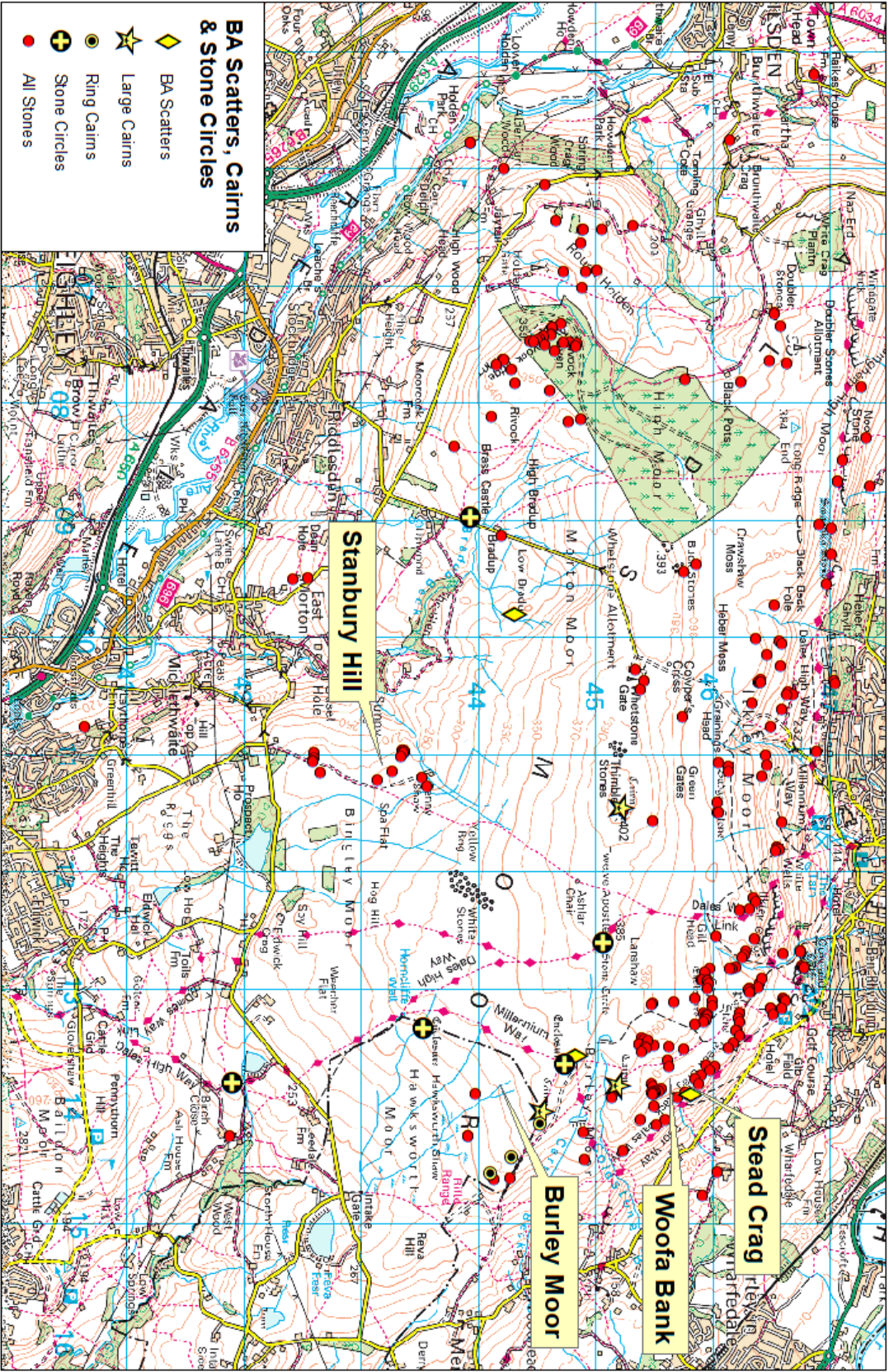


Fig 37 Bronze Age scatters and cairns (Bannister, 1985, 27).

Fig 38 (overleaf) Bronze Age scatters from HER record, with all rock-art sites, and approximate centres of major cairnfields.



Overall, there are fewer Late, compared to Early, Bronze Age lithics; it has been suggested that a climatic deterioration at the end of the Bronze Age, with colder, wetter weather, pushed upland populations to desert the highest land for lower ground (Bannister 1985, 39; Berg, 2001), though other writers disagree (eg Dark, 2006; Tipping *et al*, 2008; Young, 2000) suggesting that despite the climatic downturn, people remained in the uplands and adapted to the changes.

There are three very large round cairns on Rombalds Moor, usually interpreted as Bronze Age, but according to Frodsham (2000) possibly Neolithic. These are the Great and Little Skirtfuls of Stones, and the very overgrown Moortop Great Cairn. The Great Skirtful is still about 1.7m high and 80m in diameter. The now-visible remains constitute only part of the original cairns, as there has been extensive stone-robbing.

Most of the recorded small cairns are on and around Green Crag Slack, including Stead Crag and Woofa Bank cairnfields at the eastern end. Keighley (1981) interprets structures in Woofa Bank and Stead Crag as fragmentary Bronze Age walling and cairns, overlain by Iron Age cairns and enclosures, and 19th Century wall tumbles, and adds that it is unclear whether the cairns represent burials or clearance (or both).

Bannister, looking at the Stead Crag cairnfield, notes cairns touching each other, in lines, or associated with short lengths of walling, and has interpreted this as evidence of possible settlement. In the Woofa Bank cairnfield just above, she describes two further groups of 30-40 cairns, though the relationships between the cairns and walling here is different (Bannister, 1985, 34).

Hawksworth/Burley Moor cairnfield stands just to the south-east, above the Guiseley Gap. According to Bannister (1985, 23), some of the cairns here, slightly larger and more oval, may be Neolithic; unlike the small round cairns, these larger cairns are not associated with walling. There are also several cairns on Stanbury Hill in the south, and a few scattered cairns in various other areas of the Moor. Most of these cairns are small, only 2-5m in diameter and often less than 0.3m above ground level; unless the heather has recently been burned away, they are impossible to see from any distance away (Bannister 1985, 33 & 34; Boughey, 2013; HER record; Short *et al*, 2013; and see Fig 50 below). Antiquarians excavated a number of cairns, some of which contained pottery, but poor technique, recording and archiving makes this difficult to interpret;

furthermore, many barrows and cairns have been destroyed or diminished by stone-robbing (Holmes, 1885; Keighley, 1981).

There are numerous fragmentary remains of ancient walling on Rombalds Moor. Many of these stretches of ancient walling are in or near Green Crag Slack, such as the stretch on Cranshaw Thorn Hill, overlooking the western end of the Slack (Historic England National Heritage List, nd), with some in Woofa Bank and Stead Crag cairnfields. It is difficult to interpret what these represent. Fleming's work (2008) on the Dartmoor reaves, large-scale coaxial land divisions, led to the discovery of similar systems elsewhere, including in the Peak District and in Swaledale in North Yorkshire (Fleming, 2008, 145); however, there is no evidence of similar very long walls with laid-out fields on Rombalds Moor. Similarly, there is no clear sign of accretional field systems such as those described by Bender *et al* (2008, 130) on Bodmin Moor, Devon, or by Fairless (2004) at Burton Moor, Lower Wensleydale, North Yorkshire.

There are three relatively complete enclosures on Green Crag Slack (Fig 39 below). Note that Backstone and Green Crag Enclosures appear on OS maps but Woofa Enclosure does not. The enclosures are described here, but their complex relationships to rock-art are discussed in Chapter 6 section 6.5.3.

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Backstone Enclosure, at the western end of the Slack, is the enclosure excavated by Edwards & Bradley (Edwards, 1986; Edwards & Bradley, 1999). It has a curved wall in a J-shape; about half of it is perhaps missing, though Edwards was unsure if it was ever complete. There is now no trace to be seen of the 'missing' section.

The U-shaped Green Crag Enclosure nearby is relatively well-preserved at its eastern end, with a transverse wall but no sign of a gateway. It has two carved stones in its wall.

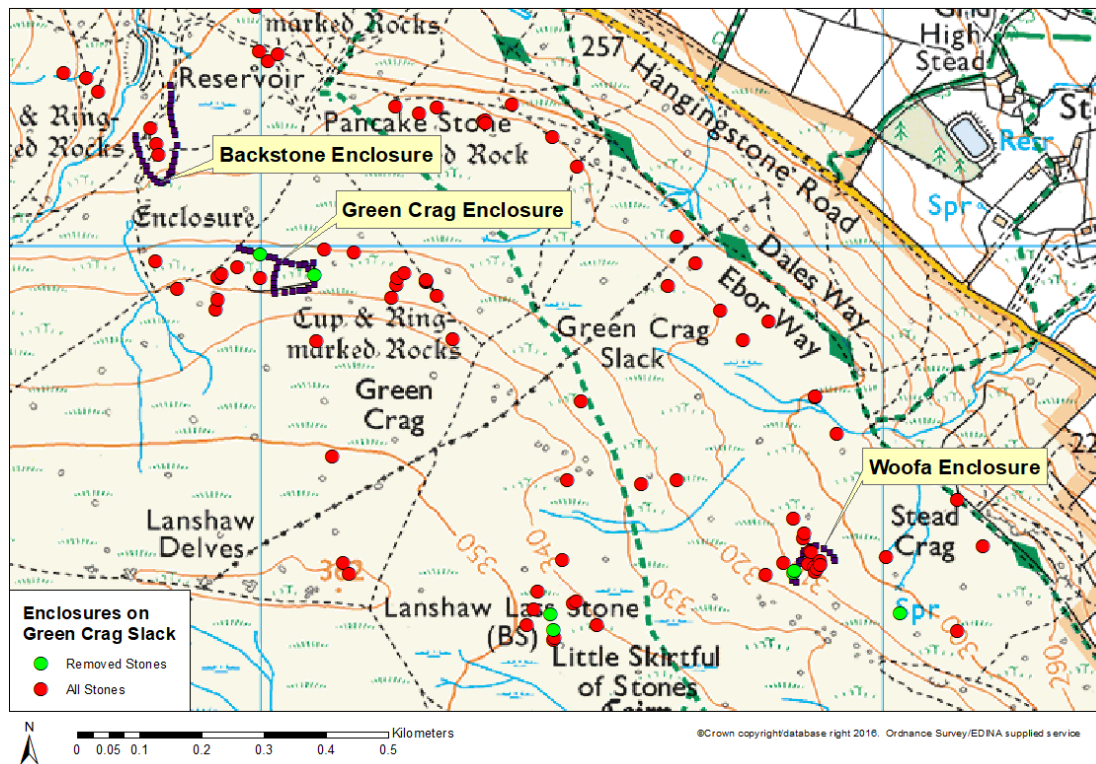


Fig 39 The enclosures on Green Crag Slack.

The enclosures are shown outlined by arbitrary points taken every few metres in the fieldwork, using a GPS handheld device. The 'Removed' stones are those removed from the main study database as not found, moved, in walls or in cairns, with two in Green Crag Enclosure wall, and two (symbols overlapping) in Woofa Enclosure wall.

Woofa Enclosure, standing towards the eastern end of Green Crag Slack, is sufficiently complete to see its original size and area; it seems to have been roughly square, but is now missing an L-shaped stretch of wall. It has what appears to be a well-preserved gateway towards the south-western corner, and two carved stones incorporated in its wall. It encloses a remarkably large number of rocks, nine of them carved; there are further carved rocks just outside the wall.

These enclosures have been interpreted by Historic England as sites of possible crop-growing, stock-pens and/or settlement, and probably made in the Bronze Age (Historic England National Heritage List, nd). As previously discussed, however, there is no evidence for the growing of cereals here, and Woofa Enclosure is full of boulders

(Bannister, 1985, 34; Historic England National Heritage List, nd; Keighley, 1981, 103; see Fig 39 above and Fig 115 below).

There was at least one further enclosure on Rombalds Moor. Standing above Ilkley near the edge of the terrace, it was destroyed during the construction of Panorama Reservoir and the nearby Victorian villas; no detailed description could be found, but 'many' particularly fine carved stones were reported to have been within or near it (Hedges, 1986, 11 & 14).

There are also five 'stone circles' on the Moor: some or all were probably burial monuments rather than stone circles (Lynch, 1979; West Yorkshire Historic Environmental record, nd; Fig 38 above). Much 'restoration', 'improvement' and vandalism has occurred, producing considerable change from Raistrick's account (1929) and making interpretation very difficult.

Two are now lost. Weecher Circle, which was 27 yds/about 25m in diameter (Cowling, 1946, 71), was destroyed during the construction of Weecher reservoir. Bradup Circle is also gone, already heavily damaged as a stone source by the 1930s, but perhaps finally destroyed by the gas pipeline works of 1971 (Keighley News, 1998). Raistrick described it as originally comprising at least 18 stones in a ring which was possibly embanked, with two further stones in the centre; he later noted that there was 'a simple cup-and-ring marked rock' within the circle (also gone) (Raistrick 1929; 1934).

Horncliffe Circle, again with a small setting of stones at its centre, may represent a robbed-out burial cairn; it has no ring bank, but may have been constructed on a platform (Keighley, 1981, 98; Raistrick, 1929).

The Twelve Apostles, Burley Moor, a much visited circle on the Moor top, has been heavily 'restored' over the years and is now very damaged (Historic England National Heritage List, nd) with some of the stones moved and some probably missing; it has a ring bank, and again may have been a burial monument rather than a stone circle.

Grubstones Circle, also on the Moor top, is described by Raistrick (1929) as having its stones set edge to edge in a ring bank, so this also was perhaps not a stone circle, but a cairn with a kerb (Lynch, 1979); a collapsed grouse-shooting butt in the corner should not be misinterpreted. It is close to a number of small cairns, three ring cairns and the Great Skirtful of Stones. Bannister cites an 1846 account of an excavation at

Grubstones revealing a cremation and a 'flint spearhead' under three stones at the centre (Bannister, 1985, 33; Keighley, 1981; Raistrick, 1929).

4.4.4 Iron Age

There were widespread clearances of trees on Rombalds Moor in the Iron Age (Bannister, 1985, 169) and although she notes the appearance of cereals in the pollen record, she thinks that the deforestation was in part due to pasturing of sheep on the Moor. Finds of early Iron Age beehive querns on the Moor have been taken to imply that there may have been some cereal processing there, and thus perhaps settlement, though no actual evidence of this, such as hut circles, has been found (Bannister, 1985, 39, 42; Vyner, 2008, 32; and see section 4.3 above).

On Green Crag Slack, Keighley (1981) thinks that at least some of the Green Crag Slack cairns, walling and enclosures here date from the Iron Age. The excavation of a cairn here, reported by Bannister (1985, 35 & 140) was associated with an Iron Age radiocarbon date from the soil beneath the central stone (see section 4.3 above).

4.4.5 Roman and later archaeology, to the present day

The stone-built Roman fort at Ilkley stood just south of the Wharfe at a crossroads, with a road, probably now Keighley Road, running south over the Moor towards Manchester (Bidwell & Hodgson, 2009, 14 & 105; Chadwick, 2009, 80; City of Bradford MDC, 2008, 15). We do not know where the wood and stone for the buildings and roadways came from, but people may have been exploiting the remaining woodland, and quarrying stone from the outcrops above the fort. There was significant cereal cultivation in the lowland areas round the Roman fort; the lower slopes of the Moor were also used for cereal cultivation from the later Iron Age into the Romano-British period, ending during this time and probably never re-starting (Bannister, 1985, 115).

By the early medieval period, most of the towns and villages surrounding the Moor were in existence. Otley, Ilkley, Addingham and Burley-in-Wharfedale are probably all Saxon foundations (Faull, 1981; Moorhouse, 1981; Sanderson & Wrathmell, 2005, 11). Bannister's pollen work on the Moor (1985, 97) shows further clearances and

increasing agricultural activity at around this time, and these townships were probably making use of moorland resources for rough grazing and the exploitation of remaining woodland (Bannister, 1985, 97 & 116). This is the case even with the necessary changes to Bannister's dates: for list of her dates, in radiocarbon years BP and their calibrated equivalents, see Appendix 3, Table A4 below.

Rombalds Moor has been heavily exploited for rock and mineral extraction. There was extensive quarrying, particularly on Ilkley Moor at the Cow and Calf Rocks, Addingham Rocks and Hangingstones Rocks; quarrying at Hangingstones involved the destruction of several carved rock sites (Boughey & Vickerman, 2003, 14; Hedges, 1986, 11; Holmes, 1885).

Frequent examples of small scale quarrying are also apparent at many areas of the Moor, not just on outcrop, but also on individual boulders, with some examples on carved stones being recorded in this study (Fig 40 overleaf).

There were several other small-scale industrial activities on the Moor. Backstone Beck was probably the site of mudstone shale extraction for the manufacture of bakesstones (Moorhouse, 2007; Walton, 1996). Lime, used for sweetening acid soils and for making mortar and whitewash, was extracted from glacial deposits and processed by burning at Lanshaw Delves, and on Hawksworth Moor (D Johnson, 2010), and there was peat cutting at Hollin Hill. These activities have left their remains on the Moor.

At Rivock, however, although the remains of coal-extraction bell pits have been described (City of Bradford MDC, 2008, 5 & 15; Hedges, 1986, 8), none could be identified during the fieldwork; the large machinery used in the Rivock commercial forestry plantation may have destroyed any surface evidence. A number of reservoirs, both open and covered, and other water-catchment works, stand above Ilkley, Burley-in-Wharfedale, Guiseley and Bingley (Hedges, 1986, 8; Ordnance Survey, 2010).



Fig 40 Rombalds Moor: small-scale quarrying.

Left: 357/GCS 15, Green Crag Slack, with a single 1-ring cup-and-ring at top (not seen here). Two sets of 'feather marks', to split the stone for quarrying, can be seen; there are also two sets of initials carved on the top surface, probably indicating ownership. Right: 355/GCS 13 H2, Green Crag Slack, with evidence of quarrying below ranging pole, and far left at vertical face.

Images: Author and P Deacon.

Ilkley became a spa town in Victorian times; White Wells Spa, now a Visitor Centre, stands on the Moor just above the town. The expansion of Ilkley involved the destruction of 'many' rock-art sites around Panorama Woods and Black Beck/Heber's Ghyll (Hedges, 1986, 11 & 14), and at least two more rock-art sites were destroyed when the golf course was constructed, downhill and north-east of the Cow and Calf (Boughey & Vickerman, 2003, 92). Today, the Moor is regularly visited by walkers and tourists, especially in the north above Ilkley, and many modern footpaths cross the area (City of Bradford MDC, 2008, 5). Although much of the Moor is managed for grouse shooting, this has been discontinued on Ilkley Moor, and sheep are now pastured on most of the Moor. They may have caused the puddles found around some rocks, including some of the carved stones; though this does not seem a credible explanation for all such sites (JG Evans, 1999, 90; Fig 41 below; see Chapter Six section 6.4 below).



Fig 41 252/GG 02, Green Gates.

The stone stands in a small puddle.

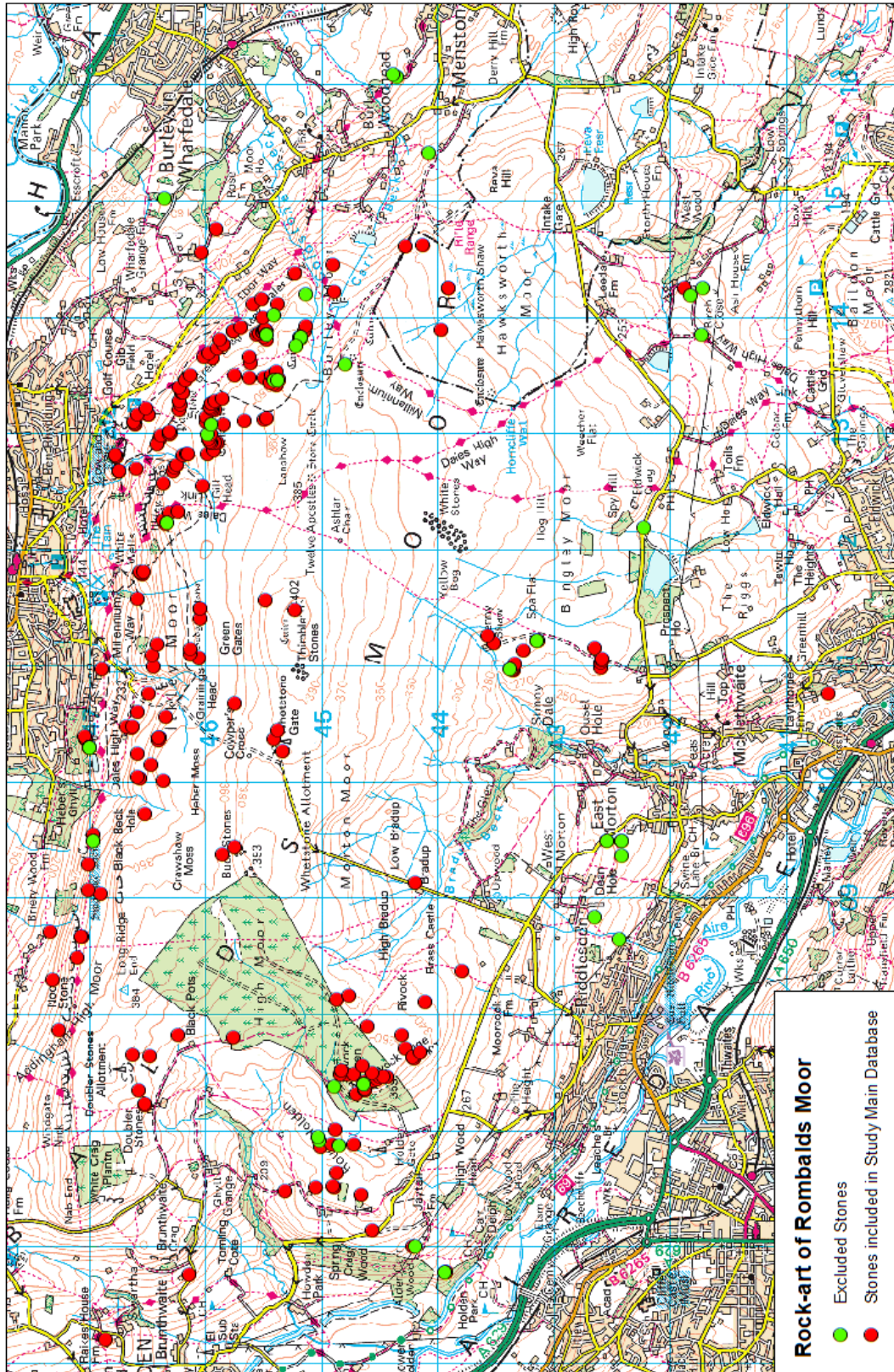
Image: Author & P Deacon

More recent remains on the Moor include some six aircraft crash sites, mostly from WWII (Aircraft accidents in Yorkshire, nd). There was also some WWII training involving live ammunition, which has left craters, slit trenches, the remains of ordnance, and perhaps bullet-marks on some rocks, misinterpreted as cups. A possible example of this is 226a/WG 03 (ERA England's Rock Art, nd; Friel, 2013; see Fig 45 below).

4.5 The rock-art of Rombalds Moor

Rombalds Moor rock-art has been well investigated over a long period, including by (in chronological order) Romilly Allen (eg 1879, 1882), Holmes (1885), Raistrick (eg 1929, 1934), Cowling (1946), Feather (eg 1964), Jackson (eg 1965), the Ilkley Archaeological Group (Hedges, 1986), Boughey & Vickerman (2003, 2013), Brown, Boughey *et al* (2013), and CSI (ERA England's Rock Art, nd). Fig 42 (facing) shows the Moor and all rock-art sites, both those included in the study, from Boughey & Vickerman (2003,2013) and CSI (ERA England's Rock Art, nd), and those excluded, as discussed below in Chapter Five section 5.4.

Fig 42 (facing) Rombalds Moor: all sites.



Boughey & Vickerman's surveys of rock-art sites in the former West Riding of Yorkshire, including Rombalds Moor, covered over 700 sites (Boughey & Vickerman 2003; 2013, 3). About 275 of them are on Rombalds Moor, though some of these 'sites' are described as 'natural markings', included to demonstrate that they were known about and had been reviewed and rejected as rock-art (Boughey & Vickerman, 2003, 32).

More recently, work by the CSI volunteers led to reports of a further 57 sites on Rombalds Moor, bringing the total up to 332 (CSI Rombalds Moor, nd; ERA England's Rock Art, nd). However, as discussed in Chapter Five, a number of these are also probably not rock-art. Fig 42 above, showing all rock-art sites for the fieldwork investigations, shows major concentrations in the north on Ilkley and Burley Moors; at Rivock in the south-west; and in the north-east at Green Crag Slack, where there are nearly 100 sites.

A recent investigation of rock-art at Stanbury Hill, on the south of Rombalds Moor, was carried out by Brown, Boughey *et al* (2013). They excavated several trenches, including a trench around and slightly underneath carved stone 102/SH 07, though the stone itself was not moved during the excavation (Fig 43 below). Near the stone were found a few lithics, including examples typologically from the Mesolithic to the Late Neolithic/Early Bronze Age. By chance, also found within this trench was a small orthostatic setting of three stone slabs, two set vertically and parallel, with a fragment from one of them placed horizontally between them (AA Evans, 2013). They also found that 102 had probably been moved; from its presumed volume, it must weigh perhaps two tonnes, and moving it would have been a considerable undertaking. They suggested it had been brought to its current position during the Middle Bronze Age, having been quarried from a spot beside a stream about 100m away (Brown & Boughey, 2013; Short, 2013; Fig 43 facing). Short (2013) suggested that this rock could not have been deposited as part of the last glacial event, as it showed very little weathering underneath; also, its underside was shown to be scalloped, which he says could not have occurred naturally. The Middle Bronze Age date was unexpectedly late; however, it rests on only three radiocarbon dates from a pink-grey sediment found all over the Stanbury hill excavations (Outram, 2013). One of these samples returned a date in the late Iron Age, and none of them came from close to the carved stone.

The interpretation is therefore difficult, and moreover, it is not possible to understand the temporal relationships between quarrying the stone, carving it, and placing it where it now stands. However, although the motifs are now very weathered, a cup-and-ring near the northern tip looks to have been broken, suggesting the stone might have been moved after it had been carved.



Fig 43 102/SH 07, Stanbury Hill.

Top: The stone, during the Stanbury Hill Project excavation in 2011.

Bottom: The stone, four years after the excavation.

Images:

Top: ERA

http://archaeologydataservice.ac.uk/catalogue/era-1618/dissemination/jpg/25254_2519_con_sh07_con_12.jpg

Bottom: Author & P Deacon.

This is an important, though so far, unreplicated finding: prior to this excavation, it had not been considered that this rock might have been moved. This raises the possibility that other apparently earthfast boulders may have been moved as well. Furthermore, their geologist thought that the apparently natural distribution of a number of both small and larger rocks in the locality, all uncarved, showed evidence of human intervention; the archaeologists thought that some of these had formed a discontinuous linear feature over 35m long, to one side of the carved rocks (Armstrong, 2013; Boughey, 2013).

The second recent Rombalds Moor project is the *Carved Stones Investigation: Rombalds Moor* (CSI), an important and prize-winning Community Archaeology project using volunteers (CSI Rombalds Moor, nd). They recorded all the panels on the Moor to English Heritage recording standards, including using photogrammetry at some sites. The CSI volunteers also recorded other archaeology in the vicinity of the stones, but their brief did not include using this data for any interpretation of rock art in the landscape.

Although some of the rock-art of Rombalds Moor shows complicated and intricate designs of cups, rings and grooves, Boughey & Vickerman (2003, 32 & 34) show that on the Moor, about 65% of sites have cups only, 25% have cups with one ring, 6% have cups with two rings, and only 2% have cups with three or more rings. Designs involving grooves with other motifs, however, are common, and they speculate that there may be sites with grooves only, which might be routinely missed; they found only one, but a probable second was identified only 80m away; a cups-and-grooves stone where the cups looked very much like natural markings (Boughey & Vickerman, 2003, 32; Chapter Two section 2.4.2).

Boughey & Vickerman (2003, 8-13) note that most carvings are on horizontal or nearly horizontal surfaces, and the sites themselves are often on flat or nearly flat terrain. There are very few sites on the Moortop plateau. On the northern side of the Moor, most rock-art is found along the terrace below, which includes Green Crag Slack. They note that complexity and altitude of carvings here do not fit with Bradley's observation that in general, complex carvings are found at higher altitudes (Boughey & Vickerman, 2003, 38; Bradley, 1997, 97), which Bradley himself acknowledged (1997, 95); most of the carved stones on Green Crag Slack, at over 300m AOD, have cups-only. There

are about twice as many carved stones on the northern slopes as there are in the south, but this is largely accounted for by the dense concentration (about 100) in Green Crag Slack alone (Boughey & Vickerman, 2003, 33; and see Fig 42 above). Sites are seldom isolated: Boughey & Vickerman (2013, 87) note that nearly half of the sites in their full database are within 25m of at least one other carved rock.

Standing within what are now improved fields on the margins of the Moor are 33 carved stones. Many of these have either seemingly been moved, mostly included into walls, or cannot readily be moved (sheet rock, or huge), suggesting that there may have been far more carved stones in these areas, perhaps moved away, broken up or used as wall material, their motifs destroyed or concealed.

4.6 Discussion: Rombalds Moor as study area

The rock-art of Rombalds Moor has been very well-covered, in terms of the distribution and recording of the sites, by many workers over the years, most recently Hedges, for the Ilkley Archaeology Group (1986); Boughey & Vickerman (2003, 2013); Brown *et al* (2013); and the CSI group (ERA England's Rock Art, nd). Unfortunately there has not been the same level of work on the environments of the Moor.

This interpretive study is concerned with rock-art landscapes, with a focus on views both of and from rock-art sites, as well as looking at, amongst other things, relationships between sites, motifs and other archaeology (see Chapter One section 1.1 above). Whether views were possible, that is, the details of the vegetation of the Moor, then becomes of great importance, and is a difficulty returned to repeatedly in the chapters that follow.

From the discussions in this chapter, and in Chapter Three, it follows that inter-relationships between rock, motifs and other features of the landscape might be found at various spatial scales. The fieldwork was intended from the outset to cover all the extant carved stones on the Moor, and thus would generate a lot of data, requiring a methodology that could deal with findings at the different spatial scales. The two extremes, the whole Moor and the individual rock, were obvious scales to examine, but

intermediate scales also needed to be identified; as, for example, considering view-related observations, it is never possible to see right across the whole Moor.

Different spatial scales generate different research questions, and this necessitated developing a methodology that could address these very different scales. This is discussed and set out in Chapter Five.

Chapter Five: Methodology

5.1 Introduction

Rombalds Moor was chosen for this study as it is an accessible, and relatively circumscribed area with many sites, already well-surveyed by Hedges (1986), Boughey & Vickerman (2003, 2013), and, overlapping the beginning of the time this study was carried out, the CSI group (CSI Rombalds Moor, nd; ERA England's Rock Art, nd). All of these have produced gazetteers, but only Boughey & Vickerman (2003, 1-46) have offered much by way of interpretation. This study covers all the extant rock-art on Rombalds Moor, following Bednarik's critiques of many landscape-based rock-art studies, which he says lack scientific rigour by not including all sites (eg Bednarik, 1990; 2000). He accepts that we may not know about sites that have been destroyed or not found, and that moreover these may be far from a random sample, but this is the most comprehensive approach possible, and essential for a rigorous landscape-based analysis. The arguments laid out in the preceding chapters have focussed on the inter-relationships between rock-art motifs and other motifs, rock itself, rock-art sites and the wider landscape. From the discussion in Chapter Three of how spirituality and belief might be incorporated into landscape (section 3.3), it is clear that this too might also be apparent in the rock-art landscapes of Rombalds Moor.

In order to build the methodology, there is first a review and critique of the methodology that other workers have used in their work in rock-art landscapes. Building the study methodology follows on from this, beginning with a definition of the boundaries of the study area, and a discussion of practical issues in the field. The fieldwork methodology is then laid out, encompassing observations at all four spatial scales, followed by a discussion of how the large amount of data could be organised, presented and understood. The methods used are described, with a consideration of their utility and limitations, whilst accepting that this was a single-worker study carried out within the time limits of a doctoral thesis. Finally, it is important to emphasise that this is not a GIS study of a rock-art landscape. GIS, Geographical Information Systems technology, is discussed at some length in this chapter because of its complexity; it was used to

augment the fieldwork and to help to present the results in a clear way, but it is fieldwork that lies at the heart of this study.

5.2 Methodology of previous studies of rock-art landscapes in Britain

This study examines inter-relationships between rock-art and its landscapes, concentrating on views (see Chapter One section 1.1 above). However, other than seeing, there are other senses which might have been involved in perception of rock-art in its landscapes, notably hearing. Associations between sound and open-air rock-art (that is, not within structures such as megalithic monuments) have been considered and investigated both in Britain and other areas of the world (Devereux, 2008; Díaz-Andreu *et al*, 2017).

Ringling rocks, which may produce a gong-like sound on being struck, are usually basalt or granite, and propped up in some way (Devereux, 2008). The sandstone carved rocks of Rombalds Moor rocks are mostly embedded, so it seemed unlikely that ringling rocks would be encountered here. However, 237/CSE 02 the Neb Stone, which is largely supported by other rocks, projects into the air, and barely touches the earth (see Fig 76 below), was experimentally struck with a wooden mallet; this only produced a dull thud, and it failed to resonate in any way.

Other rock-art soundscapes, with echoes and reverberations, may be found where rock-art is made in mountainous areas with pronounced valleys or cliffs, with large exposed rock surfaces to reflect sound (Devereux, 2008; Díaz-Andreu *et al*, 2017). This is very different from the landforms of Rombalds Moor, with its flat shelves, and vegetation covered, relatively gentle slopes, where no echoes were ever elicited, and to my knowledge, none have been reported. Thus there is no real possibility of soundscapes being a feature of Rombalds Moor rock-art, and this study considers only the visual aspects of perception.

It next becomes clear that this includes vision at several different scales, from long-distance views at the kilometre scale, perhaps even very long distance views, right down to details of the rock surface itself. Working in a very different rock-art landscape, Mont Bego in northern Italy, Chippindale (2004) considered approaching the very large

and complex stretches of carved rock at scales from millimetre to kilometre. I have not used his smallest scale, the single peck-mark, but the concept is very helpful and is applied here to examine rock-art in its landscapes at four different scales.

This must obviously include the levels of *the whole Moor*, and *the individual rock*. One intermediate scale, here named *Small Locales*, was apparent from examining rock-art distribution maps, as obvious clustering is visible in a number of areas. Although such clusters can arise randomly, some of them might have been meaningfully constructed, thus representing 'places'. A further intermediate scale, as will be seen, became apparent in the course of the fieldwork.

In considering views, we have to consider just what people might have been looking at, and what might constitute an important feature in what could be seen. Secondly, although the vegetation around rock-art sites had major implications for what could be seen, both in terms of views *from* the sites and views *of* the sites, most writers generally just presume that the views were possible (Bradley, 1997, 82; Cummings & Whittle, 2003; Waddington, 2007a). This is a major, essentially intractable issue, returned to several times in the discussions herein.

Although not the first to look at rock-art in terms of its relationships with landscape, Bradley brought these approaches prominently into mainstream archaeology, and his analyses in *Signing the Land* (1997) remain of central importance. Working in Northumberland, Scotland and Ilkley Moor (a subdivision of Rombalds Moor), Bradley looked at the landscape settings of 'complex' versus 'simple' motifs. He defined 'complex' designs as cup-and-rings with three rings or more (common in Northumberland and Scotland), and 'simple designs' as simple cups, plus cup-and-rings with one or two rings only (1997, 77). In retrospect that was unfortunate, as Jones *et al* have remarked (Freedman *et al*, 2011); across Britain, about 50% of carved rocks have cups-only. In their analysis of rock-art and landscape in Argyll, Jones' group used Bradley's definition of 'complex' designs, but split the 'simple' group into 'simple' – cup-and-rings with one or two rings; and 'cups-only' (Freedman *et al*, 2011).

Both Bradley (1997, 79) and Waddington (2007a) found that complex cup-and-ring motifs are usually found on outcrop, with cups on boulders. In Northumberland and south-western Scotland, the complexity of motifs seems to be related to altitude, though

this is known not to hold for Rombalds Moor (Bradley, 1997, 95; Boughey & Vickerman, 2003, 38).

Bradley compared views from rock-art sites with views from control sites, which he selected randomly from transects along two axes from a carved stone: along the contour line, and a perpendicular line along the slope (Bradley, 1996; 1997, 82). He found that the rock-art sites had 'wider' views than the control points, and he thought the sites were overlooking routes to monuments and the settled landscape, lying on the borders between fertile and marginal land (Bradley 1996; 1997: 83, 90, 100). He also described some stones as having 'restricted' views, though it is not entirely clear what he means by this.

Bradley also examined the relative visibility of stones with complex as opposed to simple designs, finding that stones with complex designs were more visible. He went on to demonstrate intervisibility along suggested routes from the Northumberland coast up into the hills (1997, 84 & 90). He acknowledges an important point about intervisibility: although the carved rocks can be shown to be intervisible using GIS-generated viewsheds, they cannot be picked out by eye, as the sites are often several kilometres apart (1997, 123).

Waddington's critique of this kind of intervisibility also considers just how accessible these allegedly route-connected sites really are (Waddington, 2007a). Noting that the carved surfaces are often virtually horizontal, at ground level, and near, but not on the route itself, he says that incoming strangers would not be able to 'consult' the sites, as Bradley suggested (1997, 124), without being taken there.

5.3 The boundaries of the study area

For the purposes of this study, the boundaries of Rombalds Moor were set as shown in Fig 44 overleaf. These boundaries are

- To the north-east: the River Wharfe: from Addingham to Burley-in-Wharfedale.
- To the south-west: the River Aire: from Steeton to Bingley.

- To the north-west: the Silsden Gap: across the pass from the confluence of Marchup Beck with the River Wharfe at Addingham, to the confluence of Silsden Beck with the River Aire at Steeton.
- To the south-east: the Guiseley Gap, excluding the hill of Baildon Moor. The boundary was drawn from Beckfoot in Bingley on the River Aire, to Glovershaw and round the northern margin of Baildon Moor, into the Guiseley Gap at Guiseley, then north to the Wharfe at Burley-in-Wharfedale.

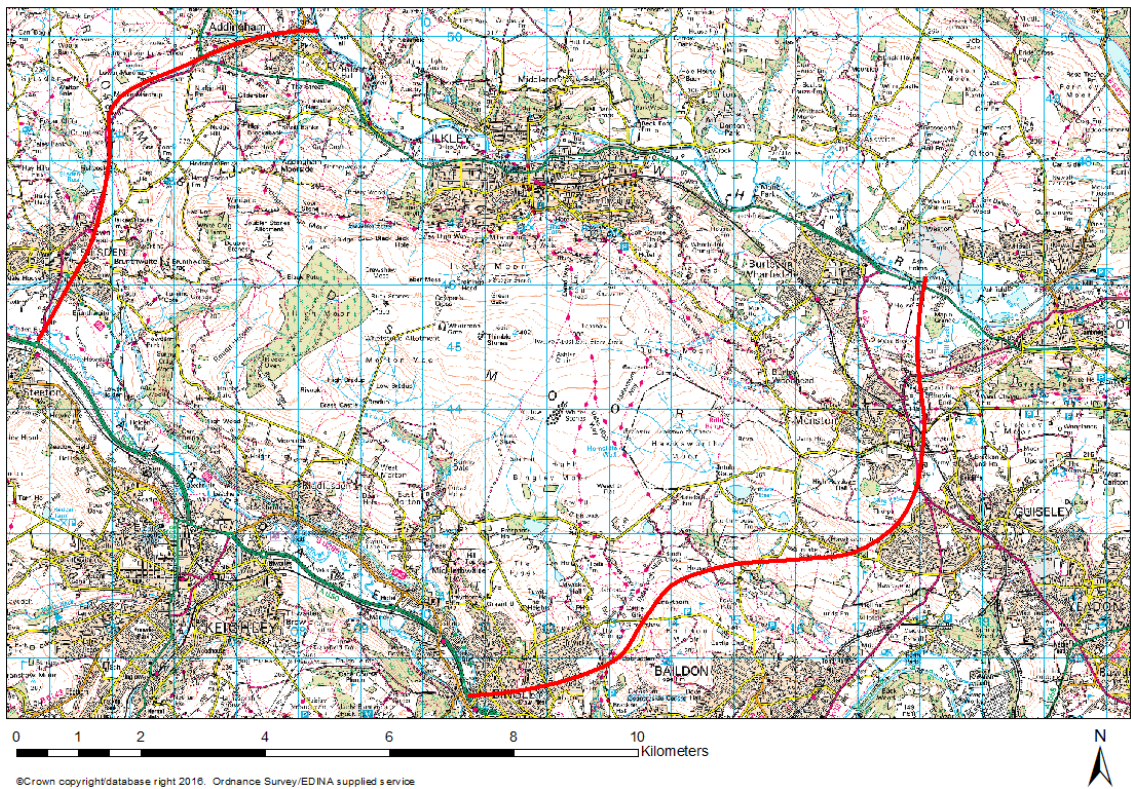


Fig 44 Rombalds Moor study area, as defined for this study.

Study boundaries: R Wharfe at NE, R Aire at SW, and arbitrary boundaries, in red, in the Silsden Gap at NW, and Guiseley Gap at SE.

The Silsden Gap boundary does not cut through a rock-art area. The Guiseley Gap northern boundary does not pass through a rock-art area, but its southern part runs across the pass, between the main massif of Rombalds Moor and Baildon Moor. Baildon Moor, although it has a further 100 sites, was not included in this study, as it

has been subject to very high levels of disturbance, including the 'reconstruction' of some sites by Victorian antiquarians. The southern half of what is now moorland carries the remains of very many coal-mining bell-pits, iron-working and pottery kilns, and there are also modern caravan and camping sites; Baildon Golf Course is in the north-eastern quadrant, and Baildon township itself covers the south-eastern slopes (Boughey & Vickerman, 2003, 18; Manby *et al*, 2003; Deegan *et al*, 2004, 13).

5.4 Practical issues in the fieldwork: working with the gazetteers

Both Boughey & Vickerman (2003, 2013) and CSI (ERA England's Rock Art, nd) include in their gazetteers a number of stones which I have not included. Some of these, though listed by Boughey & Vickerman, are discounted as natural markings, or human-made but not rock-art (Boughey & Vickerman, 2003, 32). Some of those listed in the CSI database are stones which have dubious markings, but which they decided to include 'as they are in a rock-art area' (Louise Brown, 2014, *pers comm*). Most of the rejected stones have natural markings, but some have human-made marks such as plough marks or bullet marks, and there may even be one or two forgeries (Griffiths, 2006). There is also a set of other stones which have been recorded by earlier workers, but which neither Boughey & Vickerman nor CSI could find; and stones which are known to have been destroyed or moved since prehistory. Some of these had their motifs and approximate positions recorded, and this partial data was included (with acknowledgements) in the Full Database, though not the Study Main Database, as the views of such stones cannot be recovered. All gazetteer sites excluded from the full database are shown in Fig 41 above, and listed with reasons for exclusion, in the Appendices, Tables A2 & A3.

All discoverable and accessible rock-art sites were critically reviewed in the field. (I have usually, though not always, agreed with recent workers: changes of light and of vegetation, can have a major impact on what can be perceived by the observer). This produced the Study Main Database, derived from the fieldwork, comprising 252 rock-art sites. This Excel spreadsheet can be found in the DVD Appendices.

5.5 Practical issues in the fieldwork: recognising rock-art

Much rock-art is easily recognised, but occasionally it can be very difficult. What is important is learning, a self-critical stance, comparison with the work of others, and reviewing other images of the stones, especially older photos and drawings. There are two key issues

- differentiating between curvilinear rock-art of the prehistoric period, and similar-looking marks on rocks: false positives
- erosion, with full or partial loss of rock-art: false negatives

Of the marks that resemble rock-art, but are not, some were produced by natural processes, and an awareness of these allows some to be spotted relatively easily. Marks made by people can also cause significant difficulties (Fig 45 below).



Fig 45 Rombalds Moor: marks that resemble rock-art.

Left: 90/BRP 01, Bradup. This site is next to a farm road. The cups are rock-art; the 'groove' is narrow, sharp-edged, asymmetric in profile, and probably made by agricultural machinery.

Centre: uncarved stone near Stead Crag, showing natural erosion and basin formation.

Right: West face of 226a/WG 03, on the Moor top. Some or all of these 'cups' may be bullet marks; note 'halo' round the upper cup, and the sharpness of the cut through bedding plane at left. There are further cups, of a different size, on the north face.

Images: Author and P Deacon.

Erosion eventually obliterates rock-art, and partially eroded rock-art can easily either be missed altogether, or misinterpreted as natural irregularities in the rock surface (Barnett & Díaz-Andreu, 2005; Fig 46 below).

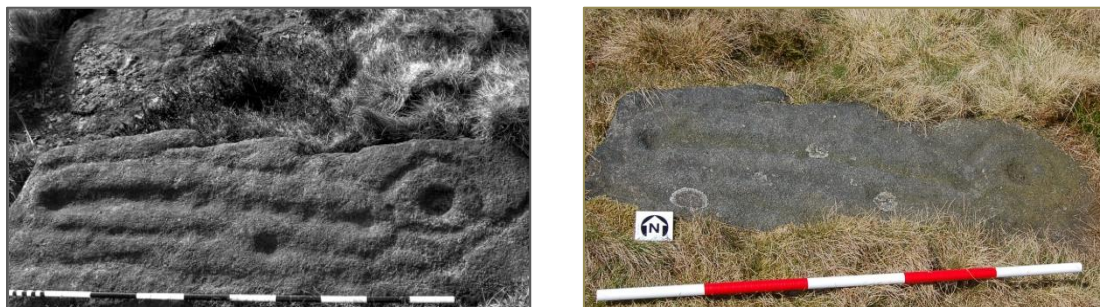


Fig 46 The effects of erosion: two views of 49/RV 06, Rivock Nose.

Left: photo probably taken before 1986.

Right: photo taken 2013. On older image, note crisper motif at right, perhaps fairly recently uncovered, but by 2013 rapidly eroding. Also note that the (uncarved) rocks immediately to the north of the stone have now completely vanished under turf

Images: Left: Boughey & Vickerman, 2003, 147. Right: Author & P Deacon.

Erosion can also cause motifs to be misclassified, as the central cup of a cup-and-ring motif is often deeper than the rings, potentially causing a heavily eroded cup-and-ring to be seen as a simple cup. Erosion can also create fantastical forms such as basins and water drainage channels that can resemble human-made carvings.

The author's Undergraduate dissertation (Deacon, 2012) on the rock-art of Snowden Carr, about 3km across the Wharfe from Rombalds Moor, looked at some 80 sites, using Boughey & Vickerman's 2003 gazetteer, allowing comparison between what was seen on the ground and their descriptions, which included some uncarved rocks with marks that resemble prehistoric rock-art but are not.

Further valuable training came from a month's excavation experience on Stanbury Hill, a rock-art area on Rombalds Moor, co-led by Dr Keith Boughey, the co-author of the 2003 and 2013 gazetteers, and by Dr Louise Brown, co-ordinator of the CSI project. The CSI website (CSI Rombalds Moor, nd) includes several training PowerPoint presentations for their volunteers, which were carefully consulted, along with the Rock

Art Recording Guidance Sheets from the ERA Project Officers' Handbook (Sharpe & Barnett, 2008).

5.6 Practical issues in the fieldwork: classifying sites

Portables, small loose carved rocks generally associated with cairns, are not included in the discussion of site types here, but are discussed in Chapter Two section 2.6.2.

Bradley defined sites as outcrop, sheet rock and boulders; these are implicitly based on a modern understanding of geology, but may not have been how people in the past conceptualised them (Jones & Tipping, 2011). Neither Bradley nor Waddington exactly define 'outcrop', but may mean clifftop sites; on Rombalds Moor, there are only six outcrop cliff sites, if the three adjacent sites at Rivock Nose, and the four panels at Hangingstone Rock are each counted as a single site. Furthermore, when sheet rock sites are considered, and counting the three adjacent sites at the western end of Ilkley Moor Lower Terrace as one site, and the four adjacent sites at Riddlesden High Carr as one site, there are only four sheet rock sites on the Moor.

CSI classify sites even more simply, as either boulder or outcrop; they include sheet rock as outcrop, though subjectively, clifftop sites seem very different from sheet rock sites. Using this classification for Rombalds Moor gives the vast majority classified as boulders, leaving no real opportunity to investigate relationships between site types and motifs. However, an alternative classification could be based purely descriptively rather than geologically, with four site types (Fig 47 overleaf):

- clifftop: with at least 2m drop at the edge.
- detached: resting on other rocks, with none, or a minimal part of the rock embedded in the ground.
- ground-level: with all margins of the carved surface embedded in the ground, the highest part of the rock no more than 0.25m above ground level
- upstanding: with the rock clearly rising from the ground, at least 0.25m above ground level. Step-like rocks in slopes, part embedded in earth and part standing free, were classified as upstanding.



284/HR 01 outcrop *cliff*top



222/CSE 01 boulder *detached*



278/HST 02 outcrop *ground-level*



304/CC 01 boulder *ground-level*



HAW 01 outcrop *upstanding*



65/RV 21 boulder *upstanding*

Fig 47 Examples of re-classification of sites.
CSI classifications are followed by new classification in *italics*.
Images: Author & P Deacon.

There is obviously some overlap between these site types, especially between ground-level and upstanding, but so there is with the geologically-based classification. Re-classifying the site-types divides the 'boulder' group in a way that allows for at least a preliminary analysis of the relationship between site-types and motifs.

5.7 Practical issues in the fieldwork: classifying motifs

On Rombalds Moor, 65% of the carved stones have cups-only, and less than 3% have cups with three or more rings (Bouhey and Vickerman, 2003, 32 & 34). It is therefore not appropriate to use Bradley's classification, where 'simple' equates to cups plus cup-and-rings with one or two rings, and 'complex' equates to cup-and-rings with three or more rings (Bradley, 1997, 77). I have followed Darvill *et al* (2000, 30), putting all cup-and-ring motifs into one group, and begun with a binary classification: rocks with cup-and-rings, and rocks without cup-and-rings, the latter group being essentially cups-only.

However, although both Bradley, and Jones *et al* make classification appear straightforward, it is rather more complicated. Bradley (1996) showed that in Northumberland, complex carvings are more likely found on outcrop, with simple carvings on boulders. He does not specify his sites exactly, but scrutinising the outcrop sites in Northumberland listed on the England's Rock Art website (ERA England's Rock Art, nd), using the Advanced Search function, shows that these sites do indeed have many cup-and-ring motifs, many with multiple rings, but many have cups as well. The Argyll stones pictured throughout *An Animate Landscape* (Jones, Freedman, O'Connor *et al*, 2011) are similar. What these workers have effectively done is to see cup-and-rings as more important, that is, as 'trumping' cups: if a carved stone has cup-and-rings *and* cups, it is classified as a cup-and-ring stone, seriously downplaying the significance of cups.

Furthermore, neither 'cup-and-ring' nor 'cup' are straightforward either.

The CSI data (ERA England's Rock Art, nd) uses numerous different subdivisions of motifs, and although it is possible to combine categories, it does not make their results easy to examine by motif type. I have again followed Darvill *et al* (2000, 30), as well as Bradley and Jones (though they do not make this explicit) in classifying all variants of

cup-and-ring motifs as such – that is, incomplete rings, horseshoe-shaped rings, cup-and-rings with comet-tails. Similarly, I have followed these workers in classifying all variants of cups, such as oval and ‘dumb-bell’-shaped cups, as cups (Freedman *et al*, 2011). Rombalds Moor however, has three cups-only rocks with over sixty cups apiece, and several stones with cup-and-groove designs (see for example 322/IS 01, Fig 113 below). Grooves are almost never found alone, with only two examples on Rombalds Moor, 343/LS 08 and 344/LS 09, standing only 80m apart.

In other areas of Britain, larger carved stones often have more than one panel (see for example Dod Law illustration, Fig 9 bottom right, above). On Rombalds Moor however, this is much less common, often involving upstanding boulders with carvings on more than one face, rather than extensive surfaces with discrete ‘patches’ of carvings.

5.8 Practical issues in the fieldwork: naming the stones

Unfortunately Boughey & Vickerman and CSI do not use the same classificatory system. Boughey & Vickerman’s gazetteers (2003, 2013) adapted the system devised by Hedges (1986) for Rombalds Moor. Thus, when they numbered the stones in their database, they broke down their study area (the whole of the old West Riding of Yorkshire) into geographical regions by river and watershed: Aire South, Aire North, Wharfe South, Wharfe North, Washburn, Nidd, and outliers. Within each region, the stones were numbered from west to east, in order of their Eastings; where sites had the same Eastings, they were numbered from north to south in order of their Northings. Thus geographically adjacent stones are usually numerically adjacent as well (Boughey & Vickerman 2003, 47; 2013). However, occasionally, stones very close to each other may not have consecutive numbers, and stones with consecutive numbers may be hundreds of metres apart.

Sites added to their database for the 2013 addendum were, within their region, given the number of the site immediately to the west, and then suffixes a, b, c, etc (Boughey & Vickerman 2013, 1). Unfortunately, the Boughey & Vickerman system, which is more intuitive and easier to use than the CSI classification, is not on-line and their 2003 book is out of print.

The CSI group recorded the carved stones of Rombalds Moor (and Baildon Moor), but not the rest of West Yorkshire. Their numbering system, entirely different from Boughey & Vickerman's system, is locale-based. They used over 70 separate locale names on Rombalds Moor alone, 22 of them containing only one stone, so it is not possible to produce an A4-sized map to show where they all are, though some of the names appear on the OS maps, and they are listed in Appendix 1 below. Furthermore, the use of some two-letter and some three-letter identifiers can cause some confusion; thus GC 15 and GCS 15 are not the same stone. In one obvious small locale, two locale identifiers are used: IS 01, GCS 05, GCS 06 and GCS 07 are together in a very tight cluster, with the IS locale identifier having only one stone. The CSI group have also begun using a, b, c suffixes already. All the CSI data is easily available on the ERA website (ERA England's Rock Art, nd).

The Boughey & Vickerman classification does not yet include the CSI new stones (as at June 2017). Keith Boughey is gradually reviewing them and will be adding those that do appear to be rock-art (KJ Boughey, 2014, *pers comm*).

However, there are real advantages in not abandoning Boughey & Vickerman's system altogether, and in the Excel spreadsheets (see DVD Appendices), I list the stones by Boughey & Vickerman numbers with CSI numbers alongside. This is because the former system nearly always shows groups of stones together; for example, there is an apparent line of carved rocks along the north-western edge of the moor which Boughey & Vickerman have as 210-217. Under the CSI system, these would be found, alphabetised among the others, as AC 01, HAH 01, PC 01, HH 01, WC 01, WC 02, WC 03 and SST 01.

In the text, both numbers are used, except where a stone has (as at June 2017) no Boughey & Vickerman number. In any given chapter, the whole number is used the first time the stone is mentioned, then dropping down to just the Boughey & Vickerman number for simplicity, eg 345/LS 10, then simply 345. Thus the reader can readily access the relevant photos and Excel spreadsheet entry in the DVD Appendices, as well as consulting the ERA website (using the CSI number), for any given stone.

Some of the stones have generally accepted, widely used names. These have been used alongside the numbering system in the same way; a discussion of 302/PR 05 and 332/PST 01 is a lot easier to follow as a discussion of the Haystack and the Pancake.

5.9 Practical issues in the fieldwork: locating the sites

Most of Rombalds Moor is now Access Land, though there are restrictions over part of this during the grouse nesting and shooting seasons. In the South-west, Rivoock is managed for commercial forestry. Four stones in improved land at the periphery of the Moor were inaccessible, but some data was available from other sources, constituting (acknowledged) partial data.

Both the Boughey & Vickerman gazetteers (2003, 2013) and the CSI gazetteer (ERA England's Rock Art, nd), give full map references for all the stones that they were able to locate, and these were used as the basis for finding and identifying the stones in all the fieldwork. For this study, a handheld Garmin eTrexH Personal Navigator, accurate to about 10-15m, was used to locate the stones; in practice it was not always easy to find them, even when they were not overgrown and lost, especially in taller and denser vegetation.

Visits to the Moor were planned in advance, and simple maps prepared so that all stones in a Small Locale, apparent from the maps, were visited on a single trip. The carved surfaces of two very large carved stones, 42/DSS 02 Doubler 2, and 332/PST 01 the Pancake could not be accessed.

5.10 Practical issues in the fieldwork: health and safety issues

Finally, health and safety considerations were not ignored, so, for example, a decision not to walk out onto the top of 332/PST 01 the Pancake was made. This leads to a further point, often ignored in interpretive studies because it is fraught with difficulty. How people in the past experienced the areas of land they were visiting, in this case to carve or to look at rock-art, was profoundly different from the experience of visiting these areas today. The perception of risk in the past, when undertaking carving, is returned to in Chapter Nine.

Thus, whilst carrying out the fieldwork, the author and field companion spent much time in little-visited parts of the Moor, often off the paths, out of sight of any other person, or

house, or road, yet the only perceived risks were of a fall in the uneven ground – after all, we were both carrying mobile phones. The fieldwork risk assessment took no account of encountering wolves, or stumbling over a bear den, or a lynx dropping off the branches of a tree. From the point of view of understanding the landscapes of rock-art, perhaps it should have done.

5.11 Constructing the fieldwork methodology

Investigating the whole rock-art landscape of Rombalds Moor allowed the consideration of relationships at very different spatial scales, including relationships between rock, sites, motifs and views. Each of the spatial scales generated a different set of research questions.

5.11.1 The whole Moor

Here there is a general overview of the rock-art of Rombalds Moor. Firstly, it is important to consider how much the sample here, all known sites on Rombalds Moor, relates to the full extent of rock-art on the Moor. A number of sites are known to have been destroyed since the earliest surveys, especially above Ilkley. In both moorland and woodland, smaller and ground-level rocks are easily overgrown (Bahn, 2010, 152). Some larger carved rocks and outcrop sites have been quarried, more recently as stone sources, though in prehistory, some may have had carvings quarried off for re-use. We cannot know how many carved rocks have been lost or moved, both in the cleared fields surrounding the Moor, and higher on the Moor itself, where many cairns and ancient walling, and later archaeology, suggest considerable activity which might have involved destruction or movement of carved rocks.

Furthermore, during the fieldwork for this study, it became clear that erosion, even over the last thirty or forty years since the earliest photos in Hedges' 1986 survey, is blurring and sometimes entirely eradicating some of the carvings (see Fig 46 above). On the other hand, new sites are still being discovered, so the sample being investigated here is neither complete nor random.

Some writers have sought to date rock-art by its incorporation or proximity to other archaeology. In some cases this is structural, with rock-art incorporated into tombs, cairns, and ancient walling, though its significance within these contexts requires careful exploration. In other cases, rock-art has been found very close to other archaeology; some writers have suggested that physical proximity equates to dating evidence, though this approach has been critiqued by Sheridan (Jones, Freedman *et al*, 2011; Edwards, 1986; Edwards & Bradley, 1999; Sheridan, 2012).

There is a great deal of other prehistoric archaeology on Rombalds Moor, including many lithics findspots, ancient walls, enclosures, cairnfields, and monuments including ring cairns, large cairns, and stone circles (reviewed in Chapter Four above). Thus relationships between rock-art sites and other archaeology were recorded (see below).

Some writers have suggested a connection with water. Bradley, looking at rock-art in Scotland, noted that it is often close to springs and pools (1997, 100), and Brown & Brown, working in the northern Pennines, also say that carved stones are frequently close to water (2008, 83). The author's Undergraduate dissertation, looking at rock-art in Snowden Carr, an area across the Wharfe from Rombalds Moor, showed that of 43 unmoved carved stones, 18 had cup-and-ring motifs, and 25 had cups-only. None of the 25 cups-only stones was near water, but of the 18 with cup-and-ring motifs, six were within 20-50m of a spring or stream; the numbers were too small for further analysis (Deacon, 2012, 42). In the study area, then, when sites were within 50m of water, including standing in a puddle, this was recorded.

Within the study area are 33 rock-art sites now wholly surrounded by improved fields, probably survivors of clearance, and standing at lower altitudes. Comparison of these sites with more typical moorland sites could challenge the view that rock-art is a feature of upland, marginal areas, standing outside the 'settled landscape'.

The fieldwork observations at every stone were planned to generate data to examine the distribution of sites and motifs, and any relationships between site-types, motifs, and views. As it is proposed here that some stones were carved in respect of their views, this needed to be explored in detail.

Stones might have been carved in response to views of other carved stones, or of major features in the landscape. The foci of some of these views might be lost to the

archaeological record, though others may still be visible. Of course, stones might also have been carved for reasons unconnected to views, such as memorable events at the site (Whitley: 1998, 2010, 2011; Arsenault, 2004a).

From the maps, there seems to be a line of cup-and-ring stones along the northern terrace edge, with a possible parallel route at the back of the terrace, below the steep slope up. As a number of writers have suggested that rock-art lies along lines of movement, perhaps routes to monuments (Bradley, 1997: 47 & 123; Jones, 2001; Freedman et al, 2011), these potential routes were walked, with recordings as free text and photographs, made at each stone and along the way. Although there are no Neolithic monuments on the Moor, any routes here could be sectors of longer routes.

In conclusion, at the scale of the whole Moor, the following questions arise

- Is the distribution of sites and motifs random, and is there a relationship between site-types and motifs?
- Is rock-art in cleared lowland that has somehow survived clearance different from rock-art in 'typical' uncleared upland?
- Is there a relationship between rock-art and water?
- Is there a relationship between carved stones and other prehistoric archaeology?
- Is there a relationship between rock-art, routes and views?

5.11.2 The individual rock

At this scale, the focus is on relationships on an individual carved rock, both between motifs and rock, and between motifs. With 252 carved stones in the Study database, it is obviously impossible to consider every stone individually, so a different approach to the data was taken, to tackle the questions set when constructing the Methodology.

These questions are

- How were rocks chosen for carving? Were features of the rock such as colour, texture, cracks or bedding planes significant in making that choice?
- What is the relationship between motifs and the natural features of the rock surface?

- What is the relationship between motifs on a single rock? Is there evidence that rocks with old carvings were carved again? Does this tell us anything about chronology?
- Could some stones have been moved at or around the time of carving?

The first question led to some important considerations about the physicality of carving, as some rocks chosen for carving were difficult to access, or even dangerous. Carving these stones, although uncomfortable and potentially hazardous, might also have been very impressive if viewed by an audience.

5.11.3 Small Locales

This, the first of the two intermediate scales of working, was chosen because a number of groups of carved stones standing close together were immediately apparent on the maps. There were 22 such groups, as well as two possible alignments of carved stones. All Small Locale names were devised for this study.

The maps, though, may suggest proximities which are artefacts of scale: at smaller scales, each rock-art symbol on the maps corresponds to about 25-100 *metres* in diameter (Monmonier, 1991, 25). Secondly, in any large random distribution of data points, some clusters can be expected to arise by chance. The aim here is to identify groups of stones which were deliberately carved close together (usually less than 100m overall) in an area defined as a Small Locale.

Chance groupings are more likely to involve small numbers of stones, so pairs, then trios and so on, need to be examined most critically. It was felt better to devise a methodology with strict criteria that avoided false positives as much as possible, whilst perhaps tolerating false negatives. This means that the dataset produced would be composed as much as possible of 'real' Small Locales, although some Small Locales may have been rejected. Examination of this group of 'real' Small Locales might then be able to establish some meaningful interpretations.

The 'cut-off' distance between a stone in a potential group and its closest neighbour was taken arbitrarily as 15m; beyond this distance, stones seemed wholly out of touch. This may still be too great a distance, but was chosen such that fieldwork observations

became more important than simply looking at maps, to determine whether stones seemed to relate to each other. In the field, each stone in the proposed group had to have visibility of, or be visible from, at least one other stone in the group.

Also investigated were two lines of stones which seem to present themselves on the map, an arc at Rivock, about 200m long, and a possible alignment at Woofa, about 250m long. These are substantially bigger than Small Locales proper, but as both the potential alignments are closely related to Small Locales, and investigated in the same way, they are discussed in those sections.

In both potential groups and lines, the following research questions were considered

- Are the stones within the group/line intervisible?
- What relationships exist between the stones in terms of their motifs?
- What relationships exist between the group/line and natural monuments (defined below)?
- What relationships exist between the group/line and other features, including the setting in the landscape?

The aim is to differentiate random clusters from Small Locales, that is, clusters of carved stones that were deliberately carved close together, and investigate the relationships both between the members of the group, and with the wider landscape.

5.11.4 Natural Monuments and Large Locales

The fourth scale of working, a second intermediate scale, only made itself apparent during the fieldwork, fortunately very early on, and a methodology had to be devised to investigate relationships at this scale, which proved to be of major significance to the study. Several large and unusually shaped carved stones were found to be unexpectedly visible from many other carved stones, and were often seen skylined. It is suggested that these were perceived as natural monuments, and the area from which they can be seen is defined as a Large Locale. Large Locales, unlike Small Locales, cannot be seen on the OS map or by simply looking at the distribution map. A sixth stone, uncarved, made itself apparent as a possible marker stone or proxy for one

of the natural monuments, the Haystack, because it was highly visible in an area from which the Haystack would be approached, but could not be seen. These stones are

- 41/DSS 01 Doubler 1
- 237/CSE 02 the Neb Stone
- 302/PR 05 the Haystack, with its proxy or marker stone, which is named for convenience the Sentinel
- 332/PST 01 the Pancake
- 355/GCS 13 Haystack 2 (H2)

One possibility that had to be immediately excluded was that large upstanding stones might in general be highly visible, and seen from many other carved stones. A control study was therefore carried out, comparing the proposed natural monuments with all the equally large upstanding carved rocks, looking for any difference in the numbers of carved stones from which they could be seen.

Each proposed natural monument in its Large Locale was then examined. It was suggested that there would be many carved stones from which it could be seen, but very few or no carved stones close by where the topography obstructs the view. As in other parts of Britain, where cups were made onto nearby outcrop to acknowledge *built* monuments (see Chapter Two section 2.6.2), it was suggested that motifs carved onto stones in acknowledgement of the view of a *natural* monument might also be cups. This generated the following research questions:

- Comparing natural monuments with other large upstanding carved rocks in general, is there a difference in the numbers of carved stones from which they can be seen?
- How many carved rocks in the vicinity of the natural monument have, or do not have, good visibility of it?
- Which motifs are used on these rocks?
- Is it possible to suggest why these large stones might have been treated as natural monuments?

5.12 Fieldwork method: recordings at the sites

Written records and photo records were completed at each accessible site; four sites on the periphery of the Moor could not be accessed. The carved surface of one site, 332/PST 01 the Pancake, was not accessed as it was felt to be too dangerous to do so (for a discussion of this, see Chapter Nine section 9.6). Similarly, 42/DSS 02 Doubler 2 could not be climbed, so its carved surface on the top could not be reached. The CSI team did not access the carvings on these two stones either, though I note that the intrepid members of the Ilkley Archaeology Group, recording for Hedges (1986) and Boughey & Vickerman (2003), managed to reach both.

The same procedures were carried out at all sites. Carved stones were cleared of loose debris such as animal droppings and dead vegetation, using a soft brush (but see Fig 48 below).



Fig 48 67/RV 23, Rivoock Forestry Plantation, 2013.

Photo taken prior to clearance of the trees. Cleaning stones before photography was usually carried out with no more than a soft brush, though in this case more extreme measures were required. The fallen tree was pivoted at its base and swung clear of the stone.

Image: Author and P Deacon.

Living moss and lichen were not removed. In some cases, where turf had encroached on the carved surface, this was rolled back, and replaced afterwards, as permitted by CSI Guidelines (CSI Rombalds Moor, nd). This was only done when the turf was very wet and flexible – a not uncommon occurrence – but not done if conditions were dry, and the turf might fragment.

During the fieldwork, no attempt was made to measure motifs. Erosion has partially or completely obliterated parts or all of many of the motifs, also wearing away the rock surface itself. This results in, for example, the edges of motifs being blurred, and motifs appearing shallower, giving a very wide margin of error. Degrees of erosion vary widely, sometimes even on a single rock. However, it was sometimes possible to describe motifs qualitatively as large or small, with vertical sides or rounded, as deep or shallow compared to the width; some rocks clearly had populations of different types of cups, considered in Chapter Nine section 9.4.5.

Some stones now wholly surrounded by fields are in field boundaries and walls. One carved stone, 88/HOW 01, was probably pushed down into a fieldside gully, where CSI declined to record it, though it was accessed for this study. The views of such stones were photographed and are included in the DVD Appendices Photos, but are not reliable.

5.12.1 Photography at the sites

Each locatable and accessible carved stone was photographed, with photos of the stone in its site, and motif details. These were taken largely for illustration, and specialised equipment was not used; photogrammetry was used by the CSI teams, and no attempt was made to duplicate this work. Some motifs were so eroded that it was very difficult to see them at all. Views north, south, east and west were photographed, along with extra views where large carved stones, putative natural monuments, seem to have been referenced. Extra photos were also taken where carved stones were in a group, or were close to ancient walling or cairns, to show relationships. The ranging poles shown in the photos are 1m poles with 20cm divisions; occasionally a 10cm scale bar is used instead.

A Nikon D50 Digital Camera was used, with a standard landscape setting (27mm focal length). The zoom function was also used to improve clarity for illustrations in the text. Wherever trees or buildings obstructed the views from the stone, a GIS-generated viewshed was constructed (see discussion below), and these have been included with the photos.

This produced well over 1500 photos plus viewsheds; too many to print, but all are included in the DVD Appendices. Many are used as illustrations in the text, but these are far from a random sample.

