Exploring places and landscapes of everyday experience in the Outer Hebridean Iron Age: A study of theory, method and application in experiential landscape archaeology

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PhD Thesis

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2009

Declaration

I Rebecca Rennell confirm that the work presented in this thesis is my own. Where information has been gathered from other sources, this is indicated in the text.

Signed:

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Acknowledgements

This thesis would not have been written without the help of a number of people. Foremost, I would like to thank my principal supervisor, Dr Sue Hamilton, for her unrelenting support and guidance throughout the last four years. I have learnt a great deal and will be forever grateful for the help and tutorship I have received. I also owe a huge debt of gratitude to Dr Mark Lake, who also helped supervise this research and has patiently shared his knowledge and experience, particularly concerning GIS. I am grateful to the Arts and Humanities Research Board for their financial support over the first three years of the doctorate and for financing a fieldwork project in the Outer Hebrides during the Summer of 2006. The Graduate School at University College London also helped fund the first season of fieldwork, during the summer of 2005. I also owe thanks to my partner Billy Barker who tirelessly and enthusiastically assisted in all the fieldwork projects carried out for this research and Katie Manning who helped during fieldwork in 2005. I would not have been able to complete the fieldwork and survey a great number of Iron Age islet sites had it not been for the generosity of Neil MacDonald, who kindly lent me a dinghy for the duration of the fieldwork in 2005.

The ideas in this thesis have been stimulated by discussions with many people. I would like to thank Kate MacDonald for inspiring me with her infectious enthusiasm for understanding the Iron Age, for sharing her knowledge and for providing some invaluable feedback on chapters in this thesis. I am also grateful to Jago Cooper and Helen Dawson for giving me the opportunity to engage in wider debates about Island Archaeology through the Forum for Island Research and Experience. I would also like to thank Fiona Pearson and Margaret Fenton who enthusiastically shared their ideas on North Uist's island duns following their extensive art and fieldwork project on this topic. I am also very grateful to Fiona for giving me somewhere to stay, when camping in Uist during October became increasingly 'uncomfortable'! I am grateful to Janet Swailes for all the conversations about landscapes and for being generally supportive and

enthusiastic about my research. I would like to thank Professor Ian Armit for making available an unpublished report on the Eilean Olabhat excavation and Dr Cole Henley for sending me his unpublished PhD thesis on the Neolithic world of the Outer Hebrides. I must also thank Paul Browne, who has offered invaluable advice and help during the numerous computer-related fiascos that have occurred over the last four years of this research, and my brother Tom who has helped extensively with images, figures, photographs and thesis layout.

Family and friends have offered immense support throughout the last four years, for which I am very grateful. In particular I would like to thank my mum and dad, Tom, Kat, Paul, Jennifer, Billy, Dan and Jen. You are all wonderful! Finally, had I not been introduced by Bill and Charlotte to what were unknown islands to me in 1997, my passion for the archaeology of this area and the immense enjoyment I have gained from studying these fascinating places would never have been known. Thank you so much!

Abstract

This thesis explores aspects of everyday experience and the creation of place within the Iron Age island landscapes of the Outer Hebrides. While investigations of place and landscape, as experiential phenomena, are well developed in the context of Neolithic and Bronze Age research such approaches have been largely neglected within British Iron Age studies and in the study of the Outer Hebridean Iron Age more specifically. A hitherto focus upon ritual landscapes partly explains the lack of uptake within British Iron Age contexts more frequently defined by concepts of domesticity. The experience of place and landscape, however, are not only of significance within 'ritual' contexts but play an important role in the shaping of human action in the realm of the everyday. Instead, the principal barrier appears to be methodological - how does one go about investigating everyday experiences within prehistoric landscapes? A major component of this research has therefore been to explore and develop a methodology for this research. Current archaeological practice provides two contrasting methods for the study of landscape experience - one rooted in the analysis of field observations, inspired more directly by phenomenology, and the other via the application of GIS as a means of modeling landscapes from the perspective of human engagement. Despite much shared theoretical ground there remains little dialogue between practitioners of these respective approaches. It is proposed, however, that both approaches can make valued contributions to our understanding of the past and this thesis aims to contribute to an emerging discourse between what are commonly conceived as contradictory methods of enquiry. By exploring the character and diversity of island landscape settlement locales and the everyday experiences of Iron Age places this research offers an alternative framework for understanding the Iron Age societies of the Outer Hebrides.

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Chapter 1: Introduction and Background: Aims and Research Outline

This thesis is concerned with the experience and creation of place within the Iron Age landscapes of the Outer Hebrides. The aims of this research were twofold. One aim was to explore domestic places and the wider Iron Age landscape of the Outer Hebrides as a means of addressing questions about the nature of this Iron Age society. A second aim was to establish and explore methodologies of experiential or sensory landscape archaeology that combined subject-centered field survey with the use of Geographical Information Systems (hereafter GIS). These two objectives run in parallel throughout this thesis.

Place and Landscape are defined in this research as the spatial context of social existence revealed through human scales of engagement and experience. The term experiential landscape archaeology is used here to refer to methods that explore archaeological landscapes and places as primarily experiential phenomena. The particular case study, the Outer Hebrides, are a group of islands located off the west coast of Scotland where the Iron Age is defined chiefly by the distribution of monumental settlement architecture; brochs, duns (Atlantic roundhouses) and wheelhouses. The stimuli for this research was the observation that experiential landscape archaeology, despite being well developed in the context of Neolithic and Bronze Age research, has been largely neglected within British Iron Age archaeology more generally and in the study of the Outer Hebridean Iron Age more specifically. I argue that this approach makes a valuable contribution to our understanding of the Outer Hebridean Iron Age and has significant potential for wider Iron Age studies. Although alternative interpretations of the Outer Hebridean Iron Age can be found within current literature, they all rely upon the premise that this society was structured primarily around differences in monumental domestic architecture. This thesis offers a new perspective by proposing an additional

schema for investigating this Iron Age society based upon the sensory qualities of Iron Age places and landscapes. One of the unique elements of this research has been the geographical breadth of this study; all known monumental Iron Age roundhouse sites (brochs, duns and wheelhouses) across the Outer Hebrides were examined in this research and a total of 172 site locations were surveyed in the field and subsequently mapped and analysed using GIS. Renewed synthesis of Iron Age material across the Outer Hebrides has been absent since Armit's 1992 BAR publication of later prehistoric settlement types and in relevant chapters of his later publication *The Archaeology of Skye and the Western Isles* (1996). Since these publications a number of excavations and survey projects have been published that have the potential to contribute significantly to our understanding of the Outer Hebridean Iron Age. To date, these projects have been discussed within the specific context of smaller island regions; South Uist (Parker Pearson, and Sharples, 1999); Barra and associated islands (Branigan and Foster, 1995; 2002); and the Bhaltos peninsula, Lewis (Armit, 2006; Harding and Gilmour, 2000; Harding and Dixon, 2000). The present research offers some alternative scales at which to understand the Outer Hebridean Iron Age. Firstly, by exploring the wider archipelago and landscape context of Iron Age island settlement this thesis offers a regional scaled perspective that leads me to argue that the individual island scale can be a problematic unit for investigating prehistoric societies. Secondly, by exploring sensory experience, this research enables me to propose additional units of analysis based upon human scales of engagement.

Regarding the second aim of this research, current archaeological practice provides two contrasting approaches to the study of place and landscape experience. One approach is rooted in the analysis of subject-centred field observations and inspired more directly by phenomenological philosophy and theory. The other has emerged out of the application of GIS and the increasing ability of this technology to model landscapes from the perspective or scale of human experience. In terms of understanding the relevance of place and landscape to our interpretations of past societies there is much shared

theoretical ground between these two strains of experiential archaeology. Nevertheless, there remains very little dialogue between practitioners of these respective approaches. Mark Lake offers a positive spin on this situation, suggesting that 'broadly sympathetic internal critique is often more productive than noisy paradigm clash' (2007: 1). He is undoubtedly right. Be that as it may, it is proposed explicitly here that in *combination* these approaches can make a valuable contribution to our understanding of past societies. This thesis therefore contributes to a productive discourse between what are generally conceived as contradictory methods of enquiry. A specifically reflexive methodology was constructed whereby both subject-centred field survey practice, influenced by phenomenology, and the use of GIS as a method of modeling and exploring elements of landscape experience, were integrated throughout. The methodological element of this research and the integrated approach adopted for presenting results has therefore been exploratory, the overall aim being to investigate the potential for synthesising these seemingly disparate approaches. It should be noted that the two approaches adopted in this research encourage different methods of presentation. Phenomenology and other subject-centred archaeology tend to be illustrated with photographic images and the use of descriptive accounts (Cummings and Whittle, 2004; Edmonds, 1999; Tilley, 1994; 2004). In contrast GIS research is frequently supported with map images, tables and graphs. Elements of both methods of presentation are used in this thesis, as well as composite figures combining these different forms and sources of information. Therefore this thesis looks different from traditional methods of presenting archaeology and as such engages with wider debates about the way in which archaeology is communicated (Bender, Hamilton and Tilley, 1997; 2007).