5.12.2 The recording sheets

It would have been preferable to use existing recording forms, allowing easier comparison of this work with that of others. However, the main ERA form, which was used by the CSI team in their work on Rombalds Moor (CSI Rombalds Moor, nd), was designed to record the panel and its setting in great detail, but does not have a section to record views. This ERA form can be viewed or downloaded as a pdf from the ERA website (ERA Guidelines for rock art recording, nd). It was therefore not felt to be appropriate for this study, as there was no wish to duplicate the CSI work, and the focus here is on views; thus only a relatively simple record of motifs and panel details was necessary. The ERA photography form is essentially just a list of photos to be taken, with very little space for free text.

Other workers looking at rock-art in its landscapes do not give references for any recording forms they may have used in their work (Bradley, 1997; Freedman, Jones & Riggott, 2011; Waddington, 1996, 1998a).

Forms were therefore designed for this study, for easy use in the field, and incorporated both tick-box sections and space for free text (see Appendix 4 Fig A3 for examples of each form).

- **General Recording Form:** completed at all sites. This included details of the type of site, details of the rock including portability, cracks, holes, basins, bedding planes and any other natural markings. The motifs were recorded in writing by type (cup-and-ring; cups; grooves), as well as sketches and free text

descriptions. Also recorded in free text were visibilities and relationships with other carved stones, with details of the views, including closer and more distant views, out to the horizon.

- **Cairn/Wall Recording Form:** completed if the stone was related to a cairn, enclosure or ancient walling; including details of other members of the group and sketch map of spatial relationships
- **Groups Recording Form:** completed if the stone was related to other carved stones in a small locale, or seemed to be part of an alignment; including details of other members of the group and sketch map of spatial relationships
- **Water Recording Form:** completed for carved stones within 50m of water; including details of the type of water, pool or running water; and the sounds of water.

Thus all stones generated a General Form, and could generate up to three extra specialised forms; in practice, no stone generated more than three forms overall. These records, along with the photos, produced the raw data of the study. From the recording sheet data, the Excel spreadsheets and the interpretation of the photos were derived.

5.13 Other prehistoric archaeology on the Moor

Full surveying and mapping of other archaeology was beyond the scope of this study, but there was a need to understand the relationships between enclosures, walls, cairns, and rock-art sites. There are remains of three enclosures on Green Crag Slack: Backstone Enclosure (Edwards, 1986; Edwards & Bradley, 1999), Green Crag Enclosure and Woofa Enclosure (Fig 49 below; and see Fig 39 above). Only the first two appear on OS maps (note that, despite the highly unusual name, there is a second 'Woofa Bank', with two prehistoric enclosures, outside the study area, beyond the north-western end of Rombalds Moor, and west of Addingham).

The walls of the three enclosures were walked, with GPS readings taken at intervals along the walls, so the points could be added to the maps.



Fig 49 Green Crag Enclosure: view north from 300/GC 10.

The walling runs in an arc in heather (arrowed) from right foreground, through the triangular boulder 303/GC 11, curving round to the left, including three more boulders (just glimpsed). Note 302/PR 05 the Haystack, skylined against dim and distant hills, on the terrace edge at centre.

Image: Author and P Deacon.

There are also many short stretches of walling which do not seem to connect with each other, though some are connected to cairns, particularly in the central and eastern parts of GCS. In the field, some longer stretches of walling are easy to pick out, but cairns, many of them only 2m in diameter and a few centimetres above the level of the moor, are readily concealed by vegetation if viewed from any distance away (see Fig 50 below). Conversely, however, it was possible to see if a particular carved stone was standing in or immediately adjacent to a cairn.

There is some information on walling and cairnfields in the HER record, in Hedges' survey (1986, 9 and 18), and in Bannister's survey (1985, 37).



Fig 50 Cairn with carved rock used as a kerbstone.

340/LS 06, to left of ranging pole, perhaps re-used as a kerbstone, in a cairn at the eastern end of Green Crag Slack. The vegetation has been burned off, and the regrowth here is only about 10-15cm tall. The cairn is about 5m in diameter but stands only about 0.3m above the level of the moor. Once the vegetation has grown back fully, the cairn will not be visible from any distance away.

Image: Author and P Deacon.

The CSI records include relationships to walling and cairns in the vicinity of each carved stone. The CSI maps were not always in agreement with the fieldwork findings; identifying overgrown walling, and particularly overgrown cairns, is very difficult in thicker vegetation, but much easier if heather has recently been burned.

5.14 Note on data from other sources

As it was felt to be very important to include data on all the rock-art sites of Rombalds Moor, data from other sources was included where fieldwork could not be done. This includes stones that could not be accessed, and stones that were lost or moved off the

Moor. For some of these, the motifs had been recorded, along with their approximate positions, though their views cannot be reconstructed. Whenever data from other sources is included in the spreadsheets, this is acknowledged.

5.15 Working with the fieldwork data

The fieldwork involved visiting over 300 stones; not all were accepted as rock-art. This, plus data from other sources, generated a large volume of data. From the outset, it was planned that the data would be analysed at several different spatial scales, from that of the whole Moor, down to the scale of the single rock. The data had to be organised so that it could be accessible for analyses at different spatial scales.

The fieldwork data was collated in three formats: the photos, the spreadsheets and the maps. The Study Main Database spreadsheet, the photos, and all the chapter maps are included in the DVD Appendices.

5.15.1 The photos

The photos comprise a record of the carved stones and their views, but interpreting the photos is not straightforward. Photos cannot fully represent what is seen by a human being from the stones, as anyone looking at their holiday snaps is aware. Moreover, decisions were made in the field as to what features in the view warranted extra photos. This may introduce bias: firstly, the author may not be correct in focusing on these features, and secondly, features that were important when the carvings were made may not have survived in the archaeological record (Brück, 2005).

Secondly, because the motifs have become in many cases significantly more eroded, even over the last 20 or 30 years, contemporary photos may not best represent what was originally carved. During the fieldwork, specialised equipment was not used to photograph the carvings, as this thesis is primarily concerned with landscape and views.

The CSI team, using scanning and photogrammetry as well as conventional photography, were specifically engaged in recording the Rombalds Moor carvings just prior to the time the fieldwork was carried out, and this data became available during the course of the fieldwork (ERA England's Rock Art, nd).

Also consulted were the drawings and descriptions of Boughey & Vickerman (2003 and 2013), Hedges (1985) and earlier work including Cowling (1946). Where views were obscured, GIS-generated viewsheds were constructed, and these are included in the photo files.

5.15.2 The spreadsheets

The Excel spreadsheets were constructed as follows. For each stone, identification and grid references were recorded, from Boughey & Vickerman (2003 & 2013), or from CSI (CSI Rombalds Moor, nd), along with details of the site, motifs and views. Also recorded were relationships with other carved stones, water, cairns and walling. Most of the information in the spreadsheets came directly from the fieldwork, that is, from the recording forms completed at the sites, plus information from the photos. However, where views in the field were obstructed, further information concerning views was derived from GIS-constructed viewsheds. Where stones could not be found, or were eroded, further information concerning motifs was obtained from pre-existing datasets, including Boughey & Vickerman (2003, 2013), Cowling (1946), CSI (ERA England's Rock Art, nd), and Hedges (1985); all sources are acknowledged.

There are 311 stones in the Full Database. In order to consider inter-relationships between sites, motifs and views, 59 stones were removed from the Full Database. These are the portables; cairn kerbstones; stones in walls, both ancient and more modern; and all stones known to have been moved or lost, thus having unknown or unreliable site positions and/or views. These 'Removed Stones' are listed in the Appendices, Tables A2 & A3. Some of the removed stones are discussed and shown on maps when the relationships between carved stones and other archaeology are considered, including carved stones in enclosure walling, and considerations of carved stones and cairns.

Some stones listed as not found by Boughey & Vickerman or by CSI were included in the Full Database, for consideration of their motifs. Many of these had only 3- or 4-figure grid references, rounded up to zeros in order to be plotted onto a map, but obviously, view data cannot be recovered for these stones; accurate viewsheds cannot be constructed, and their positions within other stones' viewsheds were not included.

A small group of carved stones which may have been moved were not excluded from the Study Main Database. It will be argued that these stones might have been moved in prehistory, at or about the time of carving. One of these (102/SH 07) was discovered by Brown *et al* to have been probably moved (Short, 2013; Brown & Boughey, 2013); fieldwork findings suggested that others had also been moved.

This leaves 252 carved stones in the Study Main Database, for consideration of interrelationships of sites, motifs and views.

5.15.3 The maps

The maps offer a far richer way of understanding the distributions and relationships between the carved rocks and their settings; visually displayed data can be very much clearer than tables and descriptions in the text. All maps are political (Bender, 2006), but the drawbacks of placing the stones within 21st century political structures seem outweighed by the advantages of placing them, accessibly, within a format that is familiar to the reader.

It is essential for research to be open to critique and to replication by others. Using modern OS maps makes it very easy for the reader to go to Ilkley Moor, for example, park at the Cow and Calf Moor carpark, walk up to IMLT and find the stones.

Some British rock-art research publications, despite presenting a lot of data as maps, do not make it easy for the reader to go out to the stones, and repeat the observations. For Bradley, for example in his analyses in *Signing the Land* (eg 1997, 87), the technology was considerably less advanced than it is now; for Freedman *et al* (2011), the mapping technology was better, but here, the viewsheds are presented such that it is very difficult to understand what a person at a particular stone might actually see.

The map format chosen for the presentation of the results was contemporary Ordnance Survey, using basemaps at 1:50,000, 1:25,000 and 1:10,000 scales, so that maps could be constructed showing the stones in their various relationships to each other and to the topography, as well as being easily identifiable within the modern world. The reader should be able to easily relate the photos to the maps, though the available maps, at different scales, all presented some problems; for example, at 1:10,000 scale, contours are not displayed, so hill slopes 'disappear'.

Maps must also be interpreted critically, as they seem to represent objective reality, but do not (Johnson, 2006, 85; Monmonier, 1991), and it is important to carefully examine the problems that are inherent in using GIS. Publications on GIS regularly use the term 'ground-truthing', emphasising the need to check what is produced by GIS software against what can actually be seen in the real world.

5.15.4 Constructing maps

Geographical Information Systems software was used to construct the maps, using ArcMap 10.3.1, with basemaps from EDINA Digimaps. ArcMap allows data to be added to the map as layers, so various Excel spreadsheets could be added, that is, all the carved stones and/or subsets.

However, decisions had to be made about symbology. In order to avoid having the maps covered in a confusing multiplicity of symbols, a hierarchical approach was used in most of the maps. So, for example, the very complex 67/RV 23 (see Figs 126 & 145 below) is represented by the symbol for cup-and-ring stones with three or more rings, despite also having 1-ring cup-and-rings, cups, cups in enhanced cracks, linear grooves and grooves enclosing cups. When encountered, these issues are acknowledged and discussed.

5.15.5 Constructing viewsheds

Viewsheds can be constructed when 'beneath' the OS maps there is an underlying Digital Terrain Model, from which upstanding, non-terrain features such as buildings or trees have been removed. Effectively, the DTM is divided into cells, each with a single

elevation value (cells can be seen in Fig 51 below). The GIS determines the visibility of a target cell from the viewpoint cell by examining the line of sight, which may or may not be blocked by intervening cells with a higher value, that is, greater elevation; cells which are not blocked are part of the viewshed (ESRI, 2007).

There are limits to the amount of data that can be added when using ArcMap. Thus for maps covering relatively small areas, on the Moor itself, or as far as Bradley Moor 7km away, a DTM with a higher degree of accuracy can be used, DTM 5-metre, reflecting the size of the cells in the DTM. However, it became necessary to construct viewsheds reaching as far as Cumbria about 100km away, and here, a DTM 50-metre had to be used, bringing with it a larger margin of error.

A viewshed can be added to a map as a semi-transparent layer. Overlapping viewsheds of several different rocks can be shown on the same map, though there will then be some loss of clarity of the underlying basemap. When constructing viewsheds, a standard offset value of 1.6m was used as advised: that is, the height of the observer was taken to be 1.6m. The height of observed features is taken as ground-level, that is, the visibility of its base.

5.15.6 The problems with GIS

GIS is used extensively in studies of rock-art landscapes, and is a very useful tool. However, it is sometimes used quite uncritically (Freedman *et al*, 2011; Thomas, 2004, 198; Winterbottom & Long, 2006). Wheatley & Gillings (2002, 204-209), discussing the use of GIS to generate viewsheds in archaeological investigations, say that their accuracy is dependent on the accuracy of the underlying DTM, noting that any inaccuracies are particularly likely to occur at hillcrests, that is, the margins of the viewshed, and to the viewer, the skyline.

'Skyline' however, is not an entirely simple concept. Exon *et al* (2000, 28) discussing GIS landscape models, describe the two types of viewshed edge, the leading edge and the trailing edge. The trailing edge represents the true skyline; any leading edge (not always present) occurs where the terrain dips below an intermediate horizon, creating an area of dead ground.

This edge may also give a skylining effect, although further land will be visible beyond it. If there is a substantial distance of dead ground, this skylining effect will still be impressive, and is seen very commonly in Rombalds Moor views, where the further land is dim and distant hills. This is still referred to as skylining, because the silhouetting effect is clear whether or not the background is sky or distant hills (see for example Fig 49 above).

Wheatley & Gillings go on to discuss intervisibility and reciprocity (that is, if A can see B, then B can see A). They note that writers may fail to take into account the clarity of the object against the background, relative sizes of A and B, and the fall-off of real-world visibility as distance from the object increases (Wheatley & Gillings, 2002, 210-214).

Thus GIS models construe as visible sites that are so far apart that they cannot be made out, and sites that are at ground level, and/or so small, that they cannot be seen even from only a few metres away. As an illustration of this, Fig 51 facing shows the southern part of the viewshed of 302/PR 05 the Haystack, and a photo of the view to the south from the Haystack.

The Haystack is a very large boulder, readily visible from all of the 16 carved stones lying to the south of it and within about 500m (it is clearly visible in the distance in Fig 49 above). However, as all these 16 carved stones are much smaller than the Haystack, none of them is actually visible from the Haystack.

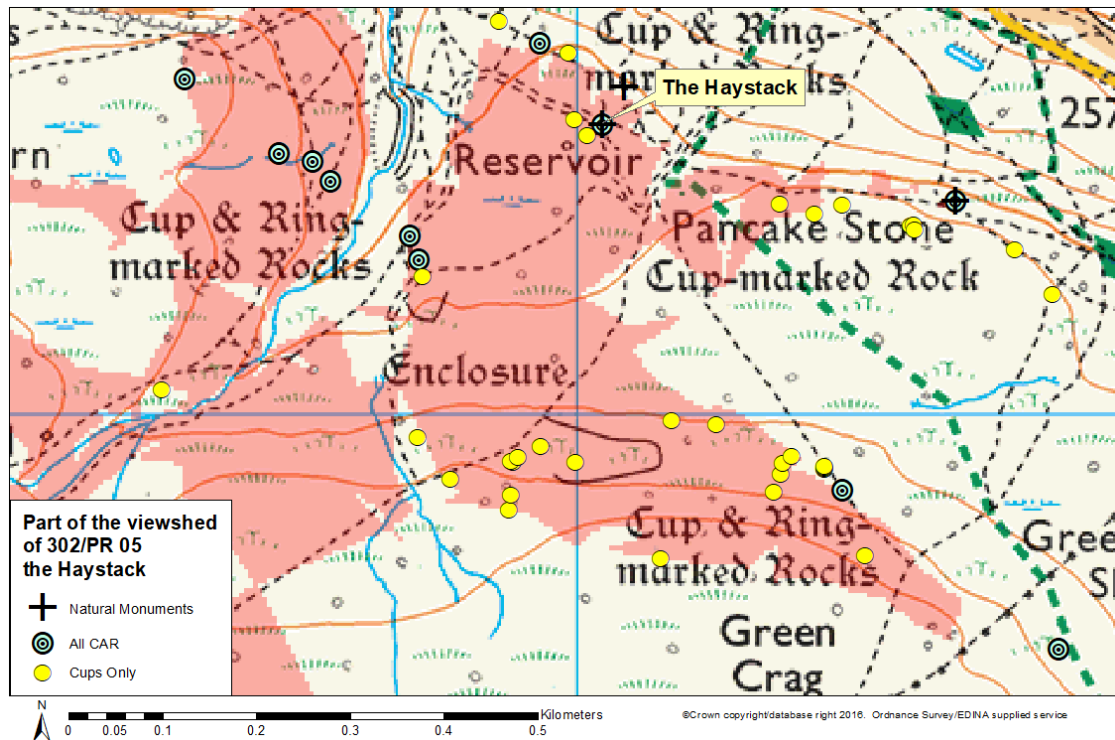


Fig 51 Viewshed and real-world views from the Haystack.

Top: Southern part of the viewshed of 302/PR 05 the Haystack, visible area shown in red.

About 16 stones are technically intervisible: the Haystack is actually visible from all of them.

Bottom: View south from the Haystack. Not a single carved stone can be seen.

Photo image: Author & P Deacon.

In this study of the rock-art landscapes of Rombalds Moor, GIS viewsheds were constructed where real-world visibility was obstructed by trees or buildings. On the Moor itself there are few trees except for the Rivock plantation and a few groves above Ilkley, so these viewsheds were only necessary in a minority of cases. The carved stones on the margins of the Moor, in cleared fields and gardens, were much more likely to have obstructed views, though these views were not needed for any subsequent analysis.

Secondly, by generating viewsheds from large upstanding carved stones which are proposed as natural monuments, it should be possible to demonstrate, using reciprocity, *from* which carved stones they can be seen. The use of a value of 1.6m for OFFSETA (the observer height) should not cause problems using reciprocity, as all the natural monuments are themselves 1.6m high or more.

In nearly all cases, fieldwork observations were available to check viewshed accuracy; as might be expected, there were some discrepancies (Wheatley & Gillings, 2002: 204-209). These are discussed where they occur in the relevant Results sections.

The viewshed of 41/DSS 01, Doubler 1, was unexpected, as its real-world views to the east and south-east, and its GIS-generated viewshed, were very different (Figs 52 & 53 below). This carved stone is a 'tower' projecting up from cliff outcrop, with all the carvings on the topmost surface. Its views include an extensive vista across the terrace to the east. Fig 52 shows the stone, its real-world view to the east, and its viewshed.

As can be seen, the GIS-calculated viewshed seems to show that *nothing at all* is visible to the east. In the field, except from immediately below, where there are no carved stones, whenever one of the Doublers is visible, the other is visible as well. The Doubler 1 viewshed was therefore compared with the viewshed of 42/DSS 02 Doubler 2. When the two viewsheds are seen together, they overlap almost perfectly, except for Doubler 1's missing eastern and south-eastern sectors (Fig 53 below).



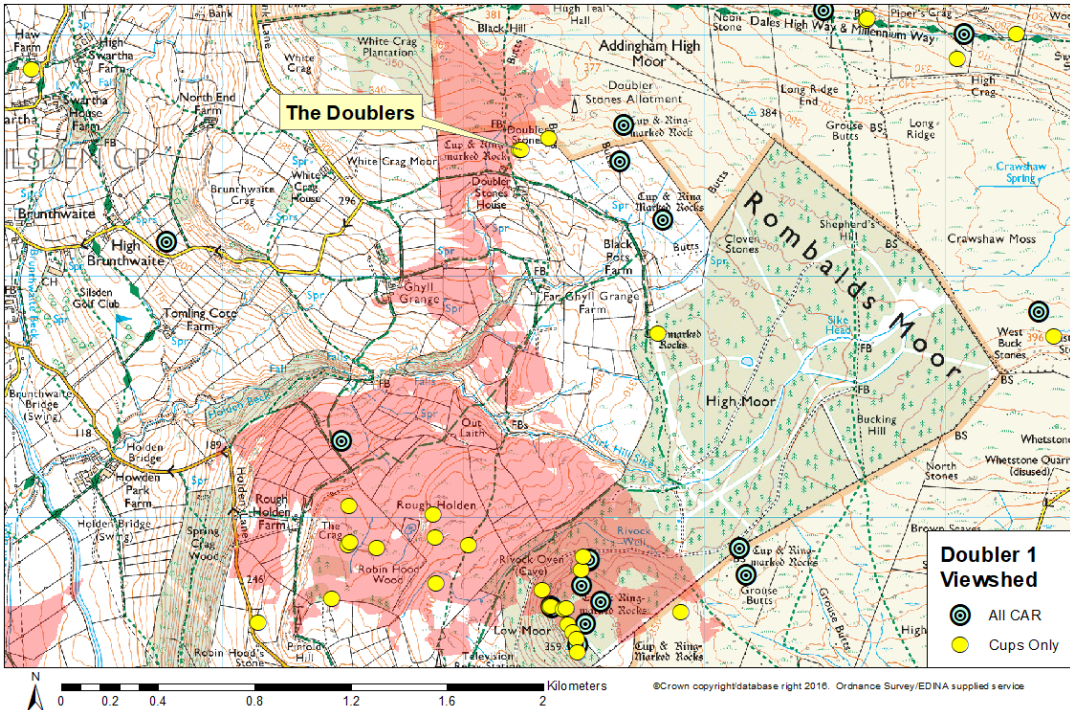
Fig 52 41/DSS 01 Doubler 1 and its viewshed.

Top: Doubler 1 from the south, with the terrace behind and to the right of the tower, to its east.

Centre: The extensive view to the east from Doubler 1 (Doubler 2 seen at left).

Bottom: Doubler 1 viewshed, with the 'visible area' generated by the GIS shown in red, and 'nothing' visible to the east and south-east.

Photo Images: Author & P Deacon.



Clearly, the reason for the discrepancy is that in constructing the Doubler 1 viewshed, the GIS reference point for Doubler 1 is too low down on the Doubler 1 outcrop cliff ‘tower’. This also means that it does not block Doubler 2’s view in the GIS. Therefore for all subsequent analyses, the viewshed of Doubler 2 was used.

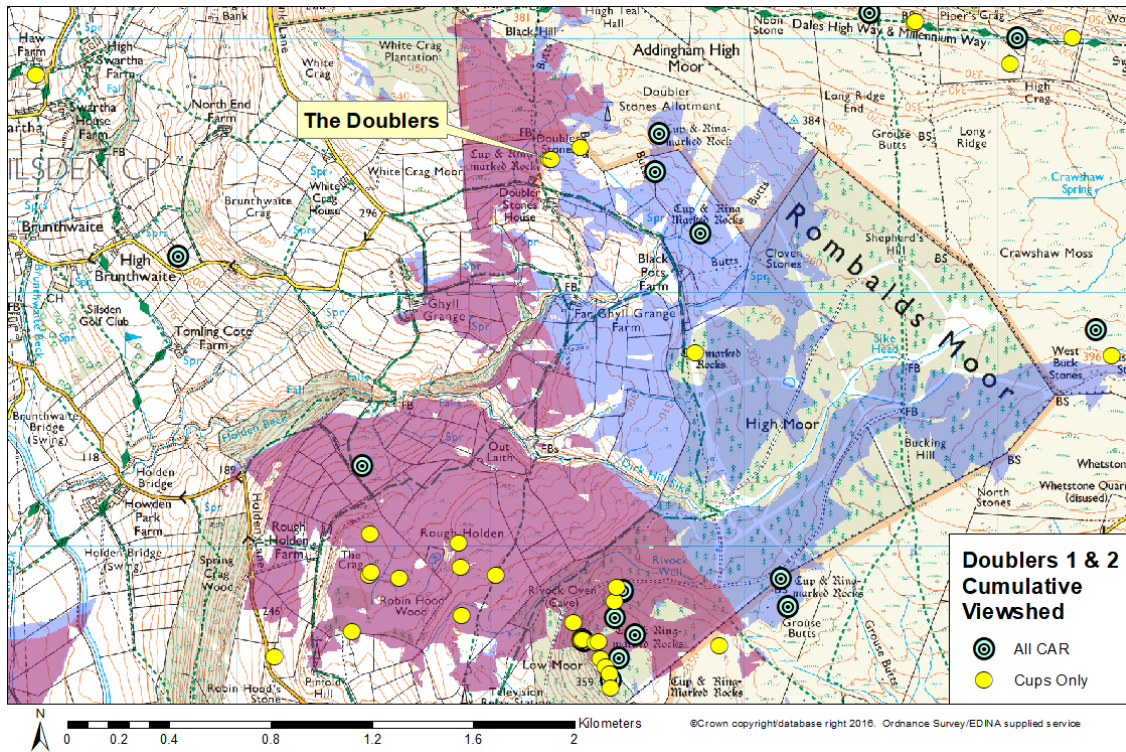


Fig 53 Cumulative viewsheds of Doublers 1 & 2.

Doubler 1 viewshed in red, Doubler 2 viewshed in blue. Virtually the entire area shown as visible from Doubler 1 is also visible from Doubler 2, and thus appears purple.

A similar problem also affected the Pancake’s viewshed over GCS; like Doubler 1, the Pancake is a ‘tower’ on top of cliff outcrop, but again, fieldwork observations were available to clear up discrepancies.

Finally, and despite the long explanation here, these problems are relatively minor and can be worked around; they appear and are dealt with in Chapters Seven and Eight.

5.16 Moving from fieldwork to interpretation

Because the data is examined at four very different spatial scales, from the whole Moor down to the individual rock, and, as it were, over a very long time period, issues around interpretation are complex, and vary depending on which particular spatial and temporal scales are being considered. Rock-art cannot be directly dated, and what evidence that we have on chronology is largely circumstantial and inconclusive. As rock-art was probably being made and used over a very long period of time, its meaning(s) probably did not remain constant. Therefore, no overarching explanation for the making of rock-art was sought; indeed, the notion of an overarching explanation is explicitly rejected.

The Results Chapters are set out as follows, with the scales taken in size order:

- **Chapter Six: the whole Moor** covers the relationships between sites, motifs and views (other than views of natural monuments) at the scale of all of Rombalds Moor and beyond, including relationships with water, and with other archaeology. A possible route along the whole northern ridge edge is considered. There is also a consideration of rock-art standing in what are now fields: that is, survivors in areas that have been cleared.
- **Chapter Seven: Natural Monuments in their Large Locales** considers the relationships between carved stones and a small number of very prominent and strikingly shaped carved stones, which are proposed as natural monuments.
- **Chapter Eight: Small Locales** examines small groups of carved stones, visible as clusters on the map, in terms of whether these collections might be meaningful, or have arisen by chance. Also considered here are two possible alignments of carved stones, both connected to possible Small Locales.
- **Chapter Nine: the individual rock**, at the smallest scale of the single rock, looks again at motifs, and the relationships between them, between motifs and the rock itself, and between rock and carver.

Chapter Six: Results I: The Whole Moor

6.1 Introduction

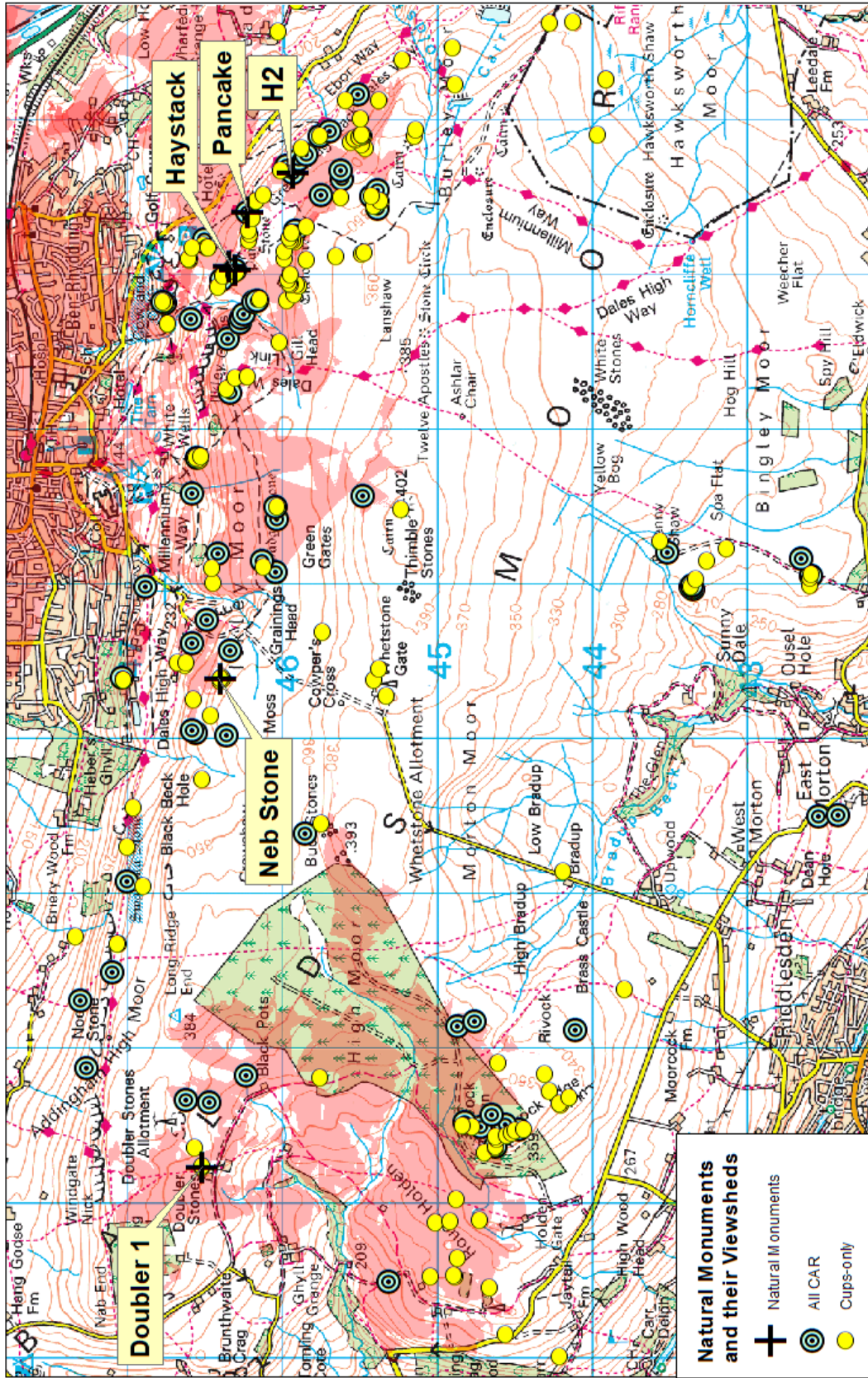
The fieldwork produced a large volume of data, and this is now examined at different spatial scales, from the whole Moor, through two intermediate scales, down to the level of the individual rock. In this chapter, we examine the findings at the level of the whole Moor. The fieldwork results are considered in comparison with earlier work, particularly Bradley (1997) and Jones, Freedman, O'Connor *et al* (2011), exploring whether the findings support their understanding of rock-art landscapes as large-scale coherent systems. An alternative interpretation would give a much more complex, messy picture, a palimpsest of carvings, for different reasons, over a long time period.

The research questions set in Chapter Five at the scale of the whole Moor were

- Is the distribution of sites and motifs random, and is there a relationship between site-types and motifs?
- Is rock-art in cleared lowland that has somehow survived clearance different from rock-art in 'typical' uncleared upland?
- Is there a relationship between rock-art and water?
- Is there a relationship between carved stones and other prehistoric archaeology?
- Is there a relationship between rock-art, routes and views?

The first three questions concern the spatial distribution of rock-art on Rombalds Moor; the fourth question, while continuing this theme, introduces a consideration of relative chronology. The fifth question includes a consideration of relationships with features at some distance from the Moor itself. The Study Main Database is used throughout the results chapters, as it excludes stones whose sites are unreliable. The map, Fig 54 opposite, shows the distribution of sites and motifs on Rombalds Moor, along with the proposed natural monuments in their Large Locales, that is, their viewsheds.

Fig 54 (facing) Distribution of sites and motifs on Rombalds Moor, with the proposed natural monuments and their viewsheds.



6.2 Is the distribution of sites and motifs random, and is there a relationship between site-types and motifs?

The classification of motifs as cups, grooves, and cup-and-rings is described in Chapter Five section 5.7 above. Cups are reasonably easy to define and characterise, there are many cups-only stones, and it is therefore possible to study them in some depth. Grooves cannot be studied in isolation, as there are only two grooves-only stones on the Moor, and the great variability in the form and length of grooves makes any attempt at classification very difficult; they have unfortunately had to be largely ignored as a specific subject for study, though in Chapter Nine, the relationship between grooves and natural cracks is considered.

Studying cup-and-rings is more problematic than studying cups. Firstly, most cup-and-ring stones have cups as well. Secondly, there are a number of variants of cup-and-rings, including the number of rings in a motif; gapped, horseshoe, 'keyhole', and turned-back rings; and the presence of comet-tails, emanating either from the central cup or from the rings, but there is no obvious way to classify them simply.

The classification of sites into one of four site-types, clifftop, detached, ground-level and upstanding (see Chapter Five, section 5.6) allows for an examination of different types of 'earthfast boulder' sites, in particular looking at relationships between rocks, motifs and the earth. In the field, though, many sites, particularly step-like sites inset into slopes, were difficult to classify, and the analysis of site-types can be considered as indicative only.

6.2.1 Distribution of sites

Examining Fig 54 above, it is clear that the distribution of sites is not random. There are very few carved stones on the highest part of the Moor and in much of the southern area. The majority of carved stones are on the north side of the Moor, largely accounted for by the dense concentration of rock-art sites in Green Crag Slack; there are further dense but smaller concentrations at Rivock and Stanbury Hill.



Fig 55 390/CHH 01 and its views.

This small, near ground-level rock, has two cups and about nine grooves. Its views seemingly include nothing of significance.

Images: Author & P Deacon.

**390/CHH 01
View north
View west View east
View south**

There is a notably higher density of sites within Large Locales as compared to outside them, fully discussed in Chapter Seven, where it is suggested that carvings here (if perhaps not all) were made in response to a natural monument. Of the 252 sites in the Study main database, 111 (44%) stand outside Large Locales.

Similarly, clustering of stones, Small Locales, is also apparent from Fig 54, and this is the theme of Chapter Eight. Of the 22 clusters and one alignment identified in Chapter Eight, only seven groups, including 24 sites, stand outside Large Locales.

This leaves 87 sites standing in neither Large nor Small Locales. Some of these sites, particularly those on the highest part of the Moor, are both isolated from other rock-art, and have only short-distance and very featureless views. An example of this is 390/CHH 01 (Fig 55 above).

This little ground-level stone, with two cups, a set of short parallel grooves and a U-shaped groove, stands about 50m from a small moortop pool, though the pool cannot be seen from the stone. Its views are now remarkably featureless. It does not appear to be on a route to anywhere, there are no flint scatters, cairns or ancient walling reported locally, and there are no nearby rock-art sites. Yet one or more carvers came to this rock; making the carvings required several hours work.

Most of the 87 sites in neither Large nor Small Locales are similar to this in terms of views, but they have a wide variety of panel compositions, a topic returned to below. It is possible that such stones were carved in connection with views of features that have not survived into the archaeological record, but it is equally likely that these carvings were made for non-view related reasons, such as commemorating an important event at that spot. A small subset of the 87, standing along the north-western edge of the Moor, are some of the biggest sites, with several discussed in Chapter Seven as large rocks *not* selected as natural monuments. They do though have extensive views, and at least on the map, some seem to perhaps trace out a route (see section 6.6.1 below).

6.2.2 Distribution of motifs

The distribution of motifs among the 252 carved stones in the Study Main Database is shown in Table 5 below. Of note is that there are many cups-only stones, but only 11

cup-and-ring-*only* stones, which include some that are part-quarried, part-overgrown or part-obscured beneath walls: some cups on these stones might have been lost, or otherwise not be visible, and 11 may be an over-estimate. Thus most cup-and-ring stones have cups as well, and carved stones with no cups are rare.

Study Main Database	Number	% of total
All stones	252	
Cups-only	174	69%
Grooves-only	2	<1%
All CAR	76	30%
at least one 1-ring CAR	71	
at least one 2-ring CAR	16	
at least one 3+ring CAR	4	
CAR, but no cups	11	

Table 5 Motif types of all sites in the Study Main Database.

6.2.3 Distribution of motifs: cups

Table 6 below shows the number and percentage of cups-only sites in different areas of the Moor, and is further considered below, when distribution by site-type is discussed.

Area	All Sites	Cups-only sites	% Cups-only sites
Whole Moor	252	174	69
Outside Large Locales	109	72	66
Doubler1 Large Locale	27	18	67
Neb Stone Large Locale	25	14	56
Haystack Large Locale	43	33	77
H2 Large Locale	33	25	82
Sentinel Large Locale, IMLT only	11	10	90
Pancake Large Locale, IMLT only	11	10	90
Pancake Large Locale, GCS only	8	7	87

Table 6 Number and percentage of cups-only sites in different areas of the Moor. Some carved stones stand in more than one Large Locale.

In the Sentinel & Pancake Large Locales, 284/HR 01 Hangingstones Rock is excluded from the analysis, as its views across IMLT are very uncertain due to major quarrying activity behind it. Natural monuments are not included as stones having sight of (other) natural monuments. There are two grooves-only stones, both outside Large Locales.

Because of the considerable variation between individual Large Locales, it is not appropriate to pool the Large Locale results, or to consider Large Locales as a homogenous group, an important finding in itself. Thus the distribution of motifs in the Doublers Large Locale is broadly similar to the rest of the Moor; but the Neb Stone Large Locale has a low proportion of cups-only sites, and all the Large Locales in the east (Haystack, Pancake and H2) have a higher proportion of cups-only sites. This is returned to in the next chapter.

The distribution, relative chronology and perhaps even the meaning of some cups, are topics considered in depth in Chapters Seven and Eight, where the cup, often largely ignored in rock-art studies, becomes a central part of the discussions.

6.2.4 Distribution of motifs: cup-and-rings

Most stones with cup-and-ring carvings have cups as well. The distribution of cup-and-ring sites, by Large Locale, is shown in Table 7 below.

Area	All sites	CAR sites	% CAR sites
Whole Moor	252	76	30
Outside Large Locales	109	35	32
Doublers Large Locale	27	9	33
Neb Stone Large Locale	25	11	44
Haystack Large Locale	43	10	25
H2 Large Locale	33	8	24
Sentinel Large Locale, IMLT only	11	1	9
Pancake Large Locale, IMLT only	11	1	9
Pancake Large Locale, GCS only	9	2	12

Table 7 Number and percentage of cup-and-ring sites in different areas of the Moor. Some carved stones stand in more than one Large Locale.

As noted above, the Neb Stone Large Locale on Ilkley Moor has a higher proportion of cup-and-ring carvings than the rest of the Moor and the other Large Locales. Many of the most unusual and intricate cup-and-ring designs are found in this area, including the now-moved or lost Panorama stones. Two very unusual motifs, swastikas and ladders, are also found only on Ilkley Moor (see below). Furthermore, five of the eight stones from which the Neb Stone can be seen edge-on have cup-and-rings; this is further discussed in the next chapter, but here it can be said that this view is not easy to obtain, and suggests that the view was being acknowledged by carving these motifs.

Given the association between cup-and-ring carving and cracked surfaces in Argyll, as shown by Jones' group (Freedman et al, 2011; Jones & Tipping, 2011), the data for Rombalds Moor were examined, looking for a similar relationship. There are 76 cup-and-ring marked rocks on Rombalds Moor, and Table 8 below shows the breakdown between maximum number of rings in a cup-and-ring motif by features of the carving surface.

Panel detail	Total	Number with bedding planes, holes, cracks	Percentage
All CAR	76	19	25
max 1-ring	57	16	28
max 2-ring	15	3	20
3+ring	4	0	0

Table 8 Maximum number of rings in cup-and-ring motifs, and carving-surface features.

Three of the 'Max 1-ring' group are proposed as natural monuments, and were probably selected for carving due to their impressive size and shape. The findings here do not follow the Argyll findings. Numbers are small, but when carving cup-and-ring motifs with two or more rings, carvers on Rombalds Moor were largely selecting featureless surfaces; only three of the 19 panels with 2-, 3-, or 4-rings have bedding planes, holes or cracks.

6.2.5 Site-types and motifs

The four site types as defined for this study are listed below.

- clifftop: with at least 2m drop at edge.
- detached: resting on other rocks, with none, or a minimal part of the rock embedded in the ground.
- ground-level: with margins of the carved surface embedded in the ground, the highest part of the rock no more than 0.25m above ground level.
- upstanding: with the rock clearly rising from the ground, at least 0.25m above ground level. Step-like rocks in slopes, part embedded in earth and part standing free, were classified as upstanding.

Classifying stones as clifftop or detached was usually straightforward. It was more difficult to classify stones between ground-level and upstanding categories, especially those inset in slopes. Moreover, there have been changes in ground level at some sites (Fig 56 below). The distributions of clifftop and detached sites are shown in Fig 57 opposite; the numbers for each site-type are shown in Table 9 below.

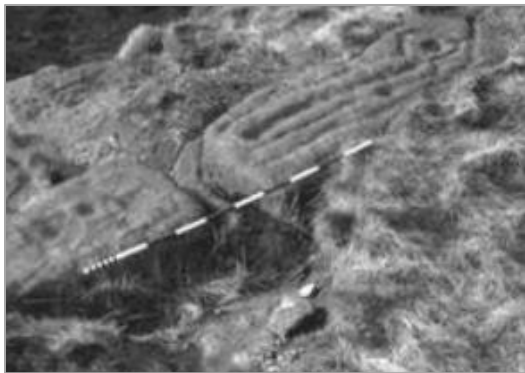


Fig 56 Changes in ground level.

48/RV 05 (at left) & 49/RV 06 (at right), Rivoock Nose: ground level has risen by about 10cm.

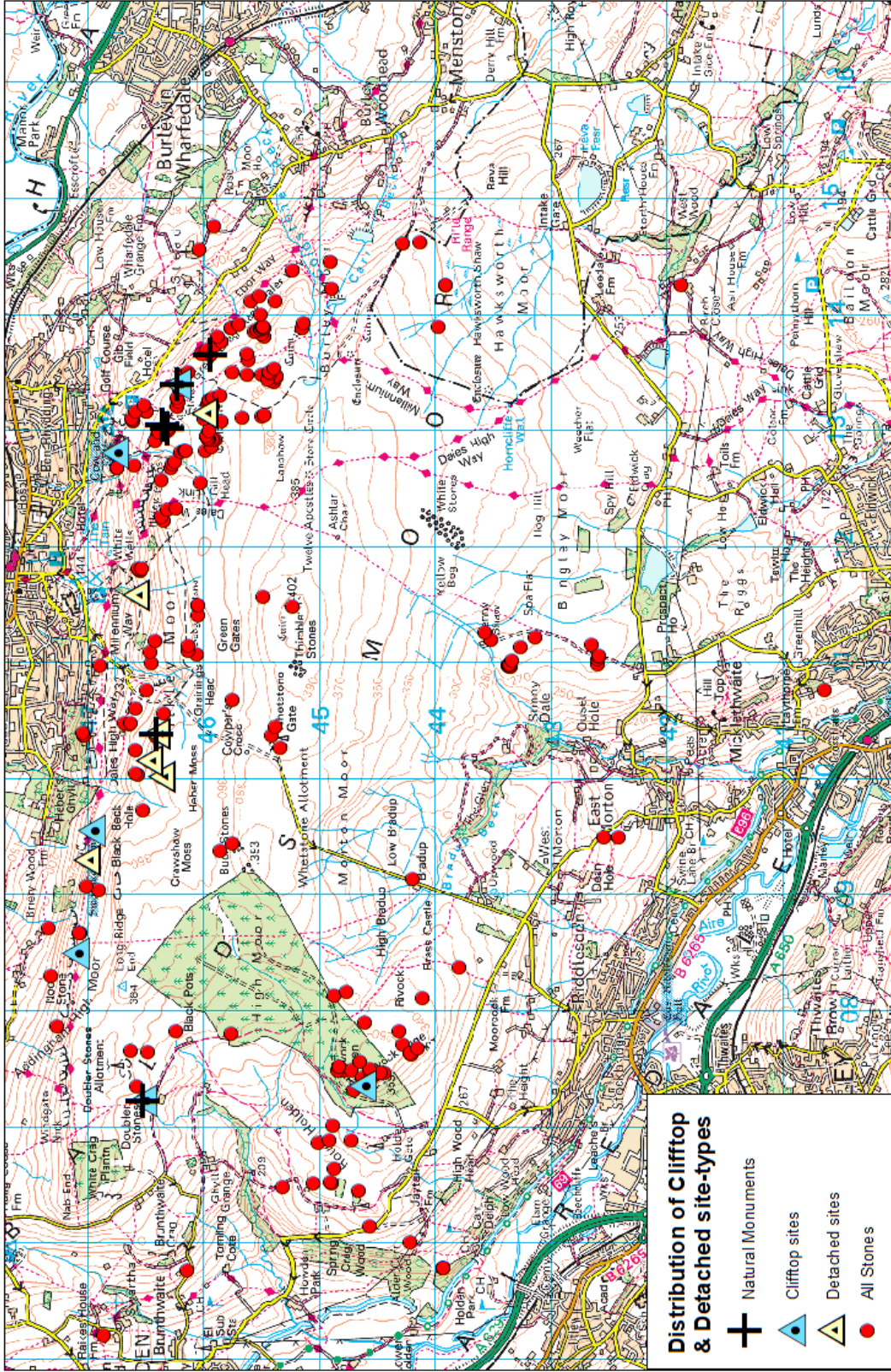
Left: photo taken before 1986.

Right: photo taken 2013.

Images: Left: Hedges 1986, 55.

Right: Author & P Deacon.

Fig 57 (facing) Distribution of clifftop & detached site-types. Thus 'All Stones' here equates to all ground-level and upstanding sites.



Site type	Number of Sites
clifftop	6: includes four panels at Hangingstones Rock counted as one site, and three adjacent carved rocks at Rivoock Nose counted as one site: thus 11 B&V sites
detached	6
ground-level	97
upstanding	138

Table 9 Numbers of stones in each of the four site-types.

There are several long stretches of cliff outcrop along the edges of the Moor, almost entirely uncarved, including a stretch in the north-east at the end of Green Crag Slack, with extensive views down lower Wharfedale and into the Guiseley Gap; by Bradley's ideas, perhaps a prime site for carving (Bradley, 1997: 90-91; 120). There are only six clifftop sites on Rombalds Moor (Table 10 below).

Site	Description	Motifs
41/DSS 01 Doubler 1*	Western Moor: upstanding 'tower' site at terrace edge.	cups, grooves
45/RV 02, 46/RV 03, 47/RV 04, Rivoock Nose	Western Moor: three adjacent sites, top of site at ground level	cups
212/PC 01 Piper's Crag	Northern-western edge: top of site at ground level	intricate CARs, cups, grooves
217/SST 01 Swastika Stone	Northern-western edge: top of site at ground level	swastika, cups
284/HR 01 Hangingstone Rock	Northern-western edge: four panels, top of site at ground level	intricate cups-and-grooves, CARs, cups
332/PST 01 the Pancake*	Green Crag Slack: upstanding 'tower' site at terrace edge.	CARS, cups, grooves

Table 10 Clifftop sites and their motifs.

***41/DSS 01 Doubler 1 and 332/PST 01 the Pancake are proposed as natural monuments.**

Two of the three clifftop sites along the northern terrace edge, 217/SST 01 the Swastika Stone, and 284/HR 01 Hangingstone Rock have very unusual motifs; the

swastika on 217 was possibly carved much later, although there are cups near this motif as well (see Chapter Eight section 8.4.1 for a discussion of this site). The views from the six cliff-top sites are considered below in section 6.6.2. With the exception of 41/DSS 01 Doubler 1, and 332/PST 01 the Pancake, both proposed as natural monuments, the cliff-top sites are not spectacular in themselves, and from below are not at all easy to pick out from the rest of the stretch of cliff outcrop.

The six detached sites, all quite large, are all on the northern side of the Moor (Fig 57 above; Table 11 below). There are no other apparent commonalities.

Site	Description	Motifs
215/WC 02 Anvil Stone	flat block on heap of rocks, below terrace edge.	cups
222/CSE 01	large angled boulder resting on another	cups, CAR
237/CSE 02 Neb Stone	very large angled boulder resting on another. Proposed natural monument	cups, grooves
224a/CSE 05*	large angled boulder resting on another.	cup
258/WHW 01	large boulder, one end resting on small rocks: possibly moved	CARS, cups, grooves, plus part-swastika
311/GC 14	medium rock partially resting on another	cups, groove

Table 11 Detached sites.

* Discovered during fieldwork, provisional number.

Over the whole Moor, there are 97 ground-level sites, and 138 upstanding sites (Fig 58 below; Table 12 below). Fig 58 includes four separate maps; different motif types are added to maps as layers, so on a single map, the bottom layer would be all but obliterated as subsequent layers were added on top.

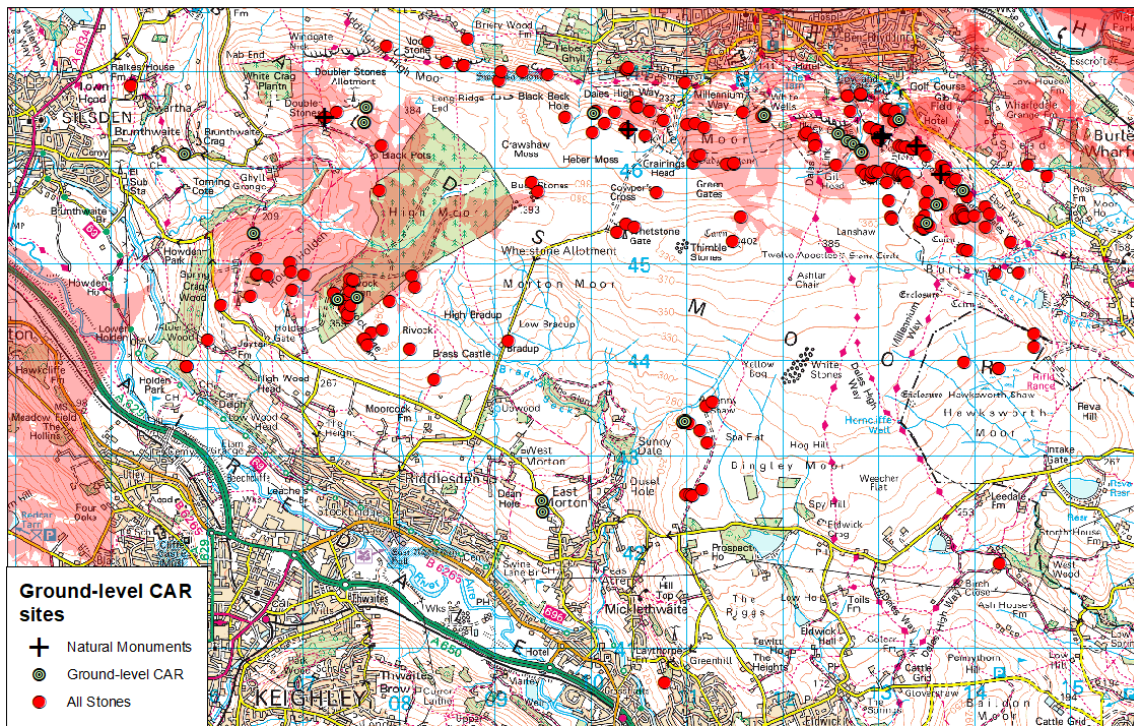
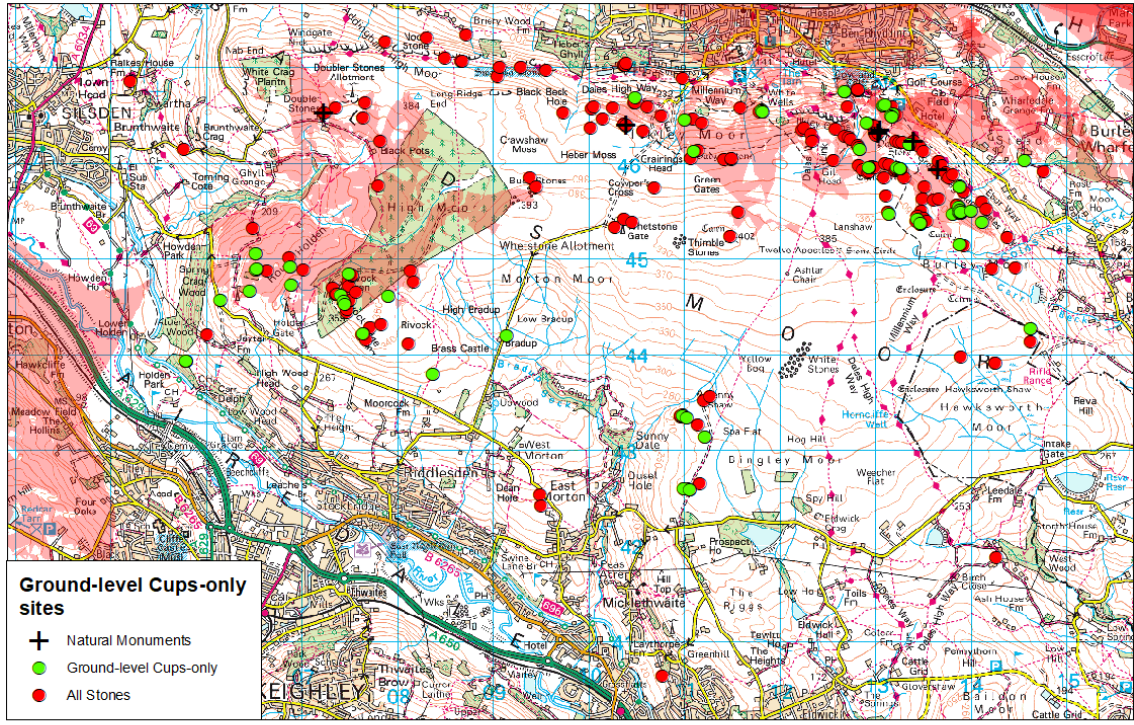
Fig 58 (overleaf across two pages) Distribution of ground-level and upstanding site-types and motifs. Viewsheds of all the natural monuments are shown in red.

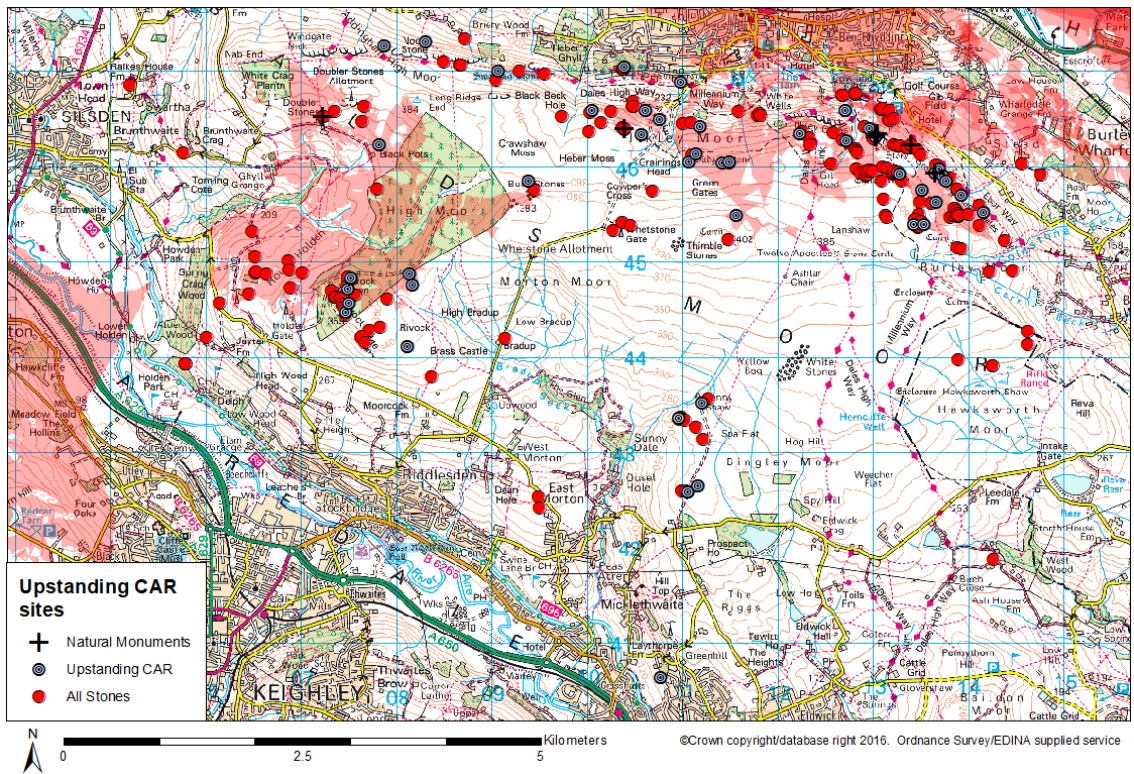
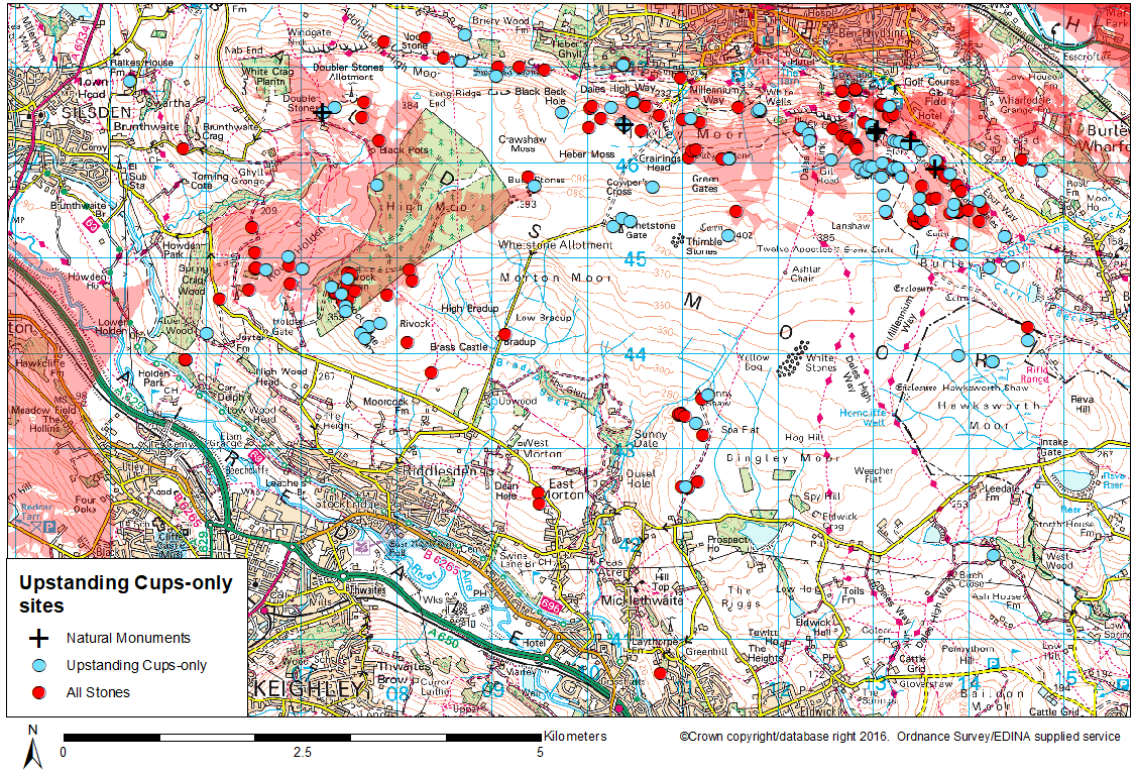
Top left: Distribution of ground-level sites, cups-only.

Bottom left: Distribution of ground-level sites, cup-and-rings.

Top right: Distribution of upstanding sites, cups-only.

Bottom right: Distribution of upstanding sites, cup-and-rings.





Nearly all the stones in the north-west, north-central and moortop areas are upstanding. Many of the sites along the north-western edge are very large, rather reminiscent of the large boulders seen as elf-churches in Iceland (see Chapter Three section 3.4.1 and Fig 26 above), though not all very large boulders here are carved.

Motifs	Ground-level sites	%	Upstanding sites	%
all	97*		138*	
cups-only	69	75	94	66
cup-and-ring	27	25	43	33

Table 12 Distribution of motifs between ground-level and upstanding sites.

***note that numbers do not add up, as there are two grooves-only sites, one upstanding and one ground-level.**

A full discussion of the proposed natural monuments and carving within their viewsheds is reserved for the following chapter, but at the scale of the whole Moor, it is important to note that the natural monuments were not all treated in the same way in terms of the type of carvings that can be found within their viewsheds.

6.3 Is rock-art in cleared lowland that has somehow survived clearance different from rock-art in ‘typical’ uncleared upland?

There are 33 carved stones now standing in cleared areas on the periphery of the Moor, and thus at lower altitudes than the moorland stones. They mostly stand in rough pasture. Their site details, and whether they were likely moved, are summarised in Table 13 below. These seem to be survivors of clearance, and it can be surmised how and why most of these were not destroyed. Many are now in walls, or have been moved onto sheet rock; one rock, 88/HOW 01, was seemingly pushed into a gully. Some, themselves sheet rock, cannot readily be moved; some are too large to be easily moved. Only six were felt to be potentially movable but not moved. Moreover, further rock-art sites in valley bottoms could also have been lost by being buried under alluvium/colluvium.

Site	Details	Probably moved?
HAW 01	outcrop	no
32/HB 01	ground level, under modern wall	no
33/HC 01	ground-level sheet rock	no
34/HC 02	ground-level sheet rock	no
35/HC 03	ground-level sheet rock	no
37/HC 05	ground-level sheet rock	no
38/HC 06	small upstanding boulder, resting on rock sheet	yes
HC 07	small boulder near outcrop on slope	no
HC 08	boulder resting on rock sheet LOST	yes
39a/PNH 02	ground-level sheet rock RE-COVERED	no
39b/RHW 04	ground-level boulder	no
39c/RH 01	ground-level boulder	no
40k/RH 09	small upstanding boulder	no
88/HOW 01	large boulder in little gully	yes
89	small loose rock LOST	yes
90/BRP 01	small ground-level boulder	no
91/DH 01	small boulder in field wall	yes
92/DH 02	small rock at base of wall	yes
93/DH 03	small rock at base of wall	yes
95a/GHW 01	large rock in bog in spring	no
116/WE 01	rock at base of wall	yes
176/BC 01	rock at base of garden wall LOST	yes
185/FG 01	rock at base of wall	yes
188a/FG 02	rock incorporated in wall	yes
189/FG 03	small upstanding rock in garden	no
211/HAH 01	very large quarried boulder on steep slope	no
213/HH 01	very large quarried boulder incorporated into barn	no
389/STE 01	ground-level sheet rock	no
STE 01a	large upstanding boulder	no
392/STE 02	small loose broken rock LOST	yes
393/STH 01	medium rock in modern quarry spoil	yes
394/SP 01	medium rock in field wall	yes
395/SP 02	medium rock in field wall	yes

Table 13 Stones now standing in cleared fields: site details.

Eight have cup-and-rings as well as cups, the same proportion as seen in the full database. The distribution of site-types is obviously different from that in undisturbed

areas, favouring non-moveable sites, so this is not a random sample. The distribution of motifs (numbers are small) suggests no differences between rock-art in lower as opposed to higher altitudes. These stones are survivors of clearance, with the implication that there may well have been rock-art on more vulnerable rocks that have been destroyed or otherwise lost. This is further supported by the records of six carved stones, now all moved or lost, from the bottom of the Aire valley, and recorded on the *PastScape* website (Historic England PastScape, nd).

As discussed in Chapter Two section 2.3, these findings call into question whether it is correct to see rock-art as a feature of upland, marginal areas outside, and often above, the settled landscape. There may have been considerably more rock-art in lowland, fertile, settled areas, disproportionately lost in comparison with rock-art in areas that were not economically worth clearing, or subject to being buried by natural processes.

This is an important point, as a number of writers have discussed at length the relationships between rock-art and the settled landscape, and this underpins much of the theorising about the 'function' of rock-art and the reasons for making it (Bradley, 1997: 86, 90, 91, 100; Waddington, 1996, 1998a, 2007a). This is discussed further in section 6.6.1 below, when considering views.

6.4 Is there a relationship between rock-art and water?

Of 252 carved stones in the Study Main Database, and discounting stones in puddles, only ten were within 50m of water, four stones bearing cups-only, six with cup-and-rings. The 'type' of water was running water rather than still, with only one carved stone near a small pool; six were near a spring (four of these dry in summer), three were close to named becks (one of these dry in summer), and one was near a curious little seasonal rivulet that, when present, appeared at the bottom of a dry valley, ran for some 10m, then disappeared into the ground again.

Six carved stones stand in a puddle (see Chapter Four section 4.4.5 and Fig 41; Appendix 6 Fig A4). These puddles are said to be caused by sheep lying in the lee of the rock (Evans, 1999, 90), though three of them are hardly large enough to provide shelter for anything bigger than a rabbit. Six is a very small number, but it is interesting

to note that all of them are on Ilkley Moor or the moortop just above, and four of them have a view of the Neb Stone, three of them edge-on. Furthermore, all are upstanding, and five of the six have cup-and-ring motifs, two of them with no cups.

Perhaps at least some of these puddles may have been caused by water draining downslope, and have some connection with the carvings; this would however require a feature as apparently ephemeral as a puddle to have persisted for several thousand years. All one can say is that this is an unusual and intriguing set of sites, and be alert for similar findings elsewhere.

The lack of a clear relationship between rock-art and water other than puddles was not an expected finding, as other writers have postulated a link (Bradley, 1997, 100; Brown & Brown, 2008, 83; Sharpe 2007, 389). However, the Moor's hydrology may have changed with the accumulation of peat in some areas, or its loss through peat-cutting, changing both the topography and water-holding properties of the land.

The major becks, in their V-shaped valleys, are not likely to have moved since the end of the last Ice Age, other than being perhaps deeper, but water-extraction works may have lowered the water-table, and reduced the volumes flowing off the Moor in watercourses. Furthermore, even the 'major' becks are small, only about 3-5km long, though there are many springs and boggy areas. It seems though that in comparison with other rock-art areas, watery areas on Rombalds Moor were not being particularly selected for carving stones.

6.5 Is there a relationship between carved stones and other archaeology?

The prehistoric 'other archaeology' comprises lithic scatters; cairns, short stretches of ancient walling and stone circles; and enclosures (see Chapter Four). These are here reconsidered in terms of their possible relationships with carved stones, both at a spatial level, but also at a temporal level, that is, whether carved stones and other archaeology standing close together might be contemporaneous. This is at the heart of the work of Jones and colleagues in Argyll, and also in Edwards & Bradley's interpretation of their excavation at Backstone Enclosure on Rombalds Moor, but this

basic premise is strongly critiqued by Sheridan (Jones, Freedman, O'Connor *et al*, 2011; Edwards, 1986; Edwards & Bradley, 1999; Sheridan, 2012).

Laurie (2003), working in the northern Pennines, noted complex relationships between rock-art and other prehistoric archaeology, saying that rock-art on earthfast boulders is often found in or close to cairns and other probable Bronze Age structures such as round barrows and ring cairns. However, he also observed that some areas with many Bronze Age sites have no rock-art at all.

6.5.1 Lithic scatters

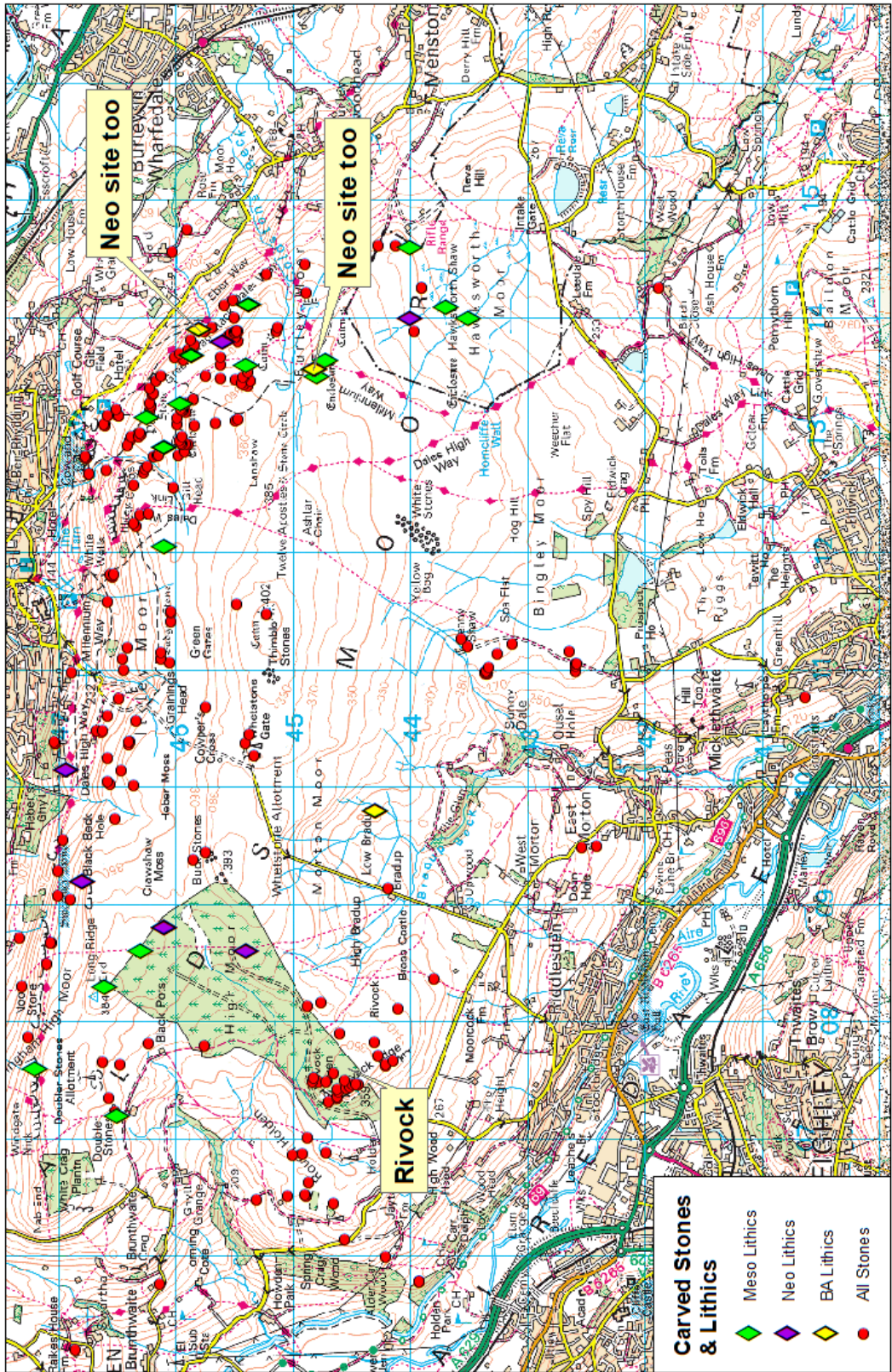
Because flint tools and debitage are so small, these remains are most likely to be hidden, or moved by natural processes (eg covered by peat, or washed downhill). Erosion is most active on steeper slopes, terrace edges and along footpaths, disproportionately revealing lithics (or indeed hiding them), and furthermore, this is where many collectors may be walking. Also, amateur flint collectors have regularly not recorded finds or findspots. Thus the data about lithic scatters is problematic.