The background and theoretical context for these two parallel research objectives are framed in Chapters 2, 3 and 4. In Chapter 2 I outline the overarching themes and the theoretical context of this research. Firstly, I outline why place and landscape, as experiential phenomena, are relevant to archaeology and explain how an interest in these concepts developed within the

discipline alongside other post-processual theories. I follow this by considering some similarities between the development of a post-processual Landscape Archaeology and Island Archaeology and explain how ideas contained within these theoretical movements have influenced this research. Islands are a theme that runs throughout this thesis. In particular I investigate *how* Iron Age communities perceived the islands they inhabited, I explore alternative island scales of engagement and I question the appropriate unit for analysis within this island case study. I then discuss existing studies of experiential landscape archaeology arguing that while similar approaches are well developed for exploring the construction of special or ceremonial places and understanding ritual practices, the more mundane circumstances of everyday life have received comparatively little attention. It is argued, however, that the sensory qualities of place and landscape setting play an equally important role in the structuring of everyday activities and social relationships on a domestic scale. Instead it is suggested that the principal barrier to studies of everyday landscapes is a lack of an established methodology. I observe that the Iron Age is frequently interpreted and defined in terms of domesticity and suggest that this association, as well as a hitherto emphasis upon ritual contexts, in part explains the lack of application of experiential landscape archaeology within Iron Age studies.

Having outlined the theoretical background to this research, in Chapter 3 I discuss the more specific theories, methods and established critiques associated with GIS and subject-centred approaches to experiential landscape archaeology. I first summarise a range of approaches associated with the term phenomenology, embodied or subject-centred field archaeology. I make the argument that a lack of explicitness on the part of many practitioners regarding the specific methods involved in such research has provoked a large proportion of contemporary critique. I also point out, however, that many of the most vehement critics of these approaches have failed to acknowledge more recent developments in the application of subject-centred field archaeology. In the following section I discuss GIS and its application to the study of experiential

landscapes. I begin by outlining the influence of post-processual critique upon theories and methods of approach. Like subject-centred approaches, it is argued that many critics of GIS have failed to engage with more recent developments in this area and that a lack of communication and obdurate attitudes to new or developing methods within archaeology finds much of this critique increasingly outdated. In conclusion it is argued that subject-centred field survey and GIS should be regarded as archaeological tools and that used appropriately a complimentary dialogue is achievable. Furthermore, the need to communicate adequately the methods and processes involved to the wider archaeological community is emphasised. These observations directed the way in which I chose to integrate and communicate these two approaches in this research.

In Chapter 4 I provide a background to the case study. It is proposed that the Outer Hebridean Iron Age provides an ideal context in which to explore methods for experiential landscape archaeology. Extensive survey of the archaeological landscape providing comprehensive data on Iron Age sites locations, available palaeoenvironmental data and the advantages of a landscape minimally affected by modern development and other intrusive features, provide a strong basis for reconstructing the Iron Age landscape. In addition it is proposed that this approach has the potential to contribute significantly to our understanding of the Iron Age in this area. It is also noted that current frameworks for understanding the Outer Hebridean Iron Age focus on less than 14 excavated sites, very few of which have been uncovered to primary occupation levels. As a consequence more is known about later Iron Age reuse of these sites than the earlier Iron Age origins of this landscape despite the wealth of potential information. It is argued that there still remains too great an emphasis on the archaeological classification of domestic architecture associated with this period and that this focus has, to a certain extent, hampered our understanding of the Iron Age in this area. Island specific terminology, models and interpretations are described as further characteristic of Iron Age archaeology in the Outer Hebrides and the suitability of the individual island approach is consequently

questioned. Alternatively, my methods allow me to construct an additional framework for understanding the Outer Hebridean Iron Age by considering Iron Age site locations across the broader island region, assessing the wider landscape setting and asking questions about the nature of dwelling associated with these places.

Having provided a theoretical and archaeological background, in Chapter 5 I outline the methodology employed in this research. The methodology was established in response to the theoretical approaches discussed in Chapter 2, the methodological research questions detailed in Chapter 3 and the case study research questions raised in Chapter 4. The methodology comprised two broad scales of analysis. In this chapter I explain how, at a regional, island-wide, scale, I explored all Iron Age site locations across the Outer Hebrides through an extensive field survey project and subsequent GIS-based analysis of these locations. I then outline the methods employed at a local landscape scale of research, where a sample of sites were more intensively investigated in the field, followed by additional methods of GIS modeling to explore further elements of sensory landscape experience.

In Chapters 6, 7 and 8, I outline the results of this research. In Chapter 6, I draw out relevant information from the regional scale of research bringing together the results from the extensive field survey and the GIS-based analysis. The detailed results from the regional study can be found within the site catalogue in Appendix 2 referenced according to site number. Chapter 6 is structured so that results are outlined for each island region within the Outer Hebrides. This method of presentation reflects an initial stage in the interpretive process and enables the appropriateness of the island unit to be explored and challenged. In conclusion, I identify alternative units of analysis based upon categories of place with similar experiential qualities. Four main types of place are identified by these means; lowland coastal, upland, coastal headland and inland islet. The remaining chapters in the thesis are structured around this alternative classification system. In Chapter 7 this classification system is outlined in more

detail and the sample areas, selected from each of these location types for investigation at the local research scale, are introduced. The results of the local landscape research are then discussed in Chapter 8. Once again information from field survey practices and GIS-based analysis are incorporated. In Chapter 8, I further develop an understanding of Iron Age places based upon investigations and analysis of sensory experience, as well as inferring from these results potential activities and taskscapes associated with these Iron Age places.

This thesis concludes with two discussion chapters, each addressing one of the two overarching research questions. In Chapter 9, I address how the two strands of information presented throughout this thesis, field survey and GIS-based practices, contribute to an understanding of Iron Age places and landscapes in the Outer Hebrides. I outline some of the problems encountered in this research and discuss what combining these approaches reveals about these methods. In the final chapter, Chapter 10, I discuss what this particular understanding of place and landscape contributes to interpretations of the Outer Hebridean Iron Age. In particular I argue that the results of this research offer an additional perspective on the dynamics of this Iron Age society. I will conclude by outlining some future research questions and objectives for the Outer Hebridean Iron Age that this project has highlighted.

Chapter 2: Introduction and Background: Places, Landscapes, Islands and Experience

2.1 Introduction

In this chapter I will introduce the theoretical background to this thesis. My research is underpinned by theories of place and landscape. Place and landscape are defined as socio-spatial phenomena, revealed specifically through human scales of engagement. I then outline the importance of exploring everyday archaeological landscapes and places of domestic dwelling within these theoretical models. Many of the ideas raised as part of a growing field of Island Archaeology have influenced this research and in the following section I outline how these issues are pertinent to studies of archaeological landscapes. Finally, I consider why studies of place and landscape, emphasising human scales of engagement and sensory experience, have received comparatively little attention within British Iron Age studies.

2.2 Place and Landscape

2.2.1 Introduction

Within archaeology, concern with *place* and *landscape* as experiential phenomena developed primarily out of the theoretical concerns of the post-processual critique and what was deemed the unsatisfactory way in which the spatial dimension of the archaeological record and the physical surroundings of archaeological sites were treated within processual theoretical frameworks. Despite the intense discussion and debate over theories of landscape over the last few decades, particularly amongst British prehistorians, there remains a lack of consensus on the definition of either place (of which more will be said below) or landscape. One can rightly argue that to seek a narrow definition of

landscape is to misunderstand the concept which is by its very nature an ambiguous idea (Gosden, 1994); the value of which resides in the vastness of its meaning and associations. Theories of landscape have incorporated a range of ideas derived from a number of different disciplinary backgrounds and therefore an 'untidiness' is almost integral to the concept (Bender, 2001: 3) making it difficult to pin down the term in any definitive sense. However, just because its meaning is fluid and ambiguous does not mean landscape is without meaning or is meaningless. There are a number of distinct theoretical concerns that underlie interpretations of place and landscape as experiential phenomena. These concerns determine how archaeologists think about landscapes, practice landscape archaeology and finally interpret archaeological landscapes. These concerns also form the basis to my research.

2.2.2 Post-processual approaches

Environment	Landscape
Passive	Active
Object	Subject
Measured Space	Experienced Space
Neutral	Partial/situated
Function	Form
Quantity	Quality

Table 1: Environment and Landscape as conceptual oppositions

The notion of landscape initially arose as a conceptual alternative to processual archaeology's idea of environment and because of this explanations of landscape have frequently been defined in terms of this opposition (Table 1). A fundamental tenet of the post-processual critique was the rejection of the simple subject-object dualism that underpinned how the relationship between people and material culture was conceptualised within extant thinking, instead highlighting the need for archaeologists to explore the complexity and dialectic character of this interaction. Therefore one of the principal points of departure for a landscape interpretation of spatial context was to recognise that it was an

inherently dialectic socio-material phenomena. From a processual perspective environments are conceived as passive spaces providing a neutral resource base and a container for social action (Darvill, 1999: 106-107). Instead, landscapes, understood as a form of a material culture, are conceived not as an external phenomena but an internal and integral part of any given society, both constructed by and constructive of social action (Tilley, 1994: 17; Gosden, 1994: 34; Ingold, 2000: 193).

Another key feature of the post-processual critique was a shift in the scale of investigation and interpretation in the past. Concern with grand narratives and questions of long-term social and cultural development, frequently with an evolutionary bent, were a particular concern of the New Archaeology. Post-processualism instead emphasised the importance of understanding at the scale of involvement, on the basis that it is the human scale at which meaning unfolds (Hodder, 1986). This is the scale of agents, of individual communities and lived-in life. An experiential approach to place and landscape, therefore, involves a repositioning of the agent and a shift in perspective from the distanced map scale to the human experiential scale. Discussions of landscape frequently deal with the particular and, from an experiential perspective, landscapes are defined by the human scale of engagement. This differs substantially from the scale at which processual models operate and are concerned.

2.2.3 Landscape, perception and temporality

In terms of social construction and engagement, it became clear that landscapes must relate to a particular perspective of involvement and this led to an interest in landscapes as a way of perceiving and experiencing physical surroundings (Bender, 1993; Tilley, 1994). Landscapes then relate to 'the way in which people – all people – understand and engage with the material world around them' (Bender 2001: 3). This exposes a further crucial distinction between landscape and environment - while the latter is envisaged as independent physical space, the former is revealed only through human

inhabitation, experience and engagement. Environments are measurable spaces and thus their study concerns questions about dimensions, quantities and other 'objective' characteristics. In contrast, landscapes relate to spaces as they are perceived or experienced and therefore their study requires a more qualitative, situated approach. The philosophy of phenomenologists such as Merleu-Ponty and Heidegger has played an influential role emphasising embodied experience and the perceiver's being-in-the-world as a fundamental means of understanding landscapes (Ingold, 2000: 168). These arguments maintain that human perception is not merely defined by the inception of sensory data to the mind, but is a process that involves continual bodily interaction and engagement with the world (Gibson,1979; Merleau-Ponty, 1962). Landscapes, then, are the world as understood and experienced by embodied and engaged subjects. Landscapes are an integral part of people's lived experience; an idea well developed in Bourdieu's *Theory of Practice* (Bourdieu, 1977) and encompassed in the term 'dwelling' (Ingold, 2000). Dwelling necessarily encompasses action and consequently there is an essential temporal component to landscape (Gosden,1994; Ingold, 1993; Ingold, 2000). The importance of time as a fundamental quality of human experience was emphasised in Heidegger's phenomenology (1962**)**. Subsequent discussions of time within archaeology have explored similar theoretical juxtapositions to that between measured and experiential concepts of space. In contrast to measured time, which is objective, abstracted and an essentially timeless concept, or evolutionary time concerned with long-term change and progress, time as an element of human experience is the subjective and engaged tempo of being-in-the-world (Gosden, 1994: Ch 1) and an essential component of landscapes as active, social and experiential phenomena.

2.2.4 Critical approaches to landscape

The post-processual critique has also involved critical analysis of the relationship between perception and knowledge creation. Perception is consequently recognised as socially, politically, culturally and temporally specific

and the partiality of modern Western modes of perception has been fully acknowledged (Bender, 1993; Bender and Winer 2001; Thomas, 1993a). These arguments have been particularly convincing regarding the term 'landscape' itself which has been related to the development of realism and perspective in renaissance art and associated notions of commodity and ownership (Cosgrove, 1989; Ingold, 1993; Thomas, 1993a). An awareness of the inerent subjectivity of the academic perspective and the need for self-reflective and self-critical approaches within archaeological research are therefore important elements of a landscape perspective. With this in mind, landscapes are understood to always reflect a situated perspective and considerable discussion within archaeology has focused on the way in which different subjects and different cultures experience and perceive their world.

2.2.5 Place

Place and landscape are clearly related concepts. Landscapes, defined here as experiential socio-spatial phenomena, comprise networks of inter-related places of experience and engagement. Place is therefore defined as an individual location or locale, a moment of space (and time) associated with certain practices and meanings. In other words, place can be understood as a single unit of the cultural landscape. In archaeological terms, place can be associated with the location of an archaeological site, or a concentration of material indicating the location of a particular activity or practice occurring in the past. These locations/locales are where places, as meaningful experiential phenomena, are created through human engagement and ongoing practices. From a social perspective there are no spaces, only places and it is through these places that landscape comes into being. Archaeological landscapes therefore comprise a nexus of meaningful places (identified by sites and other archaeological material) and the pathways between them. Where place becomes landscape, however, is unclear. These spatial boundaries are not fixed but are specific to social, cultural and historical context.

2.3 Domestic places and landscapes of the everyday

2.3.1 Monumental landscapes

While studies of place and landscape experience have come to play an increasingly vital role within British and European Archaeology, there has been a tendency for these studies to focus almost exclusively on 'ritual' or 'special' landscapes. Tilley's pioneering *Phenomenology of Landscape* (1994) dealt with Neolithic monuments across three regions of southern Britain. Similarly Cummings and Whittle's (2004) discussion of Neolithic landscapes of Wales deals with megalithic sites referred to in the title of their book as 'special places' (Cummings, 2002). Other experiential landscape studies include Early Neolithic monuments in Orkney (Noble, 2007; Woodman, 2000), Avebury (Thomas, 1995; Wheatley, 1995), Cornwall (Tilley, 1995), Brittany (Scarre, 2002b), Ireland (Bergh, 2002), the Outer Hebrides (Henley, 2005) as well as Bronze Age burial mounds in Sweden (Lageras, 2002). In comparison little attention has been given to the experiences of 'ordinary', 'everyday' places and landscape experiences (although notable exceptions include; Bender, Hamilton and Tilley, 2007; Hamilton and Whitehouse, 2006a, which will be discussed in greater detail below).

There are a number of concerns with this persisting trend. However, it is first necessary to briefly consider why this has been the case. One of the arguments maintained by the post-processual critique was that the world was inherently meaningful. Influenced by structuralist thinking it was argued that archaeologists should aim to read and decipher meaning from material culture. As a consequence early studies of post-processual landscapes sought primarily to seek out potential metaphors and meaning in the placing of sites and the structuring of landscapes that would hopefully allude to past modes of thinking and the cosmologies and belief systems of prehistoric societies. The idea that experiences of place and landscape were themselves meaningful was intuitively more explicable and readily apparent in the placing of 'ritual' sites across the

landscape. In addition there was an established tradition of reading meaning into monument location that preceded post-processual landscape arguments, most notably in pursuit of astronomical associations, (Thom, 1967; 1971; see also Ponting and Ponting, 1981; 1984; Ruggles, *et al*, 1984). In addition, the view that Early Neolithic monument building referenced natural landscape formations (Bradley, 2000; Cummings, 2002; Scarre, 2002b), that sites were constructed with a distinct sense of aesthetic considerations (Boujot, *et al*, 1998: 203), and through their construction explicitly and critically altered the way in which places and landscapes were used and experienced by prehistoric people (Thomas, 1999: 36) strengthened the conceptual link between monuments and studies of landscape experience. Whether from a normative, processual or post-processual background it has been widely accepted that there is some form of dialogue between Neolithic monuments and landscape setting. As Chris Scarre conveys, beyond any established critique of a post-processualism or experiential landscape approaches 'any attempt to understand a prehistoric monument which fails to consider the landscape setting is omitting one of the most salient characteristics' (Scarre, 2002a: 6).

2.3.2 Ritualising the everyday

The focus on monuments and 'ritual' landscapes is problematic in the first instance because of the assumption that 'ritual' and 'everyday' contexts exist independently of one another and that from a landscape point of view can be recognised as spatially and functionally discrete (Bruck, 1999b). The separation of ritual and everyday contexts, similar to implementation of strict culture/nature dichotomies frequently derives not from the archaeological data itself but is imposed by archaeologists who (wrongly) perceive this distinction to exist in their modern world (Bender, 2000; Bruck, 1999a). It is increasingly recognised, however, that this conceived dichotomy is overly simplistic. Formal rituals address aspects of the everyday, while as Bender points out, everyday life and experience is also fundamentally ritualistic (2000; see also Bender, Hamilton and Tilley, 1997; 2007; Hamilton and Whitehouse, 2006a; Edmonds, 1999; Bruck, 1999a; 1999b). In recognition that 'ritual' permeates most areas of lived

experience, for the Iron Age J D Hill distinguishes between practices that overtly serve to reproduce and strengthen social norms, belief systems and social agendas, what might conventionally be termed ritual activities, and those where this role is less explicit but no less important – i.e. through the ritualisation of daily life (1989, 1995). The importance, however, is that ritual and everyday cannot be entirely divorced from one another but instead represent a range of contexts on a spectrum of socially formalising practices.

Secondly, by commonly associating studies of place and landscape with a more recognisable ritual character, or the more formal ritual end of the social spectrum, it is implied that place and landscape play a limited role in informing and constructing human action in the realm of the everyday. Instead, it is implied that this facet of past human material culture only assumes importance during the performance or display of ceremony or power (Bruck, 1999a). If landscape is the totality of experience, engagement and activity by any given community, then surely landscape encompasses both the ritual and everyday. What needs to be emphasised is that routine activities of daily life also take place in time and space and are embedded within a spatial context that serves to enable, constrain and inform action in both a practical and meaningful way. These ideas are well established in the highly influential work of Bourdieau and his notion of *habitus* (Bourdieau, 1977). The importance of place and landscape in the structuring of everyday life are ideas also well developed in the sociology of Giddens (1984) and the social geography of Pred (1990), both of whom develop upon Hagerstrand's theory of Time-Geography and his concern with the spatio-temporal character of daily life. Pred (1984: 287) in particular perceives the daily unfolding of the structuration process as inseparable from the becoming of place. Place, landscape, the structure of society and the nature of social relationships are therefore understood to be inextricably linked via everyday activities and human actions. These ideas are consistent with a range of phenomenological approaches in which it is argued that people come to know, understand and act in the world through their very physical experience of being in the world, to use Merleau-Ponty's phraseology (1962 Part III).