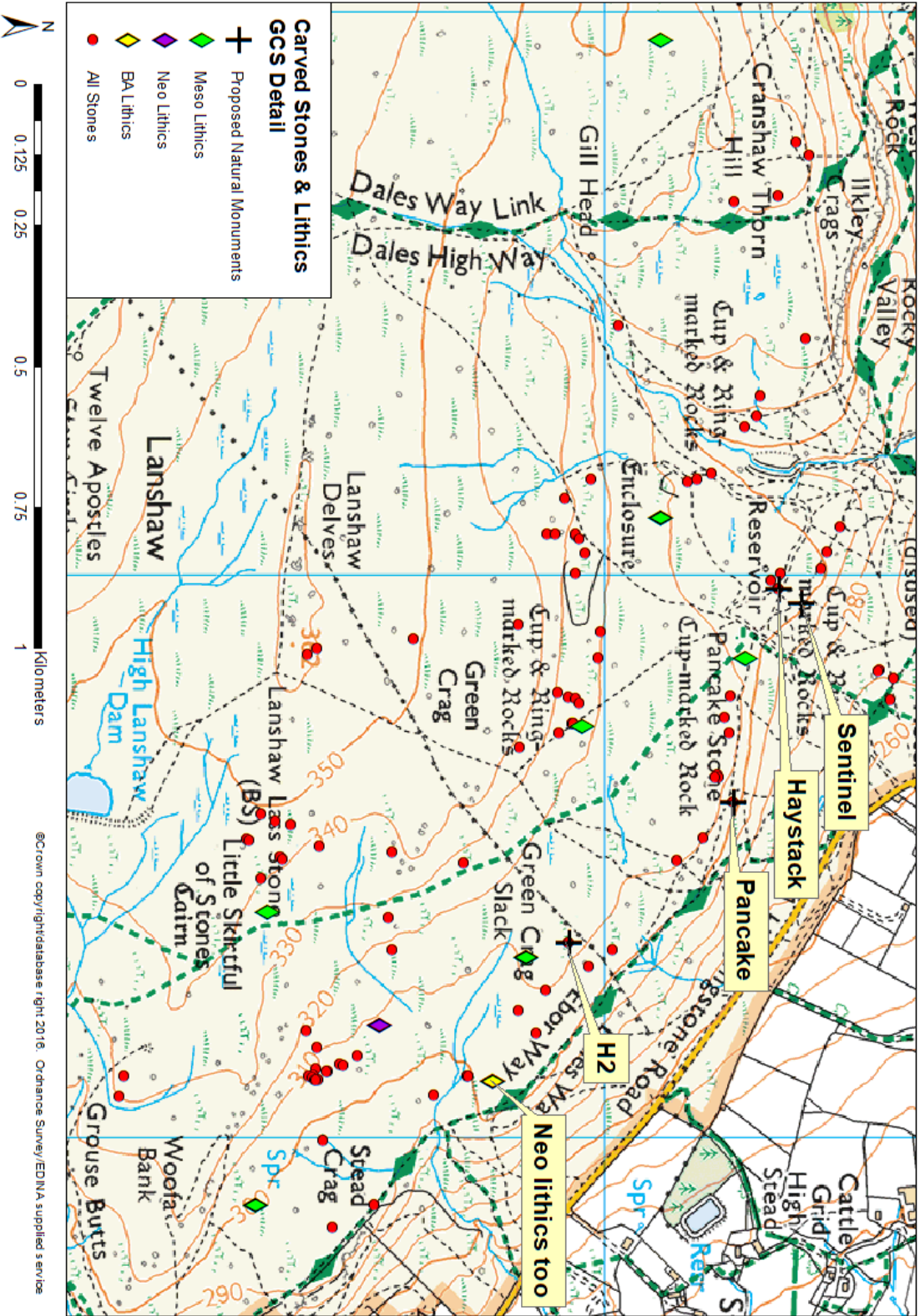
The known distribution of lithics, alongside the distribution of carved stones, is shown for the Mesolithic, Neolithic and Bronze Age in Chapter Four, Figs 33-38 above, showing no consistent relationship between lithic findspots of any period and rock-art sites. This can be seen, summarised as it were, in Figs 59 & 60 (facing and overleaf), showing the whole Moor, and Green Crag Slack detail; some symbols are hidden by overlying symbols.

Bannister's maps of Mesolithic, Neolithic and Bronze Age sites (1985: 18, 24, 27; shown in Figs 33, 35 & 37) show what appears to be a single site at Rivock, with lithics from all three periods, though it is not clear at all whereabouts on Rivock Hill this is. The impossibility of marrying up her maps with modern maps is discussed in Chapter Four section 4.4, though her sites must of course be taken into account.

Fig 59 (facing) Carved stones and lithics: the whole Moor.

Fig 60 (on following page) Carved stones and lithics: Green Crag Slack detail.





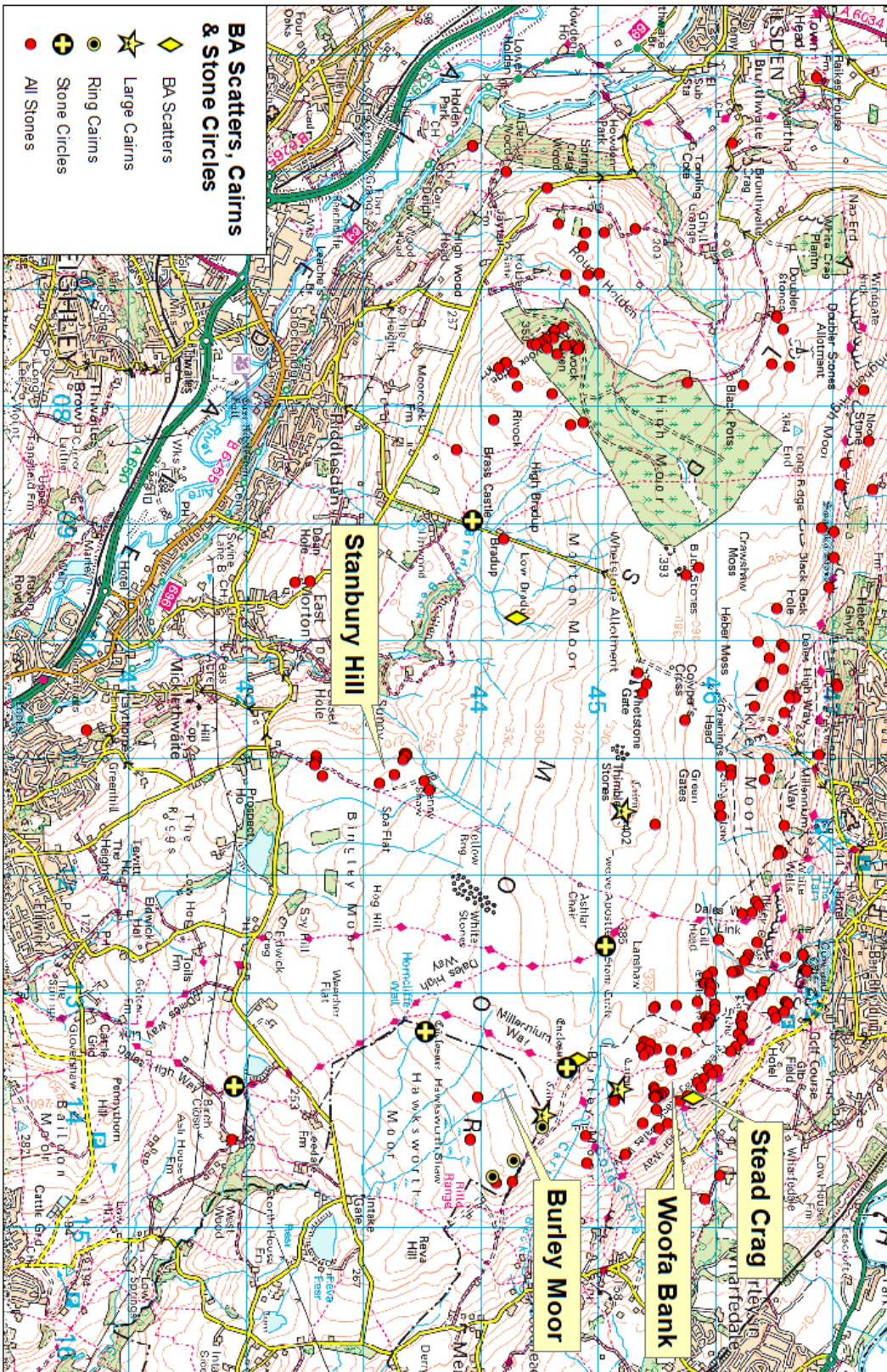
Figs 59 & 60 then, whilst not fully comprehensive, show that firstly, there is a concentration of lithics from the Mesolithic, Neolithic and Bronze Age on the moortop in the east, at Burley Moor, well away from any rock-art. Secondly, there are both many lithic sites and many rock-art sites in Green Crag Slack; and a multi-period site at Rivock Nose, with its many rock-art sites. Thirdly, there are many rock-art sites, including some of the most unusual and complex designs, on Ilkley Moor, and at Stanbury Hill, yet relatively few lithic finds. Thus no conclusions can be drawn about the relationships between rock-art and lithic finds.

6.5.2 Cairns, short stretches of ancient walling, stone circles

The distributions of cairns and stone circles, with other Bronze Age remains, are shown in Fig 61 below. There are three great cairns on Rombalds Moor, probably burial monuments, the Great and Little Skirtful of Stones, and the Moortop Great Cairn. Small cairns, often associated with short stretches of walling, are associated with burial, or clearance, or both; and the stone circles of Rombalds Moor are probably not stone circles as such, but burial monuments as well (Keighley, 1981; Lynch, 1979). The small cairns, many found clustered in cairnfields, but some more isolated, are mostly 2-5m in diameter, often scarcely 0.3m in height, and in thicker vegetation, impossible to pick out from any distance away. Downhill and east of the Great Skirtful of Stones are two, perhaps three, ring cairns, all about 20m in diameter. These probably had various ceremonial functions including burial (Lynch, 1979).

By 2015, ten cup-marked portables had been reported in the Little Skirtful of Stones Great Cairn. Four were reported by Boughey & Vickerman (2003, 92; 2013, 5), and a further six portables were reported by the CSI team (CSI Rombalds Moor, nd). There are no reports of portables in the Great Skirtful, and otherwise, there is no rock-art close to any of the three Great Cairns except for a one-cup stone, 255a/WCM 01, close to the Moortop Great Cairn. In Fig 61 overleaf, the symbol for this stone is obscured by the overlying symbol for the Large Cairn, though it stands 30m or so from the cairn centre and not apparently in cairn material.

Fig 61 (overleaf) Cairns, stone circles, BA lithics, and the approximate centres of the major cairnfields.



Not all of the ten portables in the Little Skirtful were hunted down for this study; three of the four in Boughey & Vickerman's 2003 study were included for interest in the Full Database and photos (the fourth could not be found). Why these two large cairns, both about the same size, and only about 1km apart, should be different in the way portables were added (or not) is unknown. It does however make it seem more likely that when cupstones were added to these cairns, it was deliberate, such that they do not represent accidental rubble.

As can be seen from Fig 61 above, there seems to be no close spatial relationship between ring cairns and rock-art either, in contrast with Laurie's findings in Pennine areas further to the north (2003). Indeed it is apparent that most of the non-rock-art prehistoric activity focuses on the east of the Moor, with most of the carving activity focusing along the north of the Moor; Green Crag Slack features prominently in both. With the exception of small portable cupstones in the Little Skirtful, large cairns and ring cairns seem almost to be separated from rock-art.

The relationship between rock-art and smaller cairns is more complex. There are 30-40 cairns in each of the Stead Crag and Woofa Bank cairnfields, plus at least 12 at Stanbury Hill, as well as a number of scattered cairns reported in several other areas of the Moor (Bannister, 1985, 23 & 33-34; Keighley, 1981; Short *et al*, 2013; Boughey, 2013; and see Fig 61 above). Most are very overgrown, with more cairns probably lying undiscovered beneath vegetation; thus the true number of portables, carved cairn kerbstones, and carved-stone cairn nuclei may be higher too.

Vyner (2008, 11) suggests that the cairns and walling of Stead Crag and Woofa Bank cairnfields are not contemporaneous with the local rock-art, which he takes to be Neolithic, but are substantially later; he suggests a middle Bronze Age date for the cairnfields. He notes furthermore that there are similar cairnfields in north-east England in areas devoid of rock-art. Furthermore, a radiocarbon date from the excavation of a cairn in the Woofa Bank cairnfield returned an Iron Age date, separating it (in time) even more from rock-art (Bannister 1985, 35 & 140; Chapter Four, section 4.3 above).

There are four further portables, all associated with small cairns. Two of these are associated with separate small cairns in the north-eastern part of the Moor. The other two were found in the same cairn, located on Stanbury Hill, 0.5km away from the main concentration of rock-art on the hilltop. One of these is the only cairn-associated

portable carved stone on the Moor to include a cup-and-ring motif (cut through, so probably a fragment of an earlier carving; see Fig 20, right, above). This cairn was excavated as part of the Stanbury Hill project, and found to include a number of small quartz pebbles (Brown, Hallam *et al*, 2013).

Also located in the north-eastern Moor are two carved stones on the edges of separate cairns, probably cairn kerbstones; whether the cairn builders selected these stones because they had been carved is not known (see for example Fig 50 above). Nearby is a medium-large carved rock at the centre of a cairn, perhaps the nucleus of a clearance cairn.

However, it is noteworthy that the Stead Crag and Woofa Bank cairnfields stand close to or within Green Crag Slack, which has about 100 carved stones, many of suitable size, and only these three have been found used in cairn construction. It is therefore not at all clear whether the fact that these stones had been carved was of importance to the people building the cairns.

6.5.3 Enclosures

There are three reasonably well preserved enclosures reported on Rombalds Moor, all on Green Crag Slack (see Chapter Four section 4.4.3; Fig 62 below).

There was a further enclosure, associated with the Panorama Stones on Ilkley Moor, and destroyed about 150 years ago, but no further details of this could be found (Hedges, 1986, 11). There are HER reports of other fragmentary enclosures near 332/PST 01 the Pancake, but these could not be identified during the fieldwork other than as short stretches of walling (ERA England's Rock Art, nd; West Yorkshire Historic Environmental Record, 2010).

The J-shaped Backstone Enclosure is close to, and curves around, three carved stones; Edwards (1986) was unsure if this enclosure was ever complete. There are no carved stones reported in its walls.

Green Crag Enclosure includes two carved stones within its U-shaped wall, and has a transverse section of wall, seemingly without a gate. To the west, it is now incomplete, but depending on its extent, could have enclosed several carved stones.

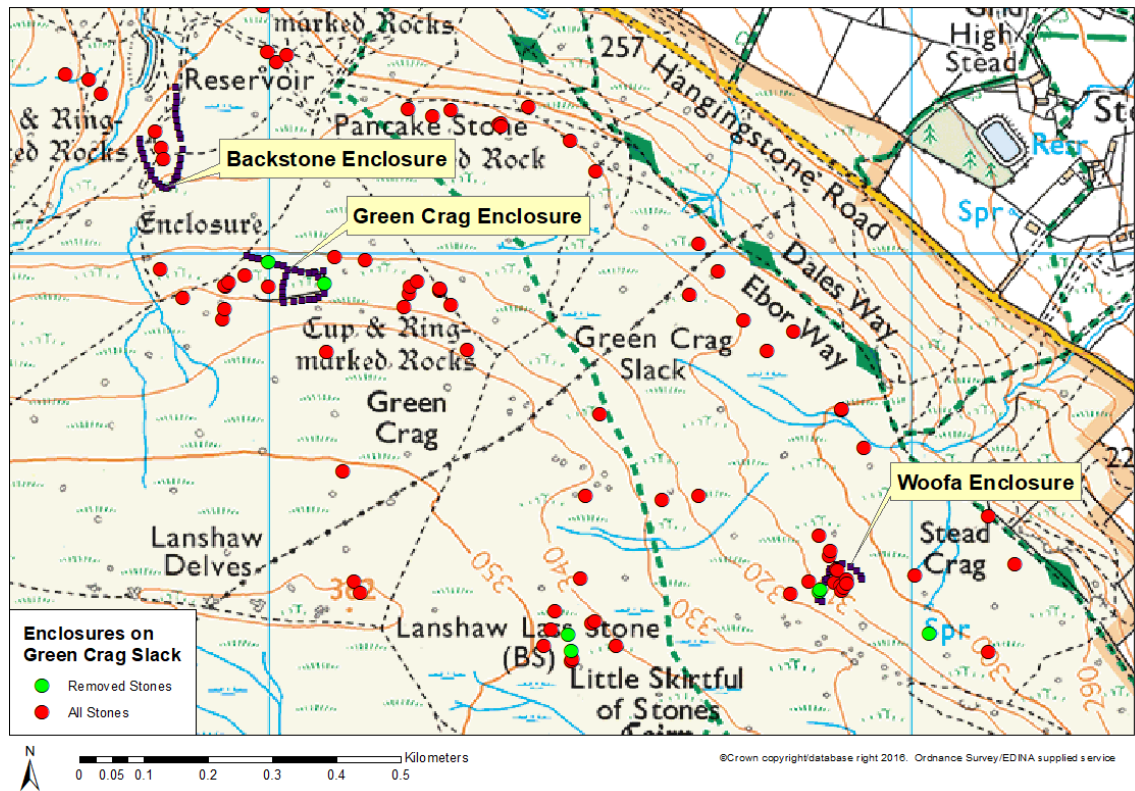


Fig 62 The three enclosures of Green Crag Slack.

The enclosures are shown outlined by arbitrary points taken along the walls in the fieldwork. 'Removed' stones are those removed from the Main Study Database as not found, moved, in walls or cairns.

Woofa Enclosure (Fig 63 below) lies to the east of Green Crag Enclosure, and also has two carved stones in its wall (overlapping symbols on the map), as well as an apparent gateway, and a small possible orthostat near two carved stones. There are many rocks within the enclosure, nine of them carved.

The carved stones in the walls of both Green Crag and Woofa Enclosures are positioned higher than ground level, and seemingly were incorporated during building; the walls also include several other similarly sized boulders (see also Fig 49 above). Thus these enclosure walls were probably constructed at some time after the rock-art was made, and perhaps when the carvings no longer elicited much interest.



Fig 63 Woofa Enclosure.

Top: The very overgrown west wall is seen arrowed, clear as it crosses the central band of darker heather. The vegetation patchwork is due to heather-burning practices. 364/WB 05 is visible on top of the wall, in the darker heather. The next, rather square rock, is part of the possible gateway. The enclosure interior is to the right, with many rocks within.

Bottom: View west from 376/WB 14, across the enclosure to the possible gateway, with a small possible orthostat in the foreground. The large flat rock just beyond is 372/WB 12.

Image: Author & P Deacon.

6.5.4 Stone circles

As discussed in Chapter Four, these monuments are probably all burial monuments and not stone circles as such (Lynch, 1979; West Yorkshire Historic Environment Record, 2010; Chapter Four section 4.4.3). From Fig 61 above, it can be seen that four of the five seem very isolated from all other prehistoric activity, and rock-art seems unassociated with all of them.

6.5.5 Carved stones and other archaeology: implications for chronology

Although the picture is complex, there seems to be no clear evidence for a persistent association between rock-art and the remains of other prehistoric activity, other than the placing of a few portable carved stones in cairns; larger carved stones found in small cairns are hard to interpret. As already noted, a number of workers presume that rock-art next to other prehistoric remains means that they are contemporaneous, though this is not necessarily so (Edwards, 1986; Bradley & Edwards, 1999; Jones, Freedman, Gamble *et al*, 2011; Sheridan, 2012).

Although the chronology of rock-art remains contentious, rock-art must be contemporaneous with some of the 'other archaeology' discussed here, covering the Mesolithic right through to the Bronze Age. There is no clear evidence for a connection between rock-art and lithic scatters with diverse tool types (the only evidence for settlement activity that we have), but there may be a negative association between rock-art and ring cairns, stone circles and large cairns (other than their portables, a special case).

Green Crag Slack is an area with multiple prehistoric sites, as well as remains of activity from every subsequent period up to the present, and interpretation is very difficult. It has never been systematically investigated, and many of the prehistoric remains are dated only typologically. However, it was clearly an attractive place over a very long period of time. There is evidence of dwelling, from the lithic scatters and perhaps enclosures too; evidence for its importance ideologically is presented and discussed in subsequent chapters.

6.6 Is there a relationship between rock-art, routes and views?

This study examines connections between rock-art and its position within the landscape, particularly in terms of views, both from and of rock-art sites (See Chapter One section 1.1 above). A number of writers argue that some carvings were made in response to views over kilometres: views of monuments, and along the routes towards them. Much discussion of the relationship between rock-art and views is pitched at this scale. Secondly, there is discussion of views of 'fertile areas' and 'the settled landscape' (Bradley, 1997, 90; Beckensall, 1999, 7; Brown & Chappell, 2005, 15; Waddington, 2007a; Freedman *et al*, 2011). This has been discussed in general terms in Chapter Two section 2.3; for Rombalds Moor, it is difficult to explore these hypotheses, due to the lack of local investigations in the surrounding valleys. Bradley, Waddington and Jones, looking at areas such as the Milfield Basin in Northumbria (Bradley, 1997: 86, 91, 113; Waddington, 1998b, 1999), and the Kilmartin and Kilmichael valleys in Argyll (Bradley, 1997, 117-118; Jones, Freedman, O'Connor *et al*, 2011), were working in areas where there are extensively investigated prehistoric landscapes. Around Rombalds Moor, the Wharfe and Aire valleys have not been well investigated. No local monuments are known, though there were possible Mesolithic, Neolithic, and Bronze Age settlement sites down the Wharfe near Otley, and down the Aire near Baildon (Bannister, 1985, 21-22; Cowling, 1973; Keighley, 1981; Chapter Four section 4.4).

6.6.1 Routes and views

The routes and views considered in this section are those that extend beyond the Moor; views within the Moor are considered in the following chapters.

Firstly, there is what looks like a section of a longer route marked out by rock-art, an apparently linear layout of cup-and-ring sites right along the northern edge of Rombalds Moor (Fig 64 below). This possible route and variations were walked from east to west, with notes, and photos (in both directions) made along the way. The walk-through showed that these 'routes', however likely they appear on the map, do not work as routes in the real world. That is, if there was a route running along the northern Moor, and there may have been, it seems unlikely that it was closely marked out by rock-art.

Looking at the 'terrace-edge' option beginning in the east, the apparent route is in fact set well back from the terrace-edge, and most of the rocks are so low that they cannot be seen from even a few metres away. Furthermore, there are several gaps of over 500m between neighbouring rocks in the trail. The modern-day route along the true terrace-edge is much better in terms of both terrain and views – doubly so if the area were still wooded. The 'rock-art route' crosses Rushy Beck through a 50m wide, flat marshy area; the modern terrace-edge path is across outcrop, and much easier. Similarly, the crossings of Backstone Beck, both upslope and terrace-edge options, are across particularly steep-sided parts of its valley, and there are further difficulties getting across or around Spicey Gill.

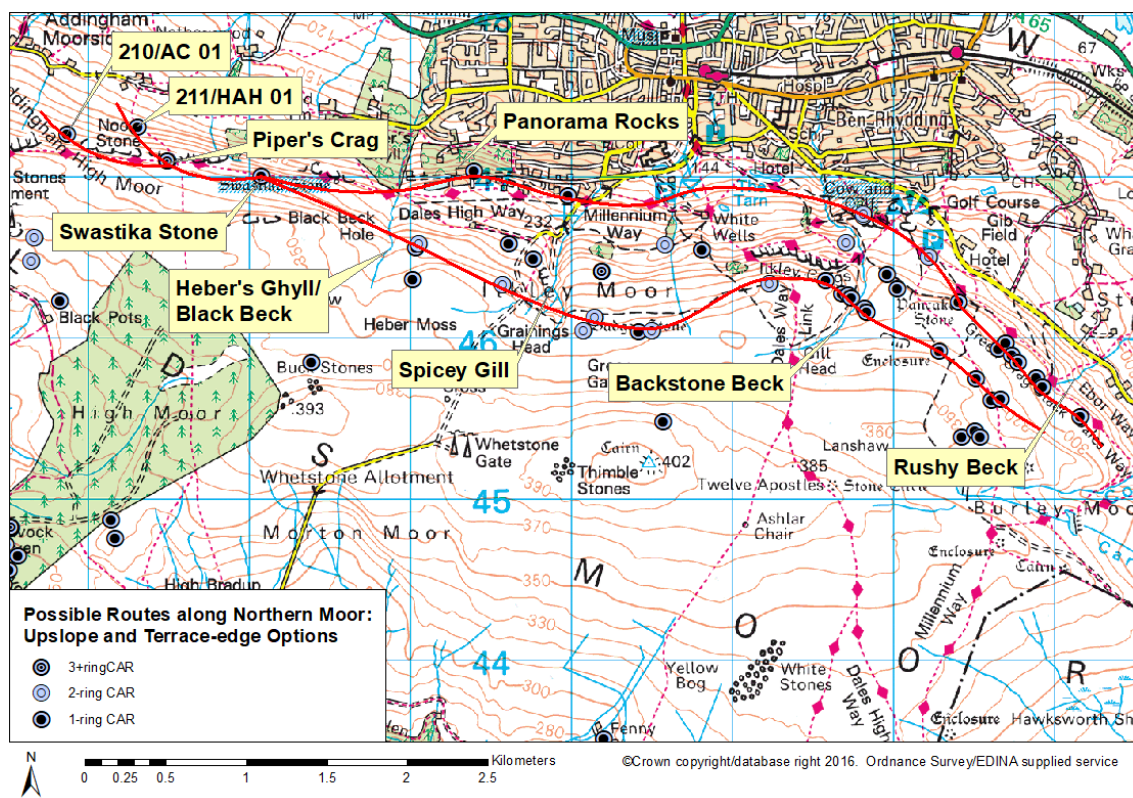


Fig 64 Possible northern routeways.
Possible routes, following cup-and-ring marked stones, are shown for pathways along the northern edge of Rombalds Moor.

The western section from 217/SST 01 the Swastika Stone to 212/PC 01 Piper’s Crag, is actually along the edge, and terminates by descending to the valley via 211/HAH 01: this would be a credible, though very short section of a route. The alternative descent, via 210/AC 01, is very steep and difficult; the author attempted to approach 210 from above in order to record it, but had to give up and approach it from below. Thus the evidence here for routes way-marked by rock-art is weak.

We next consider long-distance views, essentially views of monuments, in line with Bradley’s interpretations (1997, 123). There are no Neolithic monuments on the Moor itself, but many to the east, in the river basins and the Yorkshire Wolds; and to the west, higher up into the Pennines (Harding, 2003; Fig 65 below).

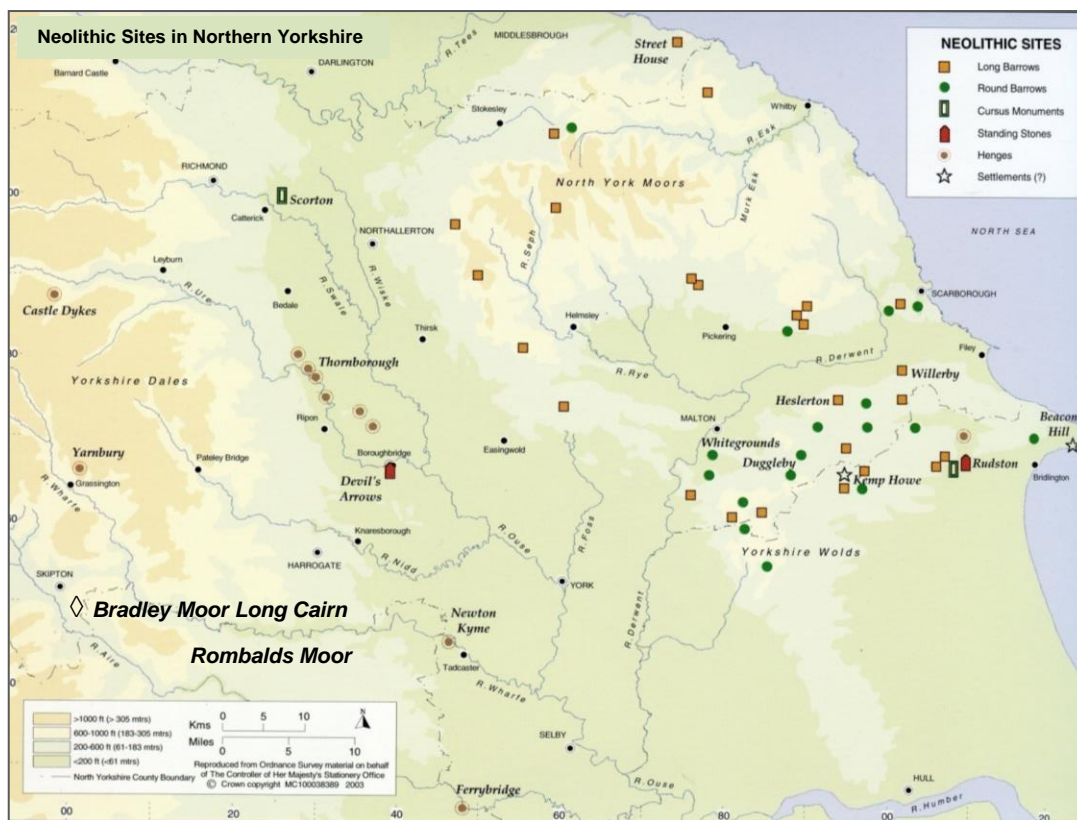


Fig 65 Neolithic sites in northern Yorkshire.

The site of Bradley Moor Long Cairn is shown approximately.

An obvious route from the Yorkshire Wolds to the Aire Gap runs across the Ouse basin, across the Wharfe, perhaps along the northern edge of Rombalds Moor, then over the pass to join the Aire valley south of Skipton.

Image: adapted from illustration p38, by Nick Staley, in Harding (2003).

There are two possible long-distance views towards Neolithic monuments from the west of Rombalds Moor. Firstly, Bradley Moor hilltop can be seen from Rivoock Nose, where the three adjacent cliff outcrop sites, 45/RV 02, 46/RV 03, and 47/RV 04 carry cups at their edge. Bradley Moor is about 7km away from Rivoock Nose, and is the site of a Long Cairn, a large Round Cairn and a ring cairn (Fig 66 below, and see Section 4.4.2 above). It is a largely uninvestigated but perhaps important site above the Aire valley. It is also about 1km uphill from what may be a pair of standing stones and some linear earthworks (Cowling, 1946, 33; Vyner, 2008, 3; Bennet, nd).

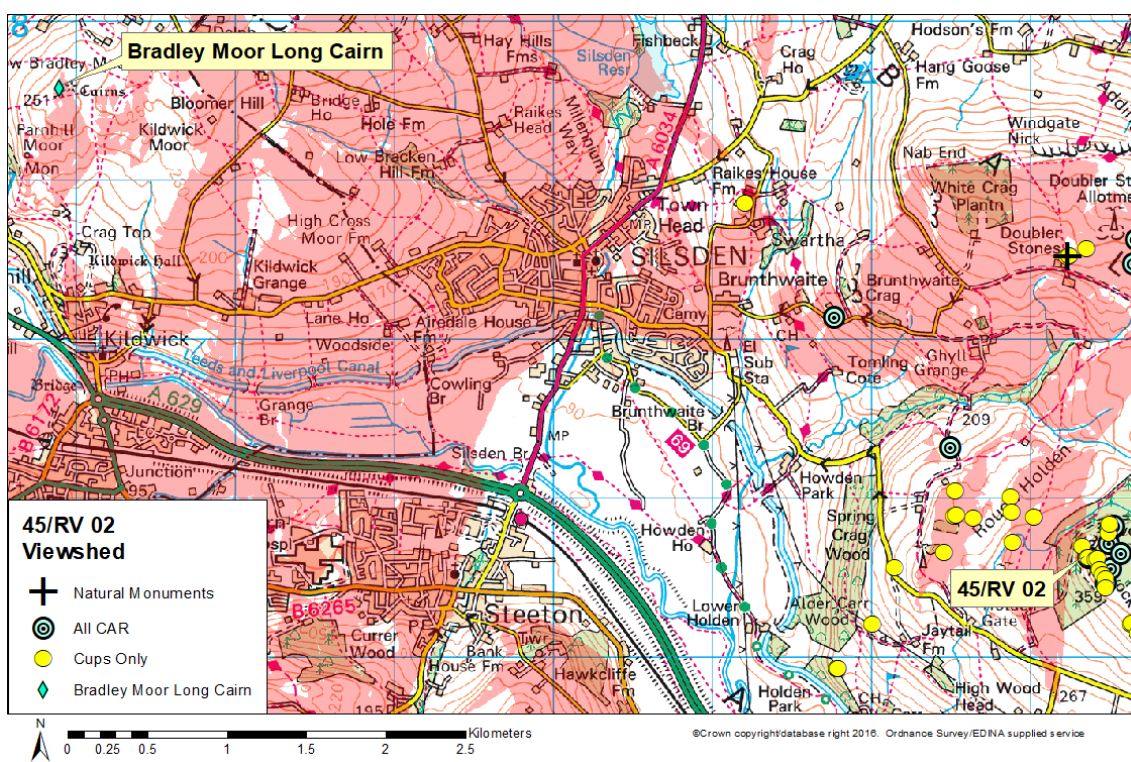


Fig 66 The viewshed of 45/RV 02.

The visible area is shown in red, with Bradley Moor Long Cairn on the skyline.

Bradley Moor would be easily accessible by following the Aire upriver from Rombalds Moor below Rivoock. It is not easy to pick out Bradley Moor from Rivoock Nose (map and compass are needed), and the cairns themselves cannot be perceived at all, though Bradley Moor hilltop could have been made identifiable by a fire and smoke.

When the views *from* Bradley Moor Long Cairn are examined (Fig 67 below), it can be seen that Bradley Moor summit must also be visible from several of the Rivock and Rough Holden stones. However, the Long Cairn is not aligned on Rivock hilltop, or indeed any part of Rombalds Moor. It is now very ruinous, but is aligned approximately SE-NW, appearing to face the midwinter sunrise.

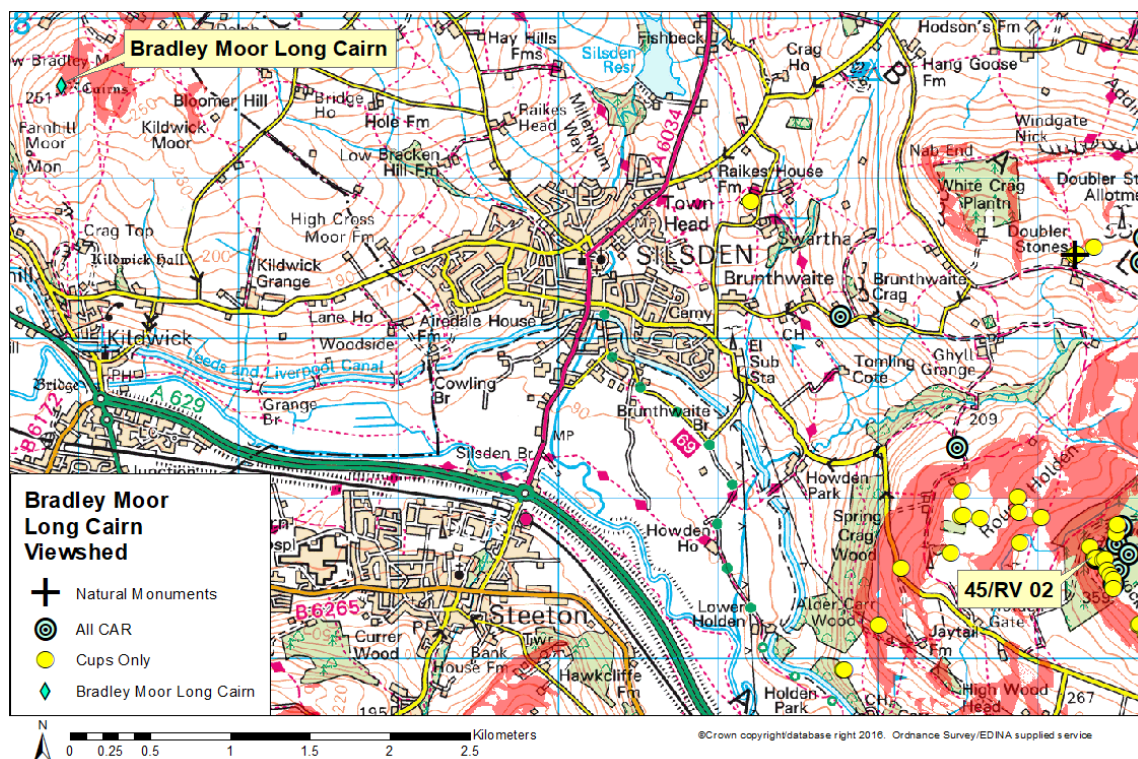


Fig 67 Part of the viewshed of Bradley Moor Long Cairn. The visible area is shown in red.

Also technically visible on a clear day from the sites on Rivock Nose – and on Rombalds Moor, only from sites on Rivock Nose – looking right through the Aire Gap, are the Cumbrian peaks (R Stroud, 2013, *pers comm*; Fig 68 below). Rivock Nose is thus favoured because firstly the viewpoint must be at sufficient altitude, and secondly, from sites further north along the western edge of Rombalds Moor than Rivock, the view is blocked by the hills east of Settle.

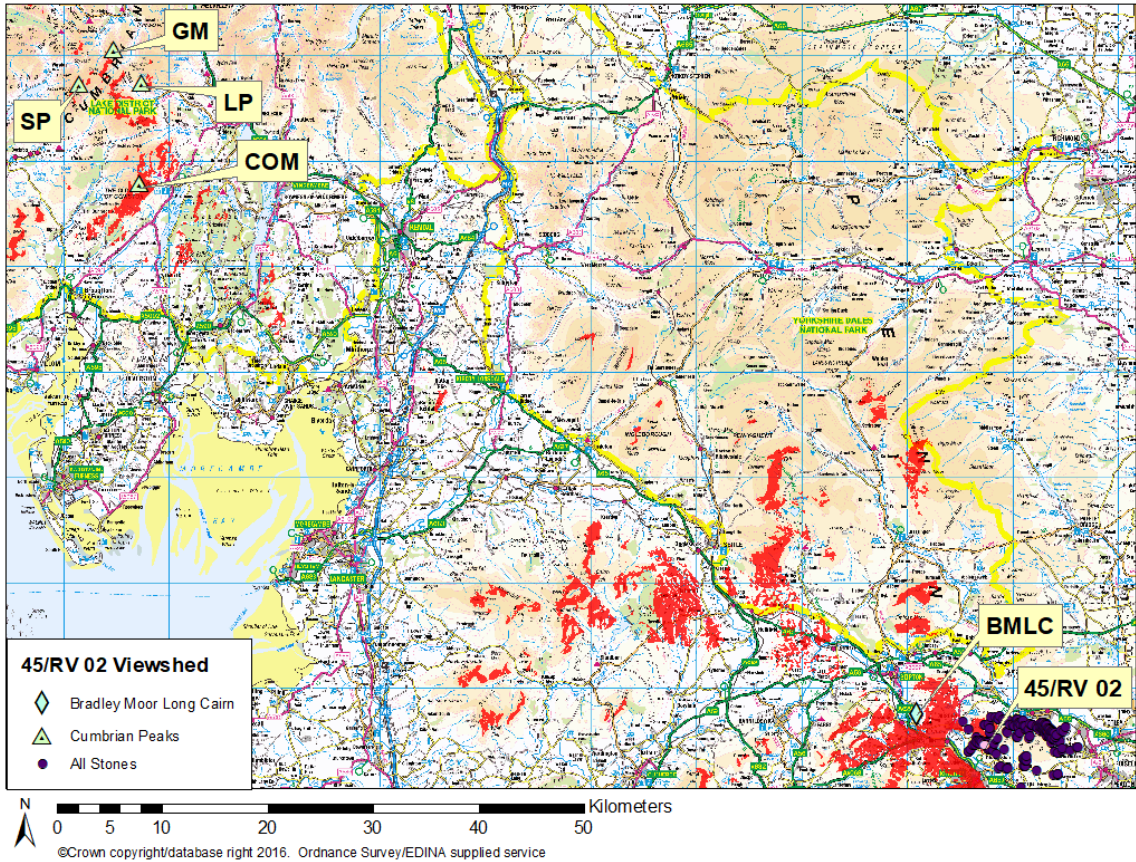


Fig 68 Long-distance viewshed of 45/RV 02.

Top: All rock-art sites on Rombalds Moor, with 45/RV 02 highlighted. Its viewshed, visible area in red, extends right through the Aire Gap to the Cumbrian peaks.

Abbreviations:

SP: Scafell Pike

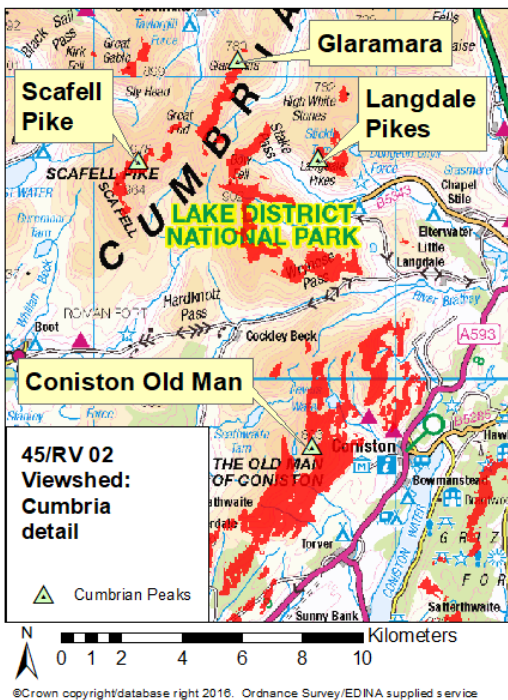
GM: Glaramara

LP: Langdale Pikes

COM: Coniston Old Man

BMLC: Bradley Moor Long Cairn

Bottom: Detail of furthest extent of 45's viewshed, visible area in red, just reaching all four peaks.



Although perhaps 100km away, the Cumbrian peaks could be actually visible; Edmonds (2004, 194) remarks that Great Orme on the North Wales coast is 'visible from the [Cumbrian] fells on a very clear day', a distance of perhaps 150km. The Langdales, Scafell and Glaramara are all reported as sites of stone extraction for axe-making (Claris *et al*, 1989; Schofield, 2009).

A possible source of error here is that the viewshed had to be constructed using a 50m-DTM, due to the size of the map, so inaccuracies are more of a problem than with the Moor-based viewsheds constructed using a 5m-DTM. Interestingly, the viewshed of Bradley Moor Long Cairn also reached the same Cumbrian peaks, though again, the cairn is not aligned along that axis.

The Cumbrian mountains are the source of hundreds of polished stone axes found in Yorkshire. There must have been well-used trails across the Pennines along which axes, or the stone to make them, were brought into Yorkshire; some five Cumbrian axes have been found on or near Rombalds Moor itself (Bradley and Edmonds, 1993, 45 & 53; Harding, 2012; 2013, 216; Vyner, 2007a; Vyner, 2008; see also Chapter Three section 3.2.2). Even Bradley has not suggested that views over such great distances are significant, though he does say that routes were marked out by rock-art even if their ultimate destination could not be seen (Bradley, 1997, 87-88). However, this is not a route way-marked by cup-and-ring rock-art, as there is very little rock-art reported in the middle of the route, and Cumbria, the 'end' of the route, has very few sites with cup-and-rings (Sharpe, 2007, 228).

As with Bradley Moor, the peaks could not be identified during the day. They could perhaps have been identified at night, as fires were used to split stone (Bradley & Edmonds, 1993, 122-126; 142); perhaps they were set to burn all night. It was remarkably difficult to find out whether they could have been visible over this distance, though it is possible to see a very long way at night, if the source is bright. For example, the International Space Station, visible only because of the reflected light of the sun, is readily visible and bright at night, even though from the UK, it is seen low down and not far above the horizon; its orbital distance is 400km (Sharp, 2016). The author was fortunate enough to see the last Space Shuttle, much smaller than the ISS, leave it in July 2011; it was clearly visible.

These views of Bradley Moor Long Cairn and the Cumbrian mountains were entirely unexpected, and it is very hard to judge if they were significant. However, the rock-art of Rivock Nose includes two highly unusual features, a possible arc of carved stones and a possible matched pair of carved stones, moved into position. These two features are unique to Rivock, indicating that it was a very special place (fully discussed in Chapter Eight sections 8.2.3 & 8.4.1 below).

Furthermore, these views perhaps give a hint that a further spatial scale was also being used in the creation of rock-art landscapes, a supra-regional scale. Unfortunately the methodology here would not be able to capture these relationships, as rock-art data and other archaeological data from other regions was in general not collected.

6.6.2 Views of the settled landscape and fertile areas

Bradley and others have suggested that rock-art was carved on rocks overlooking 'the settled landscape', and 'fertile areas', noting that it is not found in uplands well away from these settled lowlands. The suggestion seems to be that rock-art was made along some kind of boundary within the landscape (Bradley, 1997: 86, 90, 91; Waddington, 2007a; and see Chapter Three section 3.2.2). But if this was a boundary, we have to consider what two 'areas' it stood between, and why it might need to be repeatedly marked by rock-art. There are a number of possibilities to consider. Bradley (1997: 91, 100) suggested that Neolithic people were making rock-art to overlook the domesticated Neolithic world, from the boundary between the domesticated land and the wild. However, this 'boundary' was permeable at the very least, with the uplands being far from untrodden wilderness, being used for gathering of wild foods, hunting of wild animals, and as summer grazing areas for stock, which probably involved some people living in the uplands, perhaps for weeks at a time (Darvill, 2010, 88; Schulting 2008; Thomas 2013, 411).

Alternatively, Mesolithic people might have been making rock-art, looking down onto the Neolithic settled landscape. Waddington, from his work in Northumberland, (1998b, 2007a) suggests that rock-art began being made at the time of, and because of, the Mesolithic-Neolithic Transition, and presumes that it was Neolithic. Unfortunately, very

little is known of how the Neolithic way of life came into West Yorkshire, and the nature of the Transition.

Fig 69 below shows the distribution of rock-art on Rombalds Moor and its relationship to the major river valleys, presumably with fertile agricultural land slightly above the valley bottom (Baildon Moor, with over 100 rock-art sites, was excluded from this study due to very high levels of disturbance).

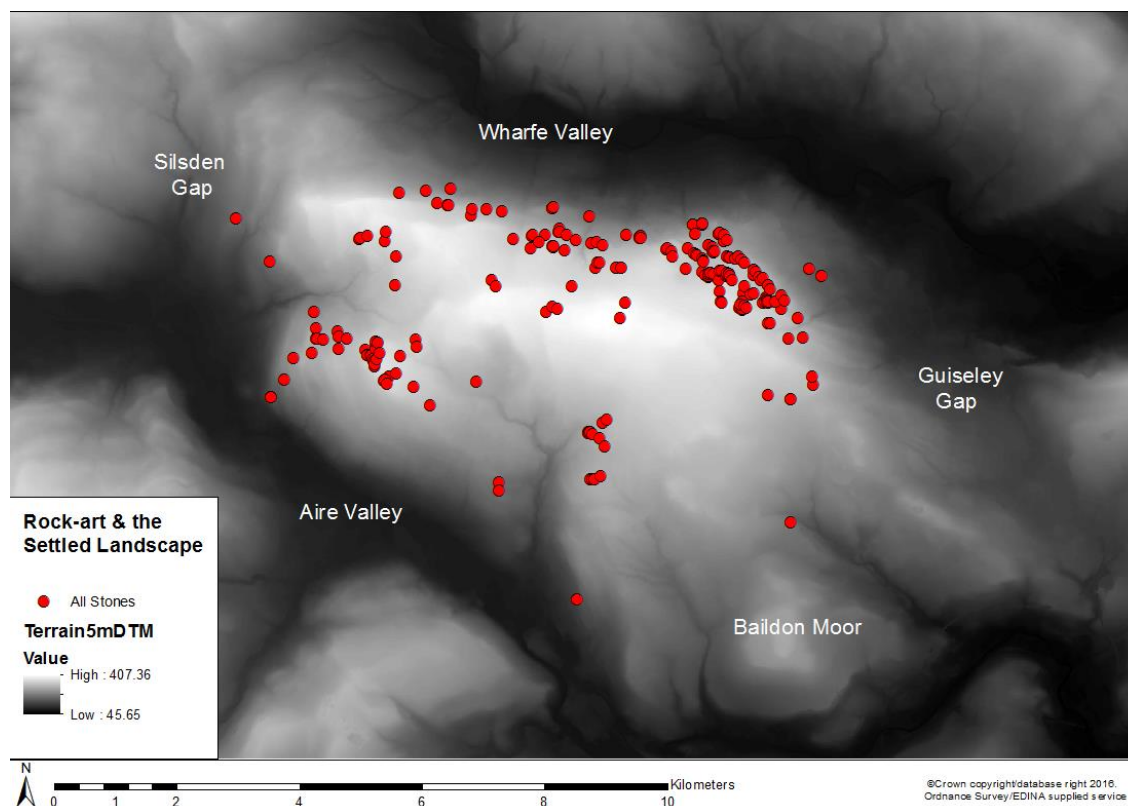


Fig 69 Rock-art and the settled landscape.
A DTM of Rombalds Moor, showing the relationships between rock-art sites and altitude.

With other details removed, the relationship between rock-art sites and terrain can be seen clearly. It is interesting to note a lack of sites in both the north-west where the Silsden Gap joins the Wharfe valley, and in the east, overlooking the Guiseley Gap. Both of these areas are reasonably flat but not in the valley bottom, with many small farms today, and ostensibly attractive land for early agriculture. Furthermore, many of

the sites that appear to be on the terrace edge do not have views of the valley bottom below, being set too far back. Cliff outcrop sites are, by their nature, best placed to see the putative settled landscape below; outcrop or sheet rock sites are common in Argyll (Morris, 1977), where Bradley, and Jones and colleagues have considered relationships between rock-art sites and the settled landscape by analysing views (Bradley, 1997, 79; Jones, Freedman, O'Connor *et al*, 2011). On Rombalds Moor however, there are only six cliff outcrop sites (Table 14 below).

Site	View
41/DSS 01 Doubler 1	Proposed natural monument. Distant views of fields below, and distant upper Airedale
45/RV 02; 46/RV 03; 47/RV 04 Rivock Nose trio	Rough Holden below, distant Doublers, distant upper Airedale, plus Bradley Moor and Cumbrian peaks
212/PC 01 Piper's Crag	Local slopes; distant upper Wharfedale, mid, lower Wharfedale, Almscliffe Crag
217/SST 01 Swastika Stone	Local slopes; Neb Stone distant but skylined edge-on; mid-Wharfedale; distant upper, lower Wharfedale, Almscliffe Crag
284/HR 01 Hangingstones Rock	Upper, mid and lower Wharfedale, Almscliffe Crag; views along IMLT, inc Sentinel and Pancake, may not be reliable
332/PST 01 the Pancake	Proposed natural monument. Views of IMLT, then mid and lower Wharfedale, Almscliffe Crag

Table 14 Cliff outcrop sites and their views.

The two clifftop sites of the western Moor are 41/DSS 01 Doubler 1, and 45/RV 02, 46/RV 03 & 47/RV 04 (considered as one site) on Rivock Nose. They have only distant views of the modern settled landscape, though Doubler 1 is close to a modern upland farm. The Aire valley bottom can be seen from both sites, but it is so far away that it is difficult to regard this as a significant view. Furthermore, both sites have been suggested as having significance other than as viewpoints of the settled landscape, Doubler 1 as a natural monument, and Rivock Nose with far distant views of monuments, as well as being a part of the enigmatic set of carvings at Rivock. Similarly, 332/PST 01 the Pancake, also proposed as a natural monument, is set back from the valley, above and at the back of the IMLT terrace, and has only distant views of the modern settled landscape.

As an aside, and probably not significant, a feature that is visible and skylined from nearly all sites along the northern Moor is Almscliffe Crag, a large sandstone outcrop standing in rough pasture in Lower Wharfedale, about 12km from the north-eastern end of the Moor (Fig 70 below). It is a prominent landscape feature, seen skylined from many parts of Wharfedale. No prehistoric archaeological findings have been reported in its vicinity, and the nearest rock-art is over 5km away.



Fig 70 Almscliffe Crag: view east from CB 01.

Almscliffe Crag is about 12km away, and can be seen in shadow, skylined on horizon, left of centre.

Image: Author & P Deacon.

The three flat-topped cliff outcrop sites along the northern edge of the Moor, 212/PC 01 Piper's Crag, 217/SST 01 the Swastika Stone, and 284/HR 01 Hangingstone Rock, all have views over the modern settled landscape, now never greater than 1km away to the north. All three have unusual carvings, and they could be interpreted as having been carved in order to overlook the settled landscape; however, they are only three sites out of 252. This proposition therefore remains very uncertain for Rombalds Moor.

6.7 Discussion

At the scale of the whole Moor, some themes are becoming apparent. The Moor seems to be a palimpsest, with carvings made at different times and for different reasons. Firstly, there is no sign of an overarching 'explanation' for the making of rock-art; there seem to be several, unconnected patterns emerging, with less confidence in

the idea of connections with water, with upland, with views of the settled landscape, and with views of monuments. Only one area of the Moor, Rivock, seems to have any connection with monuments off the Moor, and even here this requires careful discussion, returned to in Chapter Eight sections 8.2.3 & 8.4.1.

Secondly, the findings here do not help with the problems of absolute chronology. There are perhaps suggestions of a relative chronology: if at least some cups were carved to demonstrate respect to the sacred, as suggested in Chapter Three, then as well as cups carved in respect of natural monuments or other features, cups might also have been added to cup-and-ring stones, in what Jones calls 'repeated memorialisation' (Jones 2003). If cup-and-rings come earlier in the sequence, as Waddington suggests (1996, 2007a), this might lead over time, to many stones with cups-only, many stones with cup-and-rings *and* cups, but relatively few with cup-and-rings *without* cups. This is the pattern which is seen, with only 11 carved stones out of 252 having no cups at all. This adds weight to the ideas that cups are used to demonstrate respect to pre-existing carving; that the pre-existing carvings include cup-and-rings; and that cups might continue to be made after cup-and-rings had stopped being made. There is thus a suggestion that cup-and-rings begin early in the sequence, and stop earlier than cups: a hint of at least a relative chronology.

Both Bradley, and Jones and colleagues see rock-art landscapes as a coherent and unitary system of communication on a large scale, communicating information about territory and rights of access (Bradley, 1997: 45, 47, 72, 123; Freedman *et al*, 2011; Jones, 2001), though on general principles, many writers disagree (Johnson, 2012; Jordan, 2008; Ouzman, 1998). On Rombalds Moor at least, there was no indication that there was a coherent pattern across a whole landscape, or a system of stones to consult in order.

Looking at the whole Moor, it seems that rock-art was largely being made to express relationships within the local area, though at different scales. In the next three chapters, we examine relationships with proposed natural monuments, at a scale of no more than one or two kilometres; moving on to small clusters at a closer scale of less than a hundred metres, and finally examining rock-art at the scale of the individual rock. Furthermore, at the two intermediate scales considering views at the level of the Moor, the impact of vegetation on the possibility of views has to be considered.

Chapter Seven: Results II: Natural Monuments in their Large Locales

7.1 Introduction

Shortly after the fieldwork was begun, it became apparent that there were a small number of very prominent and strikingly shaped carved stones, which featured in the views of many of the other carved rocks. I argue that some or all of these were seen as natural monuments. These proposed natural monuments and their Large Locales, the area from which they can be viewed, are the subject of this chapter.

Bradley suggested that rock-art sites in Britain might be natural monuments, though he did not expand on this (1991a; 1997, 105; see Chapter Three section 3.4.2 above). Tilley has suggested that in the south-west of Britain, the strikingly shaped moorland tors might have been natural monuments, though there is no rock-art there to look at relationships with; he and others have also suggested that distant mountains were referenced as natural monuments (Tilley, 1996; Cummings & Whittle, 2003). Similarly, Waddington (1999, 108) has suggested that in upland north-east England, Mesolithic people saw outcropping rock as monumental. However, none of these writers have defined 'monumental' in these contexts, that is, why people might perceive certain natural features as monumental; this has led to their views being challenged because of a lack of solid evidence behind these assertions (eg Brück, 2005; Fleming 2005, 2006; see Chapter Three section 3.1 above).

The five possible natural monuments on Rombalds Moor, plus a sixth uncarved stone acting as a proxy for one of them, were listed in Chapter Five section 5.11.4, along with a methodology for investigating them. To find natural monuments on Rombalds Moor was unexpected, and to find as many as five in such a small area, was very unexpected. However, it is suggested that these natural features were being treated as monumental, and were acting as a focus for other carving, made to acknowledge them and to demonstrate respect (see Chapter One section 1.1 above). As it has been shown that later in the sequence in Wales, cups were added to nearby rocks to acknowledge *built* monuments (Nash *et al*, 2005; see Chapter Two section 2.6.2); it was therefore considered that on Rombalds Moor, carvings made to acknowledge *natural* monuments might also be cups.

The sites of the five proposed natural monuments of Rombalds Moor are shown in Figs 71 & 72 below. All of them are definitely carved except 237/CSE 01 the Neb Stone, which is probably carved. The further uncarved stone, here named the Sentinel for convenience, and which may be acting as a proxy for 302/PR 05 the Haystack, is also shown in Figs 71 & 72. These stones are

- 41/DSS 01 Doubler 1
- 237/CSE 02 the Neb Stone
- 302/PR 05 the Haystack, with its proxy or guidestone, the Sentinel
- 332/PST 01 the Pancake
- 355/GCS 13 H2

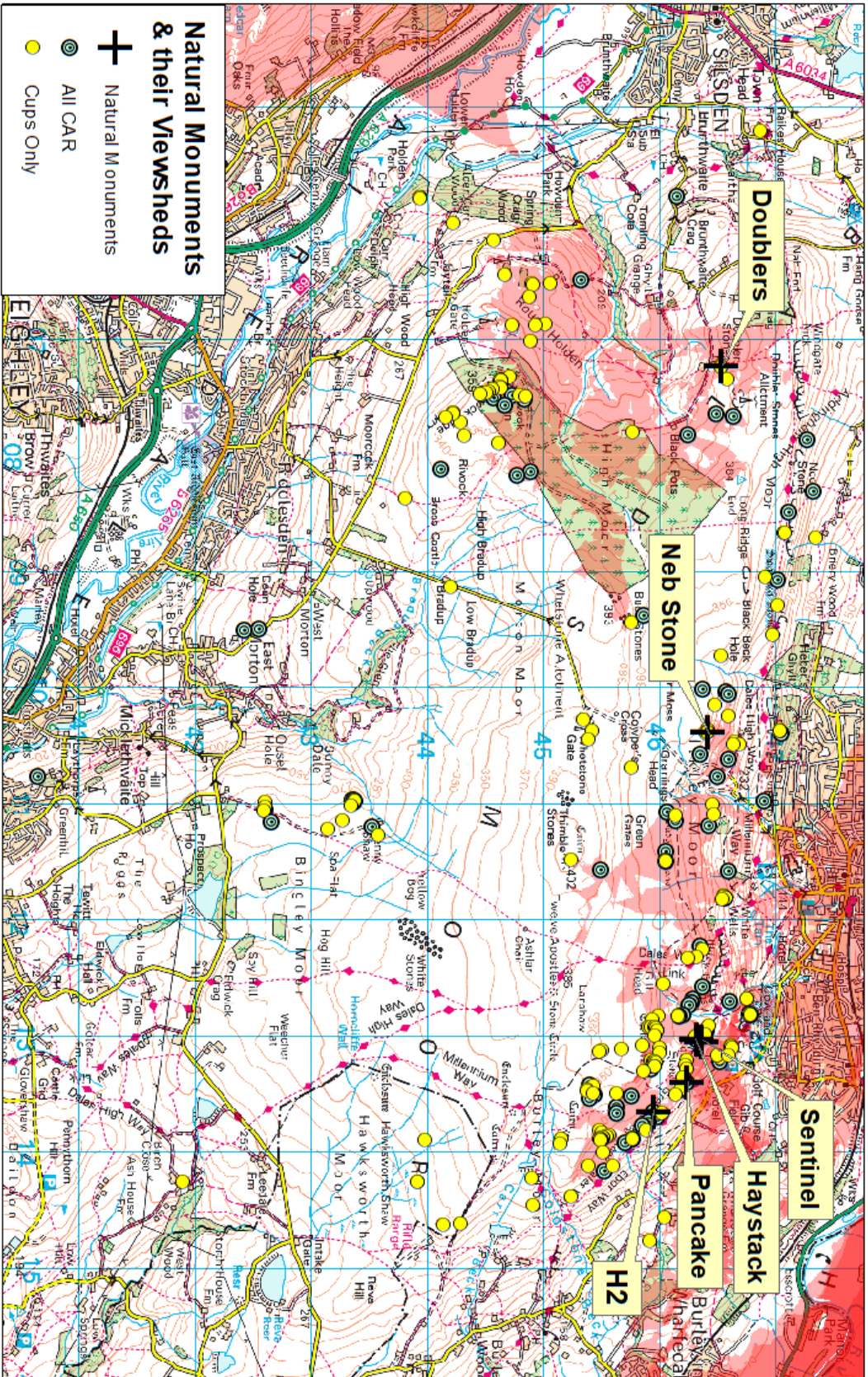
If these proposals are correct, firstly there would be many carved rocks in the vicinity of the natural monument from which it can be seen, with the carvings on these stones being mostly cups. Secondly, there would be very few carved rocks in the vicinity where the local topography obstructs the view. There is a third possibility, however, that large upstanding carved rocks might by their very nature be highly visible, and visible from many other carved stones. This was therefore investigated in a Control Study.

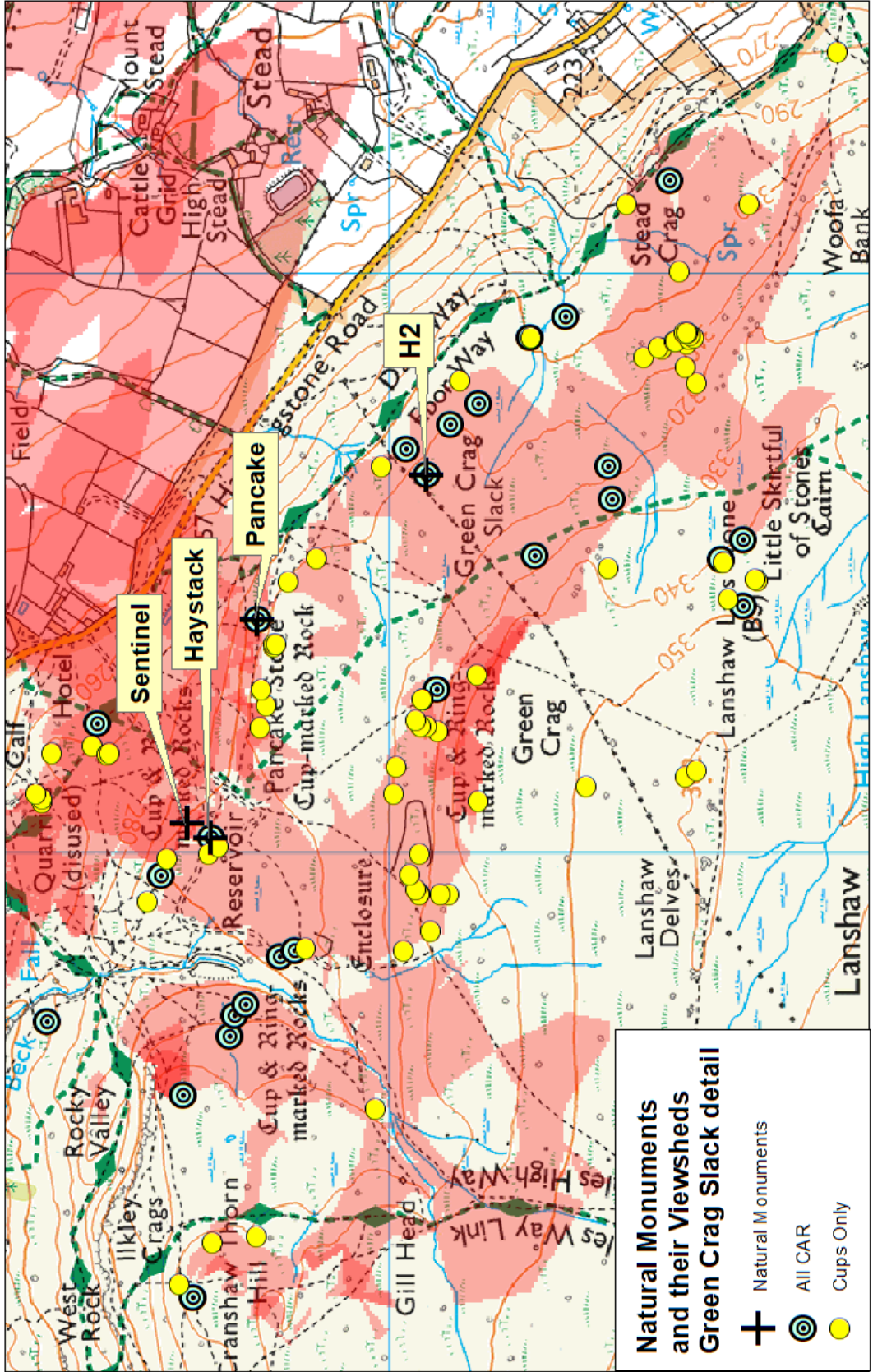
To re-cap, the research questions set out in Chapter Five are

- Comparing natural monuments with large upstanding carved rocks in general, is there a difference in the numbers of carved stones from which they can be seen?
- How many carved rocks in the vicinity of the natural monument have, or do not have, good visibility of it?
- Which motifs are used on these rocks?
- Is it possible to suggest why these large stones might have been treated as natural monuments?

Fig 71 (overleaf) Sites of the five proposed natural monuments plus the Sentinel. Cumulative viewsheds shown in red.

Fig 72 (following page) Proposed natural monuments, Green Crag Slack detail. Cumulative viewsheds shown in red.





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Several caveats are necessary first. Because there is unlikely to be a single reason for all carvings, the results here may be complicated by some carvings in proximity having been made for different reasons. Secondly, it is suggested that many cups-only rocks will be found, but almost all cup-and-ring rocks have cups as well. In Section 3.4.2, it was proposed that cups could have been made onto cup-and-ring marked rocks to demonstrate respect to these carvings too. Thus, cups might have been added to a cup-and-ring marked stone either in respect of the cup-and-ring motif; or in respect of a natural monument, using that stone because it was already special; or indeed both. They might also have been carved earlier or later than the cup-and-rings, for wholly unrelated reasons. Thirdly, it is obviously possible that people identified further unusual rocks as natural monuments, rocks that were never carved. If so, it would unfortunately not be possible to identify them as such in this study, as the methodology here does not cover uncarved rocks. However, the rocks identified here as natural monuments made themselves apparent during the fieldwork; of the uncarved rocks, only the Sentinel appeared prominently in many views, and was duly investigated. Finally, throughout this chapter, it is presumed that views were possible, a supposition returned to in the discussion at the end of the chapter.

7.2 Control Study: visibilities of large upstanding rocks

Large upstanding carved rocks were arbitrarily defined as at least 2m long, and at least 1.6m high, which is slightly smaller than H2, the smallest of the natural monuments. Conveniently, 1.6m is the value of OFFSETA, so does not cause problems in the mapping (for a discussion of reciprocity – if A can see B, B can see A – see Section 5.15.6 above) The visibilities of these ‘control’ rocks were then examined by counting how many other carved rocks had views of them. From fieldwork observations, the limit of visibility of large upstanding, but not skylined, rocks was taken to be 2km, unless for some reason they were particularly prominent in the field. Skylined rocks may be visible over longer distances.

Flat-topped outcrop cliff is common along the terrace edges, and almost all of it is uncarved; any carved section is just part of a longer stretch of cliff. These stretches of outcrop cliff are very visible from below, but the carved section cannot readily be

distinguished from the rest, and is not readily visible on its own terrace level either. These sites have therefore not been included as control sites.

Table 15 below shows the visibilities of all large upstanding carved rocks. There are 11 of these, of which three (43/RV 01, 82/RV 31 & 258/WHW 01) are tucked into little valleys and not easily seen; and two more (66/RV 22 & 244a/CSE 05) are well down steep hillsides and never seen skylined in the field. Three stand in forest in Rivock (RV prefixes), and had impeded natural views; GIS-generated viewsheds had to be used, which can cause over-estimates in real-world visibility (see Chapter Five section 5.15.6).