Alternatively, as an interpretation of these positions; everyday embodied experiences of landscape and place inform understanding, knowledge and action and by implication these experiences contribute to the creation of place, the structuring of landscape, social relationships and social identities. As such, what is stressed in my research is the importance of studying everyday experiential landscapes and places. This is not to say that we are dealing exclusively with domestic or non-ritual archaeological contexts, but rather reflects a shift in perspective whereby landscapes are conceived as the spatial context in which people dwell. These are landscapes that shape experience and knowledge in a continuous way. Not a perspective on landscape experience that assumes experience to be about moments of meaningful reflection, where experience affects the social domain only through 'special' practices, in designated 'ritual' places or through the construction of ritual landscapes.

2.3.3 Summary

A principal barrier to studies of place and landscape within everyday, lived-in contexts is the lack of an established methodology – how exactly does one go about investigating domestic places and their landscape settings from this perspective of the everyday? Concerning studies of 'ritual' or 'ceremonial' landscapes, methods of enquiry have tended to concern themselves with questions of inter-visibility, visual prominence and with describing visibility from fixed site locations. These types of study have included both 'phenomenological' methodologies, whereby observations of visibility are noted in the field (Cummings and Whittle 2004; Edmonds 1999; Tilley 1994), and the use of GIS, where visibility is modeled based upon elevation data (Gaffney and Stancic 1991; Lake, Woodman, and Mithen 1998; Llobera 2001; Llobera 2003; Wheatley 1996), of which more will be said below. The emphasis on visibility at the expense of all other perceptual senses has been frequently cited as a shortcoming of these types of approach (Bender 1993; Thomas 1993a). Despite attempts to deal with landscape journeys and movement, such as Tilley's account of his experiences walking the Dorset Cursus (Tilley 1994) or, to pick a GIS example, Bell and Lock's (2000) analysis of visibility along the prehistoric

Ridgeway in Oxfordshire, there still remains a tendency for landscape to be treated as a static entity, or a series of static entities, which people engaged with only from fixed viewing positions. There appears to be an assumption when considering monumental or ceremonial landscapes in particular, that experiences of place can be treated in such a fixed and controlled fashion. This partly derives from the view that the construction of monumental architecture within prehistory served to control experience and to 'freeze perspective through the architectural lens of the monuments themselves' (Tilley 1994) and that the construction of monuments outright suggests a desire to be seen within the landscape (*ibid:* 204). Yet it is precisely the relationship between place, landscape and daily activity that renders the study of place and landscape so relevant to our understanding of the past. This idea is emphasised within Tim Ingold's term 'taskscape' (1993; 2000 ch. 11) and Gibson's concept of landscape 'affordance' (Gibson, 1979), described as the 'properties of the real environment as directly perceived by an agent in the context of practical action' (Ingold, 1993 p.46). It is therefore important to envisage landscape not merely as a medium for expression at given times or places, but as an enduring condition of social existence that shapes and is shaped by social action. A method of enquiry concerned with specifically lived-in Iron Age landscapes therefore needs to consider how people might have lived within the prehistoric landscape, how places were constructed and what potential daily activities would have unfolded within these locales.

2.4 Island Landscapes

2.4.1 Island perceptions

Islands, like landscapes, are at their essence a spatial concept. Similarly, the concept of island is bound-up with ideas that relate to the way in which islands are perceived and experienced. In particular, the idea of island as a metaphor for isolation has a long history dating back to early Christianity and further developing through European colonialism and contact with island communities

elsewhere in the world (Gillis, 2003; Hau'Ofa,1993; Rainbird, 2007, Chapter 1). Islands have been used as the settings for numerous literary works, artwork and film with the concept of the isolated island as microcosm of the wider world frequently utilised for the purposes of political satire or tales of human morality (Fleming, 2005; 2008). The creation of specific national identities around partially mythologised concepts of the 'purity' of island communities has also been noted (Sulivan, 2008). Similarly, the allegorical status afforded to some islands, such as St Kilda, over others, has been part of this process of mythologising the island (Bradley, 2008: 129-130; Fleming; 2005; 2008). The result is that the association between islands, concepts of isolation and the notion of mythical islands is now embedded in the modern western psyche and this association has underpinned how islands and island communities have been defined and studied within many areas of the social sciences. Within archaeology, the study of islands has followed a similar path of theoretical development and enlightenment as we have seen for the study of landscapes. During the beginnings of the New Archaeology, quantitative studies of landscapes seemed well suited to the apparently distinct boundaries of island spaces (Renfrew, 1979). Thus islands were treated as conveniently, pre-defined, geographical areas that could be studied and defined objectively. Following bio-geographical models of islands developed within the natural sciences (MacArthur and Wilson, 1967), New Archaeology adopted a similar enthusiasm to the study of islands, viewing them as providing, through their insularity and boundedness, laboratory type conditions for the scientific study of social and cultural change within a distinctly evolutionary framework (Evans, 1973; Cherry, 1981). As can be found in many literary sources, the island was envisaged as representing the world in microcosm where the human-condition and socio-cultural evolution of humankind could be easily explored. These models depended upon interpreting the sea as an impenetrable boundary, with islands and the degree of islandness defined and assessed in terms of their apparent isolation, remoteness and smallness. The principal problem with these approaches, however, is that archaeology deals with cultural and social phenomena, and that these phenomena do not necessarily correlate with the

spatial boundary of an island coastline. Furthermore, these abstract concepts of island space do not necessarily reflect how people actually experience islands and island landscapes.

Within maritime communities the sea is clearly not a boundary but can be a provider of resources and a medium that specifically facilitates contact and communication. In these scenarios, rather than being isolated, islands are by their very nature well connected and as Gillis explains, in terms of trade and communication the island can provide 'strategic advantages that no landlocked outpost could offer' (2003: 29). For many of the world's indigenous island communities, the sea is regarded very much as part of the island landscape as opposed to the limits of it and the term 'seas of islands' has been frequently cited to explain this alternative perspective (Hau'Ofa, 1993; Gillis, 2003; Fleming, 2005). For island communities engaged directly in maritime or coastal activities, experiences of the sea are an everyday part of island life. It is clear then that the concept of islands as isolated represents only one perspective of island dwelling, a perspective that one can argue is distinctly 'land'-scape rather than 'sea'-scape in its viewpoint. It is also a view of islands that has been forged from a distinctively mainland and landlubber perspective and reflects little of an islander's viewpoint. It needs to be further noted that islands are rarely comprised of a single environment and may be bounded or divided in the first instance by physical features other than the coast and sea. The presence of a harsh island interior, for example, might well enable closer contact and familiarity with neighbouring coastal islands than with regions across the same island and this provides the potential for island communities to establish or promote differences *within* rather than *between* islands (Rainbird, 2007: 41). An obvious example relating to the Outer Hebrides are the so called islands of Lewis and Harris; although commonly regarded as separate islands, Lewis and Harris are in fact a single landmass, separated not by sea but by mountains. The outcome of this island geography is that Harris has greater historical and cultural links with North Uist and the islands in the Sound of Harris than it does with Lewis (Lawson, 2004). These observations return us to the discussion of

island definitions. The Oxford Concise Dictionary describes an island as 'land surrounded by water' but also metaphorically, as 'a thing that is isolated, detached or surrounded'. The latter definition betrays many of the assumptions made about islands and island societies described above. This definition also provokes questions about the subject of an island archaeology. Should island archaeology embrace, for example, not only 'true islands', by which it is meant geographical, water-bound islands, but also 'habitat island' (Boomert and Bright 2006), such as Lewis and Harris, including a range of geographical or cultural defined spaces.