Large Upstanding Stone	No. of stones with visibility of large upstanding stone	Remarks
43/RV 01*	8 : in Rough Holden	In forest: GIS viewshed data only Also 9 others to the north over 2km away (inc. Doublers): probably not visible from these
66/RV 22*	3: in Rivock	In forest: GIS viewshed data only Also 7 others to the north over 2km away (inc. Doublers): probably not visible from these
82/RV 31*	14: in Rivock	In forest: GIS viewshed data only Also 6 others to the north over 2km away (inc. Doublers): probably not visible from these
210/AC 01	1: Piper's Crag	
211/HAH 01	4: Piper's Crag, two more on terrace edge, one below	
213/HH 01	3: along NW edge	
214/ WC 01* Sepulchre Stone	8: to east and south only	Belt of trees and wall blocking views: GIS viewshed data only.
215/WC 02 Anvil Stone	2: one on terrace edge, one below	
222/CSE 01	3: in Black Beck Hole within 400m	Also 3 others over 800m away: probably not visible from these
244a/CSE 05*	0	4 are within 0.5km, but site not visible from any of them 12 other sites further away still, site not visible
258/ WHW 01	0	

Table 15 Visibilities of large upstanding carved rocks.

* indicates a GIS-generated viewshed, where real-world views are blocked by trees or walls.

* 'new' stone discovered during fieldwork, reported to Dr Boughey, number provisional.

Four further stones, 210/AC 01 Addingham Crag Stone, 211/HAH 01, 213/HH 01, and 215/WC 02 the Anvil Stone, all stand below the terrace edge in the north-west, not visible from the moorland terrace above, and in, or just above, cleared land. None of them can readily be picked out, or seen skylined from any distance away. The tenth stone, 222/CSE 05, is on a hillside, but within a stream valley, so its visibility is limited, though it can be seen skylined from a small area. Finally, the most impressive of the eleven, 214/WC 01 the Sepulchre Stone, simply seems not to have been selected (it is discussed in Chapter Nine section 9.6). Overall, the control group of stones can be seen from between zero to 14 carved stones, with a mean of 4.

Table 16 (below) shows the visibilities of the five proposed natural monuments and the Sentinel. Natural monuments are excluded from referencing each other. Hangingstone Rock, on the edge of the viewsheds of the Sentinel and the Pancake/IMLT, is excluded because its views over IMLT are unreliable, due to major old quarrying activity on IMLT behind it.

Proposed Natural Monument	No. of stones from which NM can be seen	Remarks
41/DSS 01 Doubler 1	27: 18 cups-only	Distant but clear views
237/CSE 02 the Neb Stone	25: 14 cups-only; 8 edge-on (mixed motifs)	25 with clear views (excluded: a further 20, very distant, views require binoculars)
302/PR 05 the Haystack	43: 33 cups-only	
The Sentinel (not carved)	11: IMLT: 10 cups-only (of 11)	Includes all 11 stones on IMLT, east of Backstone Beck
332/PST 01 the Pancake	19: IMLT: 10 cups-only (of 11) GCS: 7 cups-only (of 8)	Includes all 11 stones on IMLT, east of Backstone Beck, plus 8 on GCS
355/GCS 13 H2	33: 26 cups-only	

Table 16 Visibilities of proposed natural monuments plus the Sentinel.

Excluding the Sentinel, probably not a natural monument as such, the proposed natural monuments are visible from between 19 to 43 carved stones, with a mean of 29.

Putting these two tables together (Table 17 below) emphasises just how much more visible the natural monuments are, compared to all other large upstanding rocks.

Proposed Natural Monument	No. of carved stones from which NM can be seen	Large Upstanding Stone	No. of carved stones from which Large Upstanding Stone can be seen
41/DSS 01 Doubler 1	27	43/RV 01	8
237/CSE 02 the Neb Stone	25	66/RV 22	3
302/PR 05 the Haystack	43	82/RV 31	14
The Sentinel (not carved)	11	210/AC 01	1
332/PST 01 the Pancake	19	211/HAH 01	4
355/GCS 13 H2	33	213/HH 01	3
		214/WC 01	8
		215/WC 02	2
		222/CSE 01	3
		244a/CSE 05	0
		258/WHW 01	0

Table 17 Comparison of visibilities: natural monuments and large upstanding stones.

Furthermore, if the Sentinel is acting as a proxy for the Haystack (see Section 7.6 below), the 11 stones on IMLT from which the Sentinel can be seen might be added to the stones from which the Haystack can be seen, making a remarkable 54 in all; this would change the numbers of stones from which a natural monument can be seen to between 19 and 54, with a mean of 32. From this, the clear inference is that some of the largest and most imposing carved stones on Rombalds Moor were being referenced by carving, and were being treated as monumental.

The proposed natural monuments in their Large Locales, that is, their viewsheds, are now examined in more detail. The viewshed maps focus on visibilities at the level of Rombalds Moor: all these stones have extensive views beyond the Moor. Any discrepancies between the GIS-generated viewsheds and the fieldwork observations are noted and discussed in the relevant sections.

7.3 Doubler 1

41/DSS 01 Doubler 1, and its companion 42/DSS 02 Doubler 2, are a pair of stones on the terrace edge near the western end of Rombalds Moor, not in an area where cairns, walling or enclosures have been reported (Fig 73 below).

They both stand over 2m high above the level of the plateau, with Doubler 1 very prominent at the top of a cliff, with a drop of over 5m to the rocks below; Doubler 2 is set back from the cliff edge. As discussed further in Chapter Nine, it is suggested that Doubler 1 was the natural monument here, though whenever Doubler 1 can be seen from a carved stone, Doubler 2 can be seen as well; it is possible that they were considered a monumental pair, though there is no way to disentangle this. Doubler 2 is discussed in Chapter Nine section 9.6 below.

There are quarrying remains along this stretch of outcrop, but the Doublers themselves have not been quarried: their surfaces are rounded, pitted and eroded. Both are mushroom-shaped, Doubler 2 more so than Doubler 1, and both have a system of natural basins on their flat tops. Although this pattern of erosion, producing a flat plate on top of a narrower pedestal, is regularly seen, to my knowledge there are only three examples on Rombalds Moor; the third is 215a/EBS 01, less than 1m high, also carved with cups-only.

Doubler 1 has about 25 cups, along with two grooves, one of them connecting a cup to a natural basin. Doubler 2 is reported as having two large possible cups only (Boughey & Vickerman, 2003, 53). The carvings cannot be seen at all unless the stones are climbed.

It is possible to climb both. Doubler 2 is about 2.5m high, and rather more challenging to climb than Doubler 1, requiring considerable assistance or something large to stand on. Neither the author and field companion, nor the CSI team, managed to get up to the top of Doubler 2 (the IAG group achieved it, however). Being on top of it would be rather less hazardous than being on top of Doubler 1, as it stands on flat, not rocky ground well away from the cliff. Their exposure to the usual strong westerly winds, however, makes it risky to stand upright on either of the Doublers, especially Doubler 1. The hazardous task of carving Doubler 1 is discussed in Chapter Nine, section 9.6.



Fig 73 41/DSS 01 Doubler 1.

Top: Doubler 1 (left) standing above a 5m cliff; the top of Doubler 2 is just visible behind. Centre: The top of Doubler 1 (detail), showing natural basins, with cups and grooves at back. Bottom: Doubler 1 (left) and Doubler 2 (right), both about 2.5m high above the plateau, and standing 6m apart. Doubler 2 stands well back from the cliff edge.

Images: Author and P Deacon.



As discussed in Chapter Five section 5.15.6, the GIS-calculated viewshed of Doubler 1 is based on a faulty reference point for this stone, and it is best represented by the viewshed of Doubler 2. This viewshed, 'Dobblers viewshed' is used throughout, and shown in Fig 74 below.

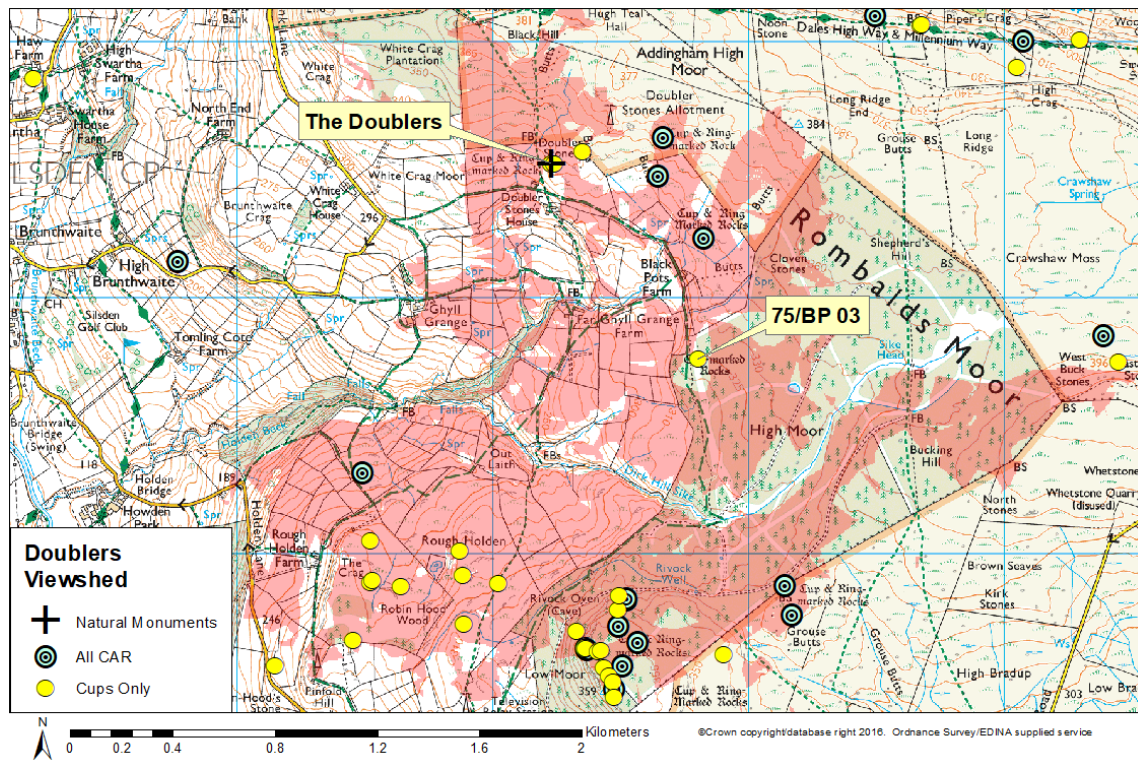


Fig 74 Viewshed of the Doublers.
Visible area shown in red.

The Doublers are visible from all the Rough Holden and Robin Hood Wood stones on the terrace below Rivock, and from much of Rivock itself, though they are about 2km away and only semi-skylined, with further land behind them (Figs 74 above and 75 facing). 75/BP 03 is shown as just outside the viewshed, though its own viewshed (see Photo Appendices) shows the Doublers as visible.



Fig 75 Views of the Doublers.

Top: Zoom view north from 40a/RHW 02. Carved rocks may have been lost in cleared areas.

Centre: Magnified detail, Doublers visible above the end of the white barn.

Bottom: Zoom view north from 40j/RH 08: Doublers now visible above the right hand end of the white barn.

Images: Author and P Deacon.



Despite the distance, the Doublers are unexpectedly easy to see; the author learned to spot them easily, as two black dots relating to and just above a long white barn. In prehistory too, they would have been visible, though only if the land around them was clear, and you knew where to look. Doubler 1 can be now seen from 27 carved stones. Unfortunately, a large and closer area, from which the Doublers would also have been visible, has been cleared, around Ghyll Grange, Far Ghyll Grange Farm and Out Laith; there could have been carved stones here which are now lost (Figs 74 & 75 above; Table 18 below).

The distribution of motifs on stones from which Doubler 1 can be seen does not show an increased proportion of cups-only stones, as compared to the whole Moor, where of 252 carved stones, 174 (69%) have cups-only. As seen in Table 18 below, the percentage here (numbers are small), is 67%, not significantly different.

Carved stones with view of Doubler 1	Number	%
Total	27	
Cups-only	18	67%
All CAR	9	33%
at least one 1-ring CAR	8	
at least one 2-ring CAR	0	
at least one 3+ring CAR	2	

Table 18 Doublers Large Locale: distribution of motifs

However, many of the stones, including most of the cup-and-ring stones, are on Rivock Hill, and as will be shown in the next chapter, this is a very complex area in itself, and may have attracted carvings unrelated to views of Doubler 1. Furthermore, if Doublers-focused cups were carved later in the sequence, they may have been made onto already carved stones.

The carving of some stones would have posed considerable difficulties for the carver, which may have been a factor in the selection of sites. Of all the carved stones on the Moor, Doubler 1 is one of only two frankly dangerous sites: a fall from above the cliff on to the rocks below would probably be fatal. However, as can be seen from Fig 73 (top) above, the act of carving would have looked very impressive if viewed by an audience

on the terrace level at the bottom of the cliff; we return to this aspect of carving in Chapter Nine.

Overall, there is a good case for considering Doubler 1 as a natural monument. Many of the stones from which it can be seen are a long way off; similar distances are found with all the natural monuments: perhaps such places were to be respected but not approached too closely.

7.4 The Neb Stone

237/CSE 02 the Neb Stone is a huge slab of rock, over 4m wide and 5m long, and tilted at about 30°. It stands on Ilkley Moor, some way downslope from the top, overlooking modern Ilkley and the Wharfe Valley (Fig 76 below).



Fig 76 237/CSE 02 the Neb Stone.

Top left: from west.

Top right: from north.

Bottom: photo from before 1986, showing possible cupmarks and grooves.

Images: Top (both): Author & P Deacon.

Bottom: K Boughey & E Vickerman,

<http://archaeologydataservice.ac.uk/era/section/panel/media.jsf?eraId=2320>

It is not in an area where cairns, walling or enclosures have been reported close at hand, but is about 1km upslope from where the Panorama Stones, 'many' other carved stones, and an enclosure formerly stood before their destruction over 100 years ago (Boughey & Vickerman, 2003, 14). Whether the Neb Stone could be seen from any of them is not known.

The Neb Stone was described by Romilly Allen (1882) as bearing cup-marks, though by 2003, Boughey and Vickerman described it as 'possibly cup-marked' only (2003, 75). Carving this stone, as with the other proposed natural monuments, would have caused significant difficulties for the carver, as it is steep and relatively smooth. Its viewshed includes 45 carved stones, but in the field, it cannot be seen from the 20 stones which are over 2km away, and from which it is not skylined (Fig 77 below). From these stones, it can only be seen with binoculars, not an amenity available to people in prehistory, so these stones are not included in the subsequent discussion.

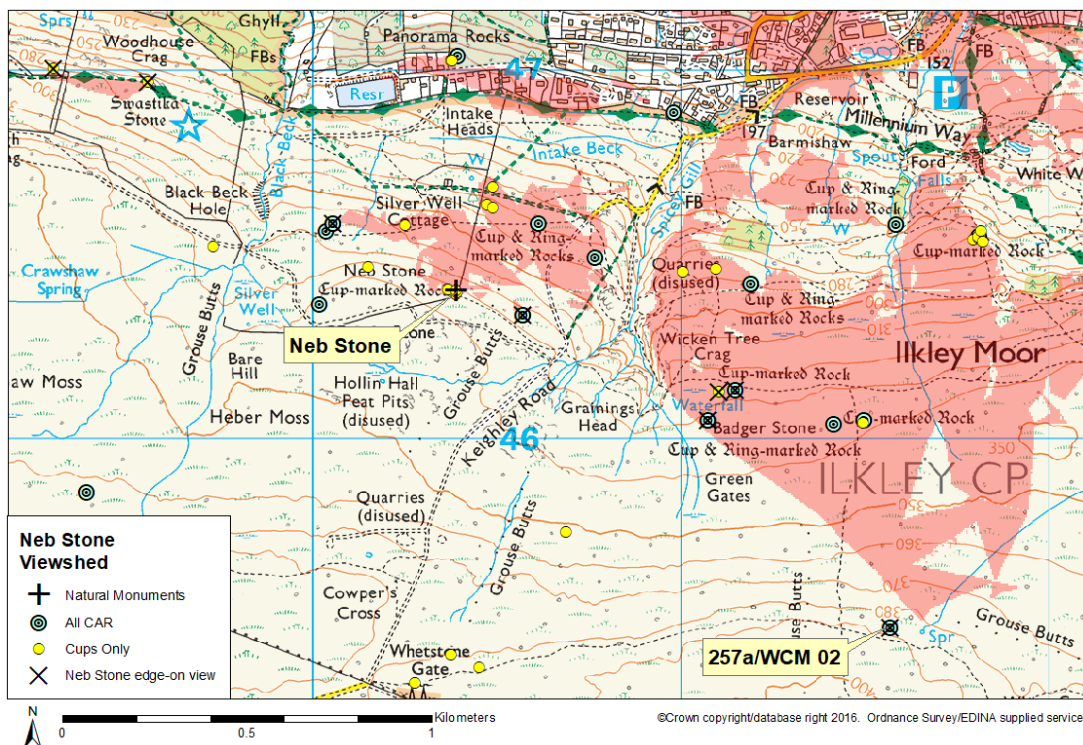


Fig 77 Viewshed of the Neb Stone.

The viewshed visible area is shown in red. There are eight stones, three to the west, five to the east, from which the Neb Stone is visible edge-on. 257a/WCM 02 has an edge-on view of the Neb Stone in the field, although apparently standing outside its viewshed.

Thus the Neb Stone can be seen from 25 carved stones, details in Table 19 below. There are no carved stones in the 'holes' in the viewshed, dips in the ground from which it cannot be seen.

The distribution of motifs, 14 with cups-only and 11 with cup-and-rings, does not fit the prediction that stones with views of natural monuments will have cups-only, and is different from the other Large Locales: across the whole Moor, 69% of carved stones have cups-only; the percentage here is 56%. This is returned to in the concluding section of this chapter, comparing the natural monuments to each other.

Carved stones with views of the Neb Stone	Number	%
Total	25	
Cups-only	14	56%
All CAR	11	44%
at least one 1-ring CAR	10	
at least one 2-ring CAR	5	
at least one 3+ring CAR	1	

Table 19 Neb Stone Large Locale: distribution of motifs.

Furthermore, eight of the 25 (32%) have an edge-on view, right through the gap under the stone, so the Neb Stone looks like a skylined needle (Fig 78 below). In prehistory, the silhouette may have been even more remarkable, as the upper free edge of the rock looks to have been partially quarried away, and the modern wall was not present.

As the Neb Stone is about 4m wide, achieving this view requires careful placement. Six of these eight stones have cup-and-ring motifs, four of them with unusual and complex carvings. Apart from 250/BST 01 the Badger Stone, these stones are quite small and low-lying, and not at all prominent. This does not follow the prediction that carvings made to acknowledge natural monuments would mostly be cups.



Fig 78 Edge-on view of 237/CSE 02 the Neb Stone.
View west from 250/BST 01 the Badger Stone (detail). Image: Author and P Deacon.

There is thus a good case for considering the Neb Stone as a natural monument.

7.5 The Pancake

The Pancake, 332/PST 01, is a large flat-topped rock perched on craggy outcrop, and is visible from 19 carved stones, 11 on Ilkley Moor Lower Terrace, as well as from eight sites on Green Crag Slack, the terrace above (Fig 79 below).

It is now heavily eroded, but early descriptions recorded six to eleven cup-and-rings, grooves, and some 40 cups (Boughey & Vickerman, 2003, 87); it was already badly eroded when first recorded.

It is set on the edge of Green Crag Slack, just downslope from the main terrace level. There are some nearby remains of quarrying activity, though not on the Pancake outcrop itself; the CSI team thought there may have been a small cairn about 50m to the south on Green Crag Slack, plus a stretch of rubble walling 60m away to the east (ERA England's Rock Art, nd).

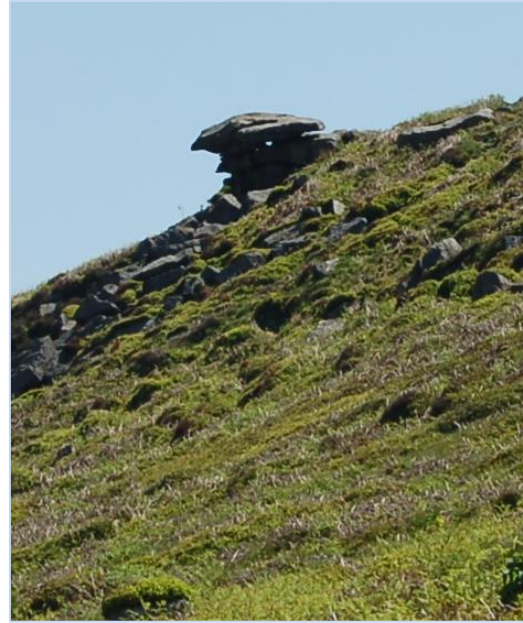


Fig 79 332/PST 01 the Pancake, from IMLT.

These photos were not taken from any of the carved stones.

Top: Two views of the Pancake, looking like an eagle on a crag.

Top Left: from north-east.

Top Right: from north-west.

Bottom: detail of upper surface, showing some of the remaining carvings, all badly eroded.

Images: Author and P Deacon.

Approaching the Pancake from the east, along Ilkley Moor Lower Terrace, as if from lower Wharfedale, it is clearly skylined in the distance, looking like an eagle perched on the crag, facing west. As the path rises, it continues to resemble an eagle, now looking east. As Bradley showed that Sami sacred sites were sometimes selected because they resembled living creatures, including birds (Bradley, 2000, 3-9; see also Fig 27 above), this rock seems to suggest itself as a natural monument.

Secondly, for a few days in autumn and again in spring, it is backlit by the setting sun, such that from IMLT below, there seem to be strange flickering lights underneath the rock (Fig 80 below).



Fig 80 The Pancake Stone, backlit.

The backlighting is seen under the stone at left, caused by the setting sun in early November: as seen from IMLT below.

On the Green Crag Slack terrace above, the sun is still bright, and the lights cannot be perceived.

Image: Author & P Deacon

This can only be seen for about 20 minutes on the appropriate days, and if clouds do not block the sunlight. No reports of this could be found, and it seems not to have been noted before; the author saw it quite by chance, and found it initially inexplicable and quite disconcerting; it looks as if the rock is burning.

Thirdly, some of the carvings were made right out over the rock, which slopes downwards as it projects over the cliff. The top of the Pancake is readily accessible from Green Crag Slack, but a fall to the rocks below would probably be fatal. Both the author and the CSI team declined to venture right out, though the Ilkley Archaeology Group recorded it fully for Hedges' book (1986, 48). Like Doubler 1, as a place to carve, it is clearly dangerous, an important point expanded on in Chapter Nine.

The Pancake is visible from all the carved stones on IMLT. It is also visible from eight sites on GCS, always skylined or semi-skylined, but always a relatively long way off (Fig 81 below).

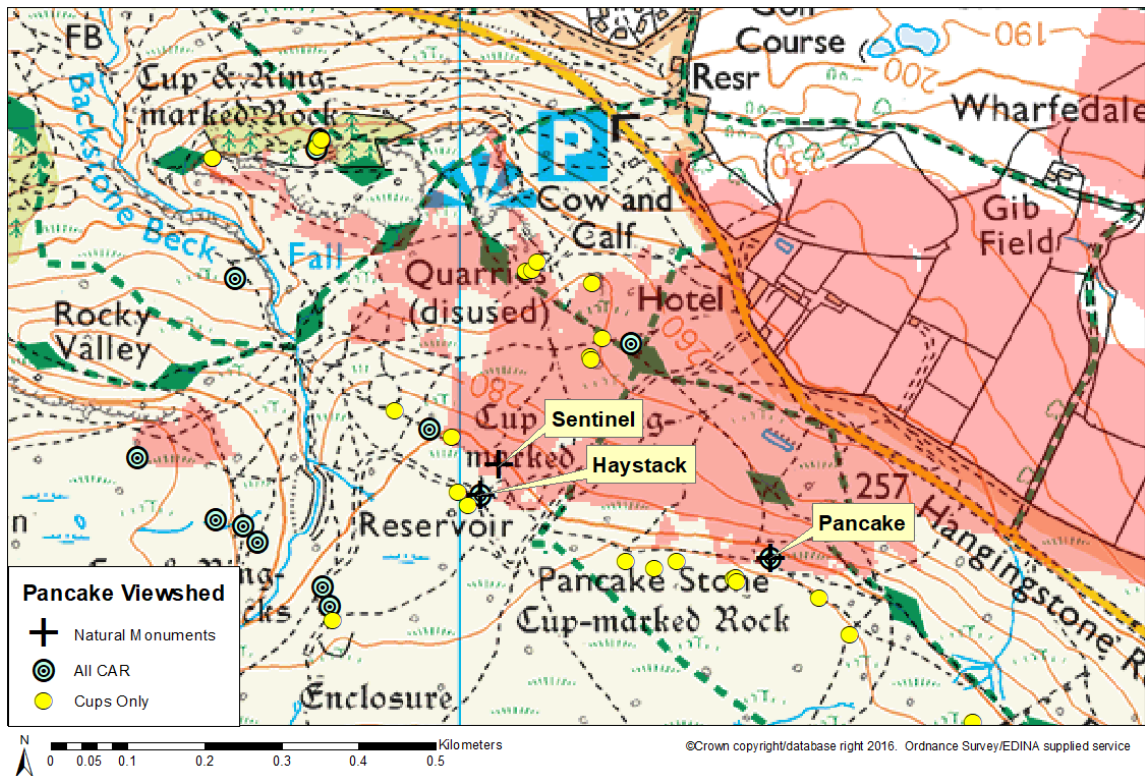


Fig 81 Viewshed of 332/PST 01 the Pancake.

The visible area is shown in red. Over IMLT, it is almost identical with the viewshed of the Sentinel (fig 85 below).

Considering the Pancake's relationship with IMLT first, of the 11 carved stones here from which the Pancake can be seen, 10 have cups only; the other is 318/CC 10, a small stone with one 2-ring cup-and-ring and two cups.

However, there are no carved stones reported where the best views of the Pancake can be obtained, though much of this area is steep, heavily overgrown with vegetation and disturbed by holloways and spoil heaps from old quarrying activity. The Sentinel (Section 7.6 below) can be seen from all the IMLT carved stones as well; none are unique to the Pancake. The areas of IMLT outside the Pancake/Sentinel viewsheds have no carved stones at all.

Eight of the cups-only stones fall into three groups, two trios and a pair, all small, ground-level stones, not conspicuous or easily found. They are discussed as possible Small Locales in Chapter Eight section 8.2.1. They seem to be at the threshold of

IMLT, referencing a natural monument, and on possible pathways, yet it is hard to see them as way-markers. They can become lost in undergrowth if not kept clear, and modern rock-art students have to seek them out; they are not obvious, though this is partly because the cups are now quite severely eroded. It is suggested that they were made as acknowledging first sight of a natural monument, as people came up from the Wharfe valley below. Whether these IMLT cupstones might have been made to acknowledge the Pancake, or the Sentinel as a proxy or guidestone to the Haystack, or indeed both, is covered in Section 7.6 below, after the initial discussion of the Sentinel.



Fig 82 332/PST 01 the Pancake, from Green Crag Slack.

Top: The Pancake, and the view over the western part of IMLT.

Bottom: The Pancake, standing at the cliff edge (not well seen), above Wharfedale.

Images: Author and P Deacon.



The Pancake is also visible from a further eight sites on Green Crag Slack, the terrace above IMLT. From here, it no longer resembles a bird, but from some angles looks like a human head in profile (Fig 82 above, and see also Fig 155 below).

The Pancake viewshed shown in Fig 83 (below) again demonstrates problems with the GIS-derived viewsheds. The GIS-calculated viewshed is probably based on a reference point too low down on the Pancake ‘tower’ (see Chapter Five sections 5.15.6), so only two sites on Green Crag Slack appear to be within the Pancake’s viewshed. Fieldwork however showed that the Pancake can be seen from a further six sites on GCS, eight sites altogether.

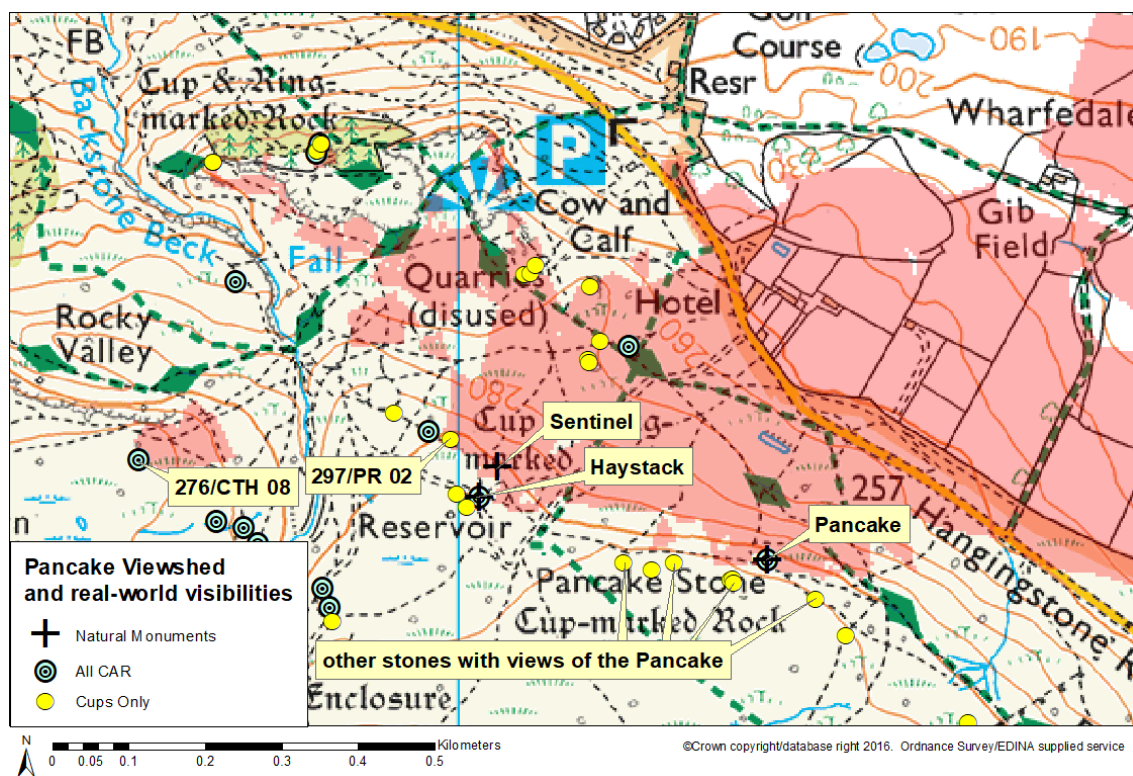


Fig 83 Viewshed of the Pancake, compared with real-world visibilities

The Pancake viewshed is shown in red. Considering only the Green Crag Slack stones, this appears to show that there are only two carved stones from which the Pancake can be seen, 276/CTH 08 and 297/PR 02. Fieldwork showed that the Pancake can be seen from a further six sites, shown here.

Of these eight sites, one, some distance away on Cranshaw Thorn Hill, has a 1-ring cup-and-ring; the other seven, all on GCS and nearer the Pancake have cups-only. These seven sites have some very unusual features, as several are split rocks, and several are close together. They are discussed fully in the next chapter on Small Locales, section 8.2.4.

In conclusion, there is a good case for the Pancake being a natural monument. From different viewpoints, it resembles both a bird and a human head, and like Doubler 1, can be seen as a liminal site between the earth and the sky. Also like Doubler 1, it would have been risky to carve, a theme which is emerging, to a greater or lesser extent, for all the natural monuments.

7.6 The Sentinel

The Sentinel is a medium-sized, uncarved boulder set some 50m from 302/PR 05 the Haystack, not in an area where cairns or walling have been reported (Fig 84 below). I argue that, although not carved, and not a natural monument as such, it acts as a proxy or guidestone for the Haystack, in views from Ilkley Moor Lower Terrace below.

The Haystack is very visible from the western end of Green Crag Slack, but being set back from the edge of this upper terrace, it cannot be seen from anywhere on IMLT below. However, during the fieldwork it became clear that the Sentinel was unexpectedly visible and skylined from all 11 of the carved stones on IMLT; the Pancake can be seen from all of them as well (Figs 85 & 86 below).

The Sentinel is just intervisible with the Haystack, as it stands in a slight dip leading north and down from the Haystack, just over the terrace edge. Thus having scrambled up the steep slope to the Sentinel, as the author did, to find out what it was, the visitor can look through the little dip, and see, surprisingly, the top of the Haystack less than 50m away. A perfect view of the whole Haystack can be obtained by standing on top of the Sentinel, though whether this might have been 'allowed' is not known.



Fig 84 The Sentinel.

Top left: View east over the Sentinel, with the Pancake just visible, skylined in the distance.

Top right: View south from the Sentinel, showing the top of the Haystack.

Bottom: View east over Green Crag Slack. At right, the Haystack, with the Sentinel 'skylined' at far left (distant Lower Wharfedale behind), and the Pancake skylined in the distance.

Images: Author & P Deacon.

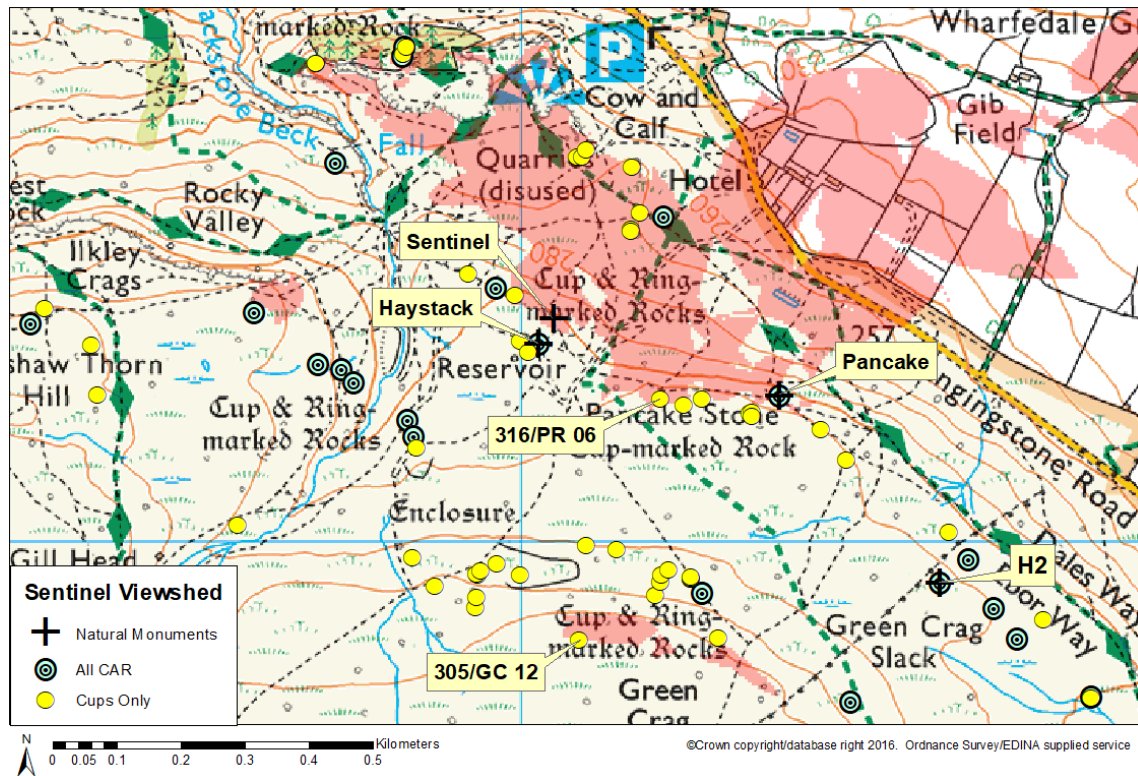


Fig 85 Viewshed of the Sentinel.
The visible area is shown in red.

Eight of the IMLT stones, two trios and a pair, are all small, inconspicuous, near-ground level rocks with cups-only, as discussed above in relation to the Pancake. They all seem to stand at thresholds, just as the slope up from the Wharfedale valley reaches the flatter ground of IMLT, and both the Pancake and Sentinel come into view. These are considered as possible Small Locales, and discussed in the next chapter.

From Green Crag Slack, the Sentinel is not visible in the field from any of the carved stones except the Haystack. Although it is technically visible from 332/PST 01 the Pancake, 305/GC 12 and 316/PR 06, it is not skylined, and is impossible to make out.



Fig 86 Views of the Sentinel.

Top: View from 278/HST 02, 279 & 280/HST 03 over IMLT, the Sentinel seen skylined, though distant, on rising horizon at right, with the Pancake at far left.

Bottom: View from 306/CC 02, showing the Sentinel skylined at centre.

Images: Author and P Deacon.

It is difficult to tease apart the cases for the Sentinel and the Pancake each being natural monuments, as their visibilities from the carved stones on IMLT are the same: they both can be seen from all of them. The case for the Pancake being a natural monument has been discussed above; it is tempting to see the Sentinel not as a natural monument as such, but as having been selected, or perhaps even moved into position (if natural, it is most fortuitously placed), to mark the position of the Haystack to people coming in from the valley bottom, as the Haystack is not visible from anywhere on IMLT below. This is suggested with considerable diffidence, as deliberate placing of rocks in this way has not previously been described, and the Sentinel is not carved; nevertheless the visibility of this rock is very striking.

7.7 The Haystack

The very large earthfast boulder 302/PR 05 the Haystack stands towards the western end of Green Crag Slack, set well back from the terrace edge (Fig 87 below). There are many small boulders surrounding the Haystack, with no space between this material and the rock itself. This may represent the remains of cairn material, as it appears to continue as rubble walling to west and east; this was not recorded as such by CSI, though they did record some further stretches of rubble walling about 20m to the south. Just below the terrace edge, and 20m to the east, are remains of fairly small-scale quarrying activity (ERA England's Rock Art, nd).

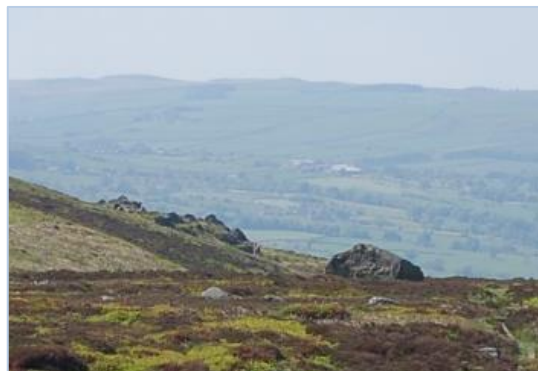


Fig 87 302/PR 05 the Haystack.

Top: View north of the Haystack from 305/GC 12.

Bottom left: View of north face of the Haystack; note many boulders around its base.

Bottom right: View of the Haystack from 316/PR 06.

Images: Author and P Deacon.

Only the 'roof' is carved, with about ten 1-ring cup-and-rings, 60 cups, and many grooves; there are extensive natural cracks on its eastern side and the roof (Boughey & Vickerman, 2003, 84). All the cup-and-rings are on the roof ridge line or the Wharfedale-facing north side of the roof; the other side has cups and grooves only. It is difficult to know how to interpret this, and the view from that face of the rock offers no clues. Neither IMLT nor mid-Wharfedale valley bottom below can be seen, but there are views of the hillsides across the Wharfe, long views down lower Wharfedale, and views into upper Wharfedale. Conversely, many rocks from which the Haystack can be seen have views of its southern side, though that is because there is a large area to the south and very little to the north.

Its viewshed is shown in Fig 88 below. In the field, it is visible from all three of the carved stones immediately to the north-west, here shown as just outside the viewshed, and it is also visible, distant but clear, from 257a/WCM 02, which also has a distant but clear view of the Neb Stone skylined.

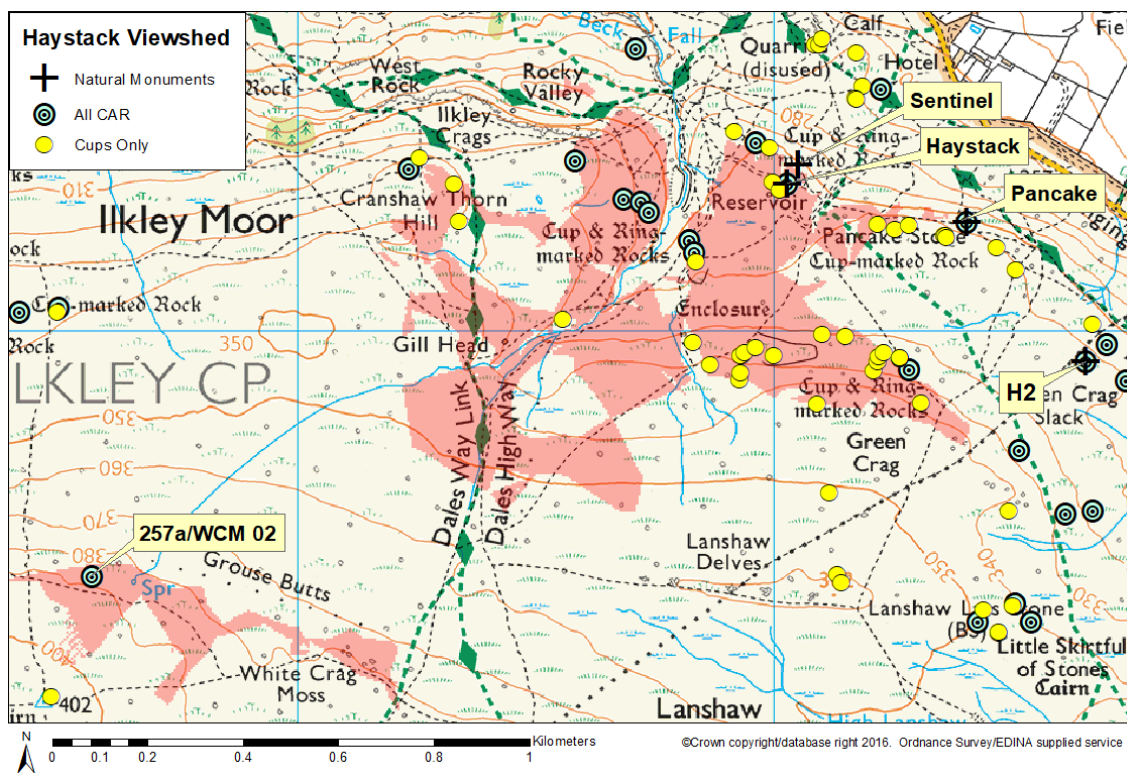


Fig 88 Viewshed of the Haystack.
The viewshed visible area is shown in red.

There is again a notable lack of carved stones in the 'holes' outside the viewshed. Included as part of Green Crag Slack for the purpose of this discussion are the carved stones across Backstone Beck on the eastern flanks of Cranshaw Thorn Hill, as they have extensive views over the west of GCS.

The Haystack can be seen from 43 carved stones, often skylined or semi-skylined, and usually with surprising clarity due to the way the light falls on this rock. Of these, 33 have cups-only; 10 have 1-ring cup-and-rings, with one of these having a 2-ring cup-and-ring as well. Two stones have no cups. It appears skylined or semi-skylined from 35 of the 43 stones. If we consider that the Sentinel does act as a way-marker or proxy to the Haystack from IMLT below, then a further 11 stones could be seen as relating to the Haystack, a remarkable 54 in all.

There is a strong case for seeing the Haystack as a natural monument, as it can be seen from a very large number of carved stones, and it seems to be being referenced by a marker stone, the Sentinel. I argue that a possible reason for this is that when viewed, particularly from the south and east, the Haystack looks remarkably like a rectilinear house. This is further discussed in the concluding section of this chapter, examining why this small group of large rocks, including the Haystack, might have been perceived as natural monuments.

Furthermore, as with Doubler 1, the Neb Stone and the Pancake, carving this very large rock would have presented some challenges, although it would not have been dangerous. To reach the carving areas on the 'roof', particularly higher up, would have required the carver to get up onto the stone. The physicality of carving, and in particular, carving the natural monuments, is discussed in Chapter Nine section 9.6 below.

7.8 H2

The large earthfast boulder 355/GCS 13 H2 is about 1.7m high, 3m wide and 4m long, set towards the middle of Green Crag Slack, well back from the terrace edge, in undulating land (Fig 89 below).



Fig 89 355/GCS 13 H2

Top : south face.

Centre left: north face.

Centre right: east face, with cup-and-ring (not seen) and cups (just seen) at upper right.

Bottom: west face

Images: Author and P Deacon.

The relationships between H2 and other prehistoric archaeology are not clear, and further confused by the remains of much later activity, such as quarrying pits and holloways. The older archaeology includes one or two short stretches of rubble walling

about 10m to the north-west and parallel to the long axis of H2. To the east is Stead Bank cairnfield, with about 40 small scattered cairns with short stretches of walling (Bannister, 1985, 34). The closest cairn seen during the fieldwork is about 20m away.

The carvings are on the eastern 'roof' surface near the northern, quarried end, with a few cups and a single cup-and-ring with two tangential parallel grooves; there could have been other carvings, lost to quarrying. The carvings are now about 1.5m above ground level, but because of the house-shape of the rock, with a vertical, then angled surface, they are not easy to reach. They perhaps required getting on top of the rock, as with the Haystack. This is further discussed in Chapter Nine section 9.6.

Unfortunately, it has been quarried. The north face has been extensively quarried, with perhaps a slab removed from the west face too, though the east and south faces seem untouched, as they are irregular, pitted and rounded, compared to the smoother faces and crisper edges of the quarried areas. H2 is surrounded by a ditch with probable spoil banks on each of the long sides, and a probable quarrying pit, water-filled, under the north and west faces.

The north face now resembles the gable end of a house, hence the modern name of Haystack 2 for this rock. Unlike the Haystack proper, this resemblance does not continue throughout the length of the rock.

The south face appears to be undamaged by quarrying, judging from its irregular surfaces and natural basins (not cups). It has a distinctly monstrous aspect, at least to the modern eye, and I argue that it may have been this aspect of H2 which people in prehistory felt was significant, and referenced by carving stones from which H2 could be seen. It is reminiscent of some of the Sami sacred sites that resemble creatures (see Fig 27 above).

H2 is on a slight natural eminence, though there are substantial parts of Green Crag Slack from which it cannot be seen. Its viewshed is shown in Fig 90 below: it is visible from 33 carved stones, of which 25 have cups-only, and the remaining eight have 1-ring cup-and-rings, two of them with no cups.

Also clearly apparent in Fig 90 is a tight cluster of cups-only carved stones in the south-east, which seems to be pointing at H2. This possible alignment is discussed in the next chapter in section 8.2.4.

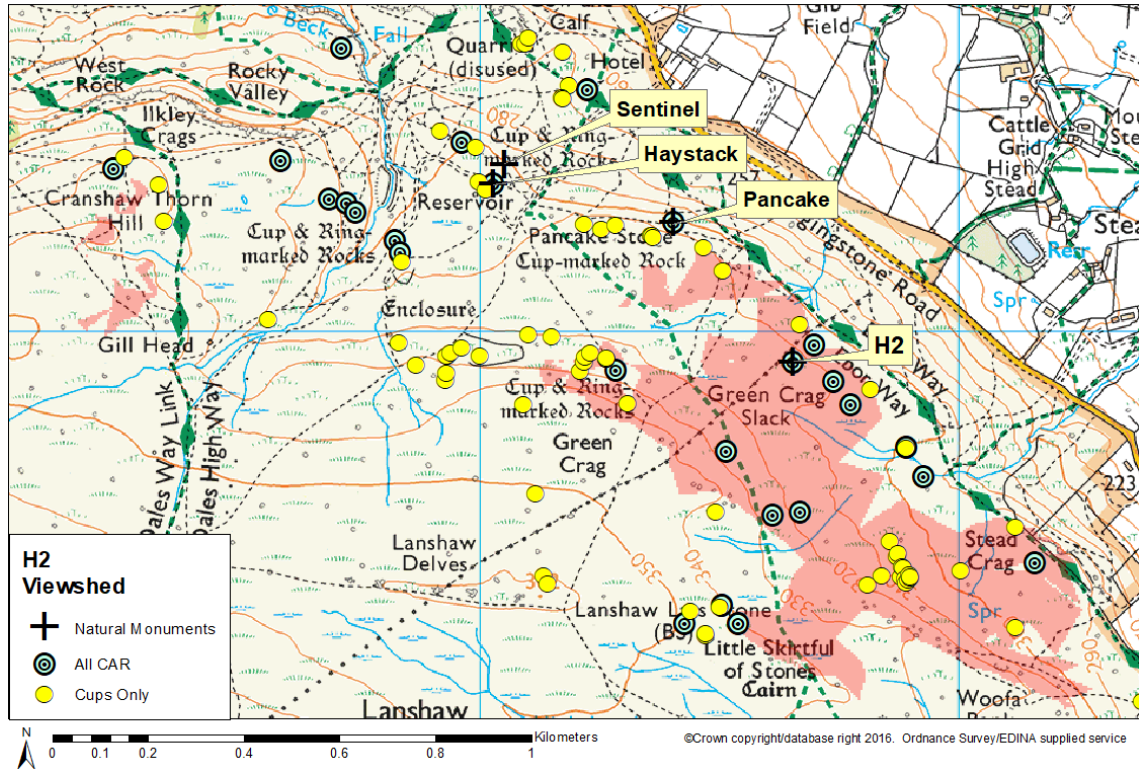


Fig 90 Viewshed of H2.
The visible area is shown in red.

Although often distant, H2 is clearly skylined from 15 of the 33 carved stones from which it can be seen, and partially skylined from a further two. From the remaining 16 carved stones, it is visible but not skylined.

In the field, though often far off, it was always easy to identify and never required binoculars, though few of the stones are close enough to make out any detail at all (Fig 91 below). Indeed, on examining the viewshed map in Fig 90 above, it is clear that many of the cupstones, although having clear sight of H2, are a substantial distance away. One might speculate that people were carving in respect of H2, but did not want to get too close.



Fig 91 Two views of 355/GCS 13 H2.

Top: View north from 352/WB 01 (detail) with H2 skylined at centre, in sunshine.

Bottom: View west from WB 20 (detail) with H2 skylined.

Images: Author and P Deacon.

The case for H2 being a natural monument rests on the large number of carved stones from which it can be seen, and its resemblance to a strange, perhaps alarming, animal emerging from the ground, as further discussed below.

7.9 Discussion

In this chapter, I have argued that five large upstanding and unusually shaped rocks on Rombalds Moor were being treated as natural monuments. The uncarved Sentinel is not included in this discussion, as it is suggested that it is not a natural monument as such, but is acting as a guidestone or proxy to the Haystack.

In each case, the five natural monuments are identified as such based firstly on the large number of carved stones from which each of them can be seen, much greater than the numbers for other large rocks. Secondly, the density of carved stones in their Large Locales is much higher than in the areas outside it: these areas were attracting carving.

This was not at all an expected finding, and therefore must be examined carefully. Key points for discussion are

- Were views possible?
- Why were these stones seen as monumental, when other large stones were not?
- Were all the natural monuments treated similarly?

7.9.1 Were views possible?

The circumstantial evidence from this chapter suggests that views were indeed possible. This is usually simply presumed by studies considering rock-art and views, but the different densities of sites between areas with views of natural monuments, and those without, is very striking. This seen particularly clearly when considering Green Crag Slack, with the Haystack, H2, and the Pancake (Fig 92 below).

From the outset of this research, it was felt that the very remarkable density of sites on Green Crag Slack had to be addressed, though it was difficult to frame this as a research question as such. With about 100 sites in rather less than 2 km², it has the highest density of rock-art sites on Rombalds Moor (Boughey & Vickerman, 2003, 9). In Argyll, Jones and colleagues, noting that there are 133 sites in Kilmichael and Kilmartin, call it 'the most significant rock art landscape in Britain' (Freedman, Jones &

Riggott, 2011). However, their area must be substantially larger than Green Crag Slack (they do not have a map of all their sites). Thus the number and density of sites on Green Crag Slack suggest that this was a special place.

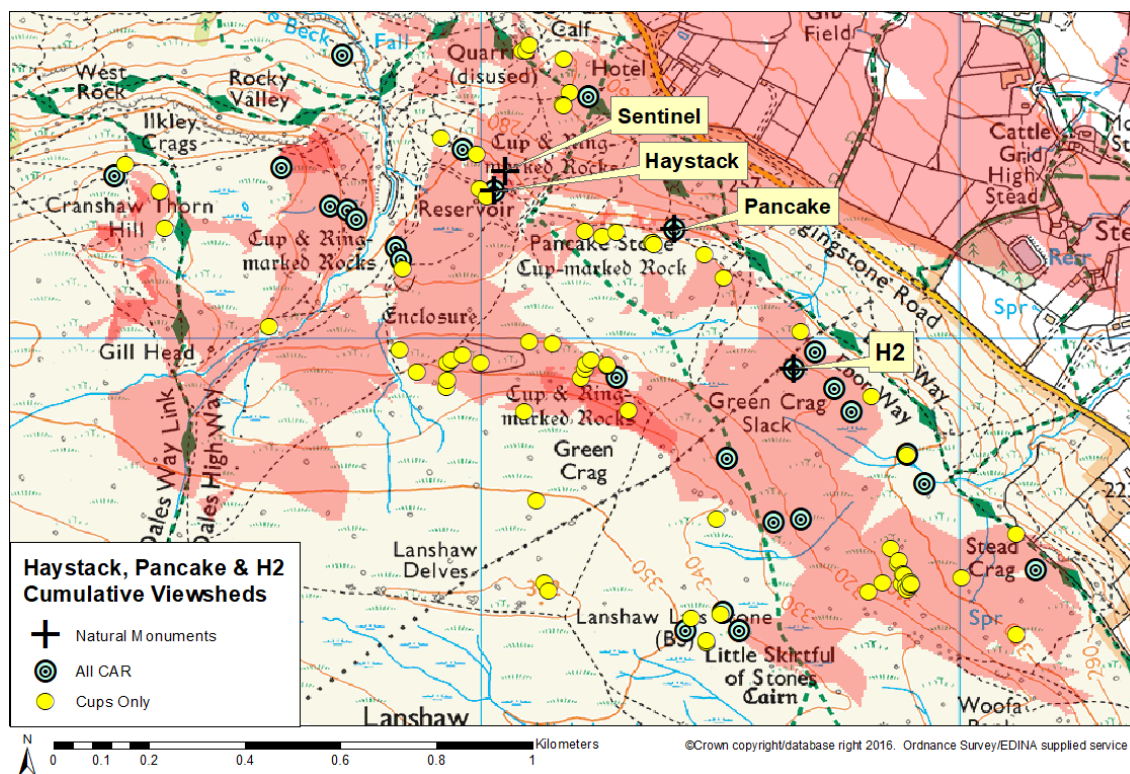


Fig 92 Cumulative viewsheds of the Haystack, the Pancake and H2.

The viewshed visible areas are shown in red. Many of the symbols for the carved stones overlie each other. Sites just south-west and west of the Pancake are in fact within its viewshed: see section 7.5 above.

There are obstacles to interpretation, as GCS has always been a much-visited place, and is a palimpsest of well over 6000 years of human activity. As well as remains of activity from the post-prehistoric periods, it has the highest number of lithic finds from the Mesolithic, Neolithic, Bronze Age and Iron Age on the Moor, as well as a number of enclosures, cairns and fragments of ancient walling. These have been considered in Chapters Four and Six, but do not have any clear or consistent relationship with rock-art sites.

In terms of its topography, Green Crag Slack is not markedly different from other areas of Rombalds Moor. It is a roughly level area, but there are others; and it has good views of Wharfedale, but so does the whole northern edge of the Moor. Only the presence of the proposed natural monuments makes this area different from other topographically similar areas.

From the cumulative viewsheds of the Pancake, Haystack and H2 (Fig 92 above), it is clear that virtually all the carved stones of Green Crag Slack lie within this combined viewshed, with the central 'hole' in the combined viewshed devoid of rock-art sites (the reader is reminded that the stones just west of the Pancake in fact have visibility of it: see section 7.5 above).

I argue that this is a coincidence too great to ignore, and that views were possible. Whether all the views were possible, all the time, is a very different matter, and whether all the natural monuments were 'active' at the same time is also a very different matter. Clear environmental evidence is lacking; in general, Bannister (1985) did not have much evidence about the Neolithic; she showed evidence of limited clearance, perhaps representing clearings, on GCS in the early Bronze Age, and later in the Bronze Age as well, and then full clearance in the Iron Age (Bannister, 1985, 93, see Appendix 3, Table A4 for conversion of Bannister's dates in radiocarbon years BP to cal BC; Yarwood, 1981; and see Chapter Four section 4.3 above).

It has been suggested that land might sometimes have been cleared for ritual purposes (Berg, 2001; AG Brown, 2000). However, relatively circumscribed patches or strips of cleared land would provide good visibility of at least one natural monument, for several stones. Examples of this can be seen west of the Pancake, and south of H2. We return to this possibility in the next chapter.

7.9.2 Why were these stones seen as monumental?

Working in Wales, Cummings & Whittle (2004, 82), and Tilley (1994, 105) state that some monuments there were built to reference certain nearby mountains; in Chapter Three section 3.1, this was critiqued on the grounds that there was little to suggest what was special and different about these mountains, or why they might have been selected. It is therefore important to identify why these five large upstanding rocks on

Rombalds Moor, here proposed as natural monuments, might have been seen as special.

They can be compared with the other 11 large upstanding stones on the Moor (see section 7.2 above; they are listed in Table 7.1 above). Other than their size, nine of them are not particularly impressive to modern eyes. Of the remaining two, shown in Fig 93 below, 214/WC 01 the Sepulchre Stone simply seems not to have been selected (see section 7.2 above, and Chapter Nine section 9.6 below). The other, 222/CSE 05, is barely tall enough to be seen as a *large* upstanding stone, and is also rather tucked away.



Fig 93 Large upstanding stones *not* identified as natural monuments.

Left: 214/WC 01 the Sepulchre Stone, with two or three cup-and-rings on the top.

Right: 222/CSE 01, with a small 1-ring cup-and-ring and two cups on the upper face.

Images: Author & P Deacon.

Thus the five stones identified here as natural monuments are both very unusual in appearance, and much more visible from other carved stones. They also all have a degree of difficulty or actual risk associated with carving them, a theme further explored in Chapter Nine. Doubler 1 and the Pancake are dangerous-to-carve towers. The Neb Stone looks impressively and ‘impossibly’ placed in position. It has been noted above that the Pancake resembles a bird or a human head, and that the Haystack looks like a rectilinear house; I suggest that H2 looks like a monster. Any of them might have been perceived as ‘occupied’, perhaps by ancestral spirits, like the modern-day ‘elf-houses’

of Iceland (Duell, 2015, and see Chapter Three section 3.4.1 above). These are of course modern interpretations, but it is likely that people in the past were more, and not less, likely to see and value such resemblances, than the cynical scientific observers of today.

Whether resemblances, or just generally strange-looking rocks, were held to be of significance is not known, but these rocks seem to have much in common with the sacred sites of Sapmi. These were uncarved, but we do not know at what point in their 'lifetime' as natural monuments that these rocks on Rombalds Moor were carved.

7.9.3 Were all the natural monuments treated similarly?

There are issues of chronology within this question, including whether all the natural monuments were 'active' at the same time. The number and complexity of the carvings on the natural monuments themselves varies considerably, and it is also unclear when these carvings might have been made in relation to each other (Table 20 below).

Natural Monument	Motifs
41/DSS 01 Doubler 1	25 cups, 13 in cluster
237/CSE 02 the Neb Stone	severely eroded: several possible cups, grooves
302/PR 05 the Haystack	30+ cups, grooves, at least six 1-ring CAR
332/PST 01 the Pancake	severely eroded: 40+ cups, grooves, at least four 1-ring CAR
355/GCS 13 H2	quarried: 5 cups, grooves, one 1-ring CAR

Table 20 Natural monuments and their motifs.

Their motifs are not particularly ornate or spectacular, though over the roof of the Haystack, they are quite dense, and they could have been dense over the top of the now very eroded Pancake as well. The general lack of arrangement of the motifs suggests they could have been added accretionally.

Examining the Large Locales by site-type and motif shows further differences between them (Table 21 below); the area outside all Large Locales is shown for comparison.

OUTSIDE LLS: 108	Ground-level: 44	Upstanding: 59	Clifftop: 2	Detached: 3
Cups-only: 71	30	39	1	1
CAR: 35	13	19	1	2
Grooves-only: 2	1	1	0	0

DOUBLER 1: 27	Ground-level: 10	Upstanding: 14	Clifftop: 3	Detached: 0
Cups-only: 18	5	10	3	0
CAR: 9	5	4	0	0

NEB STONE: 25	Ground-level: 3	Upstanding: 20	Clifftop: 1	Detached: 1
Cups-only: 14	2	10	1	1
CAR: 11	1	10	0	0

SENTINEL: 11	Ground-level: 10	Upstanding: 1	Clifftop: 0	Detached: 0
Cups-only: 10	9	1	0	0
CAR: 1	1	0	0	0

PANCAKE/IMLT: 11	Ground-level: 10	Upstanding: 1	Clifftop: 0	Detached: 0
Cups-only: 10	9	1	0	0
CAR: 1	1	0	0	0

PANCAKE/GCS: 8	Ground-level: 3	Upstanding: 5	Clifftop: 0	Detached: 0
Cups-only: 7	2	5	0	0
CAR: 1	1	0	0	0

HAYSTACK: 43	Ground-level: 13	Upstanding: 29	Clifftop: 0	Detached: 1
Cups-only: 33	8	24	0	1
CAR: 10	5	5	0	0

H2: 33	Ground-level: 18	Upstanding: 15	Clifftop: 0	Detached: 0
Cups-only: 25	16	9	0	0
CAR: 8	2	6	0	0

Table 21 Large Locales: number of sites by site-type and motif.

Looking at the distribution of motifs amongst the stones from which each of the natural monuments can be seen, it can be seen that there are clear differences between the

Large Locales, and the rest of the Moor. The IMLT stones, with views of the Pancake and the Sentinel, are almost all ground-level, cups-only sites. On GCS, the Haystack, still with a preponderance of cups-only stones in its viewshed, has a higher proportion of upstanding sites. Perhaps surprisingly, because it is also on GCS, H2, which also has a high proportion of cups-only sites, has a higher proportion of ground-level sites. The eight GCS sites with views of the Pancake are very complex – several are split sites and part of Small Locales – and discussion of these is deferred until the next chapter. Thus the three natural monuments on GCS have each attracted carvings mostly of cups, but on different site-types.

Finally, carvings within the Neb Stone viewshed do not fit the prediction that most of the stones will be cups-only: many stones here have cup-and-rings. Nearly all of them are upstanding; furthermore, of the eight stones from which the Neb Stone can be seen edge-on, four have very ornate designs, and three stand in a puddle (though whether that has any significance whatever is unclear).

These differences, taken together, suggest that the Large Locales were different from each other, that is, that natural monuments were not all treated in the same way. This also, by inference, further suggests that natural monuments referenced by smaller carvings, are a robust concept.

7.9.4 Conclusions

The key finding of this chapter is the identification of natural monuments, because, crucially, *Large Locales do not really exist*; they are a very helpful construct in identifying natural monuments, and identifying areas in which carving decisions were being made in different ways, but they cannot be really be perceived on the ground, or even on the map until viewsheds are constructed. The other three scales of working were 'real', known and clear to the people who made and used rock-art.

You only know you are in a Large Locale because you can see its natural monument, but you cannot perceive the extent of the Large Locale except from the natural monument itself, because firstly, not all of it may be visible from any other spot within it, and secondly, the other carved stones which might help to delineate its extent for you are mostly too small or low-lying to be visible from any distance away. The Large

Locale can by definition be seen from the natural monument itself, but even here, virtually all its carved stones will not be visible at all, and even if visible, will not stand out from the other uncarved boulders.

On the map, Large Locales only appear when constructed as the viewshed of the natural monument, when their utility becomes very clear. It was the 'holes' in the viewsheds, where there was no rock-art, despite being close to a large and monumental rock, that were particularly persuasive when analysing the findings.

We now turn to an examination of clusters of carved rocks, Small Locales, which can be perceived in the field, and which are clearly visible on the map. Several of them are also within Large Locales, but not all, and on Rombalds Moor, they have not previously been considered in any detail.

Chapter Eight: Results III: Small Locales

8.1 Introduction

In this chapter, there is a clear shift of scale, from the viewsheds of the Large Locales, spanning 2km or more, down to groups of stones standing much closer together, Small Locales. Consideration of deliberately-made clusters of carved stones may lead to insights about both how carvings related to each other and to the wider landscape. With a database of 252 stones, random clusters, particularly pairs, are likely. The challenge is to distinguish these from made groups.

Several writers have noted that rock-art sites are often found in clusters. Boughey & Vickerman (2003, 38; 2013, 87) note that 18% of their sites are within 5m of at least one other carved rock, and nearly half are within 25m. Brown & Chappell (2005, 13) note groups in the North York Moors, and Laurie (2003), in the Pennines of Northumberland & Durham, says that the most complex designs are found on the innermost stones, with simpler designs around them, a theme also considered here.

A number of clusters can be seen on the Rombalds Moor map, but also visible are two apparent lines of stones, both over 200m long. They are also considered here, as although much longer than the clusters, they are investigated using the same principles; both seem to relate to particular groups, and are discussed alongside them. These 29 possible groups and alignments are listed in Tables 22 and 23 below.

The Chapter Five methodology (section 5.11.3 above) proposed a 15m arbitrary cut-off between nearest neighbours, and that each stone in the proposed group must have visibility of, or be visible from, at least one other stone in the group. The fieldwork then examined relationships between stones in the group and with features in the wider landscape. The research questions from Chapter Five were:

- Are the stones within the group/line intervisible?
- What relationships exist between the stones in terms of their motifs?
- What relationships exist between the group/line and natural monuments?
- What relationships exist between the group/line and other features, including the setting in the landscape?

Area	Small Locale Name	In LL?	Number of Stones/Panels, and Motifs
NW Edge	Ramsgill pair	No	two stones: all cups
IMLT	IMLT West	Yes	three rock-sheet sites: all cups
IMLT	IMLT Central	Yes	three stones: all cups
IMLT	IMLT East	Yes	two stones: all cups
IMLT	Hangingstones Rock	Yes	two panels of intricate cups-and-grooves; two panels with CAR & grooves
Ilkley Moor	Little Panorama group	Yes	four stones: 3 cups-only; 1 with 20 cups & groove box
Ilkley Moor	Neb Stone pair	Yes	two stones: all cups
Ilkley Moor	Green Gates pair	No	two stones: CARs; cups and grooves
Ilkley Moor	Pepperpot group	No	six stones: 1 with 70 cups; 1 with CAR, grooves, cups; 4 stones with cups & grooves
Lanshaw	Lanshaw North pair	No	two stones: 35 cups in lines, groove, CARs; 10 cups
Lanshaw	Lanshaw South pair	No	two stones: 1 cup, groove; 2 cups
Hawthorn	Hawthorn pair	No	two stones: 1 cup, groove; 5 cups
Rough Holden	Robin Hood Wood pair	Yes	1 cup; 2 cups
Riddlesden High Carr	Riddlesden group	No	four rock-sheet sites: all cups-only
Stanbury Hill	Stanbury Hill group	No	six stones: 5 with CAR, grooves, cups; 1 with cups only
Stanbury Hill	Todmor group	No	four stones: 1 CAR; 17 cups; 2 cups; 1 cup
Rivock	Rivock Forest pair	Yes	4 cups; 12 cups
Rivock	Rivock Edge pair	No	1 cup; 2 cups
Rivock	Rivock multi-rings pair	Yes	3-ring CAR, grooves, cups; 4-ring CAR, grooves, cups
Rivock	Rivock Cliff trio	Yes	three outcrop cliff sites: all cups-only
Rivock	Rivock Nose intricate pair	Yes	CARs, grooves, cups; CAR, grooves, no cups
GCS	Pancake Trio W	Yes	three stones: all cups-only
GCS	Pancake Trio E	Yes	three stones: all cups-only
GCS	Idol Stone group	Yes	four stones: 1 intricate with cups and grooves; 3 stones, all cups-only
GCS	Green Crag West group	Yes	three stones: 1 intricate with cups and grooves; 2 stones, both cups-only
GCS	Green Crag East group	Yes	three stones: all cups-only
GCS	Woofa pair	Yes	two stones: both cups-only
GCS	Woofa Enclosure group	Yes	seven stones: 1 with 70 cups; 1 with cups & groove boxes; 5 with cups-only
GCS	Rushy Beck pair	No	two stones: 2 CAR, 3 cups, groove; 7 cups

**Table 22 All groups identified from the maps.
Groups were given names for this study.**

Area	Line Name	In Large Locale?	Number of Stones, and Motifs
Rivock	Rivock Arc	unclear (Doubler 1)	five or six stones: one 1-ring CAR; others cups-only
GCS	Woofa Alignment	H2	about nine stones, all cups-only

Table 23 The two possible alignments.

These questions build on the central research question concerning the salience of views (Chapter One section 1.1 above). Some Small Locales may have arisen within Large Locales, and their stones' relationship to each other may be secondary to their views of the natural monument. Others may have arisen when stones were carved close to an existing, perhaps intricately carved stone; it is suggested that this is what Laurie (2003) may be describing. Some groups of this nature might also be found within Large Locales, perhaps unrelated to the natural monument as such. Visibility is obviously dependent on vegetation, and this vexed question is carefully considered throughout.

Because it has been suggested that cups were made to acknowledge sacred features, the data was first divided into subsets based on motifs, so cups could be specifically examined. As before, grooves are not considered separately in these discussions, and have had to be largely ignored.

We now examine the cups-only set, the cup-and-ring set, and the alignments, in terms of whether they meet the criteria set out above, and also whether their motifs are related to their position inside or outside Large Locales.

The cups-only set, and the cup-and-ring set are therefore further subdivided into those inside, and those outside, Large Locales.

The first subset to be examined is groups where all members have cups only; of the 29 possible Small Locales, 20 have cups-only, an interesting finding of itself. Of these 20, 15 stand in at least one Large Locale, a further interesting finding, given that Large Locales occupy only a minority of the total area of the Moor. As will be seen however, not all of these groups met the criteria for Small Locales. The 20 cups-only groups, possible Small Locales, are listed in Table 24 below.

Small Locale Name	In Large Locale?	Number of Stones, and Motifs
Ramsgill pair	No	two stones: 2 cups; 1 cup
IMLT West	Yes	three rock-sheet sites: 9 cups; 3 cups; 1 cup
IMLT Central	Yes	three stones: 1 cup; 2 cups; 2 cups
IMLT East	Yes	two stones: 8 cups; 13 cups
Little Panorama group	Yes	four stones: 3 cups; 1 cup; 12 cups; 20-cup cluster + 5 cups + groove box and 3 cups
Neb Stone pair	Yes	two stones: 4 cups; 2 cups
Lanshaw South pair	No	two stones: 1 cup; 2 cups
Hawksworth pair	No	two stones: 1 cup, groove; 5 cups
Robin Hood Wood pair	Yes	two stones: 1 cup; 2 cups
Riddlesden group	No	four rock-sheet sites: 4 cups; 3 cups; 5 cups; 1 cup
Rivock Forest pair	Yes	two stones: 4 cups; 12 cups
Rivock Edge pair	No	two stones: 1 cup; 2 cups
Rivock Cliff trio	Yes	three outcrop cliff sites: 3 cups; 9 cups; 5 cups
Pancake Trio W	Yes	three stones: all cups-only
Pancake Trio E	Yes	three stones: all cups-only
Idol Stone group	Yes	four stones: 1 cup; 2 cups; 2 cups; all cups: 4 in line, 6 in line, 7 in line in groove box, 8 in domino
Green Crag West group	Yes	three stones: 6 cups; 12 cups; 18 cups in lines parallel to long grooves
Green Crag East group	Yes	three stones: 3 cups; 1 cup; 8 cups
Woofa pair	Yes	two stones: 5 cups; 8-10 cups
Woofa Enclosure group	Yes	seven stones: 1 cup; 3 cups; 8 cups; 1 cup; 15 cups; 15 cups & groove boxes; 70 cups

Table 24 The 20 cups-only groups identified from the maps.

8.2 Groups with cups-only, and *inside* Large Locales

Table 25 below shows the 15 cups-only groups, as identified from the maps, which stand within one or more Large Locales. These are now examined by Large Locale; as 332/PST 01 the Pancake can be seen both from stones on IMLT and from stones on GCS, these are considered separately.

The five- or six-stone Rivock Arc is discussed here, despite having one stone with a cup-and-ring, as it may include one of the Rivock Forest pair.

Small Locale	Large Locale	Number of Stones, and Motifs
IMLT West	Pancake over IMLT & Sentinel	three rock-sheet sites: 9 cups; 3 cups; 1 cup
IMLT Central	Pancake over IMLT & Sentinel	three stones: 1 cup; 2 cups; 2 cups
IMLT East	Pancake over IMLT & Sentinel	two stones: 8 cups; 13 cups
Little Panorama group	Neb Stone	four stones: 3 cups; 1 cup; 12 cups; 20-cup cluster + 5 cups + groove box & 3 cups
Neb Stone pair	Neb Stone	two stones: 4 cups; 2 cups
Robin Hood Wood pair	Doubler 1	two stones: 1 cup; 2 cups
Rivock Forest pair	Doubler 1	two stones: 4 cups; 12 cups
Rivock Cliff trio	Doubler 1	three outcrop cliff sites: 3 cups; 9 cups; 5 cups
Pancake Trio W	Pancake over GCS	three stones: all cups-only
Pancake Trio E	Pancake over GCS	three stones: all cups-only
Idol Stone group	Haystack & H2	four stones: 1 cup; 2 cups; 2 cups; all cups: 4 in line, 6 in line, 7 in line in groove box, 8 in domino
Green Crag West group	Haystack	three stones: 6 cups; 12 cups; 18 cups in lines parallel to long grooves
Green Crag East group	Haystack & H2	three stones: 3 cups; 1 cup; 8 cups
Woofa pair	H2	two stones: 5 cups; 8-10 cups
Woofa Enclosure group	H2	seven stones: 1 cup; 3 cups; 8 cups; 1 cup; 15 cups; 15 cups & groove boxes; 70 cups

Table 25 Cups-only groups (identified from the maps) inside Large Locales.

8.2.1 Groups with cups-only on IMLT with views of the Pancake & Sentinel

IMLT, the terrace below Green Crag Slack, has 11 carved stones (Hangingstones Rock has been excluded from the discussion in this section, as its views over IMLT are not reliable: its four, perhaps five, panels are discussed as a possible Small Locale in section 8.4.1 below). There are no reports of ancient walling in IMLT, though a few cairns have been reported, none near any of these groups. Eight sites appear to be in groups, two trios and a pair, all with cups-only. Both the Pancake and the Sentinel can be seen from all 11 sites (Fig 94 overleaf).

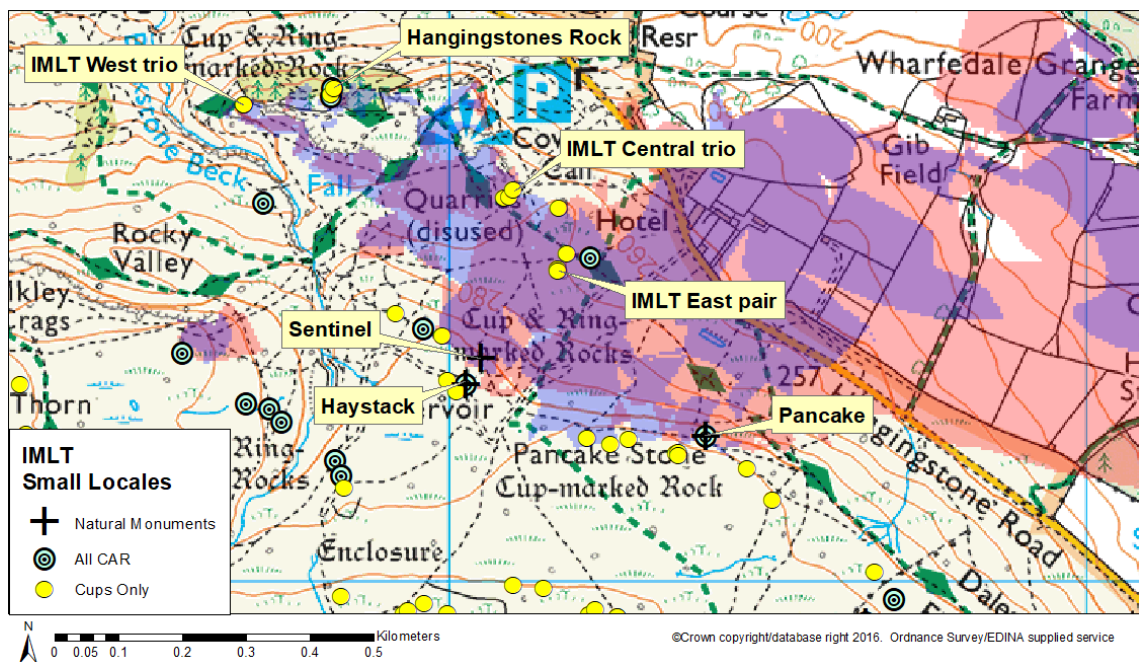


Fig 94 IMLT Small Locales, two trios and a pair.
Viewsheds of the Sentinel (blue), and the Pancake (red): the overlap appears purple.

- **IMLT West Trio**

This group of ground-level sites, 278/HST 02, and 279 & 280/HST 03 (classified as two sites by Boughey & Vickerman, but a single site by CSI), stand less than 1m apart (Fig 95 below), and have nine cups, three cups and one cup respectively.



Fig 95 IMLT Trio West
280 at bottom left & 279 with ranging pole (both HST 03), with 278/HST 02 at right.

Image: Author & P Deacon.



Fig 96 View south-east from IMLT Trio West.
The brick-like Sentinel is seen at right, on rising horizon, the Pancake skylined at far left.
Image: Author & P Deacon.

They stand a few metres into the flatter area of IMLT, just coming out of the deep Backstone Beck valley, on a steep route up from the Wharfe valley bottom; it is generally presumed that routes often followed valleys (Bradley, 1997, 120-124; Vyner, 2007a; Waddington, 2007a). From this threshold position, the walker can now see the Sentinel and the Pancake, both distant but skylined and easy to see (Fig 96 above).

- **IMLT Central Trio**

This group of three small, ground-level sites stand on flat ground near the edge of IMLT. 304/CC 01 has one cup, 306/CC 02 has two cups, and 308/CC 03 has two cups.

They stand close together and are intervisible in short vegetation (2013), with 306 about 7m from 304, and 13m from 308. They may also lie on a route, where a steep way up from the Wharfe valley passes between two rises in the ground to reach IMLT (Fig 97 overleaf).



Fig 97 IMLT Central Trio.

Top, left to right: 304/CC 01; 306/CC 02; 308/CC 03.

Bottom: The modern path up to IMLT towards the IMLT Central Trio. The path might follow a much older route. The stones are just over the horizon beyond the figure.

Image: Author & P Deacon.

From this threshold position, the Sentinel and the Pancake can be seen for the first time on coming up by this path, distant but partially skylined (Fig 98 below).



Fig 98 Views from IMLT Central Trio.

Left: the Pancake is distant but visible, just breaking the skyline.

Right: the brick-shaped Sentinel, on the skyline at centre.

Images: Author & P Deacon.

- **IMLT East Pair**

This pair, 312/CC 04 and 313/CC 05 are in a similar position to the IMLT Central Trio, but stand on the other side of the little hill seen at left in Fig 97 bottom, above. They are small, near ground-level rocks about 5m apart, with about eight and thirteen cups respectively (Fig 99 below). With edge-on bedding planes, and cups in lines following the striations, they look similar, though 312 is rather smaller than 313. In low vegetation (2013), they are intervisible.



Fig 99 IMLT East Pair.

Left: 312/CC 04

Right: 313/CC 05

Images: Author & P Deacon.

There is no real terrace edge here, with a gentler slope up from the Wharfe valley, but they are set on IMLT where the ground has become level, and both the Sentinel and the Pancake can be seen partially skylined.

These three groups are all seen as Small Locales, standing at thresholds to IMLT, on routes coming up from the Wharfe valley.

8.2.2 Groups with cups-only with views of the Neb Stone

The Neb Stone stands on Ilkley Moor, its viewshed shown in Fig 100 overleaf. There are four clusters technically within the Neb Stone viewshed. However, the Neb Stone is so far away, and not skylined, from two of these groups, the Green Gates pair and

the Pepperpot group, that it cannot be seen without binoculars. These two groups are therefore discussed as groups standing outside Large Locales.

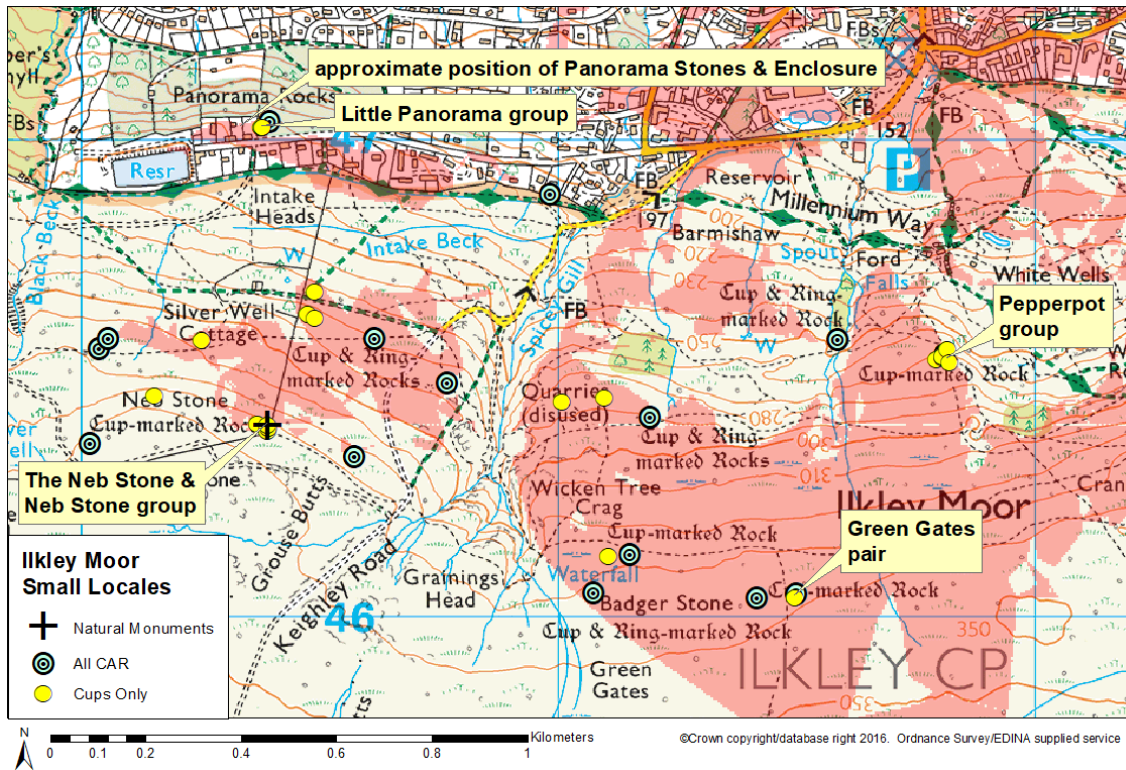


Fig 100 Ilkley Moor Small Locales.
The viewshed of the Neb Stone is shown in red.

There are thus two possible Small Locales from which the Neb Stone can be seen, both with cups-only, the Little Panorama group and a pair next to the Neb Stone itself.

- **The Little Panorama Group**

The Little Panorama Group is named to emphasise that it does not include the four Panorama Stones, all now lost or moved. The Little Panorama group, consisting of four carved stones, 230/PW 01, 231/PW 02, 232/PW 03 & 233/PW 04, stand very close together in Panorama Woods, near the ridge edge overlooking modern Ilkley. They

stand roughly in line, with an apparently uncarved rock in between, but all are eroded and covered in algae, mosses and lichens (Fig 101 below). 230, 231 and 233 have three cups, one cup and 12 cups respectively; 232 has about 28 cups, with 20 clustered round a natural cleft and basin, five scattered cups and a further three in a groove box.

This is now an area of thick woodland near a row of Victorian villas. Without trees, there would be extensive views over Wharfedale below – but see Fig 28 right, above.



Fig 101 Little Panorama Group, 230/PW 01, 231/PW 02, 232/PW 03 & 233/PW 04.

Left: 230 at left, with 231 at right.

Right: the whole group. Bottom to top: top of 230, just glimpsed, at bottom; 231 above; large uncarved rock; 232 (groove box clearly seen); 233 to right of 232.

Images: Author & P Deacon.

These stones are perhaps 100-200m from where the Panorama Stones and Enclosure once stood, and there were other carved stones nearby, also now lost (Hedges 1986, 11 & 14). The view upslope is now blocked by houses, but from 30m away, there is a clear view of the Neb Stone, skylined from below.

This group is interpreted as a Small Locale.

- **The Neb Stone pair**

The Neb Stone, 237/CSE 02, with its associated pair, stand on Coarse Stone Edge, below the summit of Ilkley Moor, amongst outcrop and large and small boulders (Fig 102 below). There has been some small-scale stone quarrying, seemingly including the upper free edge of the Neb Stone itself.



Fig 102 The Neb Stone pair.

Left: 234/CSE 04, seen at centre; the top of the Neb Stone glimpsed at far right.

Right: 235/CSE 03, seen behind, below and touching the Neb Stone, with 234 about 2m away, behind the wall.

Images: Author & P Deacon.

There are two carved rocks immediately adjacent, 234/CSE 04 and 235/CSE 03, both over 2m long, with four cups and two cups respectively.

This pair is seen as a Small Locale, carved in respect of the Neb Stone.

8.2.3 Groups with cups-only with views of Doubler 1

There are five possible Small Locales with views of 41/DSS 01 Doubler 1, four of them on Rivock hill (Fig 103 opposite). To the east, Rivock slopes down gently towards Fenny Shaw Beck; to the west, Rivock hill, with Rivock Nose, a stretch of outcrop cliff, overlooks Rough Holden. Neither cairns nor ancient walling have been reported in this area. It has been covered by a commercial conifer plantation since the 1970s; removal of the trees, prior to replanting, began in 2015.

The Rivoek Cliff Trio and the Rivoek Intricate pair stand very close together on Rivoek Nose. The proposed Rivoek Arc, of at least five stones, runs for about 200m across Rivoek hilltop, and may include the western stone of the Rivoek Forest pair, so it is discussed here. It is right on the edge of the Doublers viewshed.

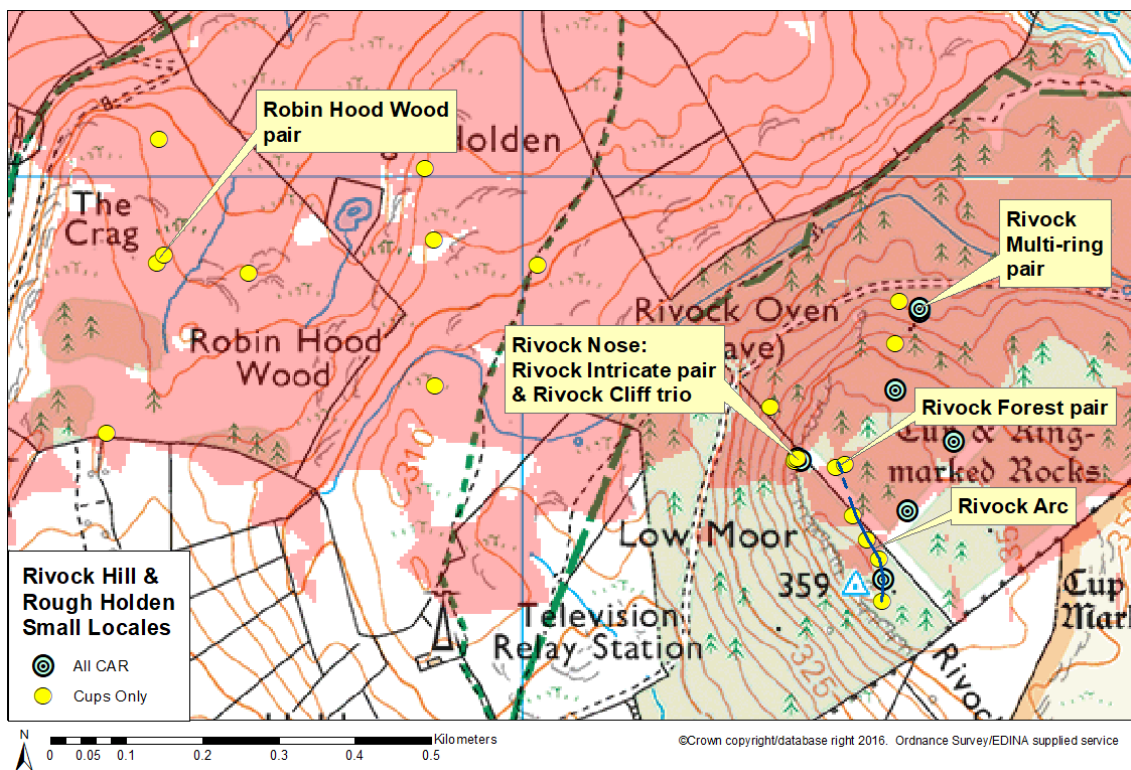


Fig 103 Rivoek Hill & Rough Holden Small Loci.

The Doublers viewshed is shown in red. There are five possible Small Loci, plus Rivoek Arc, with its five stones and a possible extension to the western stone of the Rivoek Forest pair.

Of the five groups here, three have cups-only: the Robin Hood Wood pair in Rough Holden, the Rivoek Forest pair and the Rivoek Cliff trio.

- **The Robin Hood Wood pair**

Robin Hood Wood is part of Rough Holden, an area not much visited; most of the carved stones here were only discovered in the last few years (Boughey & Vickerman, 2013, 1). It is not an area where cairns or ancient walling have been reported. Doubler 1 can be seen from all the carved stones here.

This pair of stones, 40a/RHW 02 (two cups), and 40c/RHW 03 (one cup), about 15m apart, are both small, ground level rocks. Neither can be seen from the other, so there seems to be no relationship between them: they are not included as a Small Locale.

- **Rivock Forest pair**

This pair of stones, 53/RV 10 (four cups) and 54/RV 11 (12 cups), are about 15m apart and intervisible (2015) in flat, now cleared forestry land, almost devoid of vegetation. Both are small, near ground-level rocks, and their intervisibility must be doubtful in any re-grown vegetation.

It is not possible to see Rivock Nose with the Rivock Cliff trio or the Intricate pair from either 53 or 54. In the field, there seemed to be no real connection between these two stones, and, as with the Robin Hood Wood pair, it was considered that they do not constitute a Small Locale. 53 could be a northern member of the Rivock Arc (see below).

- **Rivock Cliff trio**

The Rivock Cliff trio on Rivock Nose comprises 45/RV 02 (three cups), 46/RV 03 (nine cups), and 47/RV 04 (five cups), all on flat-topped outcrop cliff, with a significant drop and a very steep slope below (Fig 104 opposite). 46 and 47 are immediately adjacent, and 45 is separated from 46 by a metre-wide cleft. The Intricate pair are easily visible, only a metre behind 46 and 47, though the Rivock Arc behind cannot be seen.



Fig 104 Rivock Cliff trio on Rivock Nose.

45/RV 02 is seen in the foreground, with 46/RV 03 behind, concealing 47/RV 04, which is just beyond and touching it.

Image: Author and P Deacon.

Fieldwork showed that the stretch of cliff can be seen clearly from all the Rough Holden carved stones below, though the sites cannot be distinguished individually; the Rough Holden stones however are far too small to be made out from Rivock Nose. All the cups are close to the edge of the cliff; the placing of the cups at the edge suggests that these cups are perhaps not referencing something on Rivock hilltop behind, but the view from the edge. The trio has extensive views of the Aire valley with the Worth valley confluence, the Silsden Gap, and into upper Airedale and beyond. Despite the distance, Doubler 1 is clearly visible to the north, even though it is 2km away and not skylined (see Chapter Seven section 7.3).

There are also two long-distance views from the Rivock Cliff Trio (and indeed from the Intricate pair just behind them). Firstly, the summit of Bradley Moor, the site of a long cairn, is visible about 7km away. Secondly, about 100km away and right through the Aire Gap, the Cumbrian peaks can be seen on a clear day, sites of the monumentalised axe quarries. It is very difficult to know what, if anything, to make of these two views, which focus on Neolithic activity with a significant ideological and ritual component, as discussed in Chapter Six section 6.6.1. This is returned to in Chapter Ten section 10.4.

The Rivoock cliff trio is considered to be a Small Locale, though the fact that Doubler 1 can be seen from here was perhaps not the reason these cups were carved.

- **Rivoock Arc**

The possible Arc at Rivoock consists of a clear, curved line of five carved stones across the slightly domed, otherwise featureless, Rivoock hilltop (Table 26 below; Fig 105 opposite). The southern four stones of the Arc are about equidistant. Four of the stones have cups-only; the fifth has a single 1-ring cup-and-ring, and a cup; none of them is at all large or impressive. It is not clear if Doubler 1 can be seen from any or all of them, as trees block the view and they are on the edge of the GIS-calculated viewshed (Fig 103 above).

Stone Number	Site & Motifs
55/RV 12	near ground-level rock: five cups
57/RV 13	near ground-level rock: one cup
58/RV 14	near-ground level rock: four cups
60/RV 16	upstanding rock: one 1-ring CAR, one cup
59/RV 15	upstanding rock with a natural hole: 15 cups

Table 26 Members of the proposed Rivoock Arc.
The stones are listed in order of their place in the Arc.

For each member of the Arc, at least the two immediate neighbours can be seen. There are very few uncarved stones here; this, and the very regular placement of the carved stones, suggests that they may have been moved into place. Whilst noting the ‘roughly linear arrangement’, CSI (ERA England’s Rock Art, nd) do not suggest that the stones might have been moved into position.

Neither observations in the field nor Google Earth imagery show any suggestion of a bank or ditch between the stones. However, one might speculate that this Arc once incorporated more stones at its extremities, and to the north, 53/RV 10 could be a further member, now cut off by a modern wall.



Fig 105 Rivoack Arc.

Top: View to south-east from 55, with 55 in foreground, and (arrowed left to right): 57, 58 & 60 (barely seen). Note absence of uncarved stones.

Bottom: Left: Map of Rivoack Arc.

Right: Google Earth image (images not to scale). Google Earth image clearly shows stones 57, 58, 60 and 59; 55 is not seen against the wall; 53 and 54 not seen in trees.

Images: Top: Author & P Deacon.

Bottom left:

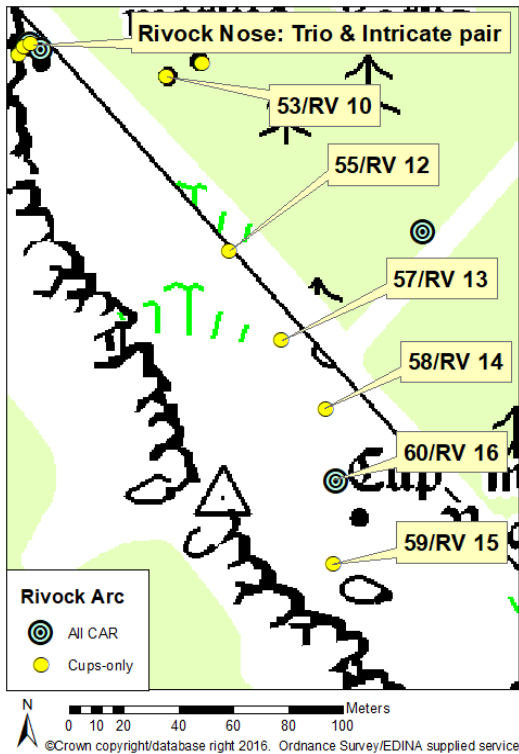
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Ordnance Survey/EDINA supplied service.

Bottom right:

Google Earth: ©2017 Infoterra Ltd &

Bluesky. Map data© 2017 Google.



It is possible that further stones might be missing, for example between 55 and 53, and beyond 53, so that the Arc reached the outcrop edge. To the south, there might also have been a further stone beyond 59, connecting the line to the outcrop cliff in the south. Both areas were therefore carefully searched during the fieldwork. No new carved stones were discovered, though north of 55, the detritus of logging is often as much as 1.5m above ground level.

The only report that could be found in the literature of similar features in Yorkshire is Boughey & Vickerman's discussion of rock-art on Baildon Moor, just outside the study area to the south-west (Boughey & Vickerman, 2003, 18). In the Low Plain/Windy Hill part of Baildon Moor, they describe 29 carved stones, 20 of them in two 'roughly parallel lines'. There is no further description, and they do not say if they think they were moved. The CSI map centred on LP 21 (ERA England's Rock Art, nd) shows a possible single line, but there are many other carved stones immediately nearby, and unfortunately the whole area is very disturbed, with many bell pits from small-scale coal mining, holloways, some possible barrows and walling, and a caravan site; the CSI surveyors thought that the area is now too disturbed for the archaeology to be understandable.

Looking beyond Yorkshire, stone rows made up of small stones have been described in other parts of Britain. At Leskernick in Exmoor, for example, Bender *et al* describe a stone row where most of the stones were less than 0.5m high, although this row was associated with a stone circle (Bender, Hamilton & Tilley, 2007, 31 & 90); no reports of rock-art on Exmoor could be found.

Interestingly, there is another similarity with Exmoor archaeology; the very small stone setting excavated by Brown & Boughey's group on Stanbury Hill (AA Evans, 2013) resembles the miniliths also on Exmoor (Gillings, Pollard & Taylor, 2010; Gillings, 2015; Chapter Four section 4.5 above). By good fortune, the author was involved in the excavation of this feature on Stanbury Hill, and can say that had it not happened to be within the trench around stone 102/SH 07, it would never have been recognised as a stone setting, as only the tips of the two vertical slabs protruded above the grass. Thus other similar small stone settings might very easily be overlooked.

In conclusion, the Rivock Arc appears to be an alignment of carved stones that were moved into position. Although other alignments of stones, probably also moved into

position, are known in Britain, no alignment of carved stones has previously been reported, and strengthens the notion that the making of rock-art landscapes might sometimes also involve moving the stones.

8.2.4 Groups with cups-only on GCS with views of the Pancake, Haystack & H2

The three proposed natural monuments on Green Crag Slack, 302/PR 05 the Haystack, 355/GCS 13 H2, and 332/PST 01 the Pancake have slightly overlapping viewsheds. As some of the groups here offer views of more than one of these, all are considered in this section. There are seven possible Small Locales and a possible alignment (Table 27 below; Fig 106 below).

Small Locale Name	Large Locale	Number of Stones, and Motifs
Pancake Trio West	Pancake	three stones: all cups-only
Pancake Trio East	Pancake	three stones: all cups-only
Idol Stone group	Haystack & H2	four stones: 1 cup; 2 cups; 2 cups; all cups: 4 in line, 6 in line, 7 in line in groove box, 8 in domino
Green Crag West group	Haystack	three stones: 6 cups; 12 cups; 18 cups in lines, in part groove box
Green Crag East group	Haystack & H2	three stones: 3 cups; 1 cup; 8 cups
Woofa pair	H2	two stones: 5 cups; 8-10 cups
Woofa Enclosure group	H2	seven stones: 1 cup; 3 cups; 8 cups; 1 cup; 15 cups; 15 cups & groove boxes; 70 cups

Table 27 Possible GCS Small Locales with views of the Pancake, Haystack and H2.

The possible Small Locales on GCS from which the Pancake can be seen are very complex because of the way stones in this area were allocated numbers by Boughey & Vickerman (followed by CSI). They are best understood by considering them together.

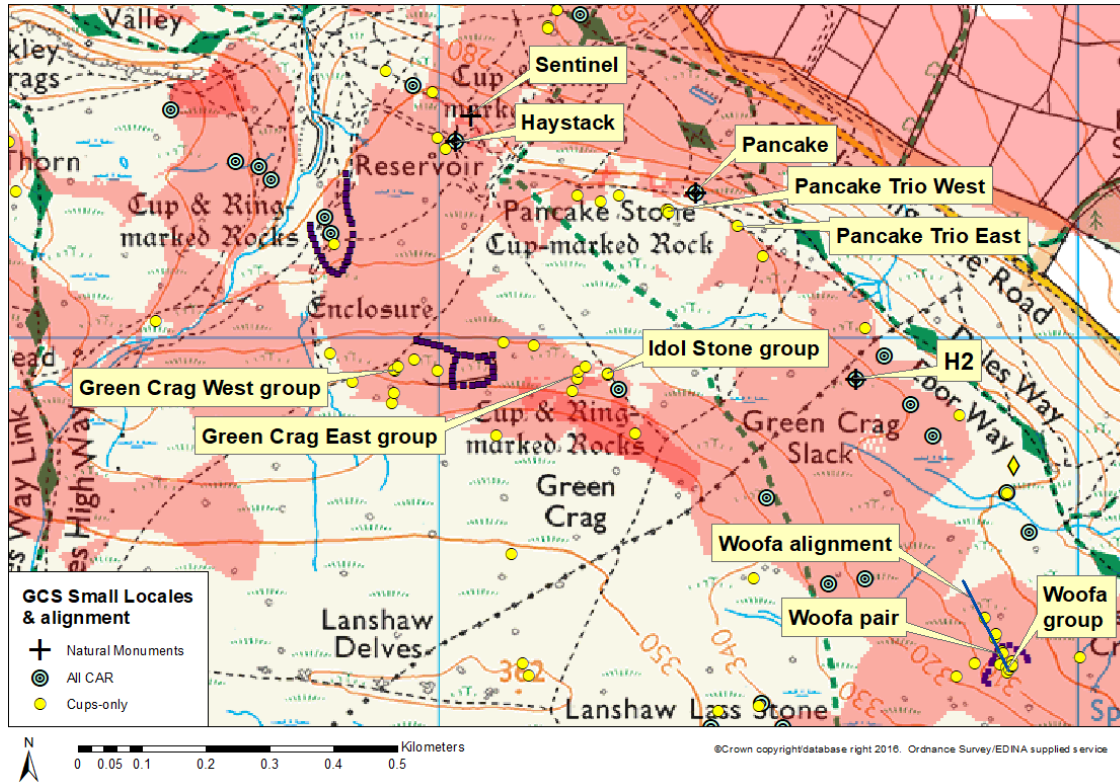


Fig 106 Green Crag Slack: possible Small Loci and Alignment.

The cumulative viewsheds of the Pancake, Haystack and H2 are shown in red, with the three enclosures shown outlined by points logged in fieldwork. At this scale, the symbols for many of the rock-art sites overlap.

- **The Pancake’s Small Loci: Pancake Trios West & East**

Unfortunately, the GIS-calculated viewshed of the Pancake, detail shown in Fig 107 opposite, does not match the fieldwork observations listed in Table 28 below. This is probably because the reference point for the Pancake GIS viewshed calculation is too low down on the Pancake ‘tower’ (see Chapter 5 section 5.15.6).

There are nine Boughey & Vickerman numbered sites on GCS from which the Pancake can be seen. One of them is the Haystack, excluded from the rest of the analysis here, because as a natural monument itself, its position and carvings are probably wholly unrelated to the Pancake.

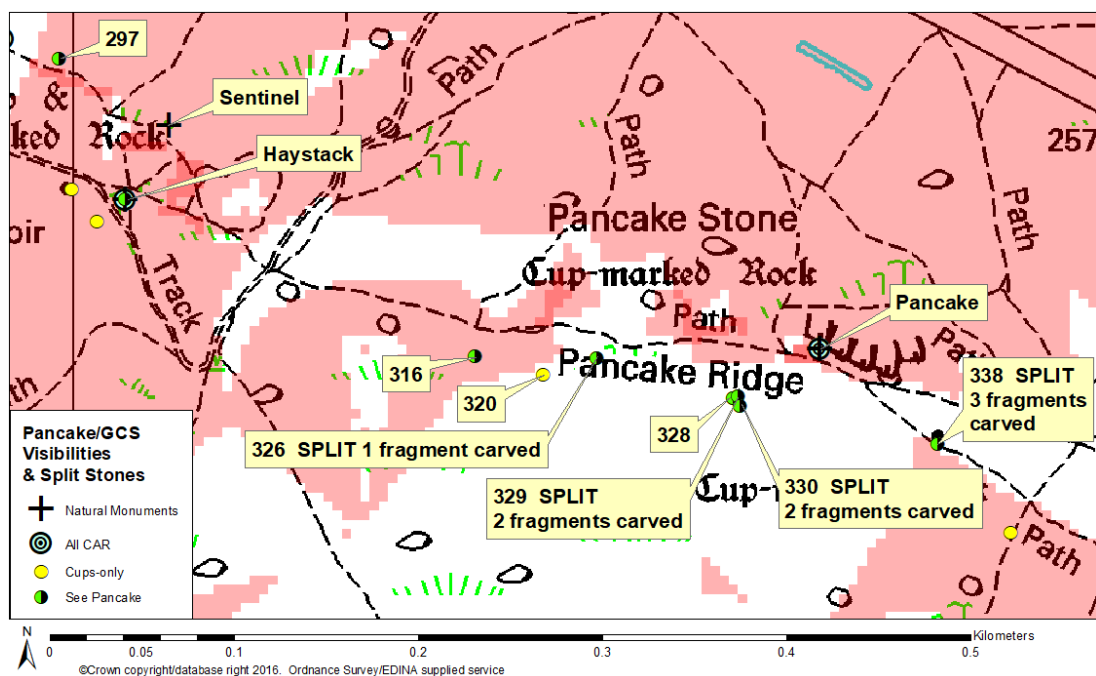


Fig 107 The Pancake's Small Locales on GCS.
The viewshed of the Pancake is shown in red.

Stone Number	Motifs	Remarks
276/CTH 08	three 1-ring CAR, 8 cups of different sizes	1km away on Cranshaw Thorn Hill; Haystack also visible, 0.5km away
297/PR 02	5-7 cups	Haystack and Sentinel also visible
316/PR 06	1 cup	Haystack also visible
326/PR 08	1 cup	SPLIT ROCK: one fragment of four carved; Haystack also visible
328/PR 09	7-12 scattered cups, including a trio at western end	part of Pancake Trio West Visible: Pancake only
329/PR 10	1 cup on east fragment; 5 cups on west fragment	part of Pancake Trio West SPLIT ROCK: two fragments, both carved. Visible: Pancake only
330/PR 11	6 cups in two trios on north fragment; 3 cups in trio on south fragment	part of Pancake Trio West SPLIT ROCK: two fragments, both carved. Visible: Pancake only
338/PR 14	1 cup on east fragment; a trio of cups on middle fragment; 11 cups on west fragment	Pancake Trio East: single B&V number SPLIT ROCK: three of four fragments carved. Visible: Pancake only

Table 28 The eight B&V sites on GCS with views of the Pancake.

Of these eight sites, 276/CTH 08, with three cup-and-rings and eight cups, is about 1km away (not seen in Fig 107), and has a view of the Haystack as well. Otherwise, all the GCS stones from which the Pancake can be seen are within 200m of the Pancake, and have cups-only. The way these seven sites were assigned numbers by Boughey & Vickerman, followed by CSI, obscures just why this is a very unusual set of stones. Four of these eight sites are split rocks. These splits are very different from simple cracks; if at ground level, there is usually earth and vegetation in the crevice, but more upstanding rocks look clearly riven. 326/PR 08 is a dramatically split rock, though only one of the four fragments is carved (Fig 108 below).



Fig 108 326/PR 08.

This site stands near the edge of Green Crag Slack (edge not well seen). The single carved fragment is under the ranging pole.

Image: Author & P Deacon.

Pancake Trio West comprises 328/PR 09, 329/PR 10 and 330/PR 11, all about 3m apart (Fig 109 below).



Fig 109 Pancake Trio West.

Left: 328/PR 09.

Centre: 329/PR 10.

Right: 330/PR 11, with southern fragment

under ranging pole, wholly overgrown.

Images: Author & P Deacon.

Both 329 and 330 are themselves split rocks, each with two fragments, with both fragments carved. 328 has seven to twelve cups, none visible now; 329 has one cup on the eastern fragment and five to seven cups and grooves on the western fragment, just visible; 330 has a trio of cups on its wholly overgrown southern fragment and six cups in two trios on the northern fragment (328 & 330 details: Boughey & Vickerman, 2003, 87 & 136).

Pancake Trio East is 338/PR 14, also a trio of carved rocks. It is a single Boughey & Vickerman/CSI site, composed of four separate fragments, three of them carved. They have one, three cups in a tight group, and eleven cups respectively (Fig 110 below).



Fig 110 Pancake Trio East: 338/PR14.

This site is comprised of four fragments, three of them carved: the two under the ranging pole, and the one at right. A fourth, at far left, is uncarved. Image: Author and P Deacon.

Both Pancake Trios, West & East, have views of the top of the Pancake. These views are partial, and not dramatic, and although the views are clear, both 326 and 330 are over 100m away (Fig 111 overleaf). The view is made significantly better by standing on top of the stone, though as discussed with respect to the Sentinel, whether this might have been 'allowed' or not is unknown (Chapter Seven section 7.6 above).

Split stones as discussed here are not common on Rombalds Moor, but as surveying the *uncarved* stones of the Moor would be a heroic enterprise indeed, it is not possible to say how common they are, or what proportion are carved. However, the author's impression is that there are relatively more in the area around the top of the Pancake, though this is an area where many rocks are heavily overgrown with mosses, ferns, heather and tussocky grass, often entirely hidden under vegetation.



Fig 111 View from 330/PR 11 of the top of the Pancake.

Whether these carved split rocks relate to the Pancake, or whether they were carved purely because they were split, is not clear. However, the lack of not-split carved stones with a view of the top of the Pancake would seem to suggest that the split nature of the rock was of primary importance in selecting the site. Furthermore, the sites on IMLT below from which the Pancake can be seen also include two trios and a pair; on considering both the sites, and the arrangement of cups on the stones from which the Pancake can be seen (often in threes as well), there seems to be an interest in threes, not found in other areas, which is intriguing.

These carved rocks with views of the top of the Pancake, are all fairly near the terrace edge, standing along a strip of land less than 400m long. This could have been in an area specifically cleared for ideological reasons, as Berg (2001) and AG Brown (2000) have suggested might have been done.

- **Green Crag West group**

This group consists of a trio of rocks, 291/GC 05, 293/GC 06 and 294/GC 07 (Fig 112 below), standing on flat ground towards the back of Green Crag Slack, close to the foot of the steeper slope up to the Moor top.

291/GC 05, about 2.5m long and twice the size of the other two, has been re-covered to protect it, and has an intricate design of cups-and-grooves; 293/GC 06 and 294/GC 07 have six cups and 12 cups respectively. From the maps (on the ground, the site of 291 is not apparent), 291 is 3m from 293, and 8m from 294. Although about 400m away, the skylined Haystack can be clearly seen.



Fig 112 Green Crag West group.
Top: 291/GC 05: note rather separate, large and eroded cup at right, below ranging pole.

Bottom left: 293/GC 06

Bottom right: 294/GC 07

Images: 291: Boughey & Vickerman, 2003, 160.

293 & 294: Author & P Deacon.



This is interpreted as a Small Locale, with cups made onto stones adjacent to a heavily carved stone, which is carved with cups and grooves only.

- **Green Crag East group**

This group also consists of three rocks, 317/GCS 02, GCS 03 and 319/GCS 04, standing almost in line on the slope above GCS (a fourth, 315/GCS 01 continues the line but is over 20m away). On the map, this looks like a short alignment focussed on the Pancake, but the Pancake cannot be seen from any of these four stones, although H2 can be seen from all of them.

317 is a large rock with 12 cups, 12m from GCS 03; GCS 03 is a small ground-level rock with one cup; 319 is a large but near ground-level rock with 8 cups, 15m from GCS 03. There are a number of fragmentary sections of walling and cairns nearby. These stones are not intervisible, and as they stand in a boulder field, even the two larger carved rocks do not stand out. In the field, they seem to have no connection, and are not considered to be a Small Locale.

- **The Idol Stone group**

The group consists of the heavily carved cups-and-grooves stone, 322/IS 01 the Idol Stone, with three cups-only stones very close by, 321/GCS 05 with one cup, 323/GCS 06 with two cups, and 324/GCS 07 with two cups (Figs 113 & 114 below).



Fig 113 322/IS 01 the Idol Stone.

Image: Author & P Deacon.



Fig 114 The Idol Stone group.

322/IS 01 the Idol Stone is visible near the top, with 321/GCS 05 just beyond. 324/GCS 07 is in the foreground by the ranging pole; the fourth carved stone, 323/GCS 06, is seen edge on just beyond 324. The other stones are uncarved.

Image: Author & P Deacon.

This group stands in flat ground in the centre of GCS. There are about five cairns to the south and west, all over 20m away, and some short stretches of possible walling, about 50m away. Both the Haystack and H2 can be seen from all stones in this group.

It is suggested that this is a Small Locale, with cups made onto stones adjacent to a heavily carved stone, again carved with cups and grooves only, and thus rather similar to the Green Crag West Small Locale above.

- **Woofa pair, Woofa Enclosure group & Woofa Alignment**

These are most easily considered together, as this is a complex area, with nine carved stones within Woofa Enclosure, and a further three outside; 355/GCS 13 H2 can be seen from all of them. From the maps, at least eight of them look like an alignment pointing at H2. The whole area is very rocky, including the enclosure interior, which has many uncarved rocks, and was perhaps never cleared (Figs 115-118 below; Table 29 below).



Fig 115 Woofa Enclosure: view north-east from slope above GCS.

Enclosure wall at far left.

Image: Author & P Deacon.

Stone Number	Motifs	Remarks
365/WB 06*	3 cups	outside enclosure, 50m from nearest neighbour
WB 08a*	1 cup	outside enclosure
368/WB 08*	1 cup	outside enclosure
369/WB 09	1 cup	inside enclosure
370/WB 10*	5 cups	inside enclosure, next to 371: Woofa pair
371/WB 11*	8-10 cups	inside enclosure, next to 370: Woofa pair
372/WB 12	15 cups, groove boxes	inside enclosure
373/WB 13	3 cups	inside enclosure
376/WB 14	8 cups	inside enclosure
377/WB 15*	1 cup	inside enclosure
378/WB 16*	70 cups	inside enclosure, next to 379: beginning of possible alignment
379/WB 17*	15 cups	inside enclosure, next to 378

Table 29 Woofa: possible pair, group, and alignment.

***members of the possible alignment.**

The Woofa pair, 370/WB 10 & 371/WB 11, are inside the enclosure barely 1m apart. They are 25m away from the other seven stones. 370 has five cups and 371 has eight to ten cups (Fig 116 below, for map see Fig 118 below). H2 can be seen from both, and they seem an obvious pair, within the possible alignment.



Fig 116 Woofa Pair

371/WB 11 (a ground-level rock) is seen with ranging pole at left, with 370/WB 10 at right, both inside the enclosure with other rocks.

Image: Author & P Deacon.

The other seven carved stones inside the enclosure are close enough to be considered as a possible Small Locale, the Woofa group (see map in Fig 118 below). They are all cups-only, near-ground level stones. 372 has 15 cups in groove boxes, and 378 has 70 cups. 378 is only 1m away from 379, and although these could be seen as a pair (Fig 117 below), they are clearly surrounded by five other carved stones nearby, so the seven are interpreted as a Small Locale.



Fig 117 378/WB 16 and 379/WB 17.

378/WB 16 (70 cups) is seen at left. At right, 379/WB 17, with ranging pole.

Image: Author & P Deacon.

The possible alignment is seen in the Fig 118 map below. It looks quite impressive at smaller scale (top), but much less so at larger scale (bottom). In the field, the walker has to make changes in direction from stone to stone, and the stones are often over 30m apart, and not intervisible. This cannot be interpreted as an alignment.

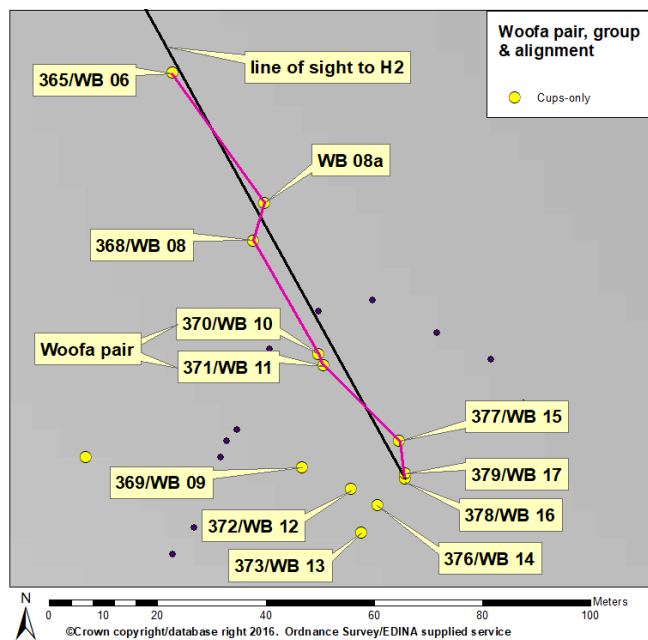
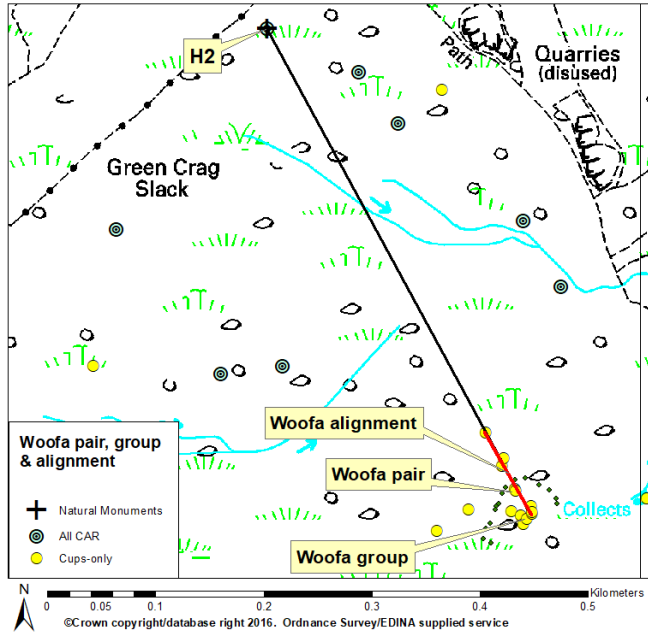


Fig 118 Maps of the Woofa pair, the Woofa Enclosure group, and the possible alignment.

Top: smaller scale.

Bottom: larger scale.

Woofa Enclosure is shown by arbitrary points taken along the wall.

The possible Woofa Alignment is shown in red, with the line of sight from 378 to H2.

However, the trees on Green Crag Slack were probably not fully cleared till the Iron Age, though smaller areas were cleared in the Bronze Age, perhaps for ritual reasons (Bannister, 1985, 93, see Appendix 3, Table A4 for conversion of Bannister's dates in radiocarbon years BP to cal BC; Berg, 2001; Brown, 2000; see Chapter Four section 4.3 above). Possibly a corridor of visibility was cleared here, which thus might include

the eight carved stones of the “alignment”, and perhaps 369, 372, 373 & 376 as well. Carvings may have been accretional, added because the visibility was available.

8.3 Groups with cups only, and *outside* Large Locales

There are five cups-only groups standing outside Large Locales (Table 30 below).

Small Locale Name	Number of Stones, and Motifs
Ramsgill pair	two stones: 2 cups; 1 cup
Lanshaw South pair	two stones: 1 cup; 2 cups
Hawksworth pair	two stones: 1 cup, groove; 5 cups
Riddlesden group	two rock-sheet sites: 4 cups; 3 cups; 5 cups; 1 cup
Rivock Edge pair	two stones: 1 cup; 2 cups

Table 30 All cups-only groups (identified from the maps), and outside Large Locales.

- **The Ramsgill pair**

PC 03 & PC 03a stand one above the other on a steep rocky slope on the north-western edge of Rombalds Moor (Fig 119 below).

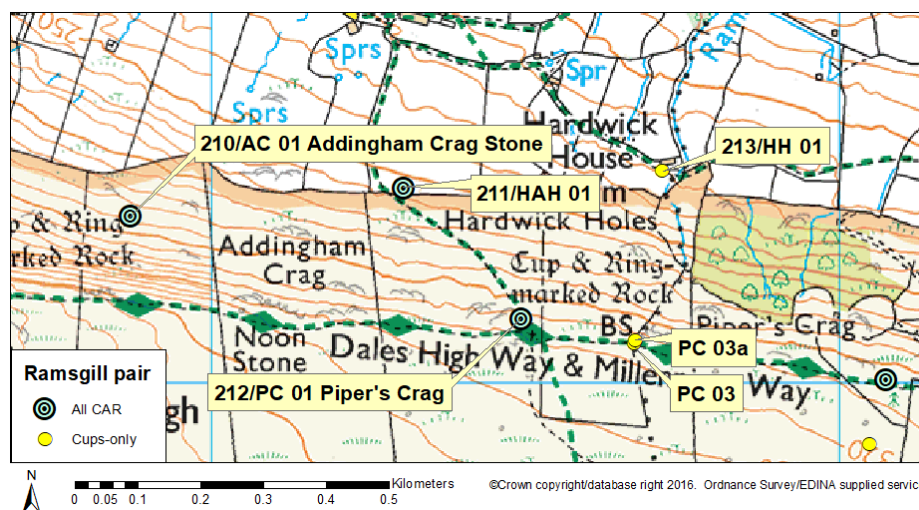


Fig 119 Part of NW Edge and the proposed Ramsgill pair, PC 03 & PC 03a.

There are no other carved stones closer than 150m away, and no reports of cairns or walling nearby. Technically they are on Piper's Crag; however, they are about 150m away from the intricately carved cliff outcrop site 212/PC 01, which is known as Piper's Crag despite not being on Piper's Crag at all (Ordnance Survey, 2010), so a more neutral name was chosen, of the little beck just below.

The small upstanding stone PC 03 has two cups at its edge. Just below it is PC 03a, a medium upstanding stone with a single large cup near its edge (Fig 120 below).



Fig 120 The Ramsgill pair.

Left: PC 03, with two cups at edge. Right: PC 03a, with a single larger cup near the edge.

Images: Author & P Deacon.

Piper's Crag Stone cannot be made out, though two very large carved stones, 211/HAH 01 and 213/HH 01, can be seen below. There are long distance views along Wharfedale and the settled landscape below. This is a clear pair, though if they are referencing something in the view, it is no longer clear what this might be.

- **Lanshaw South pair**

Lanshaw is an exposed, windy spot near the top of the Moor (Fig 121 opposite). There are a few short stretches of ancient walling, and a number of cairns, one of them with a carved stone, 340/LS 06, used as a cairn kerbstone; this is probably a re-used stone,

moved into the cairn. There are two possible pairs, Lanshaw North and Lanshaw South; Lanshaw North, with its cup-and-rings, is discussed later.

The two grooves-only stones are at Lanshaw, though they are about 80m apart and not intervisible. They are not treated as a pair, though it is interesting to speculate that they were carved by the same person.

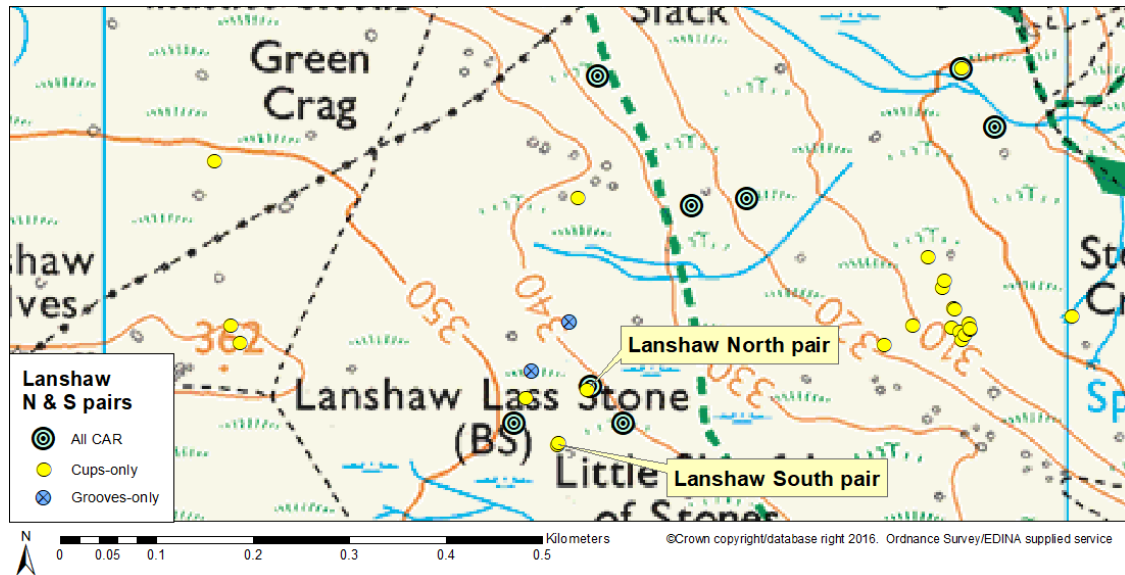


Fig 121 Lanshaw North and Lanshaw South groups.

The Lanshaw South pair, 339/LS 05 and 341/LS 07, stand 3m apart in a rocky area. Both are small. 339 has a single cup, grooves, a natural basin and an enhanced natural crack; 341 has two cups and two natural cracks. In the recently burned vegetation (in 2015), 339 is not visible from 341, though 341 is visible from 339. However, they are both difficult to distinguish from all the other rocks in the area, and in regrown vegetation, visibility would be doubtful. The views from all the Lanshaw stones are very unremarkable, allowing just a glimpse of the eastern end of GCS below, the hillsides of mid-Wharfedale and the Guiseley Gap, and views down distant lower Wharfedale. None of the natural monuments can be seen.

They have not been included as a Small Locale.

- **Hawksworth pair**

These two small carved stones, 187/HS 01 & 188/HS 02, stand barely 1m apart on the eastern flanks of Rombalds Moor, well down from the Moor top, above the Guiseley Gap. They are over 250m from any other carved stone. Both are small, near ground-level rocks, 187 with a cup and a groove, and 188 with five cups (Fig 122 below).

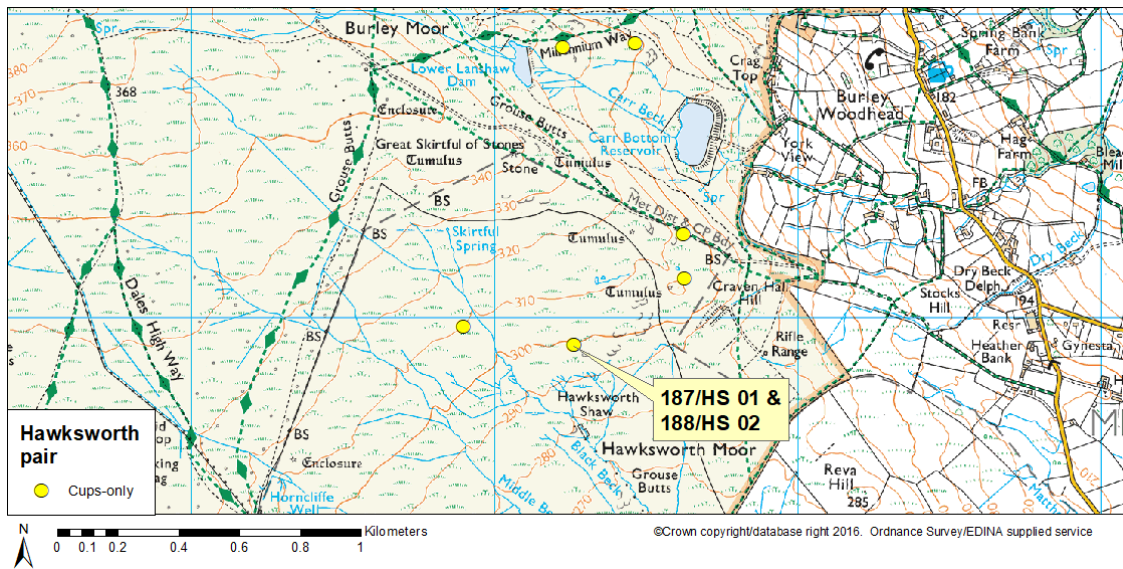


Fig 122 Hawksworth pair, 187/HS 01 & 188/HS 02

Top: Map of part of the eastern Moor. At this scale, the stone symbols overlap.

Bottom: 187 at upper right, with 188 at lower left.

Photo image: Author & P Deacon.

They are in a cairnfield, though not close to a cairn. The views are very limited, just moorland slopes, with very little visible beyond the moor other than distant hilltops. Nevertheless, they are a clear pair, though there is no obvious interpretation.

- Riddlesden High Carr group

This possible Small Locale in the SW Moor consists of four carved patches of sheet rock (Fig 123 below), in otherwise cleared ground.

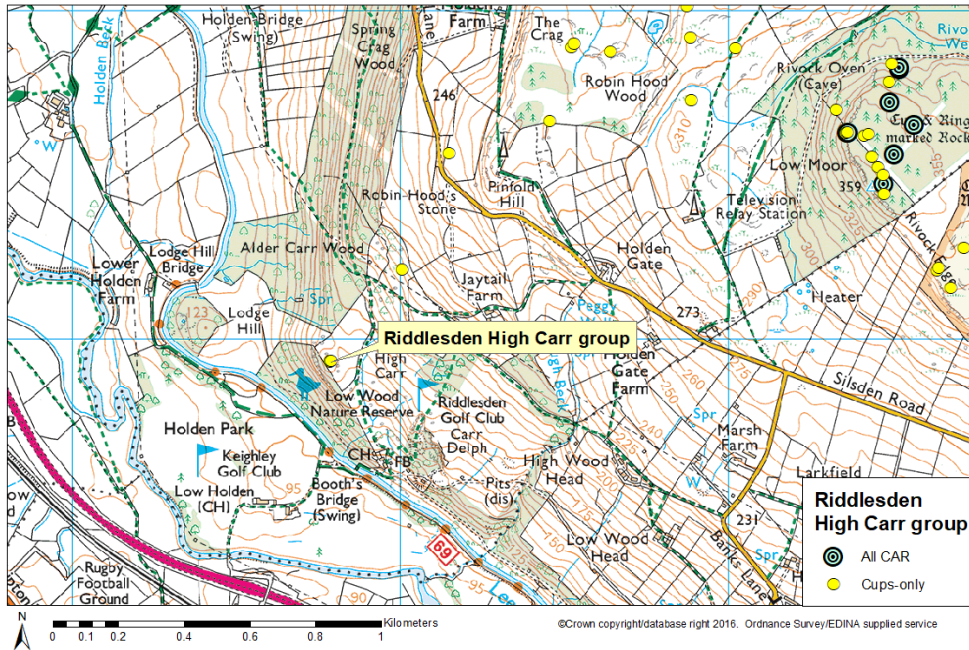


Fig 123 South-western Moor: Riddlesden High Carr group.

Top: Map of the area. Sites are close together so symbols overlap. The River Aire, is seen at bottom left, meandering; immediately below the site is the modern Leeds-Liverpool Canal. Bottom: Part of the group: 33/HC 01 at bottom; 34/HC 02 to left of ranging pole; 35/HC 03 to right of ranging pole; 37/HC 05 just out of shot at top. Photo image: Author & P Deacon.

These ground-level sites are 33/HC 01 with four cups, 34/HC 02 with three cups, 35/HC 03 with five cups, and 37/HC 05 with one cup. They stand 1-2m apart in flat ground in a field used as rough grazing. No cairns or ancient walling have been reported in this area. A further carved stone, 38/HC 06, a medium boulder perched on the rock sheet (see Fig 5 right, above), was considered as moved in during clearance of the field, and not seen as part of this proposed Small Locale.

This cups-only group is reminiscent of the three Small Locales on IMLT, particularly IMLT West Trio, also on sheet rock, though the views from Riddlesden are unremarkable: no natural monument can be seen, nor Rivock hilltop, and only a partial view of the Aire valley immediately below, as the sites are set back from the edge. This is a clear, if enigmatic, Small Locale.

- **Rivock Edge pair**

These two stones, RV 24a & RV 24b, stand on a slope about 10m apart, to the south of Rivock hilltop. Neither can be seen from the other. Both are small, RV 24a (one cup) being about 0.3m high, and RV 24b (two cups) being at ground level. Neither is within sight of a natural monument, and the views from each are of the terrace below, and Airedale and the Worth Valley beyond. In the field, there seemed to be no real connection between these two stones, and they are not included as a Small Locale.

8.4 Groups with at least one cup-and-ring

Nine groups have at least one stone with at least one cup-and-ring (Table 31 below), three inside Large Locales, and six outside. The three sites inside Large Locales are all very unusual, and in each case, their connection with the natural monument must be considered carefully.

Small Locale Name	In Large Locale?	Number of Stones, and Motifs
Hangingstones Rock	Pancake & Sentinel	panels a & b: intricate cups-and-grooves panel c: 2-ring CAR, 1-ring CAR, 9 cups panel d: perhaps 1-ring CAR
Green Gates pair	No	1-ring CAR framed by 6 grooves; 3 cups
Pepperpot group	No	six stones: 70 cups; 1-ring CAR + comet-tail, 3 cups, groove; 4 cups; 2-3 cups; 6-8 cups; 3 cups + groove
Lanshaw North pair	No	two stones: 35 cups in lines, 1-ring CAR; 10 cups
Stanbury Hill group	No	six stones: 2-ring CAR, 1-ring CAR, 12 cups; 1-ring CAR, 1 cup; 1-ring CAR, 3 cups; 1-ring CAR, 4 cups; 1-ring CAR, 2 cups; 3 cups
Todmor group	No	four stones: CAR (tiny), no cups; 17 cups; 2 cups; 1 cup
Rivock multi-rings pair	Doubler 1	3-ring CAR, grooves, cups; 4-ring CAR, grooves, cups
Rivock Nose intricate pair	Doubler 1	1-ring CARs, grooves, cups; CAR, grooves, no cups
Rushy Beck pair	No	two 1-ring CAR, 3 cups, groove; 7 cups

Table 31 All cup-and-ring groups identified from the maps.

8.4.1 Groups with at least one cup-and-ring, and *inside* Large Locales

These three groups inside Large Locales are Hangingstones Rock, Rivock Nose Multi-rings pair, and Rivock Intricate pair.

- **Hangingstones Rock**

284/HR 01 Hangingstones Rock overlooks modern Ilkley and has extensive views of Wharfedale. It is also at the edge of the viewsheds of both the Pancake and the Sentinel (map: Fig 94 above; Fig 124 below). Although they are distant, both can (now) be seen, but this view is across a very extensive quarry pit over 200m long, 100m wide and more than 20m deep. Whether this view was possible before quarrying is not known, and it was therefore considered that these views, across the quarry pit and over IMLT, are unreliable. Hangingstones Rock has therefore not been included in discussions of the Sentinel and Pancake viewsheds.



Fig 124 284/HR 01 Hangingstones Rock.

Left: the four panels.

Right: Hangingstones Rock from the west, towards panels a and b.

Images: Site diagram: Boughey & Vickerman, 2003, 134.

Photo image: Author & P Deacon.

After panels a and b were uncovered by quarrymen, the site was preserved by antiquarians from further damage (Holmes, 1885), but there may have been other sites nearby that were lost. Moreover, it is possible that part of the eastern area of panel a was added in Victorian times (Boughey & Vickerman, 2003, 16).

This cliff outcrop site has carvings on at least four sections of the clifftop. Boughey & Vickerman (2003, 134) record four panels, though CSI thought there was a further panel, panel e, with some scattered cups, to the east of panel b (ERA England's Rock Art, nd). Panels c, d and e are now very worn (panels d & e could not be identified in fieldwork), and carry conventional cups and cup-and-rings, the latter being reminiscent of the cliff outcrop site 212/PC 01 Piper's Crag. The motifs in panel b, and the western part of panel a, are highly unusual, suggesting at least two episodes of carving over the whole site. There are no other examples of carvings like panels a & b anywhere else on Rombalds Moor, and the author is not aware of similar carvings in West Yorkshire. The different nature of the carvings in panels a & b, compared to panels c, d & e, suggest that this is not a single multi-panel site, but should be seen as a Small Locale, though how many sites it comprises is open to question.

- **Rivock Multi-rings pair**

These two large upstanding stones stand on a steep slope below Rivock Nose, about 2m apart (map: Fig 103 above; Fig 125 below). In the field, trees still obscure their views to the north, but their viewsheds show that Doubler 1 is visible.



Fig 125 Rivock Multi-ring pair, 66/RV 22 & 67/RV 23

Top: Before the trees were felled: 66/RV 22 upslope at right, 67/RV 23 downslope at left.

Bottom: After the trees were felled: 66/RV 22, with the 3-ring cup-and-ring visible at centre.

Images: Author & P Deacon.

66/RV 22 is one of four cup-and-ring stones with three or more rings standing on Rombalds Moor. It also has six to eight cups near the cup-and-ring.

67/RV 23 (Fig 126 below) is one of only three stones described as having a 4-ring motif, and the only one still on the Moor: the others are one of the Panorama stones, 229/PAR 04, now in Ilkley churchyard; and 351, originally from the Grubstones area, now in Keighley museum (The Northern Antiquarian, nd). Moreover, 67's motif has a central boss instead of a cup, and it also has one or two 1-ring cup-and-rings, grooves, and over thirty cups, in lines, in arcs, and in an enhanced natural fissure.



Fig 126 67/RV 23 (detail).

Seen after the trees were felled: the 4-ring cup-and-ring, not well seen, is in half shadow at left, with cups in enhanced natural fissure seen at centre. Image: Author & P Deacon.

The two multi-ring motifs are similar in size, in their slightly irregular shapes, and in the distances between the nested circles; perhaps they were made by the same person. 66 & 67 are thus a clear pair, constituting a Small Locale.

- **Rivock Intricate pair**

The second group at Rivock Nose is the Intricate pair, 48/RV 05 and 49/RV 06 (Fig 127 below). They have the same remarkable views as the Rivock Nose cliff trio, across the Silsden gap as far as Bradley Moor, and right through the Aire gap to Cumbria (see section 6.6.1 above).

They closely resemble each other in size and shape, each being about 1.5m long, lying along the same axis, almost touching, just behind the three outcrop sites at Rivock Nose. The panel designs are different, but both cover the whole surface. Looking at the outline of the stones, it appears that a single slab of rock was split, and then one 'inner' surface and one 'outer' surface was carved.

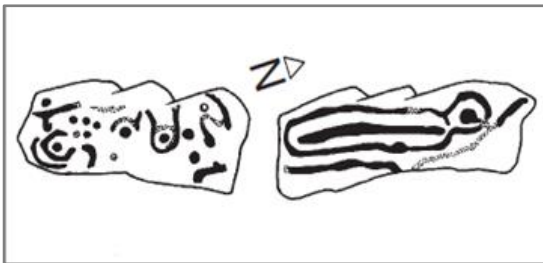


Fig 127 The Intricate pair at Rivock Nose.

Top: at left, 48/RV 05 and at right, 49/RV 06.

Bottom: Old diagram and image. These were originally published in Hedges 1986, 37 & 55, so are at least 30 years old. The motifs have been much damaged by erosion since. See also Boughey & Vickerman 2003, 123 & 147.

Top photo image: Author and P Deacon.

The old photo seems to show the stones as blocks resting on underlying flat rocks, and it is suggested that these stones were made, and placed in position. Whilst noting that they are ‘a pair...on the same axis’, CSI (ERA England’s Rock Art, nd) do not suggest that they might have been moved into place.

These two stones are very clearly related and thus constitute a Small Locale.

8.4.2 Groups with at least one cup-and-ring, and *outside* Large Locales

There are six cup-and-ring groups outside Large Locales (Fig 32 below).