2.4.2 Island Archaeology

Cyprian Broodbank's (2000) revised approach to 'Island Archaeology' importantly incorporates the concept of island-scape as a means of recognising the role of the sea and thus combining land and sea into our conception of island dwelling. Paul Rainbird (1999; 2007) goes one stage further replacing an island archaeology with an 'Archaeology of the Sea'. Similarly, Barry Cunliffe includes islands within his concept of a maritime archaeology (2001). Andrew Fleming, amongst others, however, has expressed concern over the direction of these positions. It is argued that while a view of islands purely in terms of the 'other' and defined exclusively by their isolation and exoticism is clearly simplistic, he argues that it is equally limiting to ignore some of the specific dynamics of island life, however hard these phenomena are to pin down (Fleming, 2008; Wright: 2008). Another notable problem with assimilating the study of islands into maritime archaeology is the consequent failure to recognise that some sections of island communities may have had little or no interaction with the sea itself. Admittedly, the latter case is more likely to occur within larger islands where there is greater possibility for a lack of engagement or experience with marine environments. Nevertheless, it is important to bear in mind that not all sections of a community share the same experiences of islands or of landscapes more generally. It is a common observation that within island communities around the world seafaring practices are associated more frequently with men while women's role's within society bind them more closely

with the land and land-based practices (Joly, 2001). During the tsunami that hit many of the islands within south-east Asia in 2006 it was reported that more women than men died during this tragedy because the majority of women, despite being islanders, did not know how to swim. This is a compelling example of how individuals within a single community can have very different experiences of the island landscape and very different experiences of the sea. For the women who did not swim and whose daily life had little to with the water beyond the coastline, the sea may have been more accurately described as a boundary similar to some of the traditional island views critiqued above. Conversely, male fishermen would have had an entirely different relationship with, and experiences of, the sea. We should therefore be cautious in replacing a land-biased perspective with a sea-biased perspective in our study of islands. Furthermore, this example is a reminder that archaeologists need to consider the multiplicity of experiences when pursuing an understanding of past landscapes or indeed islandscapes. The importance of a revised approach to island archaeology and the specific value of Broodbank's and Rainbird's contributions is firstly the move away from studies of insularity and secondly a revision of the simple island model where sea equals boundary and land comprises, either in geographical or cultural terms, a fairly contained and homogenous region. Overall, it is clear that despite its convenience, the island unit does not necessarily correlate with socio-cultural phenomena or with experience of island dwelling and that frequently the subject of island archaeology is more appropriately some form of archipelago as opposed to the individual island (Broodbank 2000).

A revised approach to the study of islands also relates to broader trends within archaeology towards more self-critical and interpretive (hermeneutic) frameworks in which modern perceptions and assumptions of the archaeologist are rightly challenged. For example, Broodbank contests the modern western association of islands with 'political utopias, nostalgic idylls and savage fantasies' (Broodbank 2000: 6). This of course relates back to the notion of insularity discussed above and ties in with the discussion of subjectivity and

political landscapes in the previous section. The challenge is therefore to explore island landscapes as an experiential phenomena mindful of the baggage of an island perspective that has come to define how islands are conceived by most modern, western mainlanders. As Joanna Wright aptly recognises, the majority of academics who study islands have not or do not live on islands and therefore their perspective is usually mainland in orientation (2008: 62). Even where the pursuit of an island perspective is a principal focus of research, a critical eye can frequently detect a 'mainlander' viewpoint. As an example of an island approach that integrates sea and landscapes, Noble and Stevens (2008) emphasise the importance of natural landing bays as places where prehistoric people would arrive and leave the islands. Yet similar concerns of 'arrival' and 'departure' would not be cited in landlocked contexts where instead discussion might focus on movement *through* rather than *in* and *out* of a landscape, and this betrays what can only be described as the 'outsider's' perspective of island dwelling and the archaeologists' own experience of working within islands which begins and ends with the ferry or boat journey. It is therefore important, within a self-reflective and critical theoretical framework, to acknowledge, as Joanna Wright does, the partiality of our perspective particularly when subjective accounts of experience are a core element of our research.

2.4.3 Summary

Like Landscape Archaeology, it is clear that Island Archaeology does not represent a cohesive theoretical approach. Like the concept of landscape, the value of an island archaeology is to be found in the varied perspectives and the theoretical debates that it generates. In the context of this research, an 'Island Approach' is used to imply a more in-depth consideration of the way in which islands are defined, perceived and experienced, raising for discussion the concepts of marginality, isolation and mainland-island communication. An island approach also encourages critical consideration of the appropriateness of the island or a group of islands as a region of study, taking into account evidence for maritime based communication beyond the coastal boundary. Furthermore,

an 'Island Approach' provokes critical analysis of one's own views of islands and island dwelling and provides a stimulating position from which to think about experience and identity in the Outer Hebridean Iron Age.

2.5 Iron Age Landscapes

2.5.1 Introduction

While an interest in place and landscape, as specifically experiential phenomena, have come to play an increasingly vital role in other periods of British prehistory, such approaches still remain conspicuously lacking from the core of Iron Age research (Rennell, 2008). In order to understand why this is the case it is necessary to briefly review the nature of British Iron Age studies. There are two prevailing strands of research that one can observe within the recent history of Iron Age studies. One has been a focus on settlement sites, in particular upon the roundhouse as a defining feature of British Iron Age tradition. The other has been the continued concern with constructing grand narratives and with studies of long-term social change. As we shall see, studies of place and landscape as experiential phenomena immediately satisfies neither of these dominating research interests.

2.5.2 Settlement Archaeology

The first point to be made is that the British Iron Age is, in the context of prehistoric archaeology, a markedly data-rich and more specifically settlement-rich period of study. In comparison with earlier periods of later prehistory, the Iron Age in Britain is associated with an abundance of highly visible settlement sites. There are more sites identified as Iron Age settlements than there are for all of the Neolithic and Bronze Age periods combined and this is particularly true of the archaeology of the Outer Hebrides and Atlantic Scotland. This can be explained in part by the monumental nature and permanence of archetypal Iron Age settlement sites and what seems evidently to be a desire by Iron Age communities to construct visually lasting impressions on the landscape through

their settlement architecture (Moore, 2007a; 2007b). In addition, the last few decades of both research and commercial excavation have added an immense number of Iron Age settlement sites to this already large data set.

The British Iron Age is associated with the emergence of new forms of settlement that in terms of their overall size and monumental character break with earlier traditions associated with more modest domestic architecture. This phenomenon, whereby settlements come to replace funerary sites as the important monuments within the social landscape, has its origins in the Early Bronze Age but reaches its fullest expression during the first millennium BC (Barrett, 1989: 114-115; Hill, 1995: 1178). The increased visibility of prehistoric settlements marks a change in attitudes to the home and domestic architecture as well as indicating a much more densely occupied landscape during this period, complimented by evidence for economic intensification and specialisation. During the course of the first millennium BC, increasingly complex settlement enclosures developed into the classic British hillforts which came to dominate the Iron Age landscapes across large parts of England, Wales and southern and eastern Scotland, representing wide trends towards elaborate and conspicuous settlements during this period (Haselgrove and Pope, 2007b: 5). In their most monumental form, hillforts remain some of the most powerful and lasting symbols of the British Iron Age. In addition the Iron Age landscapes in the north of England and across large parts of Scotland are defined by a range of other enclosed sites including individual enclosed homesteads, promontory forts, oblong forts and the enigmatic vitrified forts, comprising earthwork, timber rampart and stone built techniques of enclosure (Harding, 2004; Ralston, 2006). As we shall see in Chapter 4, the north-west of Scotland and the Atlantic islands are dominated by monumental roundhouse structures comprising brochs, duns and wheelhouses of Iron Age date. Elsewhere in Britain other forms of roundhouse, primarily timber and post built, define this period. Some of these are found within hillfort or other types of enclosures while others appear to be within unenclosed settlements. The ubiquity and consistency of the roundhouse or circular structure as the standard

Iron Age homestead across Britain is a phenomena that has been widely recognised (Parker Pearson and Richards, 1994; Oswald, 1997). For large parts of Britain there is a lack of evidence for formal burial traditions or identifiable foci of ritual practice outside of the domestic domain. The outcome has been that the character of the Iron Age has traditionally been associated with domestic and economic practices and overall, the studies of the Iron Age have been preoccupied with what are regarded as *domestic* contexts. As has been argued in the previous section, this distinction between domestic and ritual has been needlessly dichotomised within traditional archaeological research and alternative perspectives have pursued a practice based approach. In fact, studies of the Iron Age have contributed significantly to these discussions. Nevertheless, the concept of domesticity and in particular the dominance of the Iron Age homestead as the foci of Iron Age culture, has led current research away from studies of place and landscape as experiential phenomena. As we have seen, these approaches have tended to concern more overtly ritual or special landscapes where the importance of experience seems more readily explicable.

Approaches to the study of Iron Age settlements have followed a number of trends over the last few decades. Influenced by processual archaeology, in the 1970s and 1980s techniques of spatial analysis were frequently applied to Iron Age settlements. In particular these studies aimed to analyse and define the layout of settlements and associated deposits within the landscape (Clarke, 1972; Fasham, 1985). The influence of post-processualism was to emphasise the symbolic and ritual element of settlement layout and structure within these spatial studies. Another form of spatial analysis, focusing notably on sites across Atlantic Scotland, employed syntax studies of settlement and architectural spaces within Iron Age houses in order to explore changes in social space and the organisation of settlements over time (Foster, 1989). Other approaches have been concerned with exploring the symbolic qualities of Iron Age roundhouses (examples include Armit, 1989; Hingley, 1992; 1996). Analysis of the distribution of surface material and deliberate deposits within

Late Bronze Age and Early Iron Age roundhouses has led to the view that these buildings encode elements of Iron Age cosmology (Parker Pearson and Sharples, 1997). In particular it has been argued that activities within roundhouses were determined by movements of the sun, concentric to the placing of a central hearth and strict divisions within the roundhouse between certain domestic activities (Fitzpatrick, 1997; Oswald, 1997; Parker Pearson, 1996). Studies of deliberate deposits, pits and ditches have also been associated with principals of symbolic structuring of the Iron Age landscape (Cunliffe 1992; Hill, 1989; 1995; Parker Pearson, 1996; Parker Pearson, Sharples and Mulville, 1996). Ditches, banks and middens have more recently been interpreted not only as providing practical boundaries within settlement layouts, but also symbolic and ritual functions (Bowden and McOmish, 1987; Cunliffe and Poole, 1991; Hingley, 1990; Hill; 1995).