Small Locale	Number of Stones, and Motifs
Green Gates pair	1-ring CAR framed by 6 grooves; 3 cups
Pepperpot group	six stones: 70 cups; 1-ring CAR + comet-tail, three cups, groove; 4 cups; 2-3 cups; 6-8 cups; 3 cups + groove
Lanshaw North pair	35 cups in lines, groove, 1-ring CAR; 10 cups
Stanbury Hill group	six stones: 2-ring CAR, 1-ring CAR, 12 cups; 1-ring CAR, 1 cup; 1-ring CAR, 3 cups; 1-ring CAR, 4 cups; 1-ring CAR, 2 cups; 3 cups
Todmor group	four stones: 1-ring CAR (tiny) , no cups; 17 cups; 2 cups; 1 cup
Rushy Beck pair	two stones: two 1-ring CAR, 3 cups, groove; 7 cups

Table 32 Cup-and-ring groups outside Large Locales

- **The Green Gates pair**

The Green Gates pair, 256/GG 05 and 257/GG 06, on Ilkley Moor slopes, are about 10m apart (map: Fig 100 above). The smaller 256 is 0.3m high, with cups and grooves relating to a crack. 257 is at near-ground level, with a 2-ring cup-and-ring, cups, and a long groove. 257 cannot be seen from 256, and 256 is too small to be identified from 257. Their views are of featureless hillside and distant Wharfedale, and the Neb Stone cannot be made out. It was considered that they do not constitute a Small Locale.

- **The Pepperpot Group**

Standing on Ilkley Moor, the Pepperpot group is a very isolated group of six stones, over 200m from the next nearest carved stone. There are no reports of cairns or ancient walling nearby (map: Fig 100 above; Fig 128 below).

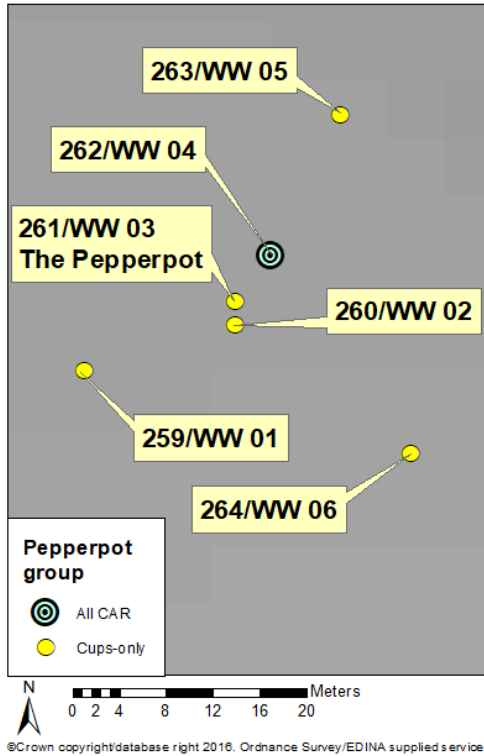


Fig 128 The Pepperpot Group.

Top left: Small Locale Map.

Top right: 261/WW 03 the Pepperpot.

Centre left: 259/WW 01.

Centre right: Pepperpot at left, with 260/WW 02 at right.

Bottom left: 263/WW 05.

Bottom right: 264/WW 06.

262/WW 04 is not visible, having been re-covered.

Photo images: Author & P Deacon.

261/WW 03 the Pepperpot has two carved areas, with some 50 cups on the higher carved surface and 20 on the lower. Some of the cups appear to be in lines and hexagons; there are different sizes, and some are deeper, though the rock surface is eroded, and some details may have been lost. The group around it consists of five further carved stones, all cups-only except for 262/WW 04, which has now been re-covered to protect it; it is a small, ground level stone carved with a single small incomplete cup-and-ring plus comet-tail, with three cups and a groove (Boughey & Vickerman, 2003, 78).

The Pepperpot is readily visible from all four exposed rocks, and consulting the map and photos, it was obviously possible to see the Pepperpot from 262 also. However, of these five stones, 263 and 264 are about 25m away from the Pepperpot, considerably more than the 15m (arbitrary) cut-off distance. Nevertheless, I suggest that this is a Small Locale. Whether it consists of four or six stones is open to question, as, at least here, is the arbitrary 15m cut-off limit.

- **Lanshaw Northern pair**

The Northern pair, 345/LS 10 and 346/LS 11, stand about 7m apart on a gentle slope near the Moor top (map: Fig 121 above). 345, a small upstanding rock about 0.5m high, has 10 scattered cups. 346 is a ground level horizontal stone, now much eroded, about 1m² in area and carved over its entire surface with an intricate design of over 30 cups, grooves, and three 1-ring cup-and-rings (Boughey & Vickerman 2003, 89).

However, the intricate 346 is not visible from 345, though 345 can be seen from 346 in the recently burned, very short vegetation (2014); once the heather regrows fully, it will no longer be visible. Thus 345 was probably not carved in respect of the intricate 346; this is not included as a Small Locale.

- **Stanbury Hill group**

Stanbury Hill is in the southern part of Rombalds Moor. There are two possible groups, a group at Stanbury Hill itself, and the Todmor Stones (Fig 129 opposite). There are a number of cairns on Stanbury Hill, though not close to the group itself.

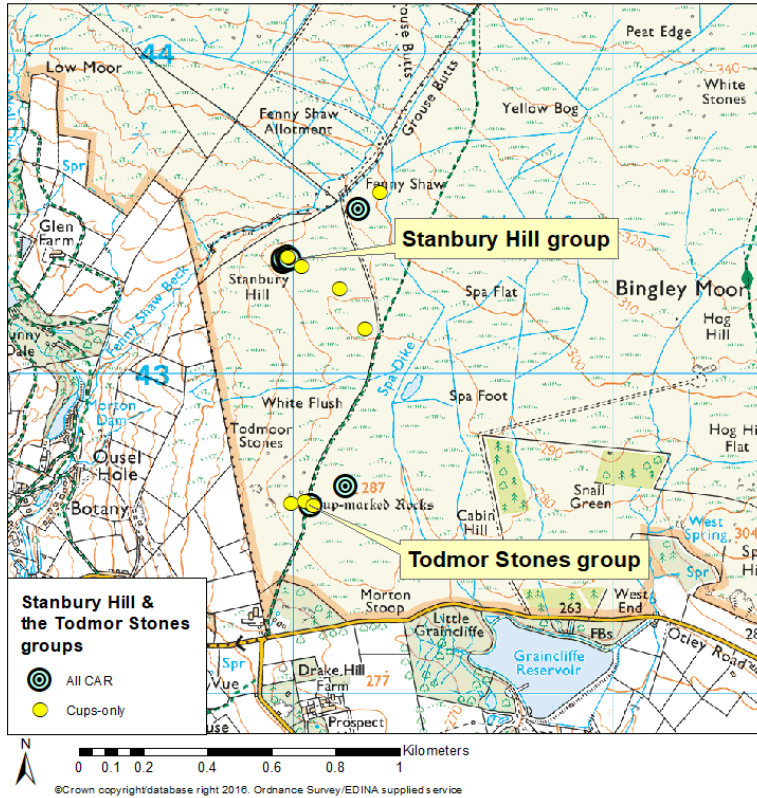


Fig 129 Stanbury Hill group, and the Todmor Stones.

The Stanbury Hill group, quite isolated from other carved stones, has six members within 40m; all but one has at least one cup-and-ring. They are not all intervisible, and 96/SH 01 and 101/SH 06 are somewhat separate from the others (Table 33 below; Figs 130 & 131 below).

Stone No.	Motifs	Intervisibilities
96/SH 01	1 cup; one 1-ring CAR	no other stones visible
97/SH 02	3 cups; one 1-ring CAR	96 & 101 visible
98/SH 03	3 cups, one with groove	97 & 99 visible
99/SH 04	1 cup; 1 cup and complex groove; one 1-ring CAR	97 & 98 visible
101/SH 06	4 cups; one 1-ring CAR and groove	no other stones visible
102/SH 07	Intricate: 12 cups, grooves; three 1-ring CAR; one 2-ring CAR	98 & 99 visible

Table 33 Stanbury Hill group: motifs and intervisibilities.

All the stones have very similar longer distance views, of the locale, the distant Aire valley below, and the Worth valley, which joins the Aire from the south at Keighley. They are not within sight of any of the proposed natural monuments.

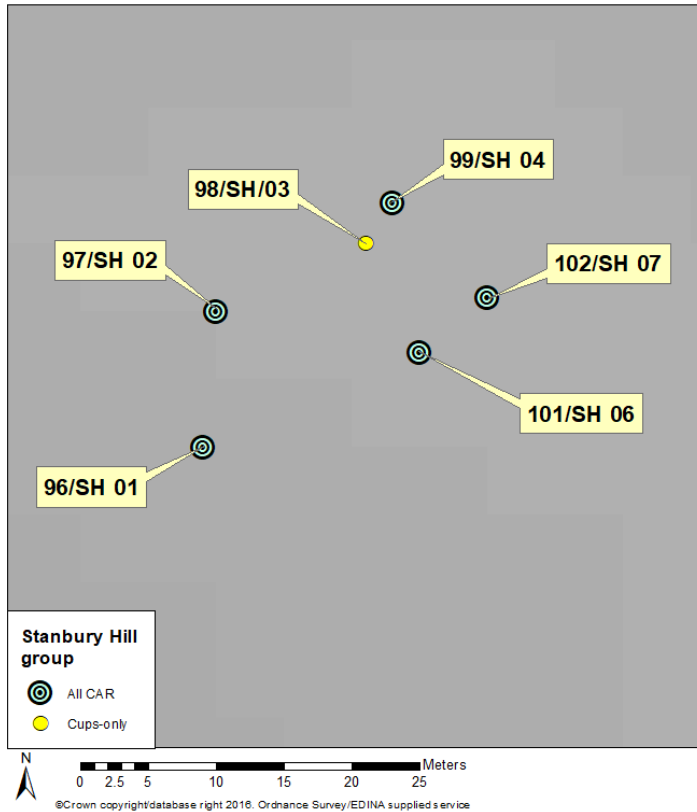


Fig 130 Stanbury Hill group.

102/SH 07, rather larger than the rest, is the rock that the Stanbury Hill excavators thought had been moved (Brown & Boughey, 2013; Short, 2013; and see Section 4.5 above), though they do not speculate how 102 came to be included: before, during or after its own carvings, or the carving of the other stones. They suggest that not only was 102 moved to this location, but that 96 and 105 were quarried out of the same exposure of rock in Fennyshaw Beck to be brought here too; they go on to speculate that perhaps all six were brought to the hilltop; however, the layout does not appear regular (Brown & Boughey, 2012).

In conclusion, this is interpreted as a Small Locale, very unusual in that all but one of its members have cup-and-rings.



Fig 131 Stanbury Hill group.

Top left: 96/SH 01

Top right: 97/SH 02

Centre left: 98/SH 03

Centre right: 99/SH 04

Bottom left: 101/SH 06

Bottom right: 102/SH 07

Images: Author & P Deacon.



- **Todmor Stones pair**

The four Todmor Stones stand in a flat, rather featureless area of moorland about 500m from other carved stones (map: Fig 129 above; Fig 132 below). There are some possible stone extraction pits nearby, and two or three possible small orthostats, though these are not close to the carved stones (ERA England's Rock Art, nd).

107/TS 05 is 100m away and considered an outlier. Two of the four are also further away from nearest neighbours than the 15m cut-off for Small Locales: 103/TS 01 is 50m away, and 106/TS 02 is 25m away. Only TS 03 & TS 04, 10m apart and intervisible, meet the criteria for distance; TS 03, with neither cups nor grooves, has a single, tiny but convincing 1-ring cup-and-ring low down on one corner; TS 04 has two cups, one on each side of the fissure.

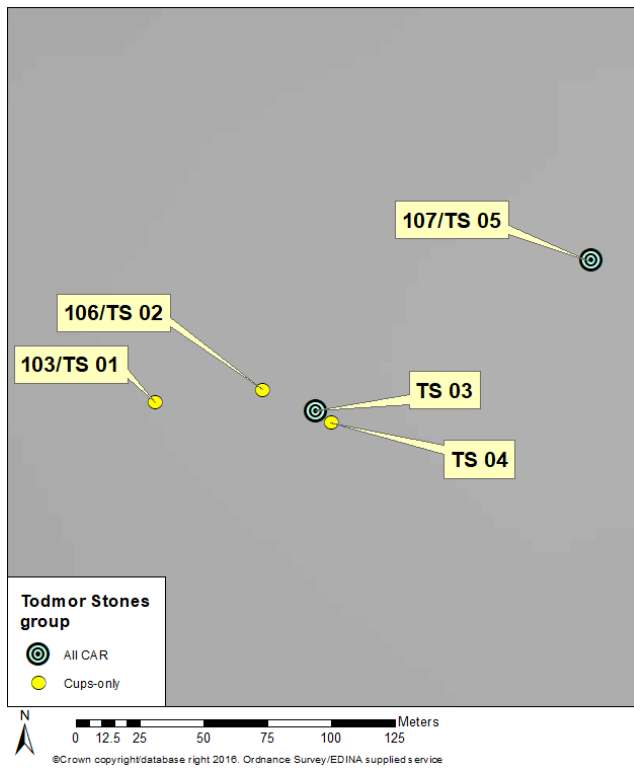


Fig 132 The Todmor Stones.

Left: map of area.

Top right: TS 03. The motif is visible at bottom centre, near edge.

Bottom right: TS 04.

Photo images: Author & P Deacon.

There are long distance views to Airedale and the Worth valley; otherwise, the area is very featureless. TS 03 & TS 04 are seen as a pair, the Todmor pair, though the whole group perhaps represent one of the anticipated false negatives.

- **Rushy Beck pair**

These two stones, 374/RB 01 & 375/RB 02, stand towards the eastern end of GCS, in the little valley of Rushy Beck (Figs 133 & 134 below).

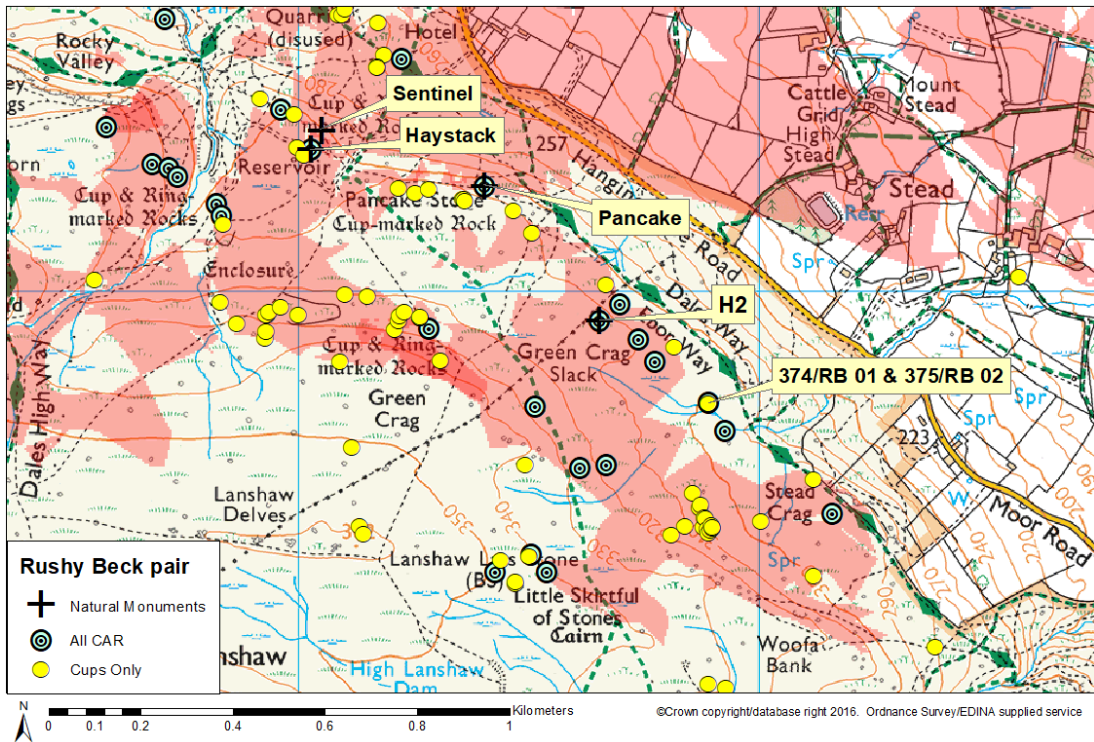


Fig 133 Rushy Beck pair
Map of area, showing 374/RB 01 & 375/RB 02, so close together that the symbols overlap.
The overlapping viewsheds of the Pancake, Haystack and H2 are shown, all in red.

Both are small, near ground-level stones, barely 1m apart. They are in Stead Crag cairnfield; though not obviously associated with any of the cairns, one of the cairns is visible from the site. 374 has seven cups. According to Boughey & Vickerman (2003,

92), 375 has two 1-ring cup-and-rings, three cups and four grooves; in the field however, two of the cups looked to have had single rings as well, making four 1-ring cup-and-rings; two of the grooves begin from carved rings, and are enhanced cracks.



Fig 134 Rushy Beck pair, 374/RB 01 & 375/RB 02.

374 is seen at left, 375 at right.

Image: Author & P Deacon.

Their views are limited almost entirely to the area round the top of Rushy Beck, plus a distant view down Lower Wharfedale. This is a clear pair, though there are no clues to interpretation.

8.5 Discussion

The concept of Small Locales seems robust, yet they are not at all a homogenous group. Using criteria based on intervisibility and proximity, 22 clusters, and the Rivoock Arc, meet the criteria for Small Locales (Table 34 below), though problems with these criteria, to do with vegetation, and with the arbitrary 15m cut-off for 'proximity', are apparent in the presentation of the findings above. Chance alone may produce clusters, and rather as predicted, of the seven groups not accepted as Small Locales, six are pairs and the seventh a trio.

Small Locale	In Large Locale?	Number of Stones/Panels, and Motifs
Ramsgill pair	No	two stones: 2 cups; 1 cup
IMLT West	Pancake & Sentinel	three rock-sheet sites: 9 cups; 3 cups; 1 cup
IMLT Central	Pancake & Sentinel	three stones: 1 cup; 2 cups; 2 cups
IMLT East	Pancake & Sentinel	two stones: 8 cups; 13 cups
Hangingstones Rock	Pancake & Sentinel	two panels of intricate cups-and-grooves; two panels with CAR & grooves
Little Panorama group	Neb Stone	four stones: 3 cups; 1 cup; 12 cups; 20-cup cluster + 5 cups + groove box & 3 cups
Neb Stone pair	Neb Stone	two stones: 4 cups; 2 cups
Pepperpot group	No	six stones: 70 cups; 1-ring CAR + comet-tail, three cups, groove; 4 cups; 2-3 cups; 6-8 cups; 3 cups + groove
Hawksworth pair	No	two stones: 1 cup and groove; 5 cups
Riddlesden group	No	four rock-sheet sites: 4 cups; 3 cups; 5 cups; 1 cup
Stanbury Hill group	No	six stones: 2-ring CAR, 1-ring CAR, 12 cups; 1-ring CAR, 1 cup; 1-ring CAR, 3 cups; 1-ring CAR, 4 cups; 1-ring CAR, 2 cups; 3 cups
Todmor pair	No	two stones: CAR (tiny), no cups; 2 cups
Rivock multi-rings pair	Doubler 1	3-ring CAR, grooves, cups; 4-ring CAR, grooves, cups
Rivock Cliff trio	Doubler 1	three outcrop cliff sites: 3 cups; 9 cups; 5 cups
Rivock Nose intricate pair	Doubler 1	CARs, grooves, cups; CAR, grooves, no cups
Rivock Arc	Doubler 1?	five stones: 5 cups; 1 cup; 4 cups; 1-ring CAR, cup; 15 cups
Pancake Trio E	Pancake	three stones: all cups-only
Pancake Trio W	Pancake	three stones: all cups-only
Idol Stone group	Haystack & H2	four stones: 1 cup; 2 cups; 2 cups; 25 cups: 4 in line, 6 in line, 8 in domino, 7 in line in groove box
Green Crag West group	Haystack	three stones: 6 cups; 12 cups; 18 cups in lines, in part groove box
Woofa pair	H2	two stones: 5 cups; 8-10 cups
Woofa Enclosure group	H2	seven stones: 1 cup; 3 cups; 8 cups; 1 cup; 15 cups; 15 cups & groove boxes; 70 cups
Rushy Beck pair	No	two stones: two 1-ring CAR, 3 cups, groove; 7 cups

Table 34 All Small Locales and Arc.

I have argued in Chapter Seven that the five natural monuments plus the Sentinel were attracting carving. Given that it has been suggested that people might have been

carrying out ritual behaviours that in North America might be called vision quests, some of the Small Locales were perhaps places that were used repeatedly, perhaps over long periods of time, to carry out ritual behaviours that included making rock-art within sight of special, favoured stones. Thus some Small Locales may have begun with a stone being carved because the natural monument could be seen, though why some carved stones might then act as a nucleus for further carving, whilst others did not, cannot be ascertained.

However, the natural monuments were not all treated in the same way, and only the Pancake seems to have attracted much carving on stones in groups, with the other natural monuments having relatively fewer groups in their viewshed. The Pancake though, mostly has groups, with several cups-only trios; on IMLT, these are at threshold sites, and on GCS, they are mostly at unusual split rock sites.

A major difficulty in understanding Small Locales relates to time depth. A first carving might relate to a natural monument, or to something else. A second carver chooses to carve there, but their choice may not be connected to why the first carving was made. Subsequent carvers face the same decisions, and we may have a palimpsest of reasons within a Small Locale, where the meanings of the earlier carvings may be effectively over-ruled by later carvings, as the Small Locale is repeatedly re-worked. These successive carvings might be made over a relatively short time, or conversely, over a very long period of time. Furthermore, motifs could have been added to already-carved rocks in a similar way, including onto the first-carved stone: just as the whole Moor can represent a palimpsest, so too can a cluster of carved stones, and even the motifs on an individual rock.

As an example of the difficulties of understanding Small Locales, the Haystack, visible from 44 carved stones, has only two Small Locales from which it can be seen, the Idol Stone group and the Green Crag West group. These two groups are similar, both with one stone carved with long complex grooves and many cups in lines, with two or three stones close by with just a few cups each. I argue that in each case, the ornate stone was carved first, followed by cups on nearby stones; why the ornate stone was carved, if it had any relationship at all to the Haystack, and whether carvings on 'satellite' stones were made for more than one reason, is impossible to say.

There are though, six groups on Rombalds Moor with one ornately-carved stone, and more simply-carved stones nearby, four of them within Large Locales and two standing outside (Table 35 below). There are a range of motifs on the ornate stone, but interestingly, four of these six groups have no cup-and-rings at all, and a fifth has a small stone with a single small cup-and-ring, but a large 70-cup stone as a more obvious nucleus.

Small Locale	In Large Locale?	Number of Stones/Panels, and Motifs
Little Panorama group	Neb Stone	four stones: 3 cups; 1 cup; 12 cups; 20-cup cluster + 5 cups + groove box & 3 cups
Pepperpot group	No	six stones: 70 cups; 1-ring CAR + comet-tail, three cups, groove; 4 cups; 2-3 cups; 6-8 cups; 3 cups + groove
Idol Stone group	Haystack & H2	four stones: 1 cup; 2 cups; 2 cups; 25 cups: 4 in line, 6 in line, 8 in domino, 7 in line in groove box
Green Crag West group	Haystack	three stones: 6 cups; 12 cups; 18 cups in lines, in part groove box
Woofa Enclosure group	H2	seven stones: 1 cup; 3 cups; 8 cups; 1 cup; 15 cups; 15 cups & groove boxes; 70 cups
Rushy Beck pair	No	two stones: two 1-ring CAR, 3 cups, groove; 7 cups

Table 35 Small Locales with one intricate stone.

The Stanbury Hill Small Locale, not included in this table, is highly unusual in that all but one of its six members has cup-and-rings; the most ornate is the moved stone 102/SH 07. In general, the Small Locales do not include cup-and-rings in a major way, apart from this group and the Rivock Multi-rings Pair. This is an important negative finding: cup-and-ring stones seem under-represented in Small Locales. It was predicted that cup-and-ring stones would sit at the heart of many Small Locales, particularly outside Large Locales, but this is not the case, a finding returned to in the final chapter.

Chapter Nine: Results IV: The individual carved rock

9.1 Introduction

From the previous chapters, it has become increasingly clear that it is important to consider not just the large, imposing sites with many motifs, but all of them, down to the smallest sites with only a single cup. Thus both 41/DSS 01 Doubler 1 and 187/HS 01 (Fig 135 below), might allow us to understand something about how rocks were chosen for carving; but, very clearly, both demonstrate different aspects of the carver's bodily engagement with the rock and the physicality of carving, a major theme of this chapter.



Fig 135 Major sites, minor sites?

Left: One of the proposed natural monuments, 41/DSS 01 Doubler 1, a cliff outcrop site with about 25 cups and one or two grooves.

Right: 187/HS 01, a small near ground-level rock, with a solitary cup at lower right centre.

Images: Author and P Deacon.

Here, we examine rock-art at the scale of the individual rock and the individual motif. In previous chapters, space allowed for all the Large Locales and all the Small Locales to be examined, but here, with 252 carved stones in the Study Main Database, that is no

longer possible, so the questions set in Chapter Five are approached in a different way. To recap, those questions are:

- How were rocks chosen for carving? Were features of the rock such as colour, texture, cracks or bedding planes significant in making that choice?
- What is the relationship between motifs and the natural features of the rock surface?
- What is the relationship between motifs on a single rock? Is there evidence that rocks with old carvings were carved again? Does this tell us anything about chronology?
- Could some stones have been moved at or around the time of carving?

Considering these questions together, it becomes clear that every carved stone is essentially unique, each carving representing a record of a relationship, however brief, between a person and a single rock, the smallest element of the landscape that we shall be examining.

All the research questions set in Chapter Five focus on the rock, not the person. In his critique of Johnson's *Ideas of Landscape* (2006), and of landscape archaeology in general, Fleming (2007) makes the important point that when we study archaeological landscapes, people in the landscapes are often effectively invisible, overwhelmed by the scale at which interpretations are made.

At the level of the whole Moor, the scale of the interpretations makes it difficult to 'see' individual people. At the levels of Large Locales and Small Locales, we can begin to get a sense of individuals making choices, though the focus is perhaps more on the rock than the person. In this chapter, however, at the level of the individual rock, it may be possible to catch a clearer glimpse of the individual people who carved stones on Rombalds Moor, choosing which rock to carve, and with which motif. In order to do this, the questions above are approached not in order as in previous chapters, but holistically, and as much as possible from the point of view of the people who carved the rocks.

9.2 The carver, the carving process, and the rock

Although often referred to as ‘the carver’, some people who made rock-art may not have seen the action of carving as a major part of their identity. It takes only an hour or so to make a cup (Lamdin-Whymark, 2011a; Lødøen, 2015), and a person making a cup might have more important aspects of their life, journey or attendance at this place, at the centre of their sense of self. Other people though, may have been frequent, experienced carvers, developing a degree of skill that casual or infrequent carvers did not have.

Although the decision to carve could have been unpremeditated, the need for a suitable hammerstone, or mallet and chisel, indicates that carving was probably planned in advance, even by people who were infrequent carvers (see Chapter Two section 2.4). Today at least, and probably also in prehistory, it would be difficult to find a suitable hammerstone just lying on the ground on Rombalds Moor; most of the rock fragments lying loose on the ground are pieces of gritstone, brittle and crumbly, or very small pebbles, not suitable for carving stones. A mallet and chisel would obviously have to have been brought to the carving site. Even if a one-handed technique was to be used, entirely suitable for making a single cup, the carver might have brought the hammerstone with them, a piece of quartz or a river pebble maybe, suitably robust and suitably shaped.

Because of erosion, it is not usually possible to see fine details of carving, although a few stones still show individual peck marks. Feather, in a very brief report (1971, 243), stated that in 1968, erosion had uncovered five ‘new’ carved stones on Green Crag Slack. There are only 3-figure grid references, but these seem to be a group of ground-level stones in Woofa Enclosure; it seems quite likely that 372/WB 12 is one of them, because its carvings are so sharp and clear (Fig 136 opposite).

The little trail of peck marks at centre perhaps indicate the path of a further, never-completed groove; the peck marks in the grooves at left and right, unsmoothed, suggest that these grooves were unfinished too. Furthermore, the whole panel is so clear that one might ask if this stone was deliberately covered over shortly after being carved, suggesting that some carvings might have been hidden, perhaps to be returned to later (or not, it would seem, in this case). Thus at least sometimes, the stone being

overgrown by vegetation might be not be the result of neglect, but a deliberate intention to put the carvings out of sight under the ground. Obviously this would be easier with a ground-level stone, a factor perhaps influencing choice of rock.



Fig 136 Details of carving technique: 372/WB 12, Woofa Enclosure.

Photo taken 2015. Some of the groove edges still look crisp, and individual peck marks can be seen.

Image: Author & P Deacon.

The very small individual peck marks here, seen most clearly at the centre of the picture, suggest the use of a hard-stone chisel. This is also suggested by the vertical-sided, flat-based cups seen on some rocks, such as 294/GC 07, which would be very difficult to make using a hammerstone in a one-handed technique (Fig 137 below).

Rocks were probably carved for a wide variety of reasons, and selection may have involved several factors. Very different criteria for selecting the stone may have been operative on different occasions, both with view-directed and non-view-directed carvings. Even if the view was the principal reason for carving, there would often be a certain amount of leeway in the choice of which rock to carve, if there were other rocks in the area from which the required view could be seen. Factors influencing the choice of rock might include features of the rock surface, and whether it was horizontal, vertical or angled. Size and accessibility of the rock might also have been important,

including how difficult or easy it would be to carry out the carving. Whether, and how, the rock might be viewed after carving might also have been a consideration.



**Fig 137 Details of carving technique:
294/GC 07, Green Crag Slack**

Some of the cups have vertical sides changing abruptly to a flat base.

Image: Author and P Deacon.

The physicality of carving, the embodied engagement of the carver with the rock, is not something that has been much discussed in the British rock-art literature. It has been considered however, by Keyser *et al* (2005, 73-76), working in the Columbia River area of the North-western USA, who identified a very different engagement with the rock for religious-specialist carvers at highly visible ‘public’ sites, as opposed to the physicality required by the smaller, low-down, ‘private’ sites carved by ordinary people. They note furthermore that the ‘public’ sites, made by shamans, were not only more skilfully carved (indicating experience) but were often on vertical surfaces that were difficult for the carver to access (see Chapter Three section 3.3 above).

It is noteworthy then, that some of the Rombalds Moor panels would have demanded that the carver climb up to access the carving surface, and that such panels include all those on the natural monuments: all of these are difficult to reach for carving, two of them hazardous. At the other extreme, many sites are small, horizontal and at ground-level: the carver has to get down low in order to engage with them. This is clearly very similar to the ‘public’ and ‘private’ sites of Keyser *et al* (2005, 73-76).

Finally, as already noted, some rocks appear to have been moved in prehistory (this group excludes the carved stones associated with cairns, which are discussed elsewhere). They are considered first, as they highlight human agency, perhaps rather more active in relationships with stone than has previously been considered.

9.3 Making place: were rocks moved?

The Stanbury Hill stone, 102/SH 07, was identified as probably moved by Brown and colleagues (Brown & Boughey, 2013; Short, 2013). During this study, fieldwork findings suggested that a small number of other stones had also been moved in prehistory. They have all been discussed in earlier chapters (Table 36 below).

Stone Number	Details	Discussed elsewhere
48/RV 05 & 49/RV 06	Rivock Intricate Pair: two stones	Chapter 6 section 6.2.2 Chapter 8 section 8.10.5
55/RV 12; 57 RV 13; 58/RV 14; 59/RV 15; 60/RV 16	Rivock Arc: at least five stones	Chapter 8 section 8.10.6
102/SH 07	Stanbury Hill	Chapter 6 section 6.2.2 Chapter 8 section 8.9.1
258/WHW 01	Willy Hall Wood	Chapter 6 section 6.2.2
The Sentinel	Green Crag Slack: uncarved stone, relating to the Haystack	Chapter 7 section 7.6

Table 36 Stones which may have been moved in prehistory.

The large stone 258/WHW 01 makes several appearances in this chapter, because as an individual rock, it stands out as highly unusual (Fig 138 below). It clearly weighs several tonnes, and looks disproportionately large, perched on top of a little hill between two small streams, within a bowl-shaped valley. One end of the boulder has apparently been propped up on some much smaller (but still substantial), sharp-edged, uneroded boulders. We can probably rule out the activities of post-medieval quarrymen, who did elevate rocks to work on them more easily (Moorhouse, 2007), as 258 shows no evidence of having itself been quarried, and there are no quarrying sites apparent in the locality. It could be wholly natural placed, a glacial erratic; it might be in its natural post-glacial position, with one end then elevated by people; or it could have been brought here from somewhere else to be placed in this position. This would have been a serious undertaking, though 102/SH 07, probably moved 100m or so, must weigh over two tonnes (Brown & Boughey, 2013; Short, 2013; see also Chapter Four, section 4.5 and Fig 43 above). At some point, 258 was carved with an intricate

design of cups, cup-and-rings and grooves, including a possible partial swastika (see section 9.4 below); however, the temporal relationship between carving and moving this stone is unclear.



**Fig 138 Moved stones:
258/WHW 01, Ilkley Moor.**

This large rock rests on the ground at back, and on a number of sharp-edged uneroded boulders at front.

Image: Author & P Deacon.

As a possible propped stone, it is also unparalleled on Rombalds Moor (to my knowledge), but there are similar examples in other moorland areas. Not far from Rombalds Moor, in the south Pennines and the western part of the Aire Gap, seven large boulders that had been raised on smaller stones were identified by Shepherd, though his examples all look rather more precariously balanced than does 258, and none of them have been carved (Shepherd, 2013; Fig 139 below). It is possible then, that for 258, the carving and the propping were unrelated treatments of this stone.



Fig 139 Propped stones.

Keld Bank propped stone, resting on bedrock at right, and on a small rock at left.

Image: David Shepherd: Shepherd, 2013.

It is interesting to note that the Rivoock Intricate pair, the Stanbury Hill stone and the Willy Hall Wood stone all have intricate designs involving cup-and-rings; these are discussed in Chapter Six, section 6.2.2. How the intricacy of the designs relates to the moving of the stones is unclear, but suggests that if there is suspicion that other stones might have been moved as well, stones with more intricate designs seem more likely to have been moved. Numbers are very small – but this might be partly because moved stones have not previously been sought for. The implications of this are that some rock-art landscapes were being created in a far more active way than has hitherto been considered.

9.4 Why choose this rock?

Factors influencing the choice of rock might include those relating to the whole rock, such as its size, the choice of a horizontal, vertical or angled carving surface, and the height of the carving surface above the ground. British curvilinear rock-art is very frequently on horizontal surfaces, in marked contrast to rock-art in other areas of the world, often made onto vertical surfaces.

A second set of factors relates to features of the carving surface such as texture and colour; cracks and fissures; natural basins and bedding planes; and old carvings. Conversely, relatively smooth and featureless surfaces were often carved as well.

9.4.1 The whole rock

Excluding both portables as a special case, and cliff outcrop sites as difficult to decide where the site begins and ends, the sizes of carved rocks vary from rather less than 1m to well over 5m. The highest carving surfaces obviously generally occur on the largest rocks; similarly, small rocks usually have low-level carving surfaces. As seen in Chapter Six, ground-level sites were frequently chosen on Rombalds Moor, and on Green Crag Slack in particular, these were frequently carved with cups. The size and height of the chosen rock may have been at least partly connected with how visible the carver wanted it to be after carving.

Carvers chose vertical or angled surfaces much less frequently than horizontal surfaces. Carving a horizontal surface reduces the potential visibility of the carvings after they are made, particularly if the surface is at low level; carvings on a vertical surface are obviously much easier to spot and then view. Thus visibility afterwards was not necessarily of prime importance.

9.4.2 The surface of the rock: texture and colour

Texture and colour were not variables that could be much explored for the Rombalds Moor carvings, as the carved stones, sandstones of various types, are mostly very similar in these respects (see Section 4.2 above). Although some had more pebbly inclusions, there were few of these, and these represent gradations in texture rather than distinct populations of rocks.

However, eight of the carved stones were of an uncommon type of rock, a very pale, fine-grained sandstone varying in colour from pale grey to almost blue under some conditions, and sparkly in bright sunlight (see Fig 140 below).



Fig 140 Choice of stone: unusual colour.

95a/GHW 01, standing in a spring on the southern margins of Rombalds Moor, the motifs now very eroded. The colour of the rock contrasts sharply with its neighbours.

Image: Author & P Deacon.

These are very different from the majority of the Rombalds Moor rocks, generally light brown to golden brown when freshly cut, darkening to a greyish-brown colour. These pale stones had nothing in common in terms of motif types or views. To the modern

eye, they are both unusual and attractive; whether that was a factor in prehistory cannot be known, and they are illustrated here to demonstrate the very real difficulty in understanding the subjective nature of choice.

9.4.3 The surface of the rock: smoothness and irregularities

Some carved surfaces are very featureless and nearly flat. As an example, the little stone 306/CC 02 is one of three standing at the threshold of IMLT, on the way up from the river, where the Sentinel and 332/PST 01 the Pancake can first be seen (Fig 141 below).



Fig 141 306/CC 02, IMLT.

A small stone, about 0.5m long, at near ground-level, with two cups, seen above and below 'MH' at centre. The stone stands by the modern path (seen at top right). It has two similar near-neighbours.

Image: Author & P Deacon.

Like its two neighbours, it is small, very low-lying and has a featureless surface, with two cups which are not close to each other. It is suggested that although the views from the stone were its most important feature (see Chapter One section 1.1 above), its modest size and appearance were also important, its neighbours being similarly unassuming. The simple carving could have been made relatively quickly and easily, as an act of piety perhaps, by a visitor who got down low, perhaps onto hands and knees, to carve it. It seems less likely that stones like this were being carved in order to be viewed afterwards; it is hardly impressive, and it is suggested that this was intentional. Stones like this could be lost by becoming overgrown, or as suggested above, by being deliberately re-covered; alternatively, they could have been deliberately kept clear.

The deliberate selection of smooth featureless carving surfaces is very different from the way rocks were selected in Argyll, where Jones' group showed that cracked rock was preferentially chosen for carving. However, they mostly discuss extensive spreads of outcrop and sheet rock rather than small and unassuming rocks like these, some of which are also present in Argyll, as shown in Morris' book (Freedman *et al*, 2011; Jones & Tipping, 2011; Morris, 1977).

Many carved stones on Rombalds Moor however do not have featureless surfaces, but are naturally stepped, ridged, fissured or cracked, with the carvings sometimes relating to these natural features. They may, for example, incorporate lines of bedding planes, or appear to emerge or disappear into cracks.

Some natural features may have been perceived as ancestral carvings, made by beings in a mythical past (Bradley, 2000, 68; Chippindale & Nash, 2004; Jones, 2003; Jones, 2011; Jones & Tipping, 2011). Many of these irregularities, geologically, are bedding planes, but do not appear as clearly laminated or striated as the examples in the section on bedding planes below. An example of these more subtle irregularities is 295/PR 01 Planets Rock, which stands near the edge of Green Crag Slack (Fig 142 opposite).

Most of the surface of Planets Rock has been incorporated into the design, including the curves of the bedding planes and the steps and cracks. There could have been more than one carver for the main design, but all nine cup-and-rings look very similar, each with a single, rather sculpted ring around a wide shallow cup, though the drawing perhaps fails to capture this.

The Planets Rock panel appears to have a design unity, and fits the stone, with the groove curving right round the edge of the rock. However, there are also about five cups, looking perhaps rather peripheral to the main design. This point is discussed in detail below; in Chapter One section 1.3.5, the reader was asked to consider the positioning of cups in all the panels in the illustrations, and is now asked to do so again in this chapter.



Fig 142 Why choose this stone?

Above: 295/PR 01 Planets Rock.

Left: Drawing of Planets Rock.

Note the cups.

Images: Photo: Author & P Deacon.

Drawing: Boughey & Vickerman, 2003, 134.

The skill level and the time involved in making the linked design of cup-and-rings and grooves in this panel are profoundly different from those required for making a single cup. To modern eyes, the Planets Rock carvings seem to have been made with confidence and skill, perhaps to endure and be seen by others. It also seems likely that the person who carved this had made many carvings before.

9.4.4 The surface of the rock: cracks and bedding planes

Of the 252 carved stones in the Study Main Database, only 63 (25%) were recorded during the fieldwork as having significant cracks or clear bedding planes, though this is

a somewhat subjective classification (Appendix 7 Table A7). In this 25%, these features may have been an important factor influencing the choice of rock for carving, as people may have considered natural features as ancestral markings made by supernatural beings (Cooney, 2008; Jones and Tipping, 2011; Waddington, 1996). Ethnographic evidence suggests that people saw such rocks as animate, powerful places where other worlds could be accessed (Bradley, 1997, 55; Lewis-Williams & Dowson, 1990; Morris, 2010; Ouzman, 2001; Vinnicombe, 2010; Whitley, 1998; 2010; 2011; see Chapter Three sections 3.3 & 3.4 above).

Rombalds Moor rocks however are not particularly cracky, indeed in many cases, it was difficult to decide what constituted a cracked rock; some of the cracks look very narrow and superficial, and some might even have been 'grown' by the percussive effects of hammering the motifs. However, some of the cracks seem to be closely referenced by carvings. Some motifs touch cracks, some of them incomplete where they touch; some motifs are near to, rather than actually touching cracks. An example of this is 356/WB 02, on Woofa Bank (Fig 143 below).



Fig 143 Stones with cracks and bedding planes: 356/WB 02, Woofa Bank.

Left: The carved surface (detail), from directly above, showing carvings clustered round the crack.

Right: Drawing of 356. Note relationships between cup-and-rings, cups, grooves, and cracks; also note two rather peripheral cups at left.

Images: Photo: Author & P Deacon. Drawing: Boughey & Vickerman, 2003, 137.

The stone has horizontal bedding planes, not really apparent on the horizontal carving surface. This surface has a narrow linear crack, perhaps not very impressive to the modern eye, with most of the carvings clustered around it. These include six or seven 1-ring cup-and-rings, and two grooves, each emanating from a cup-and-ring, and running parallel with the crack. Two of the cup-and-rings touch and incorporate the crack, such that one of them looks as if it is emerging from, or entering it.

There are ethnographic accounts from all over the world where belief systems include perceiving the rock surface as a permeable membrane, with holes and cracks as potential entrances to the spirit world (for example, in South Africa: Lewis-Williams & Dowson, 1990; Morris, 2010; Ouzman, 2001; in North America: Whitley, 1998; 2010; 2011; in Australia, Vinnicombe, 2010; and see Chapter Three section 3.4.1).

Discussing Atlantic rock-art, which includes British rock-art, Bradley (1997, 55) suggests that carvings connected to fissures might have been ways of entering the underworld. Thus this stone can be interpreted as a place which the carver perceived as a point of contact with the supernatural, and the carving as a way of acknowledging or performing that contact.



Fig 144 Bedding planes and cups.

Left: 54/RV 11, Rivock, with 12 scattered cups relating to bedding planes, some of them enhanced into grooves (seen most clearly at lower left).

Right: 256/GG 05, with an interrupted transverse linear crack, and slight bedding planes. There are three cups: one at the top of each long groove, and one in between, at the top of a faint groove-like bedding plane, all leading into the crack. Images: Author & P Deacon.

As well as cracks, Rombalds Moor has a number of stones with prominent bedding planes: when these are perpendicular to the face of the rock, the carving surface appears ridged and grooved. On these rocks, the motifs may be placed right across the 'natural grooves' of the bedding planes (Fig 144 above). On some rocks, grooves were made by enhancing cracks, or the natural grooves of bedding planes, and both grooves and cracks sometimes have cups placed in them (see Fig 145 below).



Fig 145 Grooves and cups.

Detail of 67/RV 23, Rivock, the only one of the three 4-ringed cup-and-ring stones still on the Moor. At right, note long groove or possibly an enhanced natural feature, with at least ten cups carved in it. Images: Author & P Deacon.

The majority of carvings on Rombalds Moor, however, were made onto carving surfaces that were essentially featureless, including most of the cup-and-ring motifs (see Chapter Six section 6.2.2 above). It is possible that uncracked rocks may have been seen as having potential connections with the underworld and ancestral forces too. These forces were perhaps accessed by 'opening' the membrane, that is, breaching the surface of the stone by carving.

9.4.5 The surface of the rock: old carvings

Nearly all cup-and-ring stones have cups as well. Given the evidence that cups were used to demonstrate respect to the sacred, by carving them on and near monuments (Jones, 2003; Nash *et al*, 2005; and see Chapter Two, section 2.5.2), it is suggested that on Rombalds Moor, some cups at least might be a later addition to previously carved stones, added because the stones had been previously carved. Consideration of this might lead to insights about chronology.

At Hunterheugh, Waddington (2004) excavated a stratified site, which included a cist incorporating a slab of carved stone, quarried at the site; the quarried-out area had had new carvings made to replace those taken for the cist. A cairn was then built over all. As the cairn and cist could be dated typologically, this gave him at least a partial and relative chronology. He noted that here, the later carver was less skilled, and lacking in understanding of how the earlier carvings were made in harmony with the rock surface – though more-skilled carvings are not necessarily earlier than less-skilled carvings (see Chapter Two section 2.6.2).

To date, no rock-art excavation sites on Rombalds Moor have shown the kind of stratification seen at Hunterheugh. However, there may be examples of motifs being added to already-carved stones, perhaps demonstrated by the presence of different sized or shaped motifs on the same rock. On Rombalds Moor, it can be shown that even simple cups are far from uniform, varying not only in size, but also in shape, with more or less hemispherical, conical, and wide but shallow cups seen in various sites. There are also differences in the forms of cup-and-rings.

A key question, unanswerable, is whether or not an individual carver had an idea of what a cup, or a cup-and-ring, 'should' look like, and made them all the same, or whether they had mental models of a repertoire of standard motif types. However, the degree of skill which a carver had developed was probably uniformly expressed; that is, a bad carver cannot carve well, and a good carver always carves well. Thus it may be possible to identify different carvers on the same rock.

Fig 146 overleaf shows 287/BB 06, with different-sized cups on a single panel. The six or eight cups in the lower half of the panel are all about the same size, with the two cups at top looking both very separate and considerably larger.



Fig 146 Variations in the size of cups on a single rock.

287/BB 06: cups in two sizes. See also Fig 137 above.

Images: Author & P Deacon.

Looking at the Achnabreck example (Fig 147 below), the author is unable to believe that the carver(s) who made the delicate and harmonious cup-and-rings at top also made the much less skilled motifs at bottom and centre left, with their thicker grooves, irregular circles, and lack of concentricity.



Fig 147 Achnabreck, Argyll.

Compare cup-and-rings at bottom with cup-and-rings at top, and note damaged cup-and-ring at centre left, to right of crack.

Images: Author & P Deacon.

Moreover, as discussed in Chapter Two section 2.6.2, motifs may have been deliberately obliterated here, with a battered cup-and-ring visible at centre left, to the right of the large crack (see also Fig 20 above).

More than one carver is perhaps also indicated by the way some rocks, carved with very intricate designs, appear to have cups scattered around the periphery. These are easily overlooked, as they seem not to 'belong' to the design, such as the examples in Fig 148 below; other examples have been noted in earlier illustrations. It is suggested that they indicate additional carvings made later in the sequence, perhaps renewing ancestral connections or making links to the past.

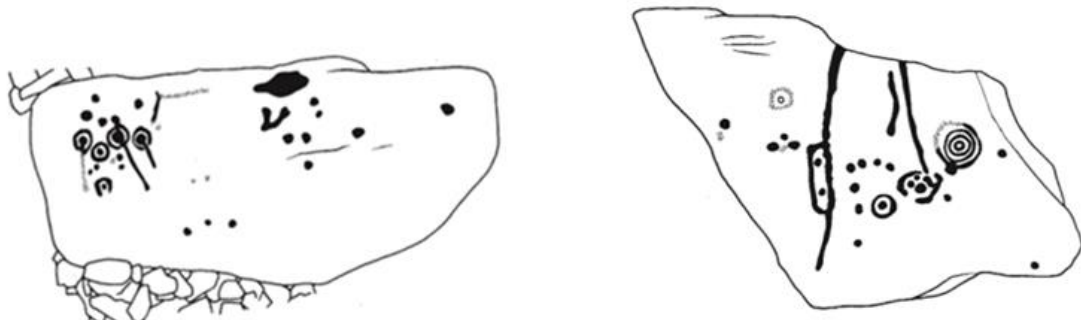


Fig 148 Peripheral cups, perhaps later additions to the panel.

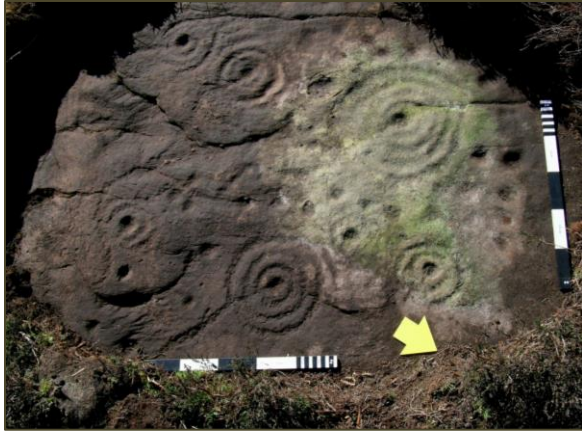
Left: 82/RV 31, Rivock. Note peripheral cups at lower centre and right.

Right: 67/RV 23. Note cups near edges at centre right, bottom right and far left.

Images: (not to scale) Boughey & Vickerman, 2003, 125 & 124.

A further example of this comes from Northumberland, again from Hunterheugh, near but not part of, the cist site (Fig 149 overleaf). Some of this panel was visible and obviously eroded, but when the soil and vegetation was cleared to reveal the whole surface, the newly exposed area looked very fresh.

This area had perhaps been covered over shortly after being made, so that no erosion ever occurred. It is clear that there are a disproportionately greater number of cups in the eroded, exposed area, as compared with the rest of the panel, suggesting that cups were being added to a cup-and-ring marked panel which originally had relatively few cups.



**Fig 149 Hunterheugh 2,
Northumberland.**

**Note many cups in the dry, eroded
area, as compared to the damp,
fresh, recently exposed area.**

Image: ERA:

**[http://archaeologydataservice.ac.uk
/catalogue/era-
836/dissemination/jpg/12367_474_
con_dscn4048_t2.jpg](http://archaeologydataservice.ac.uk/catalogue/era-836/dissemination/jpg/12367_474_con_dscn4048_t2.jpg)**

Thus in both Hunterheugh and Achnabreck, and probably Rombalds Moor too, time depth is being expressed on the rock surface, though we can derive only a relative chronology; cups might have been added from virtually contemporaneously, up to many hundreds of years later.

9.5 Why choose this motif?

Cups have already been discussed as signifying respect in many situations, though may have had other significances as well (Jones, 2003; Nash *et al*, 2005; Nash, 2007; and see Chapter Two, section 2.6.2). There seem to be few clues however about the use of cup-and-ring motifs.

Many of the most unusual and intricate cup-and-ring designs are found around Ilkley Moor, including the lost Panorama stones, and also including four of the eight stones from which the Neb Stone can be seen edge-on. Furthermore, two unusual motifs, swastikas and ladders, are also only found on Ilkley Moor (see below).

Of the 76 cup-and-ring marked rocks on the Moor, only 19 have marked bedding planes, natural holes or cracks (see Chapter Six section 6.2.4 above). Of the 15 rocks with 2-ring cup-and-rings, only three have these surface features; of the four with 3+rings, none have. Although some stones have been shown to have cup-and-rings relating to cracks, these are in the minority. More often, carvers selected featureless

surfaces to carve intricate designs. Given the deliberate choices of cracked surfaces in Argyll (Freedman *et al*, 2011; Jones & Tipping, 2011), this was an unexpected finding.

Rombalds Moor has three rocks with carvings of ladders, unique for England, originally all within about 1km of each other on Ilkley Moor (Fig 150 below). Only one of them, 253/BS 02, remains in its original position; the other two were two of the four Panorama stones. One of these, 226, has been destroyed, but the other, 229/PAR 04, now stands broken and overgrown in an Ilkley churchyard. It is just possible that the ladders are forgeries, added about 150 years ago to ancient carved stones. This is very contentious however, and moreover an easy accusation to explain away the unexpected (Griffiths, 2006).



Fig 150 Unusual motifs: ladders, seen on 253/BS 02 and 229/PAR 04.

Left: Detail of 253/BS 02 the Barmishaw Stone. Two ladders can be seen, one clear at right, the other, rather faint, at left.

Right: Drawing of 229/PAR 04.

Images: Photo: Author & P Deacon. 229 drawing: Boughey & Vickerman, 2003, 131.

The other rare motif, also found on Ilkley Moor, is the swastika. A perfect example, here consisting of a groove winding around nine cups, is found on 217/SST 01 the Swastika Stone, a cliff outcrop site. There are also about five scattered cups near the swastika (Fig 151 overleaf).

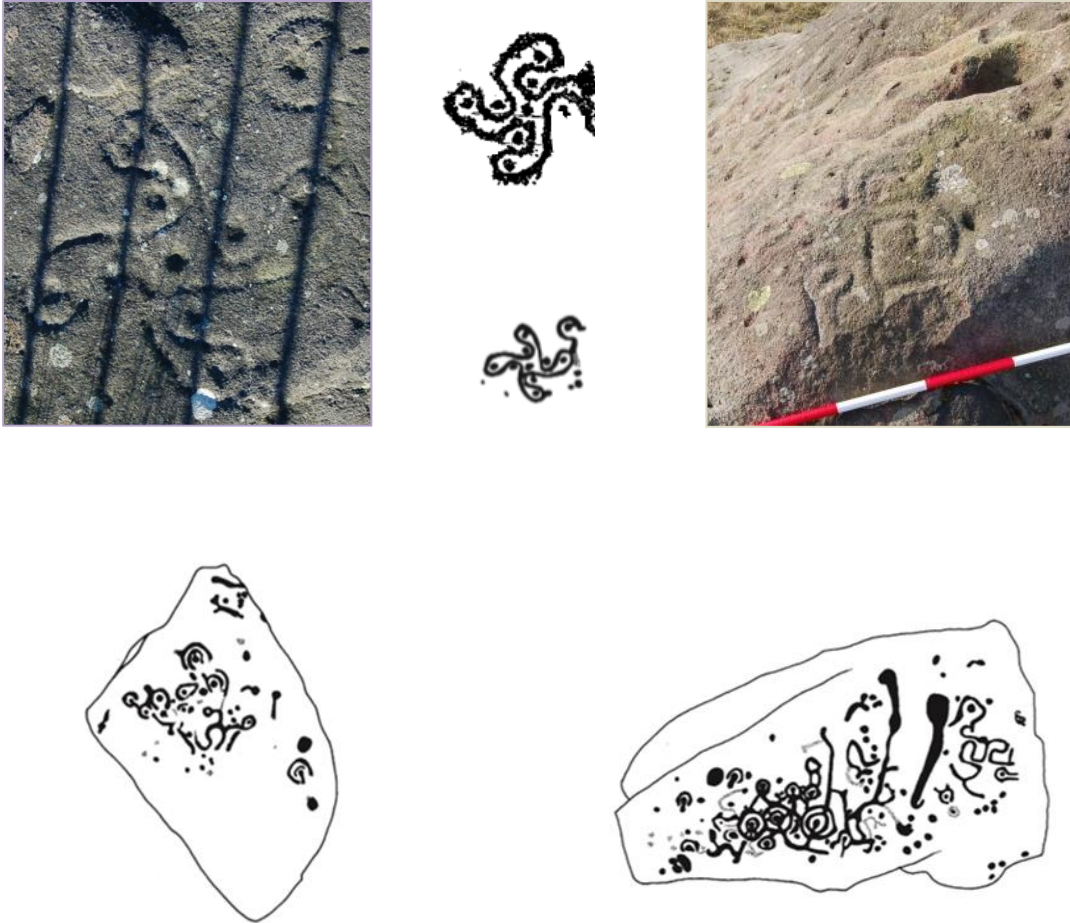


Fig 151 Unusual motifs: swastikas.

Top left photo: 217/SST 01 the Swastika Stone, shadowed by its protective railings.

Top right photo: 250/BST 01 the Badger Stone, eastern shoulder.

Top row drawings: top: Camunian Rose, Valcamonica; bottom: 217 motif; note cups.

Bottom left: 258/WHW 01, with alleged partial swastika at centre. Note peripheral cups below major group of complex motifs.

Bottom right: 250/BST 01 the Badger Stone, with alleged partial swastika at right. Note cups at extremes of panel, at bottom right, top right and left.

258 and 250 drawings not at same scale.

Images: Photos: Author & P Deacon. Camunian Rose drawing: Farina, 1997.

Drawings of 217 motif, 258 & 250: Boughey & Vickerman, 2003: 130, 133, 132.

It is unique in Britain, and virtually identical to motifs found in Valcamonica, Northern Italy, which are considered to date from the Iron Age (Farina, 1997). It would have

been immediately dismissed as 'not curvilinear rock-art', were it not for the five cups next to it, and the two claimed partial swastikas on nearby carved stones, 258/WHW 01, and 250/BST 01 the Badger Stone.

Because of its position in the middle of the top of the stone, the alleged partial swastika on 258 could not be inspected closely. It can be seen in Fig 162 below. However, neither this, nor the Boughey & Vickerman drawing (2003, 133; Fig 151 above) look like very convincing swastikas, at least to the author. The partial swastika on the Badger Stone, unfortunately partly broken away, is rather more like the 217 carving, though there are no cups in either the 258 or Badger Stone swastikas.

Presuming that some or all of these unusual motifs are genuine, this challenges us to consider how much innovation was allowed in the carver's repertoire, and why and how ideas about motifs might or might not spread. The Ormaig rosettes in Argyll are similar, an elaboration of a standard motif that is not found elsewhere (see Chapter Two, Fig 12 above).

9.6 The physicality of carving: encountering the rock

A consideration of the physicality of carving, the bodily engagement of the carver with the rock, has been largely neglected in British rock-art studies, though some aspects of this have been considered by Jones and colleagues in Argyll. They noted that many of the motifs on the very large boulders at Torbhlaren cannot be reached from the ground surface, though they did not consider in detail where the carver had to place themselves in order to make the carvings. Following their excavation around the margins of the largest carved rock, they suggested that a platform had been constructed to enable access. There is some doubt about this though, as their own palaeoenvironmental archaeologists Pears & Tipping (2011), looking at the soil micromorphology around the rock, suggested that there was no platform as such, just trampling. However, Jones and colleagues go on to discuss performative aspects of carving, suggesting that at least some carvings were made in front of an audience: an important point, platform or not (Jones, Freedman, Gamble *et al*, 2011; Jones, Freedman, Lamdin-Whymark & O'Connor, 2011; Lamdin-Whymark, 2011a; Pears & Tipping, 2011).

Difficult-to-access sites have also been noted in North America. Arsenault (2004b), working in the Canadian Shield, has discussed some of the practical problems posed by the selection of sites on vertical cliffs immediately above lakes. These can only be accessed by boat, or by walking over the ice in winter. They are, though, generally painted rather than carved, that is, hammered; hammering could be a major problem from a boat.

Similarly, some of the Scandinavian sites are also very difficult to access, such as Nämforsen in Sweden, studied in depth by Tilley (1991). This was a major hunter-gatherer aggregation site, and there is a great deal of rock-art. Some of the carvings have been made across the river from the settlement area, and others are on islands, though the violent, turbulent and intensely loud rapids make the river here very dangerous (Fig 152 below; see also Fig 29 above).

Tilley focuses more on the relationships between the *sites* and the rapids, rather than the carvers and the rapids, even though he reports his predecessor Hallström and his wife nearly being killed whilst recording the motifs (Tilley, 1991: 4, 133 & 138). Oestigaard (2011) suggests that, as with the Canadian lake-cliff rock-art, these carvings might also have been made in winter, approached over the frozen river, but as excavation has shown this to be a summer aggregation site where people gathered to exploit the salmon run, the carvers were probably braving the rapids in order to carve, when they were at their fiercest and most hazardous (Goldhahn, 2002; Mulk & Bayliss-Smith, 2007).



Fig 152 Nämforsen, Brådön island, 1907.

There are many carvings on this island. All modern photos show a much-reduced river as in Fig 29 above, as the hydroelectric power station upstream greatly decreases the flow of water at the rapids.

Image: Tilley (after Hallström), 1991, 2.

These places are obviously very different from Rombalds Moor, but show that people sometimes deliberately chose very challenging places to carve. Perhaps sometimes the danger was the whole point (Goldhahn, 2002; Edmonds, 2004, 145).

This aspect of choosing carving sites has not been much explored in British rock-art studies. Boughey & Vickerman (2003, 44) note that some carvings on Rombalds Moor are out of sight from the ground, hidden and not readily viewed, but they do not consider them from the point of view of a challenge to the carver.

However, relationships between people and rock and danger were noted by Bradley & Edmonds in their study of the axe quarries in Cumbria (1993). Here, they showed that people ignored lower-altitude, safer rock sources, in favour of sources of entirely similar rock set on high and precipitous peaks. In 1993, Bradley & Edmonds did not really discuss why people were choosing these dangerous, high-elevation sites (Bradley & Edmonds, 1993: 131, 134, 142-143). However, Edmonds went on to consider why high places might have been chosen: firstly, as potentially holy places, used by shamans and people undertaking rites of passage or other ritual activities, and secondly, that some stone extraction sites were deliberately chosen as places where risk had to be embraced. This might have added value, both to the work and to the finished axe as well (Edmonds, 2004: 88-90; 145).

In 1993, Bradley & Edmonds did not use the term 'liminal' in connection with these high places; this term, meaning at a boundary or transitional point, is now in much more common usage. It is helpful in conceptualising how people in the past negotiated boundaries, such as those between the different tiers in the three-layered cosmos, the world-view of people in the sub-Arctic. This three-tiered world encompassed the mundane world of human existence in the middle, with the underworld or deep waters below, and the heavens above, with the tiers connected by a tree or river, and liminal sites such as caves and mountain tops acting as points of access to the underworld or heavens respectively (Bradley, 2000, 12; Conneller, 2011; Mulk & Bayliss-Smith, 2007; Price, 2011; see Chapter Three section 3.4.1 above).

There was probably a general commonality of beliefs amongst the prehistoric hunter-gatherers of the whole sub-Arctic, which likely reached into Mesolithic Britain, and perhaps into Neolithic Britain as well (Bradley, 2000, 62; Carmichael *et al*, 1994; Conneller, 2011; Little *et al*, 2016; Price, 2010, 2011; Thomas, 2011; Tilley, 1991, 129;

Zvelebil, 2008; Chapter Three section 3.3 above). Many of the peoples of the sub-Arctic were making rock-art; although some of this rock-art was made by shamans, some of it was not, though it all seems to exist within the shamanic tradition. In North America, where this tradition extended much further south, and into the western deserts of the USA, some rock-art was connected with vision questing, with some of these sites being made in potentially hazardous liminal places (Arsenault, 2004a; Keyser *et al*, 2005, 62, 70, 73-76; Turpin, 2001; Whitley: 1998, 2010, 2011).

Rock could be a liminal place as of itself, with its surface seen as a membrane through which other worlds could be accessed, with cracked rocks being particularly important in that regard; this is the interpretation followed by Jones and colleagues in Argyll (Barnatt & Edmonds, 2002; Bradley, 1997, 55; Bradley, 2000, 12; Conneller, 2011; Guenther, 1999; Jones & Tipping, 2011; Mulk & Bayliss-Smith, 2007; Price, 2010; Tilley, 1991, 130; Zvelebil, 2008). However, the simple act of carving, breaking the skin of the rock, may also have been seen as a way of reaching the underworld, making any rock surface a potentially liminal place.

The Cumbrian axe quarrying sites, deliberately selected as dangerous places (Barnatt & Edmonds, 2002), can be seen as liminal places set between earth and sky. In a similar way, two of the proposed natural monuments on Rombalds Moor, 41/DSS 01 Doubler 1 and 332/PST 01 the Pancake, can also be seen as reaching into the sky. They are hardly spectacular in comparison with the Cumbrian sites, but West Yorkshire is an area of upland plateaux, generally without high or craggy peaks. It may have been important to have local places where the heavens could be accessed.

Accounts of experimental rock-art making do not usually discuss the settings in which the carvings were made in prehistory, focusing on the action of carving only. Lamdin-Whymark describes making rock-art at Torbhlaren (2011b; Fig 153 opposite), and his account is a meditative reflection on a brief but significant relationship between carver and stone surface. The illustration, already shown in Chapter Two (Fig 8 above), is shown again here because it is worth considering carefully. Firstly, he is sitting, in apparently cleared rough grazing, probably not the setting for much rock-art production. Were he sitting making rock-art in prehistory, his intense focus on the rock might distract him from the dangers of the prehistoric everyday world; if he were alone, sitting outside of settled agricultural land, he could be at risk here. Moreover, on Rombalds

Moor, some rock-art was made away from where any remains of other prehistoric activity have been found, and thus in areas that were fundamentally more risky (Chapter Six section 6.5.5).



Fig 153 Making rock-art: Torbhlairen.

Lamdin-Whymark working on a detached slab, using a quartz hammerstone.

Image: Aaron Watson, in Lamdin-Whymark, 2011b, 335.

And many rocks are not like Lamdin-Whymark's rock at all. All five of the natural monuments of Rombalds Moor would have been difficult to carve; two of them, Doubler 1 and the Pancake, are actually dangerous, the only two frankly dangerous carved stones on the Moor. Sometimes, people who were carving were taking substantial risks. Several other carved stones would also have been difficult and uncomfortable to carve. Many of these sites, including at least three of the natural monuments, have extensive carvings, not just a simple cup or two.

At the windy western end of the Moor, 41/DSS 01 Doubler 1 stands like a tower at the edge of an upper terrace above a cliff, overlooking a lower terrace below. All the carvings are on the upper surface of the tower (Fig 154 overleaf; see also Chapter Seven section 7.3, with Fig 73). Doubler 1 reaches up into the sky in a way that its partner Doubler 2 does not (see Fig 161 right, below), as the drop from Doubler 1's carving surface to the rocks below is over 5m, a likely lethal fall. It is possible to climb up without help, but not easy. The ever-present wind makes it risky to stand upright on the very uneven surface, and it's a long way down.



Fig 154 Hazardous sites: 41/DSS 01 Doubler 1

Top left: view of Doubler 1 from the south.

Top right: view of Doubler 1 from the north. Part of the 'plinth' of Doubler 1 might have been quarried, but the main tower has not.

Bottom: detail of the carving surface, with one or two grooves at centre, one or both emanating from a cup; beyond is an irregular cluster of 13 cups, not all seen. Out of shot to the right, near the edge, is a further cluster of four cups, and perhaps eight further scattered cups.

Images: Author & P Deacon.

The carvings include one or two grooves, and about 25 cups, in an irregular group of 13, a group of four, and about eight further cups. The carvings cannot be seen at all from the ground. The cups are not all the same size, suggesting that they were made by several different carvers, perhaps at different times.

Although a person crouched down at the carvings on top of the rock cannot readily be seen or heard from the upper terrace level (as established in the fieldwork), they could be seen, and probably heard too, clearly and impressively, from the terrace level below.

There would have been similar hazards in carving the Pancake – and similar views of the daring carver (Figs 155 and 156 below; see also Chapter Seven section 7.5, with Figs 79, 80 & 82).



Fig 155 Hazardous sites: 332/PST 01 the Pancake (1).

The carving surface is angled, with many of the cups carved beyond the vertical 'step' at top, making it particularly risky to stand or even crouch on.

Top: from GCS: IMLT below.

Bottom: from the slope rising from IMLT to GCS: a grotesque profile.

Images: Author & P Deacon.



The carvings on the Pancake are now very eroded, but were described as including six to eleven 1-ring cup-and-rings, over 40 cups, and many grooves (Boughey & Vickerman 2003, 87). Many of the carvings are above the drop to the rocks below, and falling off would probably be fatal. It is easy to walk out onto the top of the Pancake, as it is at the level of Green Crag Slack, though neither the author nor the CSI team went out on to the top of this rock, as it is too dangerous to do so. The risk did not stop the carvers however.

The physicality of making these carvings is very far removed from Lamdin-Whymark's experience in his meadow, and must have been a major consideration when choosing to carve these rocks. To any observer, carving these sites would have had a certain dramatic quality; to the carver it might have been frightening.

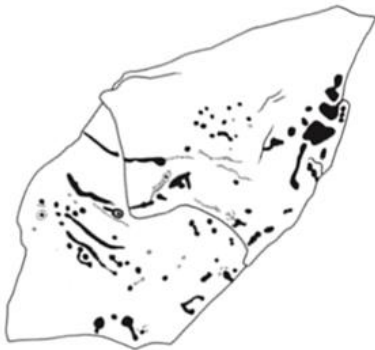


Fig 156 Hazardous sites: 332/PST 01 the Pancake (2)

Top: Drawing of carved surface. Note run of three small cups along the right-hand edge, near the edge.

Bottom: Detail of the carved surface: the motifs are not visible; the three cups are about 1m from the tip of the ranging pole, and in line.

**Images: Drawing: Boughey & Vickerman, 2003, 136.
Photo: Author & P Deacon.**



The lack of pattern in the grouping of the motifs, and the different sizes of cups suggest several carvers on several occasions. As with Doubler 1, this reinforces the idea that these were important places, where risk had to be embraced. It may have been a privilege to be allowed to carve here.

Other sites are less dangerous but still challenging. They would have been difficult and uncomfortable to carve, especially if a precision design was being made, requiring a two-handed, mallet and chisel technique. Ladders or even some kind of scaffolding might have been used in some cases, but there seems no way of mitigating the risks at either Doubler 1 or the Pancake.

Not far from the Pancake, 302/PR 05 the Haystack, with motifs high up on the 'roof', including along the ridge, would have to be climbed (Fig 157 below; see also Chapter Seven section 7.7). The author, at 1.6m tall, cannot get onto the rock; readers deciding to attempt this are encouraged to wear socks not boots.



Fig 157 Difficult sites: 302/PR 05 the Haystack.

There are carvings on the Wharfedale-facing surface and 'roof' ridge line as shown, as well as further carvings (cups and grooves only) on the back 'roof' face, equally steeply angled.

Image: Author & P Deacon.

The 'roof' faces are so steep that the carver would probably have to sit astride the rock, or crouch on top of it, to carve the motifs along the ridge. In order to carve the motifs half-way up the 'roof', they might even have had to lie down on top of it.

The great tilted slab of 237/CSE 02 the Neb Stone was described as cup-marked by J Romilly Allen (1882) but only as 'possibly cup-marked' by Boughey & Vickerman (2003, 75; Fig 158 below; see also Chapter Seven section 7.4).

If it was carved, it would have been extremely difficult to carve any motif above head height or away from the edges. A ladder or temporary framework could have been used, as it is too steep and featureless to stand or even lie down on it, or an assistant might have provided support.



Fig 158 Difficult sites: 237/CSE 02 the Neb Stone.

Left: The Neb Stone from the west.

Right: Detail of the face, with two possible cup marks at centre (see also Fig 76 bottom).

Images: Author & P Deacon.

The last of the five natural monuments, 355/GCS 13 H2 has been much altered by quarrying, particularly on the north face, which has been cut away by an unknown amount. Parts of the west face have also been quarried; some carvings could have been lost. The remains of probable spoil heaps lie alongside the east and west faces, although neither the east face nor the 'monstrous' south face have been quarried.

There is also what is probably a quarrying pit at least 0.5m deep, and always full of water, all along the quarried north face, extending partially round beneath the west face (Fig 159 below, and see also Chapter Seven section 7.8, with Fig 89). The extent of the quarrying activity makes it impossible to know where the ground level was when the carvings were made, or how far the north face originally extended.

The extant carvings are now at about head height on the east face, high up on the angled 'roof', and close to the vertical, quarried north face. Due to the configuration of the east face, with a vertical face from the ground changing to the angled 'roof' face, it is clearly not easy to access the carving area, at least over the east face and from today's ground level.



Fig 159 Difficult sites: 355/GCS 13 H2.

Left: North face of stone, quarried by an unknown extent. The carvings, not seen in this view, are on the upper part of the angled 'roof' at left, near the quarried vertical north face.

Right: East face of stone. The carvings, some cups visible, are at top right.

Images: Author & P Deacon.

Other rocks also pose real difficulties to the carver, though are not dangerous once the carving surface is reached, as they are all horizontal and extensive enough to be safe. These are 214/WC 01 the Sepulchre Stone, 210/AC 01 Addingham Crag Stone, and 42/DSS 02 Doubler 2.

Standing near the edge of the north-west terrace above Wharfedale, the Sepulchre Stone is over 1.5m high, with the carvings, two or three 1-ring cup-and-rings, on the fairly flat upper surface (Fig 160 overleaf; see also Chapter Seven section 7.2 and Fig

93 above). It is easy to climb up unaided, and the carving surface is big enough to kneel on whilst working.



**Fig 160 Difficult sites:
214/WC 01 the Sepulchre Stone,
NW Edge.**

**The carvings are all on top of the
stone.**

Image: Author & P Deacon.

Addingham Crag Stone is about 1.6m high from the easier, upslope approach; to get up, the carver would require help or something to stand on. The mushroom-shaped, 2m high Doubler 2, is so difficult to climb that neither the author and field companion, nor the CSI team, managed to get on to the top of it, though it is possible that erosion around its base may have lowered the land surface (Fig 161 below). Both these stones have all their carvings on the upper horizontal surface.



Fig 161 Difficult sites: Addingham Crag Stone and Doubler 2.

Left: 210/AC 01 Addingham Crag Stone. The downslope face, shown, is about 2m high, but the upslope face is more accessible at 1.6m above ground level.

Right: 42/DSS 02 Doubler 2 is over 2m high; in order to get up, the carver would require help or something to stand on.

Images: Author & P Deacon.

The large boulder 258/WHW 01 stands nearly 2m above the ground at its highest point. It stands, looking disproportionately large, on a little hillock between two joining streams, in a deeper dell, such that it has very limited local views (Fig 162 below; see also Fig 151 bottom left, above).



**Fig 162 Difficult sites:
258/WHW 01, Ilkley Moor.**

This stone is now quite eroded, but the alleged swastika is just visible at centre. Due to the wind, the trees are as seen, and far from vertical, so the angle of the rock is as shown.

Image: Author & P Deacon.

As discussed above in section 9.3, it looks to have been deliberately propped, with smaller rocks placed under one end, and might even have been brought here from elsewhere. It is now steeply angled, with the motifs, including a possible partial swastika, clustered together towards the higher end, away from the edges. The carving surface is smooth and largely featureless.

The smooth, steeply angled surface would have been very challenging to carve, if it was carved after being propped. The carver would probably have needed to get onto the stone, and crouch or lie on it with the risk of slipping off, though as with the Neb Stone, a ladder, scaffolding or supportive assistant might have been used.

9.7 Discussion

This exploration of the factors influencing choice of rock, and of the physicality of carving, has led to some results that were expected and in line with previous work. This includes for example the positive associations between motifs and cracks, and between motifs and old carvings. However, in this chapter every effort has been made to consider not just a landscape of carved rocks, but a landscape with people in it as well. This has led to some more unexpected conclusions.

People were carving a very wide range of stones; what is seen is wide variation in rock sizes, carving surfaces, and elevations of the surface above ground level. At one extreme are large, difficult-to-access, potentially dramatic sites; several of these are proposed in this thesis as natural monuments. Here, being allowed to carve, and perhaps subsequently to view, might have been a privilege. The hazards and difficulties involved in carving might have added 'value' to the act, eliciting considerable respect; there might have been a performative aspect to carving, with an audience in attendance (Lamdin-Whymark, 2011a). At the other extreme are the small, apparently humble sites, perhaps made privately as a personal mark of piety, though no less a mark of ritual observance.

In the gritstone Pennines, including Rombalds Moor, obviously dramatic sites that might readily be perceived as liminal are not frequent. There are no high mountains, or sharp steep summits, nor does the geology of sandstone, a permeable but not soluble rock, favour the formation of major caves. However, two of the proposed natural monuments, 41/DSS 01 Doubler 1 and 332/PST 01 the Pancake, can quite readily be seen as liminal sites, both of them projecting into the sky, and both hazardous places to carve. They both have a number of carvings, though no intricate panel as such, and are probably accretional, with many motifs made over time, probably not by the same hand.

It has been shown that the world view held by the carvers of British rock-art may have been animistic and shamanistic. Bradley (1977, 51-55) considered the possibility that entoptics and altered states of consciousness might have underlain choices of motif, and connections with natural cracks and fissures, and Wallis (2013) considered that the people who made rock-art might have had an animistic belief system; neither of them

developed this theme much further. Jones, Freedman, O'Connor *et al* (2011) also considered that the makers of rock-art had an animistic ideology, but were more concerned with the hypothesis that rock-art was both a means of communication, and of socialising landscape (Freedman, Jones & Riggott, 2011).

However, I suggest that it is worth considering whether the five natural monuments of Rombalds Moor were not only being identified within an animistic and shamanistic framework, but were also being used as sites for vision questing (see Chapter Three, sections 3.3 & 3.5 above). This is suggested with considerable diffidence, as to my knowledge it has not been proposed within mainstream archaeology for British rock-art, but if the rather dramatic terminology is considered dispassionately, it is suggesting that religious activities, within an animistic and shamanistic belief system, were going on at and around these sites.

Ethnographic evidence from the western US shows that people on a vision quest, both shamans and ordinary people, came to areas marked by rock-art to await supernatural assistance, and then might themselves then make rock-art (Hays-Gilpin, 2004, 117; Keyser *et al*, 2005: 77; 100-104; Turpin, 2001). This rock-art might include some of the relatively small, undramatic and tucked-away sites at or near dramatic and prominent sites interpreted as shamanic vision questing sites.

This is reminiscent of the physicality of ground-level sites on Rombalds Moor, which despite lacking in drama, is nevertheless also important. Lamdin-Whymark (Fig 153 above) is sitting at his carving, but an alternative would be to crouch on hands and knees. In modern Western culture, the act of kneeling is still a powerful gesture of deep respect and humility, literally lowering oneself; in the past, it may have carried similar connotations, such that rock-art at a very low level represented respect and piety expressed in a very physical way.

Chapter Ten: Discussion

10.1 Introduction

The two key findings of this work connect rock-art with people and their beliefs. A case has been made for natural monuments having been selected or identified on Rombalds Moor, themselves carved, and referenced by further carving. The physicalities of carving, both on to these large, impressive and sometimes hazardous stones, as well as on to much smaller and more humble sites, is an important insight arising directly from this.

The findings did not support interpretations connecting rock-art with text, or as messages concerning rights to access, nor with carvings made across a large area as a single coherent system. Although visibility emerged as an important theme, there was very little *intervisibility*, as so many carved stones are small and at ground level. Other negative findings included connections with water, or views of the settled landscape, and there was also doubt raised about rock-art being largely a feature of upland.

Carving has emerged here as acknowledging belief, carried out perhaps both by religious specialists, maybe with an audience, but also by individuals, carving as small personal acts of piety.

Examining the rock-art of Rombalds Moor at different spatial scales allowed for relationships at these different scales to become apparent. Choosing the 'right' spatial scales was therefore crucial, as omitting or overlooking a scale might conceal important relationships. The scales of *the whole Moor*, and *the individual rock* were obvious ones to choose, as was one of the intermediate scales, *Small Locales*, as these clusters of sites are obvious on the map and on the ground, and would clearly have been perceived and recognised by the people who were making and using rock-art.

I have argued that the other intermediate scale, *Large Locales*, although not apparent either on the ground, or on the map until viewsheds are constructed, is a legitimate and meaningful scale at which to work, allowing the identification of natural monuments on the Moor, a major finding of this project.

There could also have been relationships operating at other intermediate scales, which did not become apparent during this research; further research looking at all sites in a given area might identify other such spatial scales. A larger spatial scale relating to features beyond the Moor would not in general be detected by the methodology here, but there were hints of this when the views from Rivock Nose were considered.

Also included in this chapter are a number of suggestions for future research, always included in a final discussion, and often rather tagged on at the end. Here, however, where some of the interpretations have not previously been offered for British rock-art, further research, both locally and in other areas of Britain, is needed to add support or cast doubt upon these ideas. Suggestions for further research have therefore been integrated into the various parts of the discussions.

Having analysed the fieldwork findings at four discrete spatial scales, I now attempt to discuss the findings holistically, and as much as possible, from the viewpoints of the people who made, viewed, used, re-used and dwelt alongside the rock-art of Rombalds Moor.

10.2 From four spatial scales to holistic interpretations

The rationale for carving smaller stones in recognition of a natural monument might appear to be suggesting a large scale, coherent, spatially structured, and communicative system on Rombalds Moor. However, the findings here do not support this, and I argue that rock-art is not a text, a problem discussed at greater length in section 10.4.3 below.

Both Bradley (1997), and Jones and colleagues (Jones, 2001; Freedman *et al*, 2011) interpret rock-art landscapes as spatially coherent, communicative systems, made across substantial areas of land at the kilometre scale. Bradley, working in Northumberland and Argyll, sees rock-art as systematically laid out such that rock-art sites, especially those with complex carvings, are placed at the edges of high ground, overlooking the settled landscape below, and overlooking or standing along routes to monuments (1997, 9, 45, 79, 85, 90, 120, 123; see Chapter Two section 2.5 above). He says that sites along routes are intervisible, to be consulted in sequence, and lead

people in to monuments (*ibid*, 120, 123); for Bradley, rock-art is a 'medium of communication', with more complex panels being addressed to outsiders coming in, and simple panels being addressed to local people (*ibid*, 9, 79; see below).

Jones, considering Argyll, also sees rock-art as laid out to be highly visible and communicative, drawing people in to monuments (Jones, 2001, and see Chapter Three section 3.6 above). Jones and colleagues (Freedman *et al*, 2011) go on to say that the whole rock-art landscape of Argyll was laid out to impart information to people coming in (and see section 10.4.3 below).

However, on Rombalds Moor, the layout of carved stones within entire Large Locales does not appear to show spatial organisation, except on occasion into Small Locales and a single arc of stones at Rivock, at the tens of metres scale (see Chapter Eight). These represent much smaller-scale projects than those suggested by Bradley or by Jones. Moreover, there is very little *intervisibility*; some stones, the natural monuments, are highly visible, but the many stones from which they can be seen are for the most part not visible at all from the natural monuments (see Chapter Seven).

I have argued instead that carvings made in acknowledgement of the natural monuments were made by individuals for individual and personal reasons, much as suggested by ethnographic evidence of rock-art making elsewhere (Arsenault, 2004a; Keyser *et al*, 2005, 100-104; Turpin, 2001; Whitley, 1998, 2010, 2011; Chapter Three section 3.3). These smaller carvings, on small reticent sites, were perhaps never intended to be viewed by others (Keyser *et al*, 2005, 72-73).

Moreover, the rock-art of Rombalds Moor need not have been made over a relatively short time (though it could have been), as a coherent system would seem to demand. The use of cups to acknowledge natural monuments suggests that these cups at least were being made in the Neolithic or Early Bronze Age, in line with the use of cups elsewhere to acknowledge built monuments (Jones, 2003; Nash *et al*, 2005; Ritchie, 1918; Waddington, 2007a; Chapter Two section 2.6.2 above). Other rock-art might have been made over a longer time-span, right through the Neolithic and Bronze Age, perhaps even going back into the Mesolithic.

I have also suggested that people were adding cups to stones that had already been carved. If this involved adding cups to cups-only stones, it would not be possible to

readily detect this, but evidence has been presented here, albeit circumstantial, that people were adding cups to stones with pre-existing cup-and-rings (see Chapter Nine section 9.4.5 above). Furthermore, four stones, carved with either an intricate design of cups and grooves, or over 70 cups apiece, were also found surrounded by stones carved mostly with cups (see Chapter Eight section 8.5 for a discussion of this).

These previously carved stones were thus seen as special too, though many are hardly monumental, if 'monumental' implies at least reasonably large and impressive; ancestral might be a better term, and would imply that the pre-existing carvings were old enough that their original human histories were unknown or forgotten. Thus there are hints of chronology here, suggestions that at least some cup-and-rings were much older than at least some of the cups on the stone.

10.3 Themes arising from the preliminary chapters

From the critical review of distribution, motifs and chronology in Chapter Two, some doubt was cast on both the generally accepted ideas about the landscape setting of rock-art sites, and about chronology. Firstly, rock-art might have been made in a wider range of landscape settings, not just in 'marginal uplands' overlooking 'the settled landscape' and 'fertile areas', terms which themselves were shown to be problematic (see Chapter Two section 2.3, also Chapter Three section 3.2.2 and subsequently Chapter Six section 6.6.2).

Secondly, the possibility of a longer chronology was proposed, extending back earlier, perhaps even into the Mesolithic (see Chapter Two section 2.6.1). The uncertainties in these two areas impact on how we might evaluate current interpretations, or put together interpretations from the findings in this study.

The review of landscape approaches and environmental evidence at the beginning of Chapter Three was followed by a geographically wide-ranging review of ethnography. I have argued that although very far removed from British rock-art both in space and time, this is relevant to the study of British rock-art, and much of the interpretation here rests on the concepts of animism and a tripartite cosmos. This cosmology has connections to British Mesolithic cosmology, and might be the basis of Neolithic

cosmology too (Bradley, 2000: 32, 62; Carmichael *et al*, 1994; Conneller, 2011; Insoll, 2011; Jordan, 2008 & 2011; Mulk & Bayliss-Smith, 2007; Price, 2010, 2011; Scarre, 2008; Thomas, 2013, 194; Tilley, 1991, 129; Zvelebil, 2008; see Chapter Three section 3.3).

Also introduced in Chapter Three was the crucially important question as to whether or not views were possible, a theme lying at the heart of this thesis (Chapter One section 1.1 above, Chapter Three section 3.5 above, Chapter Four section 4.3 above, and see below). In general, the environmental evidence for the times when rock-art was probably being made, from the earlier Neolithic, or perhaps as early as the later Mesolithic, suggests widespread woodland. By the beginning of the Bronze Age, there were probably some limited clearances (Chapter Four section 4.3 above). Unfortunately there is very little evidence around rock-art sites themselves.

Another major theme first arising in this chapter was the relationship between people and rock (see Chapter Three section 3.4.1). It is widely accepted that in prehistory, people viewed various features of the landscape, including rock, as having agency, and being in some way alive. *Of course*, the modern rational scientific mind would never do this; yet the very philosophically-minded Jones (2015) says that whilst working at Torbhlaren over several seasons of excavation, he felt he was 'intra-acting' with the rocks, that in some way, there was a dialogue and a relationship going on. As places and rocks become familiar, boundaries become blurred, and certainly the author experienced this too. Once well-entrenched in the fieldwork, processing the results, and beginning to see unexpected relationships between the rocks, I would find myself saying that I needed to go back up to Green Crag Slack and ask the Haystack some questions.

This indicates just how easy it is to ascribe animacy and agency to non-living aspects of the environment, underlining how people in the past, much more embedded in the natural world than we are today, must surely have done so too. The affects involved, however, must have been profoundly different, and are well-nigh impossible to recapture, though some hints may perhaps be derived from clues in the archaeological remains.

The decision to examine the rock-art of Rombalds Moor at different spatial scales arose out of the Chapter Four review of the Moor, its geology, environments and archaeology.

It is both a very big and a very small place, over 50 km² in area, yet only a very small part of the whole area of Britain over which rock-art is found. It has a long, complex and largely uninvestigated archaeology, of which rock-art is an important part. However, detailed understanding of the environments in which rock-art was extant is lacking, and further research in this area would be particularly helpful, contributing to an understanding as to when and where views might have been available.

10.4 Themes arising from the Results chapters

Having divided the Moor into spatial scales for the purpose of analysis, it is now appropriate to recombine these, as it were, for a discussion of themes that appear repeatedly at several scales. There are four major themes to highlight here

- the identification of natural monuments, the salience of views of these, and the carving of specific motifs, cups – but not, in general, cup-and-rings – in acknowledgement of the natural monuments
- moving stones
- the animistic interpretation of rock-art
- the physicality of carving

10.4.1 Natural monuments, views and motifs

Evidence emerged from all four spatial scales of analysis that people had identified certain large impressive rocks as natural monuments, and had carved both these stones, and much smaller and more reticent stones in acknowledgement of them (see Chapter Five section 5.11.4 and Chapter Seven).

There is some evidence that views were possible, maybe even created (Bradley & Watson, 2010), but in general, the environmental evidence is at best partial and incomplete (Bannister, 1985, and see Chapter Four section 4.3 above; Yarwood, 1981). However, the modern-day views of the natural monuments from so many small stones can be taken as circumstantial evidence that the views were there. Furthermore, in

areas close by a natural monument where visibility was occluded by the terrain, people were not carving stones.



Fig 163 Selected views?

Top: View south-east to the Neb Stone, from 224/BBH 05.

Bottom: View north to H2, from 365/WB 06 in the Woofa group. H2 is seen skylined and in shadow at centre.

Image: Author and P Deacon.

Some of the views from carved stones, like the edge-on views of the Neb Stone and skylined views of H2, are only available in quite limited areas of the Moor (see Chapter Seven sections 7.4 & 7.8, and see Fig 163 above). If someone preparing to carve wanted such a view for 'their' stone, they might have had to hunt around to find it, or work in a Small Locale where such views could be obtained.

The finding of some Small Locales within Large Locales adds weight to the idea that people were creating open spaces to obtain views, and Bannister's study suggests that there were limited clearances on GCS in the Bronze Age (Bannister, 1985, 93, 142; see Chapter Four, section 4.3 above). This possibility is best seen in the near-linear, but not linear, arrangement of the proposed Woofa Alignment (rejected as an alignment, see Chapter Eight section 8.2.4), which may have been a corridor of clearance to allow a view of H2; this might also have encouraged anyone who wanted to carve in recognition of H2 to choose a further stone here. The views of H2 obtained, despite being at a considerable distance, show it skylined or semi-skylined (Fig 163 below, bottom). Such clearances may not have been extremely long-lasting; not all the views need to have been available all the time. A similar corridor of visibility might have been created, or developed, or encouraged, along a strip of land along the terrace edge west of the Pancake on Green Crag Slack.

Carvings made within sight of Doubler 1, the Haystack, and H2 showed a preponderance of cups, as do the stones on IMLT with views of both the Pancake and the Sentinel. The stones on GCS are mostly cups-only throughout. Those with views of the Pancake are mostly on upstanding rocks, as are the stones with views of the Haystack, yet most of the stones with views of H2 are at ground-level. These findings must be taken with some caution, due to the difficulty of classifying sites between upstanding and ground-level.

Several carvings made within sight of the Neb Stone however, including several of those with edge-on views, have some very unusual cup-and-ring and groove panels (see for example 242/WH 01 and 252/GG 02, pictured in the Appendix 6 Fig A4, at top left and centre left respectively). Thus the natural monuments were not all treated the same way, which might indicate that carvings were being made at different times.

By the end of Chapter Nine, considering all four spatial scales, it is clear that cup-and-ring stones are largely absent from the findings and the discussions throughout. Other

than in the Neb Stone Large Locale, they do not figure much as stones from which the natural monuments can be seen, although there are cup-and-ring carvings on all three GCS natural monuments. Cup-and-ring stones do not appear in most of the Small Locales either, and other than probably being acknowledged by the carving of later cups onto them, they figure in Chapter Nine only as stones perhaps more likely to have been moved. Whilst negative findings are more difficult to work with, it may be possible to extract some meaning from this.

Firstly, it is important to recognise a major gap in the data, as many fine cup-and-ring carvings were destroyed on Ilkley Moor around where Panorama Reservoir and the nearby Victorian villas now stand (Hedges, 1986, 11 & 14). They would have been to the north and downslope of the several unusual, ornate but mostly small stones in the Neb Stone Large Locale. Secondly, the methodology here was largely aimed at investigating views *of* and *from* carved stones, and was sufficiently robust to elicit new findings on natural monuments. The fact that cup-and-ring stones do not figure much here suggests that they may not be connected to views.

Thirdly, the apparent treatment of cup-and-ring stones as ancestral, by adding cups to them, may be suggesting that there was a significant time gap between carving the cup-and-rings, and carving the cups. A case can be made for seeing these cups (though perhaps not all cups) as Neolithic, and thus pushing back the proposed origins of cup-and-rings to an earlier time: I suggest that the possibility of cup-and-ring carving originating in the later Mesolithic should no longer be ignored.

The unexpected views from Rivock Nose of the distant Bradley Moor Long Cairn hilltop, and of the very distant Cumbrian peaks are very hard to interpret, and are perhaps not significant at all (see Chapter Six section 6.6.1). Nevertheless, these views are not the only remarkable feature of Rivock (see Chapter Eight section 8.2.3). The Rivock Arc, a line of small carved stones seemingly moved into position, is to my knowledge, unique in British rock-art. Very close to it is the Intricate pair 48/RV 05 & 49/RV 06, which look to have been carved as a pair and moved into place. This suggests that that the north-western edge of Rivock Nose must have been in some way an exceptional place; the only remarkable features that could be found here are these long-distance views to the north-west, from 45/RV 02, 46/RV 03 & 47/RV 04 together on Rivock Nose, all carved with cups only at the edge of the rock. The hilltop where Bradley Moor Long Cairn

stands is visible from other areas of western Rombalds Moor, including Doubler 1 and parts of Rough Holden below Rivock, but the Cumbrian peaks can only be seen from Rivock Nose.

If carvings were being made in respect of these views, this would suggest dates for the carvings no earlier than the earlier Neolithic, as Bradley Moor Long Cairn probably dates from the earlier Neolithic (Vyner, 2008, 3), as does the beginning of stone extraction from the Cumbrian sources (Bradley & Edmonds, 1993, 164-166; Vyner, 2008, 2-3). However, these views might equally have been acknowledged much later, as important references to ancestral places, seen even in prehistory as the deep past. Moreover, these views suggest the possibility of a supra-regional spatial scale as well. The study methodology, collecting data essentially from Rombalds Moor only, could not capture such relationships except fortuitously, and further research with this in mind is indicated.

10.4.2 Moving stones

That the making of rock-art and rock-art sites might have involved moving stones was demonstrated by Brown & Boughey (2013) with their discovery from excavation that 102/SH 07 at Stanbury Hill had probably been moved into place, having been quarried locally (Brown & Boughey, 2013; Short, 2013; see Chapter Four section 4.5 above; Chapter Nine section 9.3 above). This finding suggests that people were much more assertive in creating rock-art landscapes than has hitherto been presumed, and given the very 'unmoved' appearance of 102, it is entirely possible that other carved stones have been moved as well. This would indicate a degree of forward planning, though only on a fairly small scale.

The fieldwork observations for this study identified a small and heterogeneous set of apparently moved stones, scattered over the whole Moor (see Chapter Nine section 9.3). Clearly, any future excavations carried out round a carved stone should include taking a look underneath it; the base of 102 was sharp and uneroded, indicating that it had been quarried off. These seemingly moved stones include the pair at Rivock and the Rivock Arc stones, and the apparently propped stone 258/WHW 01 above Ilkley. Another possibly moved rock is the Sentinel, which is quite remarkably visible from IMLT, and indicates the site of the Haystack behind it. It is uncarved however, and it

might be entirely natural, left in position after the last glacial event; if so, it is very handily placed for a visitor trying to find the Haystack, though modern paths take a rather longer route with a gentler ascent.

All the rocks suggested here as moved are sufficiently large and heavy to require the involvement of several people to move them. For the matched Intricate Pair, and the Arc of at least five stones, both at Rivock Nose (Chapter Eight sections 8.4.1 & 8.2.3 above), there must have been clear plans in advance for several days' work involving a number of people for each project. Evidence for this degree of planning was only seen at the scale of Small Locales or the individual rock.

10.4.3 The animistic interpretation of rock-art

I have argued that the findings in this study suggest that rock-art was being made by people who had an animistic worldview, a worldview which probably extended across the whole sub-Arctic and into North America (Goldhahn, 2002; Turpin, 2001; Whitley, 2006; Whitley *et al*, 1999). This worldview may have persisted for millennia, albeit with some relatively minor changes (McCall, 2007), and, as further discussed below, probably reached into Britain too (Bradley, 2000, 32, 62; Carmichael *et al*, 1994; Conneller, 2011; Insoll, 2011; Jordan, 2008, 2011; Layton, 2003; Mulk & Bayliss-Smith, 2007; Price, 2010, 2011; Scarre, 2008; Thomas, 2013, 194; Tilley, 1991, 129; Whitley, 2011; Zvelebil, 2008; also see Chapter Three section 3.3 and section 10.3 above).

In this worldview, the whole world, and elements of the world, are seen as animate and as having agency, including animals, trees, storms, water and rock; the world is often seen as divided into three layers, the heavens above, the mundane world, and the underworld below (Jordan, 2011; Mulk, 1994, 2014; Mulk & Bayliss-Smith, 2007; Chapter Three section 3.3). Where shamans were identified, they were seen as powerful mediators with the spirit world (Jordan, 2001; Mulk & Bayliss-Smith, 2007; Price, 2011). It is important to note, however, that the terms animism and shamanism are modern terms being applied to very ancient religious beliefs about which we have limited evidence, and must be used with care; they may overlap, or fail to contain all the beliefs that people had (Insoll, 2011).

Here, we consider largely the animacy and agency of rock, and its position in the tripartite universe. Ethnographic descriptions of hunter-gatherer belief systems show that, in many parts of the world, the rock surface is seen as permeable, with cracks seen as potential ways into the spirit world (Lewis-Williams & Dowson, 1990; Morris, 2010; Ouzman, 2001; Vinnicombe, 2010; Whitley, 1998, 2010, 2011).

The northern Eurasian animist cosmology has probable connections to British Mesolithic cosmology (Bradley, 2000, 32, 62; Zvelebil, 2008), and animism might be the basis of Neolithic cosmology too (Price, 2011; Thomas, 2011). Researchers at Star Carr have made a strong case for shamanistic practices there (Little *et al*, 2016), and for the spread of technology, and thus very likely ideology too, across Doggerland, the North Sea basin, from continental northern Europe (Elliott, 2015).

Secondly, an animist interpretation is supported by the finding on Rombalds Moor that large impressive rocks were being identified as natural monuments, acknowledged by the carving of much smaller sites within sight of them. This is very reminiscent of similar behaviours (in very different landscapes) in North America (Gilpin, 2004, 117; Keyser *et al*, 2005, 100-104; Turpin, 2001). Furthermore on Rombalds Moor, that these carvings on small stones were often some distance away from the natural monuments, might be suggesting that not only did these large impressive stones have agency, but also that they might not be entirely benevolent, or safe to approach.

Thirdly, an animist interpretation is supported by the way that some stones were selected for carving because of their surface features, with cracked rocks seen as potential portals into other layers of the cosmos (Bradley, 1997, 55; Jones, 2007, 214; Jones & Tipping, 2011; Lewis-Williams & Dowson, 1990; Morris, 2010; Ouzman, 2001; Tilley & Bennet, 2001; Vinnicombe, 2010; Whitley: 1998, 2010, 2011; see Chapter Three sections 3.3 & 3.4; Chapter Nine section 9.4.4). This is not a major feature of Rombalds Moor rock-art, though it is an important aspect of Jones' understanding of rock-art in Argyll: he describes the landscape very clearly as animate, with cracks in rocks offering access to the Underworld (Jones, 2007, 214; Jones & Tipping, 2011).

If cups were being carved in sight of a natural monument to acknowledge it, this might be construed as a cup conveying a meaning: respect, piety, or some similar concept. However, I argue that this is very different from the interpretations of Bradley, and Jones and colleagues (Bradley, 1997, 9-10, 78-79, 123-124, 153; Jones, 2001;

Freedman *et al*, 2011; and see Chapter Three section 3.6 above), who would both see far more complex ideas as being inscribed on land through the medium of rock-art, such as information about rights of access to territory, or leading people to monuments (Bradley, 1997, 47, 123; Jones, 2001; Freedman *et al*, 2011). They are not able, though, to be any more specific about what these messages, or information, might be; and as Waddington (1996, 2007a) has pointed out, some of the more complex carvings, which Bradley thinks carry information aimed particularly at outsiders, are very tucked away, such that outsiders would have to be taken to them by local people anyway. I conclude that the Rombalds Moor findings here agree with Ouzman's statement (1998) that rock-art is neither a language nor a text, but can still carry meaning. Thus increasingly, British rock-art studies are moving from an interpretation of rock-art as text towards an animistic approach. This study offers support to that as the prevailing discourse, and future research is indicated to explore this further.

10.4.4 The physicality of carving

The physicality of carving is one of the most important themes to arise in this thesis, and further illuminates both how stones may have been chosen, and the relationships between choice of site and the embodied engagement of the carver with the rock (see Chapter Nine sections 9.6 & 9.7). This is not a theme that has been really explored before in British rock-art studies, but it raises some interesting questions about the people who made rock-art. People seem to have chosen to carve some rocks that were large, impressive, highly visible, and also difficult or risky to carve. Many other rocks chosen for carving were at ground level, small and reticent. Just as there were different 'types' of rock chosen for carving, there may also have been different 'types' of people who carved, some more specialised and experienced, and others who perhaps carved much less frequently. The carvers working on the natural monuments might have been religious specialists, who might have acquired status or renown by carving these impressive, sometimes physically dangerous sites. These sites might also have been perceived as spiritually dangerous as well, as suggested by the distances from which other carvers, non-specialists, chose to memorialise their own chosen viewpoints of them.

10.5 The rock-art of Rombalds Moor: standing on holy ground

At the beginning of this study, it was suggested that rock-art in its landscapes can tell us something of the people who made and used it, if we ask the right questions. Initial questions when beginning this study were about the prevailing discourse: signposting routes, imparting information, connections to water perhaps, but the fieldwork findings did not lead anywhere productive with these themes. Two major issues, the remarkable number of sites on Green Crag Slack, and the smaller but obvious concentration of sites at Rivock, were seen as significant and potentially informative from the beginning, though difficult to frame as research questions.

Whilst carrying out the fieldwork on Rombalds Moor, it was only after many visits to the Moor that I began to suspect that many of the rock-art sites were 'looking at' particular carved rocks that might be natural monuments. Processing the fieldwork findings using Excel spreadsheets, that readily allow the creation of data subsets, and GIS, that allows the spreadsheet data to be plotted on a map and viewsheds created, began to answer questions that I had not originally set. Suddenly, the Rivock Arc stood out clearly, Bradley Moor hilltop really could just be glimpsed in the distance, and it was actually possible to see right through the Aire Gap to Coniston Old Man, and beyond, as I had been told (R Stroud, 2013, *pers comm*). As the fieldwork went on, the growing numbers of stones with views of a handful of large impressive sites became increasingly compelling, and then the three-viewshed map of Green Crag Slack was a revelation (see Chapter Seven, and fig 92). Similarly compelling was the challenging physicality of the natural monuments, and its converse, the large number of ground-level cup-stones within sight of them, that could be carved only by getting down low, perhaps onto your knees (Chapter Nine sections 9.6 & 9.7). I had not seen or read about anything like this before in Britain.

Finding natural monuments as a focus for the making of rock-art was not an expected finding, and to find five in this relatively small area was very surprising. An obvious and crucially important question immediately arising from this is whether natural monuments can be found in other rock-art areas of Britain, and I have to be very clear about this: I don't know. Sharpe (2007, 291-293), though she does not use the term here, identifies a possible natural monument in the Lake District, the Lion and Lamb rock, which

resembles an animal head from some angles. It has not been reported as carved, but she notes that it is visible from a cup-marked patch of outcrop. Subsequently, she describes several heavily cup-marked rocks, mostly in valleys with views of mountains (Sharpe, 2015), but it is not clear if these views include axe-stone extraction sites.

As what might be called an informed tourist, with just a few days to spare, I have visited rock-art sites in Argyll, and in a number of areas of Northumberland, and have to confess to spending most time at the most intricate sites. If there are natural monuments there, I did not see them; there are of course many built monuments in both areas. Many of the rock-art sites in Argyll and Northumberland, whilst impressive close up, are carved onto rock-sheet, impossible to make out from any distance away, and it is hard to see them as natural monuments in the way that natural monuments can be seen on Rombalds Moor. Moreover, by not visiting simple cup-stones in these areas, I might very well have made finding any natural monuments less likely. Further research in rock-art areas of Britain is called for. I am convinced that if natural monuments are present, the only way to find them is by systematically visiting all the rock-art sites in the area, and thoroughly recording and considering their views. 'All sites' includes, perhaps particularly, the small and seemingly unexciting sites, even rocks with just one cup. This takes a considerable amount of time in the planning, a good gazetteer, a handheld GPS device to aid finding the stones, and crucially, the availability of appropriate mapping technology.

The unusual, entirely abstract set of motifs in British rock-art seem to set it apart from other national corpora of rock-art, but the interpretations arising from the fieldwork here suggest that it can readily be seen as part of the sub-Arctic rock-art world, made from the same animistic understandings of the cosmos. This world-view has been explored best where ethnography is available, leading to a lot of terminology which seems very American. Although American rock-art, much of it painted, much of it with vivid depictions, is very different from British rock-art, the underlying behaviours seem comparable. On Rombalds Moor, people were making rock-art as part of the way in which they created their identities, in a world wholly charged with spiritual meaning.

When I began this work, I didn't expect to be talking about animism, vision questing and shamanist practice on Ilkley Moor. I really didn't. But you have to go where the evidence takes you.

Appendices

The Appendices are presented in the order that they are referred to in the main chapters:

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Appendix 1 CSI locale abbreviations and full locale names

When using the ERA website search function, a more accurate search result will be obtained if the full locale name is used, eg Hawksworth Shaw 01, rather than HS 01

Table A1 CSI locale names

There are 73 CSI locales

AC	Addingham Crag
BB	Backstone Beck
BBH	Black Beck Hole
BC	Birch Close
BH	Bucking Hill
BLA	Black Beck
BM	Burley Moor
BP	Black Pots

BRP	Bradup
BRU	Brunthwaite Crag
BS	Barmishaw
BST	Badger Stone
CB	Coldstone Beck
CC	Cow and Calf
CHH	Craven Hall Hill
CSE	Coarse Stone Edge
CTH	Cranshaw Thorn Hill
DH	Dene Hole

DSS	Doubler Stones
DST	Doubler Stones Allotment
EBS	East Buck Stones
EG	Elam Grange
FG	Fawether Grange
FS	Fenny Shaw
GC	Green Crag
GCS	Green Crag Slack
GF	Gib Field
GG	Green Gates
GH	Grainings Head
GHD	Gill Head
HAH	Hardwick Holes
HAW	Haw
HB	High Brunthwaite
HC	High Carr
HH	Hardwick House
HIC	High Crag
HM	High Moor
HOW	How Beck
HR	Hangingstones Rock
HRD	Hangingstones Road
HS	Hawksworth Shaw
HST	Hangingstones
IC	Ilkley Crag
IS	Idol Stone
LD	Lanshaw Delves
LL	Lanshaw Lad
LS	Lanshaw
LSS	Little Skirtful of Stones
PAR	Panorama Rocks
PC	Pipers Crag
PR	Pancake Ridge
PST	Pancake Stone
PW	Panorama Woods
RB	Rushy Beck
RE	Rivock Edge
RH	Rough Holden
RHW	Robin Hood Wood
RV	Rivock
SC	Stead Crag
SH	Stanbury Hill
SP	Southpiece
SST	Swastika Stone
STE	Stead
SW	Silver Well

TS	Todmor Stones
WB	Woofa Bank
WC	Woodhouse Crag
WCM	White Crag Moss
WD	Westwood Drive
WG	Whetstone Gate
WH	Weary Hill
WHW	Willie Hall Wood
WW	White Wells

Appendix 2 Removed Stones: carved stones in B&V and CSI databases, but excluded from the study database, with reasons.

Table A2 Sites listed by Boughey & Vickerman (2003, 2013) but excluded

Stone Nos.	Reasons for Exclusion
1-31	outside study area
36	Riddlesden: not described by B&V; not found by CSI or during fieldwork
52	Rivock: not found by B&V or CSI either, and motifs not fully recorded
56	Gawk Stones: inaccessible surface, not accessed by Hedges, B&V or CSI
76	Rivock: natural markings
80	Rivock: natural markings
84	Rivock: not found by B&V or CSI either; 4-fig grid ref; motif description uncertain and atypical
94 & 95	Two Eggs: both described by B & V as probable natural markings
104	B&V: 'confused with 98, so number 104 deleted'
113-114	outside study area
115	Ashlar Chair: described by B&V as probable natural markings
116-139	outside study area
140	Horncliffe Circle: described by B&V as probable natural markings
141-175	outside study area
177-184	outside study area
186	outside study area
190-209	outside study area
218	Ilkley: not found by B&V or CSI either; no description of motifs
220	Black Beck Hole: described by B&V as probable natural markings
221	Black Beck Hole: described by B&V as probable natural markings
241	Silver Well: described by B&V as probable natural markings
243	Weary Hill: described by B&V as probable natural markings
246	Thimble Stones: described by B&V as probable natural markings
254	Green Gates: described by B&V as probable natural markings
265	Ilkley Moor: described by B&V as probable recent markings
266	Ilkley Moor: described by B&V as probable recent markings
269	Cranshaw Thorn Hill: described by B&V as probable recent markings
273	Cranshaw Thorn Hill: not found by B&V or CSI either; motif description uncertain
275	Lanshaw: described by B&V as probable natural markings
277	Ilkley Moor: described by B&V as probable natural markings
327	Idol Rock (not to be confused with 322 the Idol Stone): described by B&V as probable natural markings
360	Stead Crag: described by B&V as probable natural markings
380	Ben Rhydding Golf Course (now lost) carved gatepost
381	Ben Rhydding Golf Course (now lost) small loose rock
387	Stead Crag: described by B&V as probable natural markings
391	Craven Hall Hill: natural markings
396-647	outside study area

Table A3 Sites listed by CSI (ERA England’s Rock Art, nd) but excluded, with reasons

Stone Nos.	Reasons for exclusion
WC 01a	natural markings
CC 07	natural markings
CC 09	natural markings
HRD 01	natural markings
PR 11a	natural markings
GC 12a	natural markings
WB 17a	natural markings
LD 01	natural markings
LD 02	natural markings
LD 06	natural markings
RV 29a	natural markings
RV 33	natural markings
RE 01	natural markings
DH 01a	natural markings
BM 01	natural markings
BM 02	natural markings
BM 05	natural markings
BM 06	natural markings
BM 07	natural markings
BRU 01	natural markings
AC 01a	natural markings
CSE 02a	natural markings
PC 04	natural markings

Appendix 3: Data from Bannister (1985)

Two diagrams from Bannister (1985) are shown here, Fig A1 ‘Suggested correlation of all the pollen diagrams’ and Fig A2 ‘Lanshaw 2 pollen diagram’. These must be interpreted carefully; all her dates are given as radiocarbon years BP, so it is necessary to convert her dates to cal BC.

Table A4 lists all the dates given in her thesis with their equivalents in cal BC, converted using CalPal Online (Weninger & Jöris, 2007).

Table A5 is a glossary of all the plant names appearing in the pollen diagram.

Fig A1 below shows Bannister's suggested correlation of all the pollen diagrams (1985, 152). The solid lines connecting points on profiles represent either connections supported by her radiocarbon dates (note that these are expressed in radiocarbon years BP; for cal BC equivalents, see Table A4 below), or correlations which seemed secure due to 'obvious changes in the pollen assemblages'; the dotted lines, she says, represent correlations which seem likely, but are less well supported by evidence (*ibid*, 151).

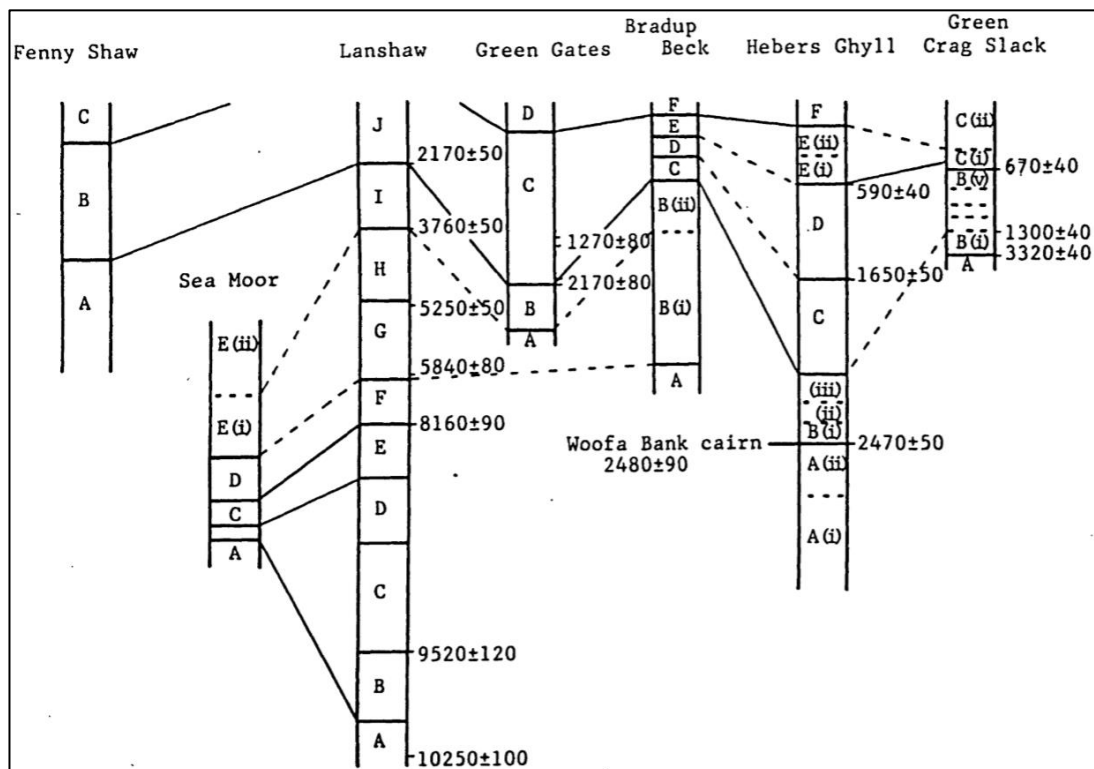
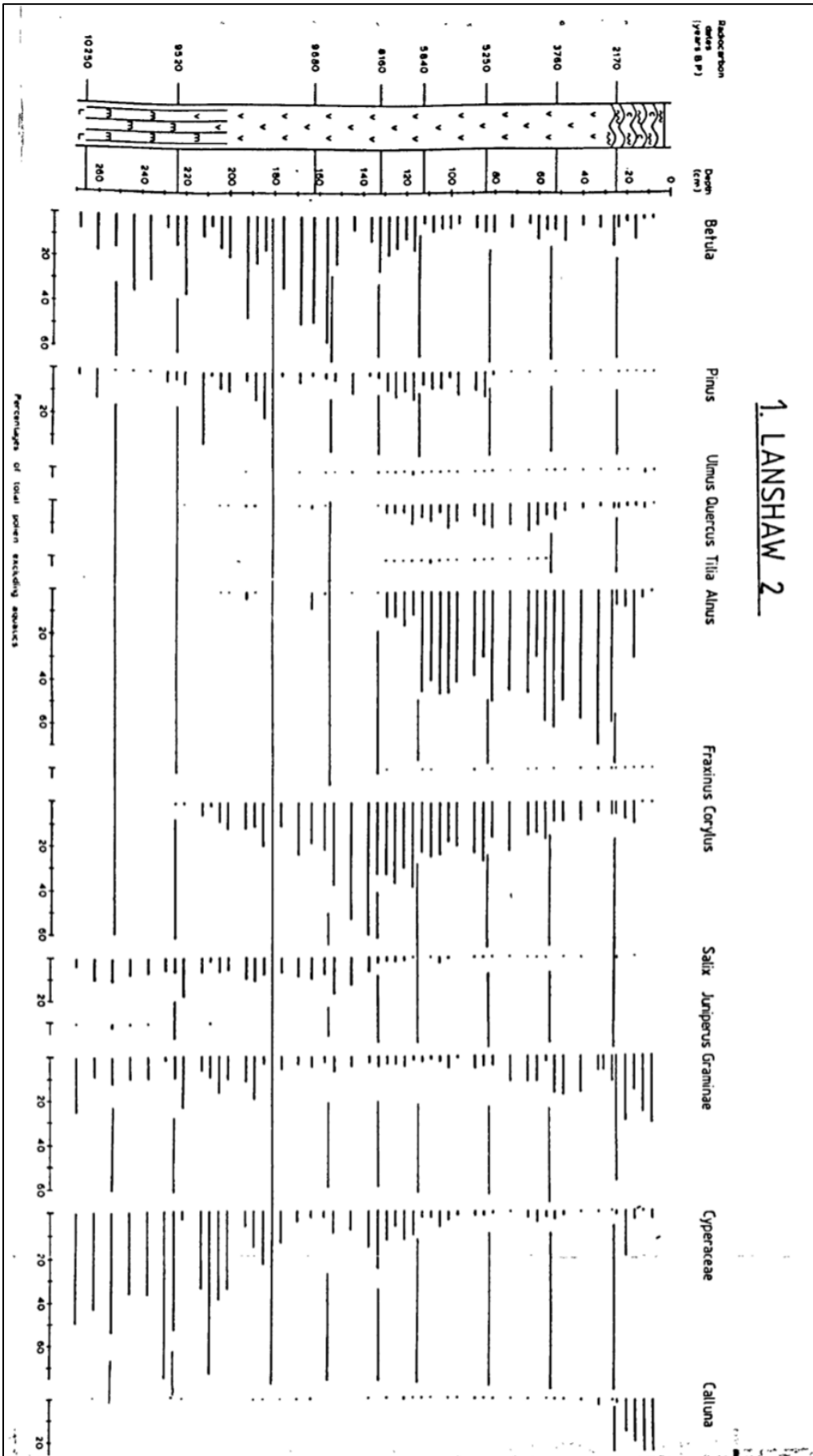


Fig A1 Suggested correlation of all the pollen diagrams (Bannister, 1985, 152).

The Lanshaw 2 pollen diagram is shown in Fig A2 (below, on two pages) (Bannister, 1985, 182-183). This shows, for example, that the oldest deposits show small amounts of *Betula*, *Pinus*, *Salix* and *Juniper* pollens, with grasses and sedges, but that trees, particularly *Alnus*, *Betula* and *Corylus* come to dominate the assemblage until late in the sequence when grasses and heather become more important.

Fig A2 (overleaf, on two pages) Lanshaw 2 pollen diagram (Bannister 1985, 182-183). See Table A4 below for conversion of dates to cal BC.

1. LANSHAW 2



P.A.Z.

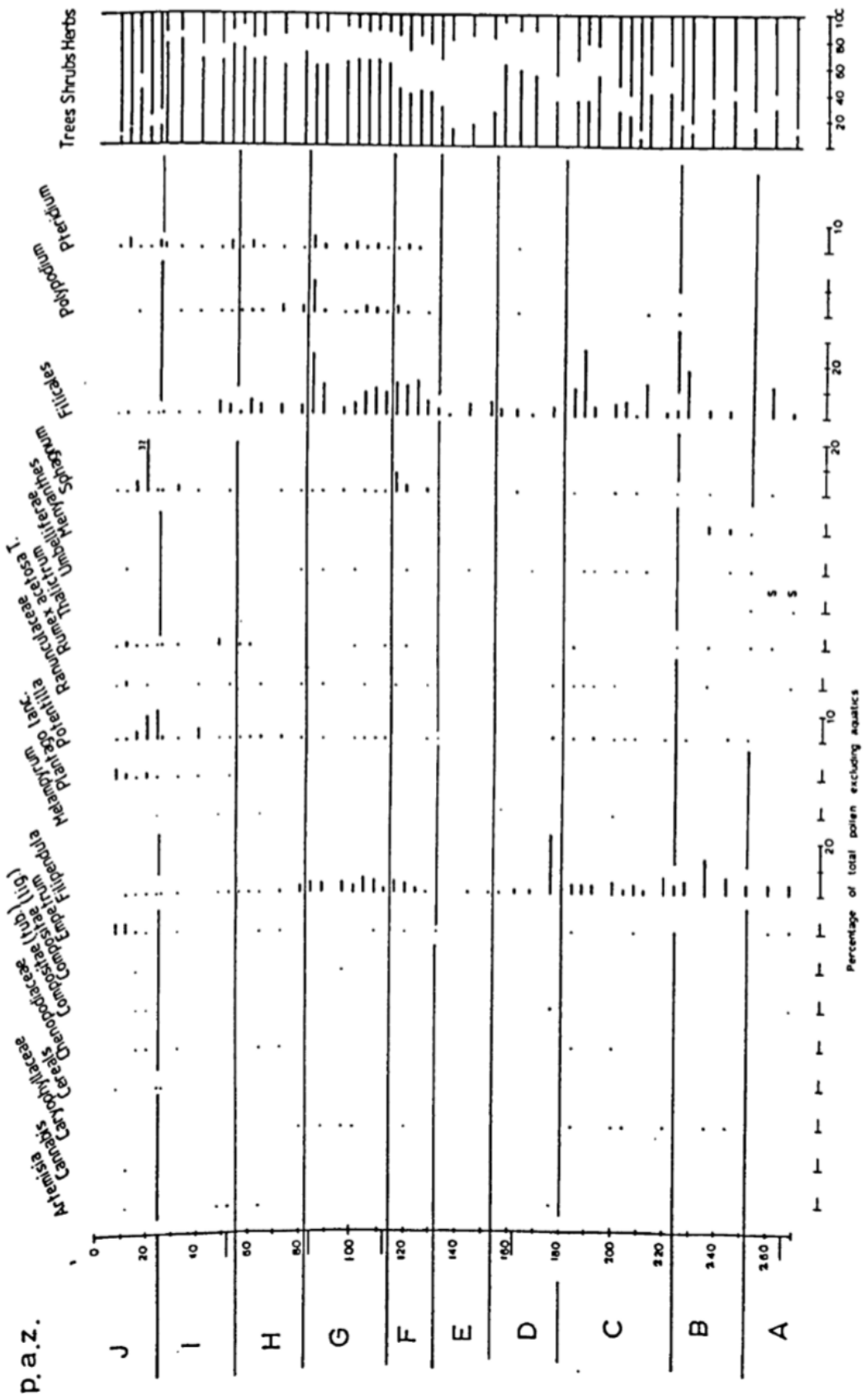


Table A4 Calibration of Bannister’s radiocarbon years BP using CalPal Online (Weninger & Jöris, 2007)

SITE	radiocarbon yrs BP (Bannister)	calibrated dates – note: some (in bold) are AD
Lanshaw	10250+/-100	10088+/-270 cal BC
	9520+/-120	8912+/-198 cal BC
	8160+/-90	7191+/-118 cal BC
	5840+/-80	4698+/-97 cal BC
	5250+/-50	4096+/-87 cal BC
	3760+/-50	2176+/-91 cal BC
	2170+/-50	247+/-89 cal BC
Green Gates	2170+/-80	226+/-111 cal BC
	1270+/-80	768+/-85 cal AD
Woofa Cairn	2480+/-90	605+/-132 cal BC
Heber’s Ghyll	2470+/-50	606+/-117 cal BC
	1650+/-50	407+/-76 cal AD
	590+/-40	1352+/-40 cal AD
GCS	3320+/-40	1603+/-56 cal BC
	1300+/-40	714+/-42 cal AD
	670+/-40	1328+/-44 cal AD

Table A5 Glossary of plant names in Lanshaw 2 Pollen Diagram, Fig A2 above.

Alnus	alder
Artemisia	mugworts
Betula	birch
Calluna	heather
Cannabis	hemp (endemic British varieties not psychoactive)
Caryophyllaceae	flowering plants including campions
Chenopodiaceae	herbs including Fat Hen and Good King Henry

Compositae	daisies
Corylus	hazel
Cyperaceae	sedges
Empetrum	crowberries
Filicales	ferns
Filipendula	meadowsweet
Fraxinus	ash
Gramineae	grasses
Juniperus	juniper
Melampyrum	cow wheats
Menyanthes	bogbean
Plantago	plantains
Pinus	pine
Polypodium	ferns
Potentilla	cinquefoils and tormentils
Pteridium	bracken
Quercus	oak
Ranunculaceae	buttercups and crowfoots
Rumex	docks
Salix	willows
Sphagnum	bog moss
Thalictrum	meadow rue
Tilia	lime
Umbelliferae	umbellifers, including weeds, aromatics, food plants and poisons
Ulmus	elm

Appendix 4: Fieldwork Recording Sheets

Fig A3 (on four pages, below) Fieldwork Recording Sheets: General; Cairns & Walls; Groups; Water. For Portable? Y E D N refers to possible portability: Yes Easy Difficult No

A) GENERAL RECORDING SHEET

FIELD RECORDING SHEETS: GENERAL				
PICTURE NO	DETAILS	SUPPLEMENTARY SHEETS		ROCK NO
				DATE
		GROUP	Y / N	
				NM
		WATER	Y / N	
		FREE-STANDING BEDROCK OUTCROP SHEET		GPS
		PORTABLE? Y E D N		LOCALE
		NATURAL MARKINGS/UNUSUAL ROCK? YES NO		DESIGN
		SEE OTHER CARVED ROCKS? YES NO		
		NUMBERS:		SEE WATER NEARBY? YES NO
				DISTANCE:
REMARKS			SKETCH	

B) CAIRNS & WALLS RECORDING SHEET

FIELD RECORDING SHEETS: CAIRNS AND WALLS	
OTHER CARVED ROCKS IN CAIRN/WALL? YES NO NUMBERS:	ROCK NO
	DATE
	LOCALE
ROCK PART OF GROUP BEYOND CAIRN/WALL? YES NO NUMBERS:	PART OF OTHER STRUCTURE? YES NO
	CAIRN GPS CENTRE KERB? Y / N
ROCK: PORTABLE? Y E D N ROCK PORTABLE? ANY EDGES SHARP? YES NO ORTHOSTAT? YES NO DESIGN: SIMPLE COMPLEX BOTH NATURAL MARKS ON ROCK? YES NO	SKETCH OF ROCK
REMARKS	SKETCH OF CAIRN AND LOCALE

C) GROUPS RECORDING SHEET

FIELD RECORDING SHEETS: GROUPS	
OTHER CARVED ROCKS IN GROUP NUMBERS:	ROCK NUMBERS
	DATE
ALSO IN CAIRN / WALL / STRUCTURE? YES NO	LOCALE
	LINEAR / CIRCULAR
ALIGNMENT: VIEW	
REMARKS	SKETCH MAP

D) WATER RECORDING SHEET

FIELD RECORDING SHEETS: WATER	
WATER TYPE: SPRING STREAM POOL	ROCK NO
CLOSEST WATER GPS:	DATE
DISTANCE TO WATER:	LOCALE
HEIGHTS AOD	WATER AUDIBLE?
ROCK:	YES NO
WATER:	
DESIGN ON ROCK: SIMPLE COMPLEX BOTH	
OTHER CARVED ROCKS NEARBY? YES NO	
NUMBERS:	
REMARKS	SKETCH MAP

Appendix 5 Carved stones with no cups

Table A6 Carved stones with no cups

Number	Description
32/HB 01	flat, ground-level boulder under wall, >50% of surface hidden: two pairs of 1-ring CAR, no grooves
49/RV 06	narrow, ground-level rectangular rock: intricate design of one 1-ring CAR, 4 long grooves, one encircling
69/DST 03	large, ground-level sloping eroded rock: two 1-ring CAR (one with comet), one possible 2-ring CAR, no grooves
70/DST 04	very overgrown eroded ground-level rock: two or three 1-ring CAR, one or two 2-ring CAR, no grooves
SH 13	portable, probably quarried, small rock in cairn: one 2-ring CAR, design cut through, no grooves
WC 03	worked gatepost on side, perhaps a fragment quarried out and moved: one or two 1-ring CAR (one may be a cup), no grooves
236/PW 05	flat upstanding medium boulder: one 1-ring CAR, no grooves
252/GG 02	small ridgeback rock in puddle: one 2-ring CAR, framed by 6 parallel swirling grooves going down into puddle
257a/WCM 02	small upstanding cracky rock inset in slope in puddle: one very eroded 1-ring CAR, no grooves
CTH 01	small upstanding rock, quarried: two 1-ring CAR, one cut through; one 2-ring CAR, damaged; no grooves
LS 05	moortop ground-level cracked rock: one 1-ring CAR, no grooves
343/LS 08	medium large domed rock just below moor top: 2-3 long grooves only
344/LS 09	small ground-level rock just below moor top: perhaps 3 grooves only
357/GCS 15	large upstanding boulder: one 1-ring CAR at apex, no grooves
358/GCS 16	small upstanding domed rock: one 1-ring CAR at apex, no grooves
TS 03	medium upstanding cracky rock: one very small 1-ring CAR

Appendix 6 Carved stones standing in puddles

Fig A4 Carved stones standing in puddles

All Images: Author & P Deacon.



242/WH 01



244/WH 03



252/GG 02



255/GG 04



255a/WCM 01



257a/WCM 02

Appendix 7 Carved stones with cracks

35 carved stones were recorded as having cracks. Ten of them have cup-and-ring motifs. Six carved stones have cups in cracks.

Table A7 Carved stones with cracks

Stone No.	Description
40c/RHW 03	flat boulder, ground-level, 2 cracks, one cup between cracks
40h/RH 05	flat boulder, ground level, 6-8 scattered cracks all N of crack
58/RV 14	flat boulder, quartered by cracks, 4 scattered cups in N corner
61/RV 17	rounded odd shaped pale rock, 2 cups at apex, touching
64/RV 20	flat ground level rock near 66 & 67, slightly cracky, 15-20 scattered cups
65/RV 21	pale stepped rock, one deep crack, 20 scattered cups, one at top of crack; eight 1-ring CARs, scattered
105/SH 08	small ground-level cracked rock, about 60 cups, in lines, in arcs, scattered; short grooves connecting cups
TS 03	medium cracky fissured rock, one very small 1-ring CAR only
TS 04	medium near ground-level, nearly flat rock with fissure; 2 cups, one on either side of fissure, top of fissure perhaps enhanced
BLA 01	small upstanding rock, small crack and hole, 1 cup at apex
210/AC 01 Addingham Crag Stone	large rock, large natural cleft, 40 cups, scattered, in short grooves or near CARs, 3-4 short grooves with cups, ten 1-ring CAR, some linked or touching
224/BBH 05	small slightly domed rock, whole surface carved, natural cracks incorporated into design. Three 2-ring CAR, three 1-ring CAR (one with comet), all touching; 5-10 scattered cups; 3 grooves with 1 cup apiece, 1 groove with 2 cups
250/BST 01 Badger Stone	large ridgeback, several long deep cracks. South face: three to five 2-ring CAR with comets, linked; four or five 1-ring horseshoe CARs, all touching; complex linking grooves and possible half-swastika; 20-30 scattered cups. East face: two or three 1-ring CAR; 6 cups
251/GG 01	ground-level flat cracked rock, 3 cups, 2 linked by groove
256 GG 05	small ridgeback, vertical bedding planes, horizontal crack near base, 2 grooves, 3 cups, 1 at top of each groove, 1 between
257a/WCM 02	small cracky rock in slope, one 1-ring CAR
274/GHD 01	large cracky boulder near Backstone Beck, 7-10 cups, 3 in line
297/PR 02	medium rock in slope, flat top, cracked, 7 cups, 3 in cracks
302/PR 05 Haystack	very large upstanding boulder, natural holes and fissures. Six or seven 1-ring CAR (one with comet), short grooves with 2-4 cups; 30 scattered cups
307/GC 13	medium upstanding boulder, 6 deep holes. 18-25 scattered cups, 3 along crack
LD 03	medium boulder, 3 cups in line, groove from natural basin to natural crack
314/CC 06	medium rock, big crack, 4-5 cups at cracky end

339/LS 05	ground level cracked rock, 1 cup, 1 groove
349/LS 12	medium rock on slope, small crack, 7-8 scattered cups
356a/GCS 14	large cuboid rock, natural holes in vertical face, deep crack in top, 3 cups; end of crack enhanced
357/GCS 15	medium upstanding rock, line of fissures on top, one 1-ring CAR
359/GCS 17	small rock, central crack, one or two 1-ring CAR, 1 cup N of crack
370 WB 10	small ground level rock, crack; 1 cup at top of crack, 3 in line with it; 2 further cups (one rather oval)
371/WB 11	medium ground level rock, 8-10 scattered cups
378/WB 16	medium low flat rock, crack; 70 cups: some near crack, some in curves, some in lines, some larger
BM 08	small rock, natural fissure, 4 cups on face with fissure
BM 10	medium pyramidal rock, one crack; 6 cups at apex; one cup on face with crack
382/RB 03	small pale cracky rock, one 1-ring CAR with curved comet tail; 2 cups joined by groove
386/SC 01	large upstanding cracked rock, 2 natural basins, 1 cup near basins
390a/CHH 02	small ground level rock, cracks and quartz pebbly inclusions, 10-11 scattered cups

Bibliography

Allen, J Romilly (1879) 'The prehistoric rock-sculptures of Ilkley', *Journal of the British Archaeological Association*, 35, 15-25.

Allen, J Romilly (1882) 'Notice of sculptured rocks near Ilkley', *Journal of the British Archaeological Association*, 38, 158.

Allen, MJ (1995) 'Before Stonehenge', in RMJ Cleal, KE Walker & R Montague, *Stonehenge in its landscape: twentieth century excavations*, 41-62. London: English Heritage Archaeological Reports.

Allen, MJ & Gardiner, J (2002) 'A sense of time: cultural markers in the Mesolithic of southern England?', in B David & M Wilson (eds) *Inscribed landscapes: marking and making place*, 139-153. Honolulu: University of Hawai'i Press.

Aircraft accidents in Yorkshire (nd)

<http://www.yorkshireaircraft.co.uk/aircraft/planes/dales/tabledales.html>

Page viewed 17 November 2012.

Anati, E, Carafa, S, Scotti, G, Fradkin, A, Bastoni, R & Cavagnis, D (eds); Giorgi, P (translator) (2014) *Valcamonica rock art: a history for Europe*, 3rd digital edition: Atelier.

Armstrong, AC (2013) 'The natural history of Stanbury Hill: Geology', in LD Brown, K Boughey, D Paley, D Spencer, J Croasdale, D Hallam, J McIlwaine & contributors, *Stanbury Hill Project: archaeological investigation of a rock art site*, 11-14. Bingley & District Local History Society.

Arsenault, D (2004a) 'Rock-art, landscape, sacred places: attitudes in contemporary archaeological theory', in C Chippindale & G Nash (eds), *The figured landscape of rock-art: looking at pictures in place*, 69-84. Cambridge: Cambridge University Press.

Arsenault, D (2004b) 'From natural setting to spiritual places in the Algonkian sacred landscape: an archaeological, ethnohistorical and ethnographic analysis of Canadian Shield rock-art sites', in C Chippindale & G Nash (eds), *The figured landscape of rock-art: looking at pictures in place*, 289-317. Cambridge: Cambridge University Press.

Aston, M & Rowley, T (1974) *Landscape Archaeology: an introduction to fieldwork techniques on post-Roman landscapes*. Newton Abbot: David & Charles.

Aston, M (1985) *Interpreting the landscape: landscape archaeology and local history*. London: Routledge.

Bahn, P, Munoz, F, Pettit, P & Ripoll, S (2004) 'New Discoveries of Cave Art in Church Hole (Creswell Crags, England)', *Antiquity*, 77 (300), 227-231.

Bahn, P (2010) *Prehistoric rock art: polemics and progress*. Cambridge: Cambridge University Press.

Bannister, J (1985) *The vegetational and archaeological history of Rombalds Moor, West Yorkshire*. Unpublished PhD thesis: E-Theses, University of Leeds:
<http://etheses.whiterose.ac.uk/164/> Page viewed 30 Oct 2012.

Barnatt, J (2008) 'From clearance plots to sustained farming: Peak District fields in prehistory', in AM Chadwick (ed), *Recent approaches to the archaeology of land allotment. BAR International Series 1875*. Oxford: Archaeopress.

Barnatt, J & Edmonds, M (2002) 'Places apart? Caves and monuments in Neolithic and Early Bronze Age Britain', *Cambridge Archaeological Journal*, 12(1) 113-129.

Barnett, T & Díaz-Andreu, M (2005) 'Knowledge capture and transfer in rock art studies', *Conservation and Management of Archaeological Sites*, 7, 35-48.

Barrett, JC (1994) *Fragments from antiquity*. Oxford: Blackwell.

Barrett, JC & Ko, I (2009) 'A phenomenology of landscape: A crisis in British landscape archaeology?' *Journal of Social Archaeology*, 9, 275.

Beckensall, S (1999) *British prehistoric rock art*. Stroud: Tempus.

Beckensall, S (2001) *Prehistoric rock art in Northumberland*. Stroud: Tempus.

Beckensall, S (2002a) *Prehistoric rock art in Cumbria*. Stroud: Tempus.

Beckensall, S (2002b) 'British prehistoric rock-art in the landscape', in G Nash & C Chippindale (eds), *European landscapes of rock-art*, 39-70. London: Routledge.

Beckensall, S & Laurie, T (1998) *Prehistoric rock art of County Durham, Swaledale and Wensleydale*. Durham: County Durham Books.

Bednarik, R (1990) 'On neuropsychology and shamanism in rock art', *Current Anthropology*, 31 (1), 77-80.

Bednarik, RG (2000) 'Some minor caveats about the place of rock art in the landscape', in G Nash (ed), *Signifying place and space: World Perspectives of Rock Art and Landscape*, 129-130. BAR International Series S902. Oxford: Archaeopress.

Bednarik, RG (2013) 'Myths about rock art', *Journal of Literature and Art Studies*, 3(8), 482-500.

Bell, M & Noble, G (2012) 'Prehistoric woodland ecology', in AM Jones, J Pollard, MJ Allen & J Gardiner (eds), *Image, memory and monumentality: archaeological engagements with the material world*, 80-92. Oxford: The Prehistoric Society and Oxbow Books.

Bender, B (2002) 'Time and landscape', *Current Anthropology*, 43, 103-112.

Bender, B (2006) 'Place and landscape', in C Tilley, W Keane, S Küchler, M Rowlands & P Spyer (eds), *Handbook of Material Culture*, 303-314. London: SAGE Publications Ltd.

Bender, B, Hamilton, S & Tilley, C (2007) *Stone Worlds: Narrative and Reflexivity in Landscape Archaeology*. Walnut Creek: Left Coast Press.

Bennet, P (nd) *Hambleton, Low Bradley, Skipton, North Yorkshire: Standing Stones*.

<http://megalithix.wordpress.com/2008/10/09/hamblethorpe-stones/>

Page viewed 25 Jan 2013.

Berg, D (2001) 'The physical environment', in I Roberts, A Burgess & D Berg (eds), *A new link to the past: the archaeological landscape of the A1-M1 Link Road*, 3-9. Yorkshire Archaeology 7. Leeds: WYAS.

Bidwell, P & Hodgson, N (2009) *The Roman Army in Northern England*. Kendal: Titus Wilson & Son.

Boughey, K (2013) 'Background to the Stanbury Hill Project', in LD Brown, K Boughey, D Paley, D Spencer, J Croasdale, D Hallam, J McIlwaine & contributors, *Stanbury Hill Project: archaeological investigation of a rock art site*, 1-9. Bingley & District Local History Society.

Boughey, K (2014) *Personal communication*: conversation on reviewing new CSI sites. April 2014.

Boughey, KJS & Vickerman, EA (2003) *Prehistoric rock art of the West Riding: cup and ring marked rocks of the valleys of the Aire, Wharfe, Washburn and Nidd*. Leeds: West Yorkshire Archaeological Services.

Boughey, KJS & Vickerman, EA (2013) *Prehistoric rock art of the West Riding: cup and ring marked rocks of the valleys of the Aire, Wharfe, Washburn and Nidd: Supplementary CD*. Leeds: West Yorkshire Archaeological Services.