2.5.3 Summary

What has been lacking, however, is consideration of the wider landscape context of Iron Age settlements and settlement features. It is generally agreed that changes in the use of settlement space occur through the Iron Age across Britain indicating alternative forms of social interaction. There is also evidence that during the Iron Age, in particular the later Iron Age, that increasingly intensive uses of landscape for specialised economic practices results in the settlement of previously unoccupied landscape areas (Haselgrove and Moore, 2007b: 7; Davis, Sharples and Waddington, 2008b). Environmental and population pressures are frequently cited as reasons for expanding and shifting settlement patterns throughout this period. However, an emphasis on the experiential qualities of these new landscapes and site locales and studies of these changing structures of landscape space have been largely neglected. The view that settlements provide meaningful and symbolic spaces that can inform about past cosmologies, rather strangely ends at the roundhouse wall or the settlement boundary, beyond which, if one is to read recent Iron Age literature, the Iron Age world becomes straightforwardly economic and *rational*. Calls for research on Iron Age landscapes within this broad ‘experiential’ vein, have been

made. In particular, Armit *et al*, in 2001 suggested embodied approaches to Iron Age landscapes, an archaeology of inhabitation in their terminology, as an important future research objective within British Iron Age studies (2001: 9). However, similar approaches have not yet emerged in any great quantity. In two recent anthologies of current Iron Age research (Haselgrove and Moore, 2007a; Haselgrove and Pope, 2007a) and the most recent publication from the Iron Age Research Student Seminars (IARSS) (Davis, Sharples and Waddington, 2008a), a number of papers included in their title the term 'landscape'. However, within these articles the concept of landscape was rarely explained or explored in any detail and the Iron Age landscape, as an experiential phenomenon or otherwise, appeared not to be the focus of investigation, discussion or interpretation. Instead the term landscape frequently refers to little more than the distribution or geography of the archaeological remains under question. In which case, one might ask why the term 'landscape' features in so many of these papers? Worryingly it seems that 'landscape' is merely a buzzword of contemporary archaeology. The term appears in a wide variety of contexts and although it has been argued previously that landscape is by its very nature an ambiguous concept, its meaning in certain circumstances has become worryingly vague. Often, as we have seen, the term landscape features in the titles of academic publications yet the content of these media frequently lack a definition of landscape either as a theoretical concept or a source of archaeological information. In its broadest sense, the use of the term landscape appears to denote any inter-site archaeological study or research that considers a site's physical surroundings, so that landscape frequently arises merely as contemporary lexicon for the word 'environment', geographical location or the spatial analysis of archaeological material. There is obviously the risk that post-processualists seek to hijack this term for their own exclusive interpretation of this concept. This is of course unacceptable and one must bear in mind that the term landscape has been with archaeology long-before post-processual reinvention of this term. Landscape archaeology, comprising survey techniques and aerial photography, amongst other methods, is a fairly traditional archaeological practice. The concern, however, is that the use of this term is

employed to indicate the contemporary nature of one's research often without theoretical justification, or concealing otherwise outmoded approaches to studies of spatial context. Moreover, it is argued here that an experiential approach to Iron Age landscapes has something to offer Iron Age studies. In particular such an approach would compliment existing work focused on the structure of architectural spaces as discussed above.

Chapter 3: Introduction and Background: Experiential Landscape Archaeology

3.1 Introduction

As we have seen in Chapter 2, an interest in place and landscape from the perspective of human experience and engagement has grown as a field of study in archaeology over the last 15 years. Experiential Landscape archaeology ultimately owes its background to the concerns raised as part of the post-processual critique as well as a range of phenomenological philosophies and social theories emphasising the importance of human experience. Experiential landscape archaeology has become increasingly popular and is arguably on its way to becoming recognised as a distinct field of archaeological research. However, this requires that in addition to sound theoretical discussion, which has been well established, methods for practicing experiential landscape archaeology need to be advanced and one aim of this thesis is to develop the methodologies of study. The term experiential landscape archaeology is used here to refer to research that explores archaeological landscapes as primarily experiential phenomena. Currently within archaeology two alternative strands have developed that deal with landscape and place in this way. Firstly, methods of field survey that relate more directly with the original aims of phenomenology which I describe as subject-centred field survey. The second means of addressing experiential and human-centred approach to landscape and place has evolved out of the application of GIS and the increasing ability for this technology (or archaeological practitioners of this technology) to model human scales of geographical space and elements of human experience. Despite the fact that there are elements of common ground between these two approaches, there is little dialogue between the respective advocates (Lake, 2007). In this chapter I will discuss how experiential

landscape archaeology has developed as an area of research within archaeology along these two seemingly different paths; a phenomenological or subject-centred approach and a GIS approach. The purpose is to summarise current opinions, criticism and perspectives as regards these approaches within archaeological thinking, to highlight the need for discussions on method within experiential landscape archaeology more generally and to demonstrate the value of exploring a dialogue between these two areas.

3.2 Phenomenology and Subject-centred Landscape Survey

3.2.1 Introduction

The phenomenological position has been extensively and convincingly reiterated within the archaeological literature over the last 15 years (see for example Bender, 1993; Tilley, 1994; Tilley and Bennett 2001; Thomas, 1993b) and is established sufficiently well so that, within the discipline, it has become increasingly acceptable, although perhaps still controversial, to now recognise phenomenology as an archaeological term (see for example Johnson, 1999; Renfrew and Bahn, 2000). The term, however, plays a number of roles within archaeology. As we have seen, phenomenological philosophy was one of a number of external influences in the formulation of the post-processual critique and therefore as a body of theory is drawn into wider theoretical debates within archaeology that relate to how archaeologists think about the past, as well as the present, and the relationship between people and the material world. Phenomenology is also associated with a particular form of interpretive narrative within archaeology, exemplified most notably by the work of Edmonds (1999; 2004). The concern here, however, is with phenomenology as a way of studying places and landscapes as specifically experiential phenomena. Foremost, phenomenology in this context is a field-based practice that explores the experiential qualities of archaeological places and landscapes from the perspective of an embodied individual or individuals. Tilley describes phenomenology as a practice that '...involves the understanding and description

of things as they are experienced by a subject' (Tilley, 1994: 12). Similarly, Hamilton and Whitehouse (2006b: 32) define phenomenological fieldwork as being 'concerned with sensory aspects of past human experience'. The rationale behind exploring landscapes from the perspective of human engagement and experience represents an internally cohesive theoretical argument. The underlying premise is that the scale of human engagement and experience is crucial because people create manipulate and respond to the physical world that they perceive, or know through experience, as opposed to an abstract or objective spatial framework. Furthermore, it is argued that landscape experience is multi-sensuous, encompassing more than merely the reception of visual data and therefore phenomenology engages with landscape not only as a visual interpretation of spatial context but complete bodily immersion in place. However, it is notable that comparatively little phenomenology or similarly orientated research has focused on specifically non-visual sensory experience (exceptions include Watson, 2006).

3.2.2 Critiques of phenomenology

Within archaeology there is a well established critique of phenomenology. In their entirety these debates are beyond the confines of this chapter. Instead I want to draw attention to elements of this critique that relate specifically to methods of practice, or lack of. An initial criticism is that phenomenological practice implies that past experiences can be recreated in the present (Bruck, 1998; Layton and Ucko, 1999), presenting subjective experience as a universal one (Hodder, 1999: 136). In defense advocates describe phenomenology not as a method for recreating experience but as a medium through which past meanings might be revealed (Tilley, 1994: 47), a middle range theory so to speak. Nonetheless phenomenology has been labeled 'surrogate' meanings and the method of investigation described as 'occupying archaeological landscapes in the present' (Layton and Ucko, 1999). Whilst critics see this as invalidating phenomenology, in response it can be argued that all archaeological practice is located in the present and a number of phenomenological investigations have specifically explored the relationship

between 'archaeology as a discourse on the past and archaeology as a practice in the present' (Bender, Hamilton and Tilley, 1997: 59; see also: Bender, Hamilton and Tilley, 2007; Hamilton and Whitehouse, 2006a; 2006b, Balter, 2004).