Bradley, R (1991a) 'Monuments and places', in P Garwood, D Jennings, R Skeates & J Toms (eds), *Sacred and profane: proceedings of a conference on archaeology, ritual and religion, Oxford 1989*, 135-140. Oxford: Oxford Committee for Archaeology.

Bradley, R (1991b) 'Rock art and the perception of landscape', *Cambridge Archaeological Journal*, 1(1), 71-101.

Bradley, R (1994) 'Symbols and signposts: understanding the prehistoric petroglyphs of the British Isles', in C Renfrew & E Zubrow (eds), *The ancient mind: elements of cognitive archaeology*, 95-106. Cambridge: Cambridge University Press.

Bradley, R (1996) 'Learning from places – topographical analysis of Northern British Rock Art', *Northern Archaeology*, 13/14, 87-99.

Bradley, R (1997) *Rock art and the prehistory of Atlantic Europe: Signing the Land*. Abingdon: Routledge.

Bradley, R (1998a) *The significance of monuments: on the shaping of human experience in Neolithic and Bronze Age Europe*. London: Routledge.

Bradley, R (1998b) 'Ruined buildings, ruined stones', *World Archaeology*, 30(1), 13-22.

Bradley, R (2000) *An archaeology of natural places*. London: Routledge.

Bradley, R (2002) *The past in prehistoric societies*. London: Routledge.

Bradley, R (2007) *The prehistory of Britain and Ireland*. Cambridge: Cambridge University Press.

Bradley, R (2009) *Image and audience: rethinking prehistoric art*. Oxford: Oxford University Press.

Bradley, R (2010) 'Dead stone and living rock', in B O'Connor, G Cooney & J Chapman (eds), *Materialitas: working stone, carving identity*, 1-8. Oxford: The Prehistoric Society and Oxbow Books.

Bradley, R, Brown, A & Watson, A (2010) 'The archaeology and environment of prehistoric rock carvings on Ben Lawers,' *Past: the Newsletter of the Prehistoric Society*, 65, 10-12.

Bradley, R, Criado Boardo, F & Fabregas Valcarce, R (1994) 'Rock art research as landscape archaeology: a pilot study in Galicia, north-west Spain', *World Archaeology*, 25 (3), 374-390.

Bradley, R & Edmonds, M (1993) *Interpreting the axe trade*. Cambridge: Cambridge University Press.

Bradley, R & Watson, A (2012) 'Ben Lawers: carved rocks on a loud mountain', in A Cochrane & AM Jones (eds), *Visualising the Neolithic: Abstraction, figuration, performance, representation*, 64-78. Oxford: Oxbow.

British Rock Art Collection (nd) <http://ukra.jalbum.net/brac/>
Page viewed 24 June 2014.

Brown, AG (2000) 'Floodplain vegetation history: clearings as potential ritual spaces?', in AS Fairburn (ed), *Plants in Neolithic Britain and beyond: Neolithic Studies Group Seminar Papers 5*, 49-62. Oxford: Oxbow.

Brown, L (2014) *Personal communication*: Conversation on CSI working brief. 24 May 2014.

Brown, L (2014) *Personal communication*: Conversation on policy for adding sites to CSI list. 24 May 2014.

Brown, LD & Boughey, K (2013) 'Stanbury Hill: an integrated discussion of the evidence', in LD Brown, K Boughey, D Paley, D Spencer, J Croasdale, D Hallam, J McIlwaine & contributors, *Stanbury Hill Project: archaeological investigation of a rock art site*, 87-90. Bingley & District Local History Society.

Brown, LD, Boughey, K, Paley, D, Spencer, D, Croasdale, J, Hallam, D, McIlwaine, J & contributors (2013) *Stanbury Hill Project: archaeological investigation of a rock art site*. Bingley & District Local History Society.

Brown, LD, Hallam, D, Malley, F, Nottage, R, Shepherd, D & Volichenko, L (2013) 'Summary of the excavations', in *Stanbury Hill Project: archaeological investigation of a rock art site*, 42-77. Bingley & District Local History Society.

Brown, P & Brown B (2008) *Prehistoric rock art in the Northern Dales*. Stroud: Tempus.

Brown, PM & Chappell, G (2005) *Prehistoric rock art in the North York Moors*. Stroud: Tempus.

Brown, T (1997) 'Clearances and clearings: deforestation in Mesolithic/Neolithic Britain', *Oxford Journal of Archaeology*, 16(2) 133-146.

Brück, J (2005) 'Experiencing the past? The development of a phenomenological archaeology in British prehistory', *Archaeological Dialogues* 12(1), 45-72.

Brück, J (2008) 'The architecture of routine life', in J Pollard (ed) *Prehistoric Britain*, 248-267. Oxford: Blackwell.

Burrow, S (2010) 'Bryn Celli Ddu Passage Tomb, Anglesey: alignment, construction, date and ritual', *Proceedings of the Prehistoric Society* 76, 249–270.

Carmichael, D, Hubert, J & Reeves, B (1994) 'Introduction', in DL Carmichael, J Hubert, B Reeves & A Schanche (eds), *Sacred sites, sacred places*, 1-8. London: Routledge.

Chadwick, AM (2009) *Research agenda: the Iron Age and Romano-British periods in West Yorkshire*. Leeds: WYAAS.

Chatterton, R (2006) 'Ritual', in C Conneller & G Warren (eds), *Mesolithic Britain and Ireland: new approaches*, 101-120. Stroud: Tempus.

Chippindale, C (2001) 'Studying ancient pictures as pictures', in DS Whitley (ed), *Handbook of rock art research*, 247-272. Walnut Creek: AltaMira Press.

Chippindale, C (2004) 'From millimetre up to kilometre: a framework of space and of scale for reporting and studying rock-art in its landscape', in C Chippindale and G Nash (eds), *The figured landscapes of rock-art: looking at pictures in place*, 102-117. Cambridge: Cambridge University Press.

Chippindale, C & Nash, G (2004) 'Pictures in place: approaches to the figured landscapes of rock-art', in C Chippindale & G Nash (eds), *The figured landscape of rock-art: looking at pictures in place*, 1-36. Cambridge: Cambridge University Press.

City of Bradford MDC (2008) *Local Development Framework for Bradford: Landscape Character Supplementary Planning Document: Rombalds Ridge*. City of Bradford MDC
http://www.bradford.gov.uk/NR/rdonlyres/C56383DF-826F-4A29-BA52-67E6CEEF7B91/0/Vol4_RombaldsRidge_October2008.pdf
Page viewed 15 November 2012.

Claris, P, Quartermaine, J & Woolley, AR (1989) 'The Neolithic quarries and axe factory sites of Great Langdale and Scafell Pike: a new field survey', *Proceedings of the Prehistoric Society*, 55, 1-25.

College of the Siskiyous (nd) *The significance of Mount Shasta as a visual resource: Native American artists*. https://www.siskiyous.edu/library/shasta/documents/AB_Ch27.pdf
Page viewed 1 May 2015.

Conneller, C (2004) 'Becoming deer: corporeal transformations at Star Carr', *Archaeological Dialogues*, 11(1), 37-56.

Conneller, C (2010) 'Taskscapes and the Transition', in B Finlayson & G Warren (eds), *Landscapes in Transition*, 184-191. Oxford: Oxbow.

Conneller, C (2011) 'The Mesolithic', in T Insoll (ed) *The Oxford handbook of the archaeology of ritual and religion*, 358-370. Oxford: Oxford University Press.

Conneller, C, Milner, N, Taylor, B & Taylor, M (2012) 'Substantial settlement in the European Early Mesolithic: new research at Starr Carr', *Antiquity*, 86(334), 1004-1020.

Cooney, G (1994) 'Sacred and secular Neolithic landscapes in Ireland', in DL Carmichael, J Hubert, B Reeves & A Schanche (eds), *Sacred sites, sacred places*, 32-43. London: Routledge.

Cooney, G (1997) 'Images of settlement and the landscape in the Neolithic', in P Topping (ed), *Neolithic landscapes: Neolithic Studies Group Seminar Papers 2, Oxbow Monograph 86*, 23-31. Oxford: Oxbow.

Cooney, G (1999) 'Social landscapes in Irish prehistory', in PJ Ucko & R Layton (eds), *The archaeology and anthropology of landscape*, 46-64. Abingdon: Routledge.

Cooney, G (2008) 'Engaging with stone: making the Neolithic in Ireland and Western Britain', in H Fokkens, BJ Coles, AL Van Gijn, JP Kleijne, HH Ponjee & C Slappendel (eds), *Between foraging and farming: An extended broad spectrum of papers presented to Leendeert Louwe Kooijmans: Analecta Praehistorica Leidensia*, 40, 203-214. Faculty of Archaeology, University of Leiden: Leiden.

Cooper, RG (1977) 'Quarrying in the Hambleton Hills, North Yorkshire: the Problem of Identifying Disused Workings', *Industrial Archaeology Review* 1(2), 164-170.

Cowling, ET (1946) *Rombalds Way: a prehistory of mid-Wharfedale*. Otley: William Walker and Sons.

Cowling, ET (1973) 'A Mesolithic flintsite - the Sandbeds, Otley, Yorks', *Yorkshire Archaeological Journal*, 45, 1-12.

CSI Rombalds Moor (nd) *Carved Stone Investigations in a Watershed Landscape*
<http://csirm.wordpress.com/> Website viewed 11 April 2013.

Cummings, V (2002) 'All cultural things: actual and conceptual monuments in the Neolithic of western Britain,' in C Scarre (ed), *Monuments and landscape in Atlantic Europe: perception and society during the Neolithic and Early Bronze Age*, 107-121. London: Routledge.

Cummings, V (2003) 'The origins of monumentality? Mesolithic world-views of the landscape in western Britain', in L Larsson (ed), *Mesolithic on the move*, 74-81. Oxford: Oxbow.

Cummings, V & Whittle, A (2003) 'Tombs with a view: landscape, monuments and trees', *Antiquity*, 77 (296), 255-266.

Dark, P (2006) 'Climate deterioration and land-use change in the first millennium BC: perspectives from the British palynological record', *Journal of Archaeological Science*, 33(10), 1381-1395.

Darvill, T (1996) 'Neolithic buildings in England, Wales and the Isle of Man', in T Darvill & J Thomas (eds), *Neolithic houses in Northwest Europe and beyond: Neolithic Studies Group Seminar Papers 1*, 77-111. Oxford: Oxbow.

Darvill, T (1997) 'Neolithic landscapes: identity and definition', in P Topping (ed) *Neolithic landscapes: Neolithic Studies Group Seminar Papers 2*, Oxbow Monograph 86, 1-13. Oxford: Oxbow.

Darvill, T (1999) 'The historic environment, historic landscapes, and space-time-action models in landscape archaeology', 104-118, in PJ Ucko & R Layton (eds) *The archaeology and anthropology of landscape*, 46-64. Abingdon: Routledge.

Darvill, T (2008) 'Pathways to a panoramic past: a brief history of landscape archaeology in Europe' in B David & J Thomas (eds), *Handbook of Landscape Archaeology*, 60-76. Walnut Creek: Left Coast Press.

Darvill, T (2010) *Prehistoric Britain (2nd Edition)*. Abingdon: Routledge.

Darvill, T (2013) 'Monuments and monumentality in Bronze Age Europe', in H Fokkens & A Harding (eds), *The Oxford Handbook of the European Bronze Age*, 140-158. Oxford: Oxford University Press.

Darvill, T (2014) 'Approaches to the conservation and management of open-air rock-art panels in England, United Kingdom', in T Darvill & APB Fernandes (eds), *Open-air rock-art conservation and management: state of the art and future perspectives*, 17-37. Oxford: Routledge.

Darvill, T & Fernandes, APB (2014) 'Open-air rock-art preservation and conservation: a current state of affairs', in T Darvill & APB Fernandes (eds), *Open-air rock-art conservation and management: state of the art and future perspectives*, 1-16. Oxford: Routledge.

Darvill, T, Ucko, P & Gibson, A (2000) *Rock Art Pilot Project Main Report*. Bournemouth and London: Bournemouth University, Institute of Archaeology, and English Heritage.
<http://eprints.bournemouth.ac.uk/9602/> Page viewed 3 Nov 2012.

Darvill, T & Wainwright, G (2014) 'Beyond Stonehenge: Carn Menyn Quarry and the origin and date of bluestone extraction in the Preseli Hills of south-west Wales', *Antiquity*, 88(342), 1099-1114.

Davies, P & Robb, JG (2004) 'Scratches in the earth: the Underworld as a theme in British prehistory, with particular reference to the Neolithic and Earlier Bronze Age', *Landscape Research*, 29(2), 141-151.

Davies, P, Robb, JG & Ladbrook, D (2005) 'Woodland clearance in the Mesolithic: the social aspects', *Antiquity*, 79, 280-288.

Deacon, V (2012) *The curvilinear rock-art of upland Britain: a landscape approach*. Unpublished BA Dissertation, University of York.

Deakin, P (2007) 'Exploring links between cupmarks and cairnfields', in A Mazel, G Nash & C Waddington (eds), *Art as metaphor: the prehistoric rock art of Britain*, 111-122 . Oxford: Archaeopress.

Deegan, A, Oakey, M & van den Toorn, D (2004) *Lower Wharfedale National Mapping Programme Project: Summary Report*. Advisory Services, WYAS and English Heritage <http://www.englishheritage.org.uk/content/publications/publicationsNew/research-reports/lower-wharfedale-nmp/2957-lower-wharfedale-summary-rep.pdf>
Page viewed 10 November 2012.

Devereux, P (2008) 'The association of prehistoric rock-art and rock selection with acoustically significant landscape locations', in G Nash & G Children (eds), *The Archaeology of Semiotics and the Social Order of Things*, 19-29. Oxford: BAR International Series 1833.

Díaz-Andreu, M, Atiénzar, GG, Benito, CG & Mattioli, T (2017) 'Do you hear what I see? Analyzing visibility and audibility in the rock art landscape of the Alicante Mountains of Spain', *Journal of Anthropological Research*, 73(2), 181-213.

Donahue, RE & Lovis, WA (2006) 'Regional settlement systems in Mesolithic Northern England: scalar issues in mobility and territoriality', *Journal of Anthropological Archaeology*, 25, 248-258.

Dronfield, J (1996) 'Entering alternative realities: Cognition, art and architecture in Irish passage tombs', *Cambridge Journal of Archaeology*, 6: 7-72.

Duell, M (2015) *Elf and safety! Road developers in Iceland ordered to move giant rock along route as it is believed to be an ancient elven church in Icelandic folklore.*

<http://www.dailymail.co.uk/news/article-3002096/Elf-safety-Road-developers-Iceland-ordered-giant-rock-route-believed-ancient-elven-church-Icelandic-folklore.html#ixzz3xWOaMFwr> Page viewed 13 Jan 2016.

Edmonds, M (1997) 'Taskscape, technology and tradition', *Analecta Praehistorica Leidensia* 29, 99-110.

Edmonds, M (1999a) *Ancestral geographies of the Neolithic: landscapes, monuments and memory*. London: Routledge.

Edmonds, M (1999b) 'Inhabiting Neolithic landscapes', *Journal of Quaternary Science*, 14(6), 485-492.

Edmonds, M (2001) *Prehistory in the Peak*. Stroud: Tempus.

Edmonds, M (2004) *The Langdales: landscape and prehistory in a Lakeland valley*. Stroud: Tempus.

Edmonds, M (2006) 'Who said romance was dead?', *Journal of Material Culture*, 11(1/2) 167-188.

Edwards, G (1986) 'Backstone Beck Prehistoric Site', Council for British Archaeology Monograph 1986, 5-10.

Edwards, G & Bradley, R (1999) 'Rock carvings and Neolithic artefacts on Ilkley Moor, West Yorkshire', in R Cleal & A MacSween (eds), *Grooved ware in Britain and Ireland*, 76-77. Oxford: Oxbow.

Elliott, B (2015) 'Facing the chop: redefining British antler mattocks to consider larger-scale maritime networks in the early fifth millennium cal BC', *European Journal of Archaeology*, 18(2), 222-244.

ERA England's Rock Art (nd) <http://archaeologydataservice.ac.uk/era/>
Website viewed 25 September 2014.

ERA Guidelines for rock-art recording (nd)
http://archaeologydataservice.ac.uk/era/section/record_manage/rm_projects_publications_guides.jsf

ESRI (nd) *Performing a viewshed analysis*
http://webhelp.esri.com/arcgisdesktop/9.2/index.cfm?TopicName=Performing_a_viewshed_analysis Page viewed 08 Jan 2017.

Evans, AA, Langer, JL, Donahue, RE, Wolframm, YB & Lovis, WA (2010) 'Lithic raw material sourcing and the assessment of Mesolithic landscape organisation and mobility strategies in Northern England', *The Holocene*, 20(7), 1157-1163.

Evans, AA (2013) 'Artefactual evidence: the lithic assemblage' in LD Brown, K Boughey, D Paley, D Spencer, J Croasdale, D Hallam, J McIlwaine & contributors, *Stanbury Hill Project: archaeological investigation of a rock art site*, 67-72. Bingley & District Local History Society.

Evans, JG (1999) *Land and archaeology: histories of human environment in the British Isles*. Stroud: Tempus.

Exon, S, Gaffney, VL, Woodward, A & Yorston, R (eds) (2000) *Stonehenge Landscapes: Journeys through real-and-imagined worlds*. Oxford: Archaeopress.

Fairless, KJ (2004) 'Burton Moor Settlement', in RF White & PR Wilson (eds) (2004) *Archaeology and Historic Landscapes of the Yorkshire Dales, Occasional Paper No 2*, 99-104. Leeds: Yorkshire Archaeological Society.

Farina, P (1997) 'The motif of the 'Camunian Rose' in the rock art of Valcamonica', *2nd International Congress of Rupestrian Archaeology*
<http://www.rupestre.net/tracce/?p=2369> Page viewed 25 Jan 2014.

Faull, ML (1981) 'The post-Roman period', in ML Faull & SA Moorhouse (eds), *West Yorkshire: an archaeological survey to AD 1500*, 171-229. Wakefield: West Yorkshire Metropolitan County Council.

Faull, ML & Moorhouse, SA (1981) *West Yorkshire: an archaeological survey to AD 1500: Vol 4: the maps*. Wakefield: West Yorkshire Metropolitan County Council.

Feather, SW (1964) 'Mid-Wharfedale cup-and-ring markings. No. 25. Doubler Stones Allotment, Silsden, near Keighley. SE 076466', *Bradford Cartwright Hall Archaeological Group Bulletin*, 9 (9), 90-91.

Feather, S (1971) 'Ilkley (WR), Green Crag Slack', *Yorkshire Archaeological Journal*, 42, 243.

Field, D (2008) 'The development of an agricultural countryside', in J Pollard (ed), *Prehistoric Britain*, 202-224. Oxford: Blackwell.

Fleming, A (2005) 'Megaliths and post-modernism: the case of Wales', *Antiquity*, 79(306), 921-932.

Fleming, A (2006) 'Post-processual Landscape Archaeology: a Critique', *Cambridge Archaeological Journal* 16:3, 267-280.

Fleming, A (2007) 'Don't bin your boots!' *Landscapes* 8(1), 85-99.

Fleming, A (2008) *The Dartmoor reaves: investigating prehistoric land divisions*. 2nd edition. Oxford: Oxbow, Windgather Press.

Flood, J (1997) *Rock art of the Dreamtime: images of ancient Australia*. Sydney: Angus & Robertson.

Foster, S (2010) 'Shaping up rock-art in Scotland: past progress, future directions', in T Barnett & K Sharpe (eds), *Carving a future for British rock art: new directions for research, management and presentation*, 82-93. Oxford: Oxbow.

Freedman, D, Jones, A & Riggott, P (2011) 'Rock art and the Kilmartin landscape', in AM Jones, D Freedman, B O'Connor, H Lamdin-Whymark, R Tipping & A Watson (eds), *An animate landscape: rock art and the prehistory of Kilmartin, Argyll, Scotland*, 222-249. Oxford: Oxbow, Windgather Press.

Friel, RM (2013) 'The military history of Stanbury Hill', in LD Brown, K Boughey, D Paley, D Spencer, J Croasdale, D Hallam, J McIlwaine & contributors, *Stanbury Hill Project: archaeological investigation of a rock art site*, 79-85. Bingley & District Local History Society.

Frodsham, P (1996) 'Spirals in time: Morwick Mill and the spiral motif in the British Neolithic', *Northern Archaeology*, 13/14, 101-138.

Frodsham, P (2000) 'Worlds without ends: towards a new prehistory for central Britain', in J Harding & R Johnston (eds.), *Northern Pasts: Interpretations of the Later Prehistory of Northern England and Southern Scotland*, 15-31. Oxford: BAR British Series 302.

Gaffney, V, Fitch, S, Ramsey, E, Yorston, R, Ch'ng, E, Baldwin, E, Bates, R, Gaffney, C, Ruggles, C, Sparrow, T, McMillan, A, Cowley, D, Fraser, S, Murray, C, Murray, H, Hopla, E & Howard, A (2013) 'Time and a Place: a luni-solar 'time-reckoner' from 8th millennium BC Scotland', *Internet Archaeology* **34**, <http://dx.doi.org/10.11141/ia.34.1>

Page viewed 18 Sept 2014.

Garton, D (1991) 'Neolithic settlements in the Peak District: perspective and prospects', in R Hodges & K Smith (eds), *Recent developments in the archaeology of the Peak District*, 3-22. Sheffield: JR Collis Publications, University of Sheffield.

Garwood, P (2011) 'Rites of passage', in T Insoll (ed) *The Oxford Handbook of the Archaeology of Ritual and Religion*, 261-284. Oxford: Oxford University Press.

Giesen, MJ, Mazel, AD, Graham, DW & Warke, PA (2014) 'The preservation and care of rock-art in changing environments: a view from north-eastern England, United Kingdom', in T Darvill & APB Fernandes (eds), *Open-air rock-art conservation and management: state of the art and future perspectives*, 39-52. Oxford: Routledge.

Gillings, M, Pollard, J & Taylor, J (2010) 'The miniliths of Exmoor', *Proceedings of the Prehistoric Society*, 76, 297-318.

Gillings, M (2015) 'Betylmania: Small standing stones and the megaliths of south-west Britain', *Oxford Journal of Archaeology*, 34(3), 207-233.

Goldhahn, J (2002) 'Roaring rocks: an audio-visual perspective on hunter-gatherer engravings in northern Sweden and Scandinavia', *Norwegian Archaeological Review*, 35(1), 29-61.

Goldhahn, J (2008) 'Rock art studies in northernmost Europe, 2000-2004', in P Bahn, N Franklin & M Strecker (eds), *Rock art studies: news of the world III*, 16-36. Oxford: Oxbow.

Gooder, J (2007) 'Excavation of a Mesolithic house at East Barns, East Lothian, Scotland: an interim view', in C Waddington & K Pedersen (eds), *Mesolithic studies in the North Sea Basin and beyond*, 49-59. Oxford: Oxbow.

Griffiths, K (2006) *Achaeologist [sic] challenges authenticity of Ilkley rock drawings*. Ilkley Gazette, ilkleygazette.co.uk/news/1037367.acheologist_challenges_authenticity_of_ilkley_rock_drawings/ Page viewed 5 Aug 2012.

Guenther, G (1999) 'From totemism to shamanism: hunter-gatherer contributions to world mythology and spirituality', in RB Lee & R Daly (eds), *The Cambridge encyclopedia of hunters and gatherers*, 426-433. Cambridge: Cambridge University Press.

Harding, A (2003) 'The Neolithic', in RA Butlin (ed) *Historical Atlas of North Yorkshire*, 35-40. Otley: Westbury.

Harding, J (2000a) 'Later Neolithic ceremonial centres, ritual and pilgrimage: the monument complex of Thornborough, North Yorkshire', in A Ritchie (ed), *Neolithic Orkney in its European context*, 31-46. Cambridge: McDonald Centre for Archaeological Research & Oxbow Books.

Harding, J (2000b) 'From coast to vale, moor to dale: patterns in later prehistory', in J Harding & R Johnston (eds.), *Northern Pasts: Interpretations of the Later Prehistory of Northern England and Southern Scotland*, 1-14. Oxford: BAR British Series 302.

Harding, J (2012) 'Henges, rivers and exchange in Neolithic Yorkshire', in AM Jones, J Pollard, MJ Allen & J Gardiner (eds), *Image, memory and monumentality: archaeological engagements with the material world*, 43-51. Oxford: The Prehistoric Society and Oxbow Books.

Harding, J (2013) *Cult, religion and pilgrimage: archaeological investigations at the Neolithic and Bronze Age monument complex of Thornborough, North Yorkshire*. CBA Research Report 174. York: Council for British Archaeology.

Hays-Gilpin, KA (2004) *Ambiguous Images: Gender and Rock Art*. Walnut Creek: AltaMira Press.

Hedges, J (1986) *The carved rocks on Rombalds Moor: a gazetteer of prehistoric rock carvings on Rombalds Moor, West Yorkshire*. Wakefield: Ilkley Archaeological Group and Wakefield Metropolitan Council.

Helvenston, PA & Bahn, PG (2007) 'Yes, there is a "shamanism and rock art debate"', *Before Farming*, 2007(1), 1-6.

Helvenston, P (2014) 'Comments on the paper "Are altered states of consciousness detrimental, useful or helpful for the origins of symbolic cognition? A response to Hodgson and Lewis Williams"', by T Froese, A Woodward and T Ikegami', *Adaptive Behavior*, 22(4) 277-281.

HER (nd): Historic Environment Record for West Yorkshire

Office viewed 20 Oct 2012.

As Jan 2018: this record continues to be held and maintained by West Yorkshire Archaeology Advisory Service, neither published nor online, but available by visiting their Wakefield office. Website details: <http://www.wyjs.org.uk/archaeology-advisory-service/>

Historic England National Heritage List, nd

<https://historicengland.org.uk/listing/the-list/> Page viewed 18 November 2012.

Historic England PastScape, nd

<http://www.pastscape.org.uk/default.aspx> Page viewed 3 January 2014.

Holmes, J (1885) 'A Sketch of the Pre-Historic Remains of Rombalds Moor', *Proceedings of the Yorkshire Geological Society*, 9, 283-315. <https://doi.org/10.1144/pygs.9.2.283>

Hodder, I (1990) *The domestication of Europe*. Oxford: Blackwell.

Ingold, T (1986) *The appropriation of nature: essays on human ecology and social relations*. Manchester: Manchester University Press.

Ingold, T (1993) 'The temporality of the landscape', *World Archaeology*, 25 (2), 152-174.

Ingold, T (2000) *The perception of the environment: essays on livelihood, dwelling and skill*. London: Routledge.

Innes, J (2006) 'Appendix 2: Vegetation history of the North York Moors area', in M Waughman (ed), *North East Yorkshire Mesolithic: Phase 1 report*, 27-28.
http://www.teesarhaeology.com/NEYorksMesolithicPhase1report_low_res_pdf
(application/pdfObject) Page viewed 2 May 2013.

Innes, JB, Blackford, JJ & Rowley-Conwy, PA (2013) 'Late Mesolithic and early Neolithic forest disturbance: a high resolution palaeoecological test of human impact hypotheses', *Quaternary Science Reviews*, 77, 80-100.

Innes, JB, Blackford, JJ, & Simmons, IG (2011) 'Mesolithic Environments at Star Carr, the Eastern Vale of Pickering and Environs: Local and Regional Contexts', *Journal of Wetland Archaeology*, 11(1), 85-108.

Insoll, T (2011) 'Animism and Totemism', in T Insoll (ed), *The Oxford Handbook of the Archaeology of Ritual and Religion*, 1004-1016. Oxford: Oxford University Press.

Jackson, S (1965) 'Ilkley cup-and-ring stones', *Bradford Cartwright Hall Archaeology Group Bulletin*, 10(12), 116.

Jacobi, RM, Tallis, JH & Mellars, PA (1976) 'The southern Pennine Mesolithic and the ecological record', *Journal of Archaeological Science*, 3, 307-320.

Janik, L (2014) 'Preservation by record: the case from Eastern Scandinavia', in T Darvill & APB Fernandes (eds), *Open-air rock-art conservation and management: state of the art and future perspectives*, 112-124. Oxford: Routledge.

Jefferson, P & Jefferson, D (2010) 'Prehistoric rock art: a petrographic and geological assessment of the stone in order to identify the possible factors affecting the durability of the exposed carvings', in T Barnett & K Sharpe (eds), *Carving a future for British rock art: new directions for research, management and presentation*, 102-122. Oxford: Oxbow.

Johnson, D (2010) 'Hushes, delfs and river stonary: alternative methods of obtaining lime in the gritstone Pennines in the early modern period', *Landscape History*, 31(1), 37-52.

Johnson, M (2006) *Ideas of landscape*. Oxford: Blackwell.

Johnson, M (2010) *Archaeological theory: an introduction (2nd edition)*. Chichester: Wiley-Blackwell.

Johnson, MH (2012) 'Phenomenological approaches in landscape archaeology', *Annual Review of Archaeology*, 41, 269-284.

Johnston, R (1998) 'Approaches to the perception of landscape,' *Archaeological Dialogues*, 5(1), 54-68.

Johnston, R (2000) 'Dying, becoming and being the field: prehistoric cairnfields in Northumbria', in J Harding & R Johnston (eds), *Northern Pasts: Interpretations of the Later Prehistory of Northern England and Southern Scotland*, 57-70. Oxford: BAR British Series 302.

Johnston, R (2001) 'Breaking new ground: land tenure and fieldstone clearance during the Bronze Age', in J Brück (ed), *Bronze Age landscapes: tradition and transformation*, 99-109. Oxford: Oxbow.

Johnston, R (2008) 'Later prehistoric landscapes and inhabitation', in J Pollard (ed) *Prehistoric Britain*, 268-287. Oxford: Blackwell.

Jones, A (2001) 'Enduring images: Image production and memory in Earlier Bronze Age Scotland', in J Brück (ed), *Bronze Age landscapes: tradition and transformation*, 217-228. Oxford: Oxbow.

Jones, A (2003) 'Technologies of remembrance: memory, materiality and identity in Early Bronze Age Scotland', in H Williams (ed), *Archaeologies of remembrance: death and memory in past societies*, 65-88. New York: Springer.

Jones, A (2011) 'Encountering rock art', in AM Jones, D Freedman, B O'Connor, H Lamdin-Whymark, R Tipping & A Watson (eds), *An animate landscape: rock art and the prehistory of Kilmartin, Argyll, Scotland*, 4-9. Oxford: Oxbow, Windgather Press.

Jones, AM (2012) 'Living rocks: animacy, performance and the rock art of the Kilmartin region, Argyll, Scotland', in A Cochrane & AM Jones (eds), *Visualising the Neolithic: Abstraction, figuration, performance, representation*, 79-88. Oxford: Oxbow.

Jones, AM (2015) 'Meeting pasts halfway: a consideration of the ontology of material evidence in archaeology', in R Chapman & A Wylie (eds), *Material Evidence: Learning from Archaeological Practice*, 324-338. Oxford: Routledge.

Jones, AM, Freedman, D, Gamble, F, O'Connor, B & Lamdin-Whymark, H (2011) 'Fieldwork and excavation at Torbhlaren: Tiger Rock', in AM Jones, D Freedman, B O'Connor, H Lamdin-Whymark, R Tipping & A Watson (eds), *An animate landscape: rock art and the prehistory of Kilmartin, Argyll, Scotland*, 38-87. Oxford: Oxbow, Windgather Press.

Jones, AM, Freedman, D, Lamdin-Whymark, H & O'Connor, B (2011) 'Excavations at Torbhlaren: Lion Rock', in AM Jones, D Freedman, B O'Connor, H Lamdin-Whymark, R Tipping & A Watson (eds), *An animate landscape: rock art and the prehistory of Kilmartin, Argyll, Scotland*, 90-121. Oxford: Oxbow, Windgather Press.

Jones, AM, Freedman, D, O'Connor, B, Lamdin-Whymark, H, Tipping, R & Watson, A (eds) (2011) *An animate landscape: rock art and the prehistory of Kilmartin, Argyll, Scotland*. Oxford: Oxbow, Windgather Press.

Jones, AM & Kirkham, G (2013) 'From landscape to portable art: the changing settings of simple rock art in south-west Britain and its wider context', *European Journal of Archaeology*, 16 (4), 636-659.

Jones, AM & Lamdin-Whymark, H (2011) 'Torhhlaren in context', in AM Jones, D Freedman, B O'Connor, H Lamdin-Whymark, R Tipping & A Watson (eds), *An animate landscape: rock art and the prehistory of Kilmartin, Argyll, Scotland*, 204-221. Oxford: Oxbow, Windgather Press.

Jones, AM & Riggott, P (2011) 'An animate landscape I: rock art and the evolution of the Kilmartin landscape', in AM Jones, D Freedman, B O'Connor, H Lamdin-Whymark, R Tipping & A Watson (eds), *An animate landscape: rock art and the prehistory of Kilmartin, Argyll, Scotland*, 252-267. Oxford: Oxbow, Windgather Press.

Jones, AM & Tipping, R (2011) 'From geology to microtopography', in AM Jones, D Freedman, B O'Connor, H Lamdin-Whymark, R Tipping & A Watson (eds), *An animate landscape: rock art and the prehistory of Kilmartin, Argyll, Scotland*, 12-35. Oxford: Oxbow, Windgather Press.

Jones, RS (2013) 'HRS Wales Projects: Maerdy Windfarm, Glamorgan, 2012-2013', <http://www.hrs-wales.co.uk/Projects.html> Page viewed 26 March 2015.

Jordan, P (2001) 'The materiality of shamanism as a 'world-view': praxis, artefacts and landscape', in N Price (ed), *The Archaeology of Shamanism*, 87-104. London: Routledge.

Jordan P (2003) *Material Culture and Sacred Landscape: The Anthropology of the Siberian Khanty*. Walnut Creek: Altamira Press, Rowman & Littlefield.

Jordan, P (2004) 'Agency in hunter-gatherer cultural transmission', in A Gardiner (ed) *Agency uncovered: archaeological perspectives on social agency, power and being human*. London: Cavendish Publishing, UCL Press.

Jordan, P (2006) 'Analogy', in C Conneller & G Warren (eds), *Mesolithic Britain and Ireland: new approaches*, 83-100. Stroud: Tempus.

Jordan, P (2008) 'Northern landscapes, northern mind: on the trail of an archaeology of hunter-gatherer belief', in DS Whitley & K Hays-Gilpin (eds), *Belief in the past: theoretical approaches to the archaeology of religion*, 227-246. Walnut Creek: Left Coast Press.

Jordan, P (2011) 'Landscape and culture in Northern Eurasia: an introduction', in P Jordan (ed), *Landscape and Culture in Northern Eurasia*, 17-45. Walnut Creek: Left Coast Press.

Keighley, JJ (1981) 'The prehistoric period', in ML Faull & SA Moorhouse (eds), *West Yorkshire: an archaeological survey to AD 1500*, 73-140. Wakefield: West Yorkshire Metropolitan County Council.

Keighley News (1998) *Mystery surrounds vanishing circle*
http://www.keighleynews.co.uk/news/8080170.Mystery_surrounds_vanishing_circle/
Page viewed 12 Feb 2014.

Keyser, JD & Poetschat, G (2004) 'The canvas as art', in C Chippindale & G Nash (eds), *The figured landscape of rock-art: looking at pictures in place*, 118-130. Cambridge: Cambridge University Press.

Keyser, JD, Taylor, MW & Poetschat, GR (2005) *Echoes of the Ancients: Rock art of the Dalles-Deschutes region*. Portland: Oregon Archaeological Society.

Kirby, KJ (2004) 'A model of a natural wooded landscape in Britain as influenced by large herbivore activity', *Forestry*, 77(5), 405-420.

Lahelma, A (2005) 'Between the worlds: rock art, landscape and shamanism in Subneolithic Finland,' *Norwegian Archaeological Review*, 38(1), 29-47.

Lamdin-Whymark, H (2011a) 'Lithics, landscape and performance', in AM Jones, D Freedman, B O'Connor, H Lamdin-Whymark, R Tipping & A Watson (eds), *An animate landscape: rock art and the prehistory of Kilmartin, Argyll, Scotland*, 178-201. Oxford: Oxbow, Windgather Press.

Lamdin-Whymark, H (2011b) 'The experience of manufacturing rock art', in AM Jones, D Freedman, B O'Connor, H Lamdin-Whymark, R Tipping & A Watson (eds), *An animate landscape: rock art and the prehistory of Kilmartin, Argyll, Scotland*, 334-335. Oxford: Oxbow, Windgather Press.

Last, J (2010) 'Between a rock and a hard place? The role of rock art in prehistoric research', in T Barnett & K Sharpe (eds), *Carving a future for British rock art: new directions for research, management and presentation*, 123-131. Oxford: Oxbow.

Laurie, TC (2003) 'Researching the prehistory of Wensleydale, Swaledale and Teesdale', in TG Manby, S Moorhouse & P Ottaway (eds), *The Archaeology of Yorkshire: an assessment at the beginning of the 21st century*, 223-253. Yorkshire Archaeological Society Occasional Paper No. 3, Leeds: Yorkshire Archaeological Society.

Layton, R (2000) 'Review Feature: Shamanism, totemism and rock art: *Les Chamanes de la Préhistoire* in the context of rock art research', *Cambridge Archaeological Journal*, 10(1), 169-186.

Layton, R (2001) 'Ethnographic study and symbolic analysis', in DS Whitley (ed) *Handbook of rock art research*, 311-331. Walnut Creek: AltaMira Press.

Layton, R (2003) 'Foreword: Landscape anthropology', in P Jordan, *Material Culture and Sacred Landscape: The Anthropology of the Siberian Khanty*, xi-xiv. Walnut Creek: Altamira Press, Rowman & Littlefield.

Lewis-Williams, JD (2001) 'Brainstorming images: neuropsychology and rock art research', in DS Whitley (ed) *Handbook of rock art research*, 332-357. Walnut Creek: AltaMira Press.

Lewis-Williams, JD (2003) 'Putting the record straight: rock art and shamanism', *Antiquity*, 77(295), 165-170.

Lewis-Williams, D & Dowson, T (1988) 'The sign of all times: entoptic phenomena in Upper Palaeolithic art', *Current Anthropology*, 29(2), 201-245.

Lewis-Williams, D & Dowson, T (1990) 'Through the veil: San rock paintings and the rock face', *South African Archaeological Bulletin*, 45, 5-16.

Little, A, Elliott, B, Conneller, C, Pomstra, D, Evans, AA, Fitton, LC, Holland, A, Davis, R, Kershaw, R, O'Connor, S, O'Connor, T, Sparrow, T, Wilson, AS, Jordan, P, Collins, MJ, Colonese, AC, Craig, OE, Knight, R, Lucquin, AJA, Taylor, B & Milner, N (2016) 'Technological Analysis of the World's Earliest Shamanic Costume: A Multi-Scalar, Experimental Study of a Red Deer Headdress from the Early Holocene Site of Star Carr, North Yorkshire, UK', *PLoS ONE*, 11(4), e0152136

Løddøen, TK (2015) 'The method and physical processes behind the making of hunters' rock art in Western Norway: the experimental production of images', in H Stebergløkken, R Berge, E Lindgaard, & HV Stuedal (eds), *Ritual landscapes and borders within rock art research: papers in honour of Professor Kalle Sognnes*, 67-77. Oxford: Archaeopress.

Lynch, F (1979) 'Ring cairns in Britain and Ireland: their design and purpose', *Ulster Journal of Archaeology*, 42, 1-19.

Manby, TG (2003) 'The Upper Palaeolithic and Mesolithic periods in Yorkshire', in TG Manby, S Moorhouse & P Ottaway (eds), *The Archaeology of Yorkshire: an assessment at the beginning of the 21st century*, 31-34. Yorkshire Archaeological Society Occasional Paper No. 3, Leeds: Yorkshire Archaeological Society.

Manby, TG, King, A and Vyner, B (2003) 'The Neolithic and Bronze Ages: a time of early agriculture', in TG Manby, S Moorhouse and P Ottaway (eds), *The Archaeology of Yorkshire: an assessment at the beginning of the 21st century*, 35-113. Yorkshire Archaeological Society Occasional Paper No. 3, Leeds: Yorkshire Archaeological Society.

Mazel, A (2007) 'On the fells and beyond: exploring aspects of Northumberland rock-art', in A Mazel, G Nash & C Waddington (eds), *Art as metaphor: the prehistoric rock-art of Britain*, 231-256. Oxford: Archaeopress.

Mazel, A, Nash, G & Waddington, C (2007) 'A coming of age', in A Mazel, G Nash & C Waddington (eds), *Art as metaphor: the prehistoric rock-art of Britain*, 1-8. Oxford: Archaeopress.

McCall, GS (2007) 'Add shamans and stir? A critical review of the shamanism model of forager rock art production', *Journal of Anthropological Archaeology*, 26(2), 224-233.

McFadyen, L (2006) 'Landscape', in C Conneller & G Warren (eds), *Mesolithic Britain and Ireland: new approaches*, 121-138. Stroud: Tempus.

McFetters, A (2014) *Personal communication and carving demonstration*. 24 May 2014.

Millard, A.R. (2014) 'Conventions for reporting radiocarbon determinations,' *Radiocarbon*, 56(02), 555-559.

Milner, N (2006) 'Subsistence', in C Conneller & G Warren (eds), *Mesolithic Britain and Ireland: new approaches*, 61-82. Stroud: Tempus.

Monmonier, M (1991), *How to lie with maps*. Chicago: The University of Chicago Press.

Moore, J (2000) 'Forest fire and human interaction in the early Holocene woodlands of Britain', *Palaeogeography, Palaeoclimatology, Palaeoecology*, 164, 125-137.

Moorhouse, SA (1981) 'The rural medieval landscape', in ML Faull & SA Moorhouse (eds), *West Yorkshire: an environmental survey to AD 1500: Vol 3*. Wakefield: West Yorkshire Metropolitan County Council.

Moorhouse, S (2007) 'The quarrying of building stone and stone artefacts in medieval Yorkshire: a multi-disciplinary approach', in J Klápšte & P Sommer (eds), *Ruralia: Arts and Crafts in Medieval Rural Environment*, 295-319. Brepols Publishers.

Morris, D (2010) 'Snake and veil: the rock engravings of Dreikopseiland, Northern Cape, South Africa', in G Blundell, C Chippindale & B Smith (eds), *Seeing and knowing: understanding rock-art with and without ethnography*, 36-53. Walnut Creek: Left Coast Press.

Morris, R (1977) *The prehistoric rock art of Argyll*. Dolphin Press.

Mulk, I-M (1994) 'Sacrificial places and their meaning in Saami society', in DL Carmichael, J Hubert, B Reeves & A Schanche (eds), *Sacred sites, sacred places*, 121-131. London: Routledge.

Mulk, I-M & Bayliss-Smith, T (2007) 'Liminality, rock art and the Sami sacred landscape', *Journal of Northern Studies*, 1(1-2), 95-122.

Mulk, I-M (2014) 'Depictions in Sami rock art of the Mother Earth figure', in EE Djaltchinova-Malec (ed), *Shamanhood and art*, 47-72. Warsaw: Polish Institute of World Art Studies.

Mulville, J (2008) 'Foodways and social ecologies from the Middle Bronze Age to Late Iron Age', in J Pollard (ed), *Prehistoric Britain*, 225-247. Oxford: Blackwell.

Nash, G (2007) 'A scattering of images: the rock-art of southern Britain', in A Mazel, G Nash & C Waddington (eds), *Art as metaphor: the prehistoric rock-art of Britain*, 175-203. Oxford: Archaeopress.

Nash, G, Brook, C, George, A, Hudson, D, McQueen, E, Parker, C, Stanford, A, Smith, A, Swann, J & Waite, L (2005) 'Notes on newly discovered rock-art on and around Neolithic burial chambers in Wales', *Archaeology in Wales*, 45, 11-16.

Nash, G & Chippindale, C (2002) 'Images of enculturing landscape: a European perspective', in G Nash & C Chippindale (eds), *European landscapes of rock-art*, 1-19. London: Routledge.

Noble, G (2007) 'Monumental journeys: Neolithic monument complexes and routeways across Scotland', in V Cummings & R Johnston (eds), *Prehistoric journeys*, 64-74. Oxford: Oxbow.

O'Connor, B (2010) 'Re-Collected objects: carved, worked and unworked stone in Bronze Age funerary monuments', in B O'Connor, G Cooney & J Chapman (eds), *Materialitas: working stone, carving identity*, 147-160. Oxford: The Prehistoric Society and Oxbow Books.

Oestigaard, T (2011) 'Water', in T Insoll (ed), *The Oxford Handbook of the Archaeology of Ritual and Religion*, 38-50. Oxford: Oxford University Press.

Ordnance Survey (2010) *Ordnance Survey Explorer Map 297, Lower Wharfedale & Washburn Valley*. Southampton: Ordnance Survey.

Outram, Z (2013) 'Dating evidence', in LD Brown, K Boughey, D Paley, D Spencer, J Croasdale, D Hallam, J McIlwaine & contributors, *Stanbury Hill Project: archaeological investigation of a rock art site*, 63-66. Bingley & District Local History Society.

Ouzman, S (1998) 'Towards a mindscape of landscape: rock-art as expression of world understanding', in C Chippindale & PSC Taçon (eds), *The archaeology of rock-art*, 30-41. Cambridge: Cambridge University Press.

Ouzman, S (2001) 'Seeing is deceiving: rock-art and the non-visual', *World Archaeology*, 33(2), 237-256.

Pears, B & Tipping, R (2011) 'Appendix B: Soil micromorphology of the platform at Tiger Rock', in AM Jones, D Freedman, B O'Connor, H Lamdin-Whymark, R Tipping & A Watson (eds), *An animate landscape: rock art and the prehistory of Kilmartin, Argyll, Scotland*, 336-348. Oxford: Oxbow, Windgather Press.

Piggott, S (1972) 'Excavation of the Dalladies long barrow, Fettercairn, Kincardineshire', *Proceedings of the Society of Antiquaries of Scotland*, 104, 23-47.

Pollard, J (1999) 'These places have their moments': thoughts on settlement practices in the British Neolithic', in J Brück & M Goodman (eds), *Making places in the prehistoric world*, 76-93. London: University College Press.

Preucel, RW & Hodder, I (1996) 'Nature and culture', in RW Preucel & I Hodder (eds), *Contemporary archaeology in theory: a reader*, 23-38. Oxford: Blackwell.

Preucel, RW & Mrozowski, SA (eds) (2010) *Contemporary archaeology in theory: the new pragmatism*. 2nd edition. Chichester: Wiley-Blackwell.

Price, NS (2001) 'An archaeology of altered states: shamanism and material culture studies', in NS Price (ed), *The archaeology of shamanism*. 3-16. London: Routledge.

Price, N (2010) 'Beyond rock-art: archaeological interpretation and the shamanic frame', in G Blundell, C Chippindale & B Smith (eds), *Seeing and knowing: understanding rock-art with and without ethnography*, 281-289. Walnut Creek: Left Coast Press.

Price, N (2011) 'Shamanism', in T Insoll (ed), *The Oxford handbook of the archaeology of ritual and religion*, 903-1003. Oxford: Oxford University Press.

Raistrick, A (1929) 'The Bronze Age in West Yorkshire', *Yorkshire Archaeological Journal*, 29, 354-365.

Raistrick, A (1934) "'Cup-and-ring" marked rocks of West Yorkshire', *Yorkshire Archaeological Journal*, 32, 33-42.

Raistrick, A & Holmes, PF (1962) 'Archaeology of Malham Moor', *Field Studies*, 73-100.

Renfrew, C & Bahn, P (2008) *Archaeology: theories, methods and practice*, 5th Edition. London: Thames & Hudson.

Ritchie, J (1918) 'Cup-marks on the stone circles and standing-stones of Aberdeenshire and part of Banffshire', *Society of Antiquaries of Scotland: Proceedings*, 5th series, 4, 86-121.
ads.ahds.ac.uk/catalogue/adsdata/arch-352-1/.../52_086_121.pdf
Page viewed 20 April 2013.

Robinson, A (2012) 'Uncovered: secrets of Ilkley Moor's rock art', *Yorkshire Post*,
<http://www.yorkshirepost.co.uk/news/uncovered-secrets-of-ilkley-moor-s-rock-art-1-4925780> Page viewed 2 May 2013.

Robinson, MA (2000) 'Coleopteran evidence for the Elm Decline, Neolithic activity in woodland, clearance and the use of the landscape', in AS Fairbairn (ed), *Plants in Neolithic Britain and beyond: Neolithic Studies Group Seminar Papers* 5, 27-36. Oxford: Oxbow.

Ross, M (2001) 'Emerging trends in rock-art research: hunter-gatherer culture, land and landscape', *Antiquity*, 75, 453-458.

Rowley-Conwy, P (2004) 'How the West was lost: a reconsideration of agricultural origins in Britain, Ireland and southern Scandinavia', *Current Anthropology*, 45 (No S4, Special Issue: agricultural origins and dispersal into Europe) S83-S113.

Ruggles, C (1999) *Astronomy in prehistoric Britain and Ireland*. New Haven, CT: Yale University Press.

Sanderson, I & Wrathmell, S (2005) *Research agenda: archaeology from the end of the Roman period to the Norman Conquest*. Leeds: WYAAS

Scarre, C (2008) 'Shrines of the land and places of power: religion and the transition to farming in western Europe', in DS Whitley & K Hays-Gilpin (eds), *Belief in the past: theoretical approaches to the archaeology of religion*, 209-226. Walnut Creek: Left Coast Press.

Scarre, C (2011) 'Monumentality', in T Insoll (ed) *The Oxford Handbook of the Archaeology of Ritual and Religion*, 9-23. Oxford: Oxford University Press.

Schofield, P (2009) *Axe working sites on path renewal schemes, Central Lake District, Cumbria*. Archaeological Survey Report, The National Trust and Lake District National Park Authority. PDF download at <https://library.thehumanjourney.net/1574/1/AxeworkingsitesonpathrenewalFullReport.pdf>

Schulting, R (2008) 'Foodways and social ecologies from the Early Mesolithic to the Early Bronze Age' in J Pollard (ed), *Prehistoric Britain*, 90-120. Oxford: Blackwell.

Sharp, T (2016) *International Space Station: Facts, History & Tracking*

<http://www.space.com/16748-international-space-station.html>

Page viewed 22 February 2017.

Sharpe, K (2007) *Motifs, monuments and mountains: prehistoric rock art in the Cumbrian landscape*. Unpublished PhD Thesis, Durham University.

<http://etheses.dur.ac.uk/1362/> Page viewed 25 January 2014.

Sharpe, K (2012) 'Reading between the grooves: regional variations in the style and deployment of 'cup and ring' marked stones across Britain and Ireland', in A Cochrane & AM Jones (eds), *Visualising the Neolithic: Abstraction, figuration, performance, representation*, 47-63. Oxford: Oxbow.

Sharpe, K (2014) 'Pride and Prejudice: the challenges of conserving and managing rock-art in the landscape of northern England, United Kingdom, through public participation', in T Darvill & APB Fernandes (eds), *Open-air rock-art conservation and management: state of the art and future perspectives*, 53-69. Oxford: Routledge.

Sharpe, KE (2015) 'Connecting the dots: cupules and communication in the English Lake District', *Expression*, 9, 109-116.

Sharpe, K & Barnett, T (2008) *Recording England's Rock Art: a handbook for Project Officers: Appendices*. Northumberland & Durham Rock Art Pilot Project.

PDF available: RECORDING ENGLAND'S ROCK ART @ academia.edu

Sharpe, K & Watson, A (2010) 'Moving images: interpreting the Copt Howe petroglyphs', in T Barnett & K Sharpe (eds), *Carving a future for British rock art: new directions for research, management and presentation*, 57-64. Oxford: Oxbow.

Shepherd, D (2013) 'Propped Stones: The Modification of Natural Features and the Construction of Place', *Time and Mind: The Journal of Archaeology, Consciousness and Culture*, 6(3), 263-285.

Sheridan, A (2010) 'The Neolithisation of Britain and Ireland: the "big picture"', in B Finlayson & G Warren (eds), *Landscapes in transition*, 89-105. Levant Supplementary Series 8. Oxford: Oxbow.

Sheridan, A (2012) 'Book reviews: An animate landscape', *Proceedings of the Prehistoric Society* <http://www.prehistoricsociety.org/publications/reviews/P10/>
Page viewed 12 October 2012.

Sheridan, A (2013) 'Early Neolithic habitation structures in Britain and Ireland: a matter of circumstance and context', in D Hoffman & J Smyth (eds), *Tracking the Neolithic House in Europe: sedentism, architecture and practice*, 283-300. London: Springer.

Short, M (2013) 'Source, selection and transportation of rock by prehistoric people on Stanbury Hill', in LD Brown, K Boughey, D Paley, D Spencer, J Croasdale, D Hallam, J McIlwaine & contributors, *Stanbury Hill Project: archaeological investigation of a rock art site*, 73-76. Bingley & District Local History Society.

Short, M, Spencer, D & Boughey, K (2013) 'Field survey, interpretation and photography', in LD Brown, K Boughey, D Paley, D Spencer, J Croasdale, D Hallam, J McIlwaine & contributors, *Stanbury Hill Project: archaeological investigation of a rock art site*, 26-31. Bingley & District Local History Society.

Simmons, IG (1990) 'The Mid-Holocene ecological history of the moorlands of England and Wales and its relevance for conservation', *Environmental Conservation*, 17(1), 61-69.

Simmons, I (1995) 'The history of the early human environment', in B Vyner (ed), *Moorland monuments: studies in the archaeology of north-east Yorkshire in honour of Raymond Hayes and Don Spratt*, 5-15. York: Council for British Archaeology.

Simmons, IG (2001) 'Ecology into landscape: some English moorlands in the Later Mesolithic', *Landscape*, 2(1), 42-55.

Simmons, IG & Innes, JB (1996) 'Disturbance phases in the mid-Holocene vegetation at North Gill, North York Moors: form and process', *Journal of Archaeological Science*, 23, 183-191.

Smith, BW & Blundell, G (2004) 'Dangerous ground: a critique of landscape in rock-art studies', in C Chippindale & G Nash (eds), *The figured landscapes of rock-art: looking at pictures in place*, 239-262. Cambridge: Cambridge University Press.

Sognnes, K (1998) 'Symbols in a changing world: rock-art and the transition from hunting to farming in mid Norway', in C Chippindale & PSC Taçon (eds), *The archaeology of rock-art*, 146-162. Cambridge: Cambridge University Press.

Spikins, P (1999) *Mesolithic Northern England: environment, population and settlement*. BAR British Series 283. Oxford: Archaeopress.

Spikins, P (2000) 'Ethnofacts or ethnofiction: searching for the structure of settlement patterns', in R Young (ed), *Mesolithic lifeways: current research from Britain and Ireland*, 105-118. Leicester: School of Archaeological Studies.

Spikins, P (2002) *Prehistoric people of the Pennines: reconstructing the lifestyles of Mesolithic hunter-gatherers on Marsden Moor*. West Yorkshire Archaeology Service/English Heritage.

Spikins, P (2010) 'Palaeolithic and Mesolithic Research Agenda for West Yorkshire', <http://www.archaeology.wyjs.org.uk/documents/archaeology/Palaeolithic-and-Mesolithic-Research-Agenda-for-West-Yorkshire.pdf> Page viewed 14 November 2012.

Stevens, CJ & Fuller, DQ (2012) 'Did Neolithic farming fail? The case for a Bronze Age agricultural revolution in the British Isles', *Antiquity*, 86, 707-722.

Stroud, R (2013) *Personal communication*: Conversation on visibility of Coniston Old Man from Rivock. 5 July 2013.

Summers, JR, Outram, Z & Cussans, JEM (2013) 'Macrobotanical remains and charcoal assemblage', in LD Brown, K Boughey, D Paley, D Spencer, J Croasdale, D Hallam, J McIlwaine & contributors, *Stanbury Hill Project: archaeological investigation of a rock art site*, 61-63. Bingley & District Local History Society.

Taçon, PSC (1999) 'Identifying ancient sacred landscapes in Australia: from physical to social', in W Ashmore & AB Knapp (eds), *Archaeologies of landscape: contemporary perspectives*, 33-57. Oxford: Blackwell.

Taçon, PSC (2002) 'Rock-art and landscapes', in B David & M Wilson (eds), *Inscribed landscapes: marking and making place*, 122-136. Honolulu: University of Hawai'i Press.

Taçon, PSC & Chippindale, C (1998) 'An archaeology of rock-art through informed methods and formal methods', in C Chippindale & PSC Taçon (eds), *The archaeology of rock-art*, 1-10. Cambridge: Cambridge University Press.

Tarlow, S (2000) 'Emotion in archaeology', *Current Anthropology*, 41(5), 713-746.

Tarlow S (2010) 'Pale reflections', *Archaeological Dialogues*, 17 (2), 183-186.

Tauhindali (1979) *Sanusa stopped the rain*. Carmichael, California, USA: Chalatién Press.

The Northern Antiquarian (nd) *Comet Stone, Cliffe Castle, Keighley, West Yorkshire*
<https://megalithix.wordpress.com/2008/12/30/comet-stone-cliffe-castle/>
Page viewed 12 May 2014.

Theodoratus, DJ & LaPena, F (1994) 'Wintu sacred geography of Northern California', in DL Carmichael, J Hubert, B Reeves & A Schanche (eds), *Sacred sites, sacred places*, 20-31. London: Routledge.

Thomas, J (1996) *Time, culture and identity: an interpretive archaeology*. London: Routledge.

Thomas, J (1999) *Understanding the Neolithic*. Oxford: Routledge.

Thomas, J (2004) *Archaeology and modernity*. London: Routledge.

Thomas, J (2006) 'Phenomenology and material culture', in C Tilley, W Keane, S Küchler, M Rowlands & P Spyer (eds), *Handbook of Material Culture*, 43-59. London: SAGE Publications Ltd.

Thomas, J (2011) 'Ritual and religion in the Neolithic', in T Insoll (ed), *The Oxford handbook of the archaeology of ritual and religion*, 371-386. Oxford: Oxford University Press.

Thomas, J (2013) *The birth of Neolithic Britain: an interpretive account*. Oxford: Oxford University Press.

Tilley, C (1991) *Material culture and text: the art of ambiguity*. London: Routledge.

Tilley, C (1994) *A Phenomenology of Landscape: Places, Paths and Monuments (Explorations in Anthropology)*. Oxford: Berg.

Tilley, C (1996) 'The Power of Rocks: Landscape and Topography on Bodmin Moor', *World Archaeology*, 28, 161-176.

Tilley, C (2004) 'Mind and body in landscape research: can archaeology recover past intentions?', *Cambridge Archaeological Journal*, 14(1), 77-80.

Tilley, C (2008) *Body and Image: Explorations in Landscape Phenomenology*. Walnut Creek: Left Coast Press.

Tilley, C (2010) *Interpreting Landscapes: Geologies, Topologies, Identities, Explorations in Landscape Phenomenology*. Walnut Creek: Left Coast Press.

Tilley, C & Bennett, W (2001) 'An archaeology of supernatural places: the case of West Penwith', *Journal of the Royal Anthropological Institute*, 7, 335-362.

Tingle, M (2013) 'A new Mesolithic pit site and Beaker features at Little Dartmouth Farm, Devon', *Past*, 74: 5-6.

Tipping R, Davies A, McCulloch R & Tisdall E (2008) 'Response to late Bronze Age climate change of farming communities in north east Scotland', *Journal of Archaeological Science*, 35(8), 2379-2386.

Tipping, R, Verrill, L, Morrison, S, Burns, M & Bunting, J (2011) 'Landscapes and landscape dynamics at Torbhlaren', in AM Jones, D Freedman, B O'Connor, H Lamdin-Whymark, R Tipping & A Watson (eds), *An animate landscape: rock art and the prehistory of Kilmartin, Argyll, Scotland*, 124-175. Oxford: Oxbow, Windgather Press.

Topping, P (1997) 'Different realities: the Neolithic in the Northumberland Cheviots', in P Topping (ed), *Neolithic landscapes: Neolithic Studies Group Seminar Papers 2*, Oxbow Monograph 86, 113-124. Oxford: Oxbow.

Turpin, S (2001) 'Archaic North America', in DS Whitley (ed), *Handbook of rock art research*, 361-413. Walnut Creek: AltaMira Press.

van Hoek, M & Smith, C, (1988) 'Rock carvings at Goatscrag rock shelters, Northumberland', *Archaeologia Aeliana*, 15, 29-35.

Vinnicombe, P (2010) 'Meaning cannot rest or stay the same', in G Blundell, C Chippindale & B Smith (eds), *Seeing and knowing: understanding rock-art with and without ethnography*, 241-249. Walnut Creek: Left Coast Press.

Vitebsky, P (1992) 'Landscape and self-determination among the Eveny: the political environment of Siberian reindeer herders today', in E Croll & D Parkin (eds), *Bush base, Forest farm*, 223-245. London: Routledge.

Vyner, B (2000) 'Lost horizons: the location of activity in the Later Neolithic and Early Bronze Age in north-east England', in J Harding & R Johnston (eds), *Northern Pasts: Interpretations of the Later Prehistory of Northern England and Southern Scotland*, 101-110. Oxford: BAR British Series 302.

Vyner, B (2007a) 'A great north route in Neolithic and Bronze Age Yorkshire: the evidence of landscape and monuments', *Landscape*, 8(1), 69-84.

Vyner, B (2007b) 'Rock-art in Cleveland and north-east Yorkshire: contexts and chronology', in A Mazel, G Nash & C Waddington (eds), *Art as metaphor: the prehistoric rock art of Britain*, 91-110. Oxford: Archaeopress.

Vyner, B (2008) *Research Agenda: The Neolithic, Bronze Age and Iron Age in West Yorkshire*. WYAAS
http://www.archaeology.wyjs.org.uk/documents/archaeology/Revised-SW-Later-Prehistoric_Neo-BA-IA.pdf Page viewed 26 January 2013.

Waddington, C (1996) 'Putting rock art to use: a model of early Neolithic transhumance in north Northumberland', *Northern Archaeology*, 13/14, 147-178.

Waddington, C (1998a) 'Cup and ring marks in context', *Cambridge Archaeological Journal*, 8(1), 29-53.

Waddington, C (1998b) *A landscape archaeological study of the Mesolithic-Neolithic in the Milfield Basin, Northumberland*, Durham theses, Durham University.

Durham E-Theses Online: <http://etheses.dur.ac.uk/5004/> Website viewed 6 Jan 2013.

Waddington, C (1999) *A landscape archaeological study of the Mesolithic-Neolithic in the Milfield Basin, Northumberland*. BAR British Series 291. Oxford: Archaeopress.

Waddington, C (2000a) 'Recent research on the Mesolithic of the Milfield Basin, Northumberland', in R Young (ed), *Mesolithic lifeways: current research from Britain and Ireland*, 165-177. Leicester: School of Archaeological Studies.

Waddington, C (2000b) 'The Neolithic that never happened?', in J Harding & R Johnston (eds), *Northern Pasts: interpretations of the later prehistory of Northern England and Southern Scotland*, 33-44. BAR British Series 302. Oxford: Archaeopress.

Waddington, C (2004) 'Rock of ages', *British Archaeology*, 78, 17-21.

Waddington, C (2007a) 'Neolithic rock-art in the British Isles: retrospect and prospect', in A Mazel, G Nash & C Waddington (eds), *Art as metaphor: the prehistoric rock art of Britain*, 49-68. Oxford: Archaeopress.

Waddington, C (2007b) 'Rethinking Mesolithic settlement, and a case study from Howick', in C Waddington & K Pedersen (eds), *Mesolithic studies in the North Sea Basin and beyond*, 101-113. Oxford: Oxbow.

Waddington, C, Bailey, G, Bayliss, A, Boomer, I, Milner, N, Shiel, R, Stevenson, T & Pedersen, K (2003) 'A Mesolithic settlement site at Howick, Northumberland: a preliminary report', *Archaeologia Aeliana* 5th series, 32, 1-12.

Waddington, C, Marshall, P & Passmore, D (2011) 'Towards Synthesis: Research and Discovery in Neolithic North-East England', *Proceedings of the Prehistoric Society*, 77, 279-319.

Wagner, MJ, McCorvie, MR & Swedlund, CA (2004) 'Mississippian cosmology and rock-art at the Millstone Bluff site, Illinois', in C Diaz-Granados & JR Duncan (eds), *The rock-art of eastern North America: capturing images and insight*, 42-64. Tuscaloosa: University of Alabama Press.

Walker, N (2010) 'Cups and saucers: a preliminary investigation of the rock carvings of the Tsodilo Hills, northern Botswana', in G Blundell, C Chippindale & B Smith (eds), *Seeing and knowing: understanding rock-art with and without ethnography*, 54-73. Walnut Creek: Left Coast Press.

Wallis, RJ (2013) 'Animism and the interpretation of rock art', *Time and Mind: The Journal of Archaeology, Consciousness and Culture*, 6(1), 21-28.

Walton, J (1996) 'Old Yorkshire Stone Crafts', *Folk Life* 35(1), 78-90.

Walsh, K (2008) 'Mediterranean Landscape Archaeology: Marginality and the Culture-Nature 'Divide'', *Landscape Research*, 33(5), 547-564.

Walsh, K, Richer, S & de Beaulieu, J-L (2006) 'Attitudes to altitude: changing meanings and perceptions within a 'marginal' Alpine landscape: the integration of palaeoecological and archaeological data in a high-altitude landscape in the French Alps', *World Archaeology* 38(3), 436-454.

Waughman, M (2010) *North East Yorkshire Mesolithic Project Phase Two Report*.
Tees Archaeology, North York Moors National Park Authority and English Heritage.
www.teesarhaeology.com/Phase_2_Final_Report_1-2.pdf Page viewed 19 March 2013.

Weninger and Jöris (2007) *Cologne radiocarbon calibration and paleoclimate research package: Online CalPal* <http://www.calpal-online.de/cgi-bin/quickcal.pl>
Page viewed 16 July 2018.

West Yorkshire Historic Environmental Record (2010) *Ilkley and Burley Moors, Bradford, West Yorkshire Level III archaeological surveys of six scheduled monuments, Oct 2010, Report No. 2088*. Wakefield: WYAS, West Yorkshire Historic Environment Record.
Page viewed at Wakefield, not available online, 20 October 2012.

Wheatley, D (1995) 'Cumulative viewshed analysis: a GIS-based method for investigating intervisibility and its archaeological application', in G Lock & Z Stančič (eds), *Archaeology and Geographic Information Systems*, 171-186. London: Taylor & Francis.

Wheatley, D & Gillings, M (2002) *Spatial technology and archaeology: the archaeological applications of GIS*. London: Taylor & Francis.

Whitley, D (1998) 'Finding rain in the desert: landscape, gender and far western North American rock-art', in C Chippindale & PSC Taçon (eds), *The archaeology of rock-art*, 11-29. Cambridge: Cambridge University Press.

Whitley, DS (2001) 'Rock art and rock art research in worldwide perspective: an introduction', in DS Whitley (ed) *Handbook of rock art research*, 7-51. Walnut Creek: AltaMira Press.

Whitley, DS (2006) 'Is there a shamanism and rock art debate?', *Before Farming*, 4(7), 1-7.

Whitley, D (2010) 'Art and belief: the ever-changing and the never-changing in the Far West', in G Blundell, C Chippindale & B Smith (eds), *Seeing and knowing: understanding rock-art with and without ethnography*, 116-137. Walnut Creek: Left Coast Press.

Whitley, D (2011) 'Rock art, religion and ritual', in T Insoll, (ed), *The Oxford handbook of the archaeology of ritual and religion*, 307-326. Oxford: Oxford University Press.

Whitley, DS, Simon, JM & Dorn, RI, (1999) 'The vision quest in the Coso Range', *American Indian Rock Art*, 25, 1-31.

Whittle, A (1997) 'Moving on and moving around: Neolithic settlement mobility', in P Topping (ed), *Neolithic landscapes: Neolithic Studies Group Seminar Papers 2*, Oxbow Monograph 86, 15-22. Oxford: Oxbow.

Whittle, A, Bayliss, A & Healy, F (2011) 'Gathering time: the social dynamics of change', in A Whittle, F Healy & A Bayliss (eds), *Gathering time: dating the early Neolithic enclosures of southern Britain and Ireland*, 848-914. Oxford: Oxbow.

Williams, DJ, Richardson, JA & Richardson, RS (1987) 'Mesolithic sites at Malham Tarn and Great Close Mire, North Yorkshire', *Proceedings of the Prehistoric Society*, 53, 363-383.

Wilson, M & David, B (2002) 'Introduction', in B David & M Wilson (eds), *Inscribed landscapes: marking and making place*, 1-9. Honolulu: University of Hawai'i Press.

Winterbottom, SJ & Long, D (2006) 'From abstract digital models to rich virtual environments: landscape contexts in Kilmartin Glen, Scotland', *Journal of Archaeological Science*, 33, 1356-1367.

Woodbridge, J, Fyfe, RM, Roberts, N, Downey, S, Edinborough, K & Shennan, S (2012) 'The impact of the Neolithic agricultural transition in Britain: a comparison of pollen-based land-cover and archaeological ¹⁴C date-inferred population change', *Journal of Archaeological Science*. <http://dx.doi.org/10.1016/j.jas.2012.10.025> Page viewed 1 May 2013.

Yarwood, RE (1981) 'Section 2: The environmental background', in ML Faull & SA Moorhouse (eds), *West Yorkshire: an archaeological survey to AD 1500*, 33-72. Wakefield: West Yorkshire Metropolitan County Council.

Young, R (2000) 'Continuity and change: marginality and later prehistoric settlement in the northern uplands', in J Harding & R Johnston (eds.), *Northern Pasts: Interpretations of the Later Prehistory of Northern England and Southern Scotland*, 71-80. Oxford: BAR British Series 302.

Zvelebil, M (2008) 'Innovating hunter-gatherers: the Mesolithic in the Baltic', in G Bailey & P Spikins (eds), *Mesolithic Europe*, 18-59. Cambridge: Cambridge University Press.