Other substantial criticisms are the claims that phenomenological observations lack rigour (Llobera, 2001: 1005), that they are 'uncorroborated', 'untestable' and want 'verification' (Fleming, 2006: 268; see also: Fleming, 1999; Bruck, 2005). On the one hand these criticisms merely highlight the non-scientific rationale to which phenomenology subscribes. Furthermore, the concept of verification is problematic as it implies that there exists a series of *real* spatial relationships and *real* physical conditions that need authenticating by means other than experience and observation, as well as implying that these experiences are somehow a 'distorted' or 'impoverished' version of this real world (Thomas, 2001: 171). Whether or not alternative methods, and presumably more traditional survey and mapping techniques are implied here, can verify certain landscape qualities, it is in response to the physical, and social, world that people *perceive,* that social action is formulated. Therefore, by exploring and recording how archaeology is situated in the wider landscape from an embodied and engaged, as opposed to disembodied and distanced, perspective, phenomenology aims to reveal additional layers of meaning and understanding to our comprehension of the past. However, it is clear that many of these opinions arise from what is deemed a lack of clear and explicit methodology (Fleming, 1999; 2006; Bruck, 2005). It is certainly true, that in comparison with the volume of text that addresses the theory of phenomenology, particularly within early phenomenological writings very little has been conveyed as to how fieldwork and survey methods are carried out. To return to Tilley's *Phenomenology of Landscape* (1994) what is notable is the absence of any detailed account or description of how the researcher gathered information, recorded the experiential qualities of place and landscape or analysed this information. In a later publication, *Materiality of Stone* (2004), Tilley describes elements of his phenomenological process:

'*One needs to explore first before recording anything. Writing is essential to the task at a later stage because it produces a vision and feeling for place. Taking photographs or making video recordings of places are, by comparison (unless well scripted in advance), relatively passive acts which do not produce knowledge in the same way. For us these acts of visual appropriation of place only take on essential importance following description*' (Tilley, 2004: 223).

Tilley's phenomenological practice clearly includes a written record and, secondarily, photography and video recordings, however the precise details of the field survey methods are still lacking and at best these accounts can be described as vague. Furthermore, the choice to include these comments about method in the concluding chapter of this book and as remarks in the acknowledgements is not only unconventional by traditional archaeological standards (where method would usually precede a presentation of results, interpretation and conclusions), but also demonstrates a lack of care for method and moreover an unwillingness to disclose the practices involved. This type of ambiguity has exposed phenomenologists to sneering questions over the laborious and time-consuming nature of phenomenological fieldwork (Fleming, 2006: 270-273) and has contributed to a burgeoning critique conveyed not as sound argument but as caricature or ridicule (See comments made by Hamilton and Whitehouse, 2006b: 31-32 about the 'pejorative' nature of phenomenological critique). Most importantly, by communicating very little of the process by which the interpretations are arrived at and how information on the qualities of place and landscape were recorded, selected and analysed, assessment and critique by the wider archaeological community is hindered. While Tilley's *Phenomenology of Landscape* (1994) undoubtedly represents an impressive and influential archaeological text, attested by the fact that it remains a contentious and provocative book some 14 years after publication, as an individual piece of archaeological research assessed specifically on its contribution to an understanding of the past as opposed to contribution to the archaeological discipline, it is obviously limited. Because of the manner in which

it is written and the lack of explicit methodology, *Phenomenology of Landscape* (1994), like *Materiality of Stone* (2004), offers a hard-varnished narrative on the past that restricts reinterpretation, response and dialogue with the wider archaeological community. Tilley is refreshingly candid about this, arguing that his phenomenology is a 'metaphorical work of art for which we make no apology' (Tilley, 2004: 225) and without a doubt there is a place within archaeology for these types of narrative (see also Edmunds, 1999). However, in order for phenomenology to be integrated into broader discussions of archaeological material and to engage in dialogue with existing or future research, it is vital to communicate and thereby explain how phenomenological or subject-centred fieldwork is practiced.

3.2.3 Responses

In response, it needs to be recognised that while critiques of phenomenology still focus upon these two particular publications, phenomenology within archaeology has meanwhile moved on and developed from these early promulgations. Firstly, there are an increasing number of archaeologists conducting research that one might identify as distinctively phenomenological in practice, yet lacking the 'phenomenology' tag. For example, the research that contributed to Cummings and Whittle's book 'places of special virtue' was based primarily upon records of landscape perception (vision and sound) from Neolithic monuments in Wales, made and recorded in the field by embodied participants. The authors, however, do not identify their research as phenomenological (other examples include; Noble, 2007; Noble and Stevens, 2008). Although Hamilton and Whitehouse discuss phenomenology and its influence upon their fieldwork practice, they identify their approach as being an archaeology of the senses (2006a) or as a 'subjective approach' (2006b). Armit *et al* discuss the importance of an embodied landscape approach within future Iron Age research, which they term an 'archaeology of inhabitation' (2001: 9). All these approaches share field survey techniques where records or observations of embodied landscape experiences form the basis for archaeological analysis within a post-positivist framework of interpretation. Increasing abandonment of

the term phenomenology may well reflect a reluctance to associate with the controversy and antagonism that this term has come to engender. One might also argue that archaeologists have realised that the term phenomenology, whilst influencing how to think about and study archaeological landscapes, ultimately has associations that extend beyond what archaeology aims to achieve - ie phenomenological philosophy crucially questions the fundamental nature of being and understanding the world, while archaeology aims to understand past societies. Regardless, phenomenology has clearly developed beyond its initial stages, a fact which critics have fully failed to acknowledge.

The second point to be considered is that the lack of comprehensive accounts of methodology within phenomenological texts is a shortcoming that has been increasingly recognised by practitioners. In response to this critique, there have been a number of publications which have aimed explicitly to outline the methods of phenomenological field survey (Bender, Hamilton and Tilley, 2007; Cummings and Whittle, 2004; Hamilton and Whitehouse, 2006a; 2006b). Consistent elements of these methods include locating archaeological sites and recording perception of surrounding features, both archaeological and natural, through established record sheets, examples of which are often included in publications, photographs and various methods of artistic or schematic representations of landscape setting from an individual's embodied perspective (Hamilton and Whitehouse, 2006b: 40-41; Cummings and Whittle, 2004: 17). A number of these publications have been forthright about the exploratory and developmental nature of the methodology. Both the Bodmin Moor Project (Bender,Hamilton and Tilleyl, 1997; 2007) and the Tavoliere-Gargano Prehistory Project (Hamilton and Whitehouse, 2006a; 2006b) are examples where this has been a particular concern. Having said that, not all current phenomenological research makes methodology a prime concern or is clear about how ideas and interpretations have been arrived at, and there is still a tendency for phenomenology and phenomenology-type research to be communicated via what are essentially anecdotal comments about experience in publications heavily weighted in favour of theory and interpretation. Yet, it is important to

recognise that 'phenomenology' now encompasses much more than either Tilley's *Phenomenology of Landscape,* or research explicitly labeled as such. Instead what is emerging is a specifically embodied and subject-centred approach to the study of archaeological landscapes associated with a specific, albeit currently developmental, range of field survey practices. The future contribution of phenomenology, and other similarly orientated approaches to the study of landscapes, to archaeology relies on the development of field survey practices that allow us to explore landscapes and places as embodied, experiential phenomena, as well as aiding the communication of these ideas to a wider audience. It is this area of discussion and research to which this thesis aims to contribute.

3.3 Geographical Information Systems

3.3.1 Introduction

In comparison with subject-centred field survey techniques, GIS provides a very different means of exploring landscape and place as experiential phenomena - most obviously in that methods are not field based and therefore engage with an immediately different landscape perspective. GIS comprises a range of computer database programs for the storage, analysis and manipulation of spatially referenced data. Within archaeology the use of GIS has divided into two broad areas of application: cultural resource management and research. Concerning the former, GIS has facilitated the storage and management of spatially related data-sets and the construction of models predicting potential site locations, in which environmental factors are given primacy (Kvamme, 1992; Harris and Lock, 1995). In areas of research, early uses of GIS found similar application. The result was a focus on environment as the key factor in explanations of the past (Burton and Shell, 2000). In the context of the post-processual critique, these applications of GIS were regarded by many as conforming to an 'outmoded' theoretical perspective and rejected as both reductionist and functionalist (Gaffney and Van Leusen 1995, Van Hove 2004).

It is worth briefly reviewing this critique before discussing the development of GIS as a means for exploring experiential landscapes, as many of these initial concerns have been maintained in more recent rejections of GIS and scepticism as to its contribution to an interpretative archaeology**.** The validity of this sustained critique will then be assessed.

3.3.2 Post-processual Critique

The development and impact of GIS within archaeology has close parallels with that in geography approximately a decade earlier. In both disciplines, GIS was adopted as a research tool from more commercially driven contexts, where it was used primarily as an information management tool. Within geography studies GIS was first taken up by quantitative geographers and hence adopted into a strongly positivist theoretical tradition. Similarly, within archaeology GIS was first applied within a processual theoretical framework. In both geography and archaeology the adoption of GIS also coincided with the development of post-positivist theoretical approaches and consequently the technology was decried by many as being theoretically regressive and its users accused of 'inheriting a discredited philosophy' (Sui, 1994). Furthermore, GIS was seen as being 'theoretically sterile' and there was a genuine fear that the use of this technology would impact negatively on the theoretical developments of these respective disciplines (ibid.).

A primary issue of the critique was the trap of 'technological determinism' (Gaffney and Van Leussen, 1995; Gaffney, Stancic and Watson, 1996; Wheatley, 1993). Particularly within archaeology, GIS-based research appeared to be driven by existing functions in available software - software developed, on the whole, outside the discipline often with quite different research objectives in mind (Gaffney and Van Leusen, 1995: 372) - and was not always clearly understood by those who used them. Consequently research projects were being determined not by the needs of archaeology, but by the available technology. As Wheatley notes, there was a danger of an 'unintentional drift

towards an archaeology of least resistance' (Wheatley, 2000: 123). A related technological concern was that the ease with which GIS produce 'results' often led to the assumption that these results were inherently meaningful (Gaffney, Stancic and Watson, 1995). The assumption was further exacerbated by the 'myth' that the use of GIS is atheoretical and by the importance and esteem associated with computer technology within our modern society which seems to automatically afford GIS a degree of authority that can be misplaced. As Gaffney, Stancic and Watson (1995) point out, GIS does not provide a means of revealing innate patterns, but instead generates results according to the questions we ask and the theoretical and methodological frameworks we employ. Questions and subsequent results also depend on the availability of suitable base data and in early uses of GIS this data was frequently secondary in source and exclusively environmental in nature. This circumstance encouraged interpretations where environmental factors were the primary explanation for archaeological phenomena. In particular predictive models were constructed whereby site locations were understood entirely in terms of environmental factors (see Gaffney and Leusen, 1995 for further discussion). The criticism of these approaches is not concern for environment in determining site location, but the lack of consideration of alternative (social, cultural or historical) factors. Thus, these early GIS studies were dealing exclusively with the spatial context as the 'passive environment of the New Archaeology', as opposed to addressing landscapes, as discussed in Chapter 1, permeated with social, cultural and historical meaning. Therefore, the technology of GIS seemed to embody the simplistic and one-dimensional perspective of spatial context that a post-processual landscape approach sought to reevaluate. In short, there was a distinct lack of theory about the spatial organisation of past societies and about socio-spatial relationships in general which many regarded as severely limiting the contribution of GIS to an archaeology that was becoming increasingly theoretically discursive (Wheatley, 2000).

3.3.3 Subject-centred landscapes

As we have seen to be the case for phenomenology, the use of GIS has developed over the last 15 years since an initial phase of critique, albeit largely unnoticed, and a significant proportion of the GIS-using community has been using GIS to explore alternative theoretical perspectives. In particular a greater emphasis has since been placed on sociocultural interpretations of space and attempts to use GIS to engage with human-scales of landscape and place as sociocultural and experiential phenomena. On the whole these discussions have successfully enriched GIS-based research and from a theoretical perspective have brought GIS research in line with current theoretical debate within archaeology. Within current GIS publications one will now find reference to structuration theory, theories of practice and habitus (Van Hove, 2004), the concept of dwelling, phenomenology (Trick, 2004; Witcher, 1999) and social interpretations of space citing principals of time-geography (Llobera, 2000). The question that remains to be answered, however, is how successful GIS practitioners have been in applying these revised theoretical perspectives to their research.

In terms of modeling human-scaled landscapes and landscape experience, this has been most successfully achieved through models of visibility, conventionally termed viewshed analysis. The underlying principle of viewshed analysis is the calculation of unbroken lines-of-sight, based upon input elevation data, between given locations. The result is a hypothetical *model* of landscape visibility, from a given location, based upon a digital *model* of landscape elevation. Viewshed models have been used to investigate visibility between monuments. In an early example of viewshed analysis, Wheatley (1995) investigated the inter-visibility of Neolithic long barrows in southern Britain on the Salisbury plain and in the Avebury area. Similarly, Woodman used viewshed models to investigate areas of shared visibility between Neolithic chambered cairns in Orkney (2000), mentioned in Chapter 1. In these types of applications, visibility analysis is used to ‘explain’ specific site locations (Gaffney, Stancic and Watson, 1996; Wheatley, 1996), where visual qualities are linked with cognitive, perceptual and

symbolic associations and provide an alternative to previously economic and environmentally dependent explanations. However, the degree to which the environmental determinism of earlier research is merely replaced by topographic derived visual determinism has been called into question (Conolly and Lake, 2006: 9). Importantly, however, visibility analyses have allowed landscapes to be represented as relative rather than abstract space - ie where spatial locations are attributed a value, as visible or non-visible cells, from a specific point or location within the study area and therefore, potentially or in theory, representing landscapes from a specific individual's or human-centred perspective. Before we consider the potential for exploring non-visual landscapes within GIS, we must first consider the degree to which models of visibility within a GIS can accurately or acceptably reflect visual experience - or more precisely what differs between visual experience and models of visibility.

A number of GIS practitioners have been increasingly concerned with the process of visual perception and visual comprehension and have been exploring ways of better representing how people view their surroundings. Importantly this has necessitated the development and/or manipulation of (simple) existing viewshed functions in order to address specific questions or alternative perspectives and it is this type of innovative and developmental approach to GIS that Lake, Woodman and Mithen (1998), and Lake and Woodman (2003) have advocated. One of the earliest examples is Wheatley and Gillings' (2000), implementation of 'Higuchi' viewsheds influenced by Gibson's concept of landscape affordance *(*1979*)* and Higuchi's arguments about scale and structure of visual perception (1983). The Higuchi viewshed is based upon a standard viewshed function, but is manipulated using map algebra to represent different scales and fields of vision. The importance of Higuchi viewsheds are that they allow questions to be asked about the focus and structure of landscape visibility, such as whether sites are located with extensive views of the immediate locality or regions further afield. It is of course important in these and similar models to employ meaningful and relevant distance boundaries, otherwise the result becomes increasingly abstracted from

the experiences of archaeological landscapes that it is the aim to understand. Llobera's investigation of 'visual exposure' (1996), 'topographic prominence' (2001), and 'co-visibility' (2007) provide similar examples. His models define visual prominence as 'the percentage of locations that lie below the individual's location'. However, the degree to which this model, which is based upon calculations of relative elevation, reflects experiences of visual prominence is questionable. The misplaced assumption is that because a landscape location has high relative elevation it must be visually prominent. For example, while the summit of a mountain will have significant relative elevation it may well be concealed from a number of locations within the immediate vicinity. As anyone who has climbed a mountain can testify, one often believes they have reached the top, only to find the 'true summit' a few metres further and this is because mountain summits are frequently not visually prominent on approach. This example demonstrates the complexity of the relationship between the topographic structure of a landscape and visual landscape experience. An example of an entirely new programme developed specifically within the archaeological discipline is Lake, Woodman and Mithen's cumulative viewshed programme (1998) which allows users to model the accumulation of visible cells *from* or *to* a number of locations. The case study provided shows how this programme enables the visibility of specific sites to be compared with 'random' landscape locations in order to demonstrate statistical significance, of which more will be said below. Lake and Woodman (2003) have also developed an algorithm to isolate visibility of the furthest horizon in order to investigate 'impressions of circularity'. The idea of the furthest visible horizon provides great potential for investigating how the visual structure of a location might affect a 'sense' of place and provides a good example of how the relationship between geographical space and experiential space can be explored. All these examples demonstrate that there is a keenness amongst GIS practitioners to explore more nuanced ways of modeling and representing visual experience, as well as developing GIS tools more specifically for archaeological purposes.

The focus on visibility over other perceptual senses, however, is problematic. As we have seen, similar criticisms have been made about phenomenological research, where despite acknowledgment that experience is multi-sensuous, the majority of research undertaken has, fairly inevitably, focused on visual characteristics of place and landscape (Bender, 1993. Thomas, 1993a). This bias is clearly more acute in GIS-based research where it is inherently difficult to model experience as a holistic, multi-sensuous engagement. Instead, for the time being at least, it is necessary to model perceptual senses, such as visibility, in isolation. The built-in viewshed function within most commercial GIS packages (ArcView, Idrisi and GRASS being examples) further encourages a visual bias in GIS research - an example of 'technological determinism' cited above. Marcos Llobera, however, justifies an emphasis on visibility in his research, arguing that for most people (past and present) visibility still provides the majority of information about spatial context (2007: 52). The privilege afforded to vision has been challenged and calls made for 'democracy of the senses' within other disciplines.

So far models of non-visual experience within GIS are scarce. Mlekuz's (2004) innovative research represents one of just a few attempts to model sound within GIS. His model is based upon assessing the spatial limits of acoustic transmission, from a specified sound source, across topography based upon input figures of wavelength, sound intensity and ground elevation models. The case study investigates the area across which church bells in Polhograjsko hriborje, Slovenia, could be heard. Mlekuz describes the church bells as important 'soundmarks' within this medieval landscape and claims that his program enables the study of past 'soundscapes', a term he uses to emphasise the role of the perceiver. However, it should be noted that in comparison with the traditional viewshed, what is in fact being modeled here is the sound itself as opposed to the perception of sound (hearing), the equivalent in visual terms being models of light rather than vision. Consequently, this soundscape model represents less of a human-centred perspective than the author proposes, as well as highlighting some of the fundamental differences between hearing and

seeing as elements of perception (see Ingold, 2000 for an in-depth discussion of these differences) and the fundamental difficulties in modeling this element of landscape perception. Furthermore, as the case study demonstrates, this model is better suited to the study of direct or purposive soundscapes that one might more closely associate with special or ritual practices, in the example a church bell, as opposed to the study of everyday landscapes of aural experience, because the model necessitates isolating sounds and sound sources. The ability to model the varied nature of everyday sounds, such as animals, people's voices, the sea, etc. from multiple sources seems intuitively beyond the realms of possibility with current GIS technology.

In addition to visibility and sound, GIS has also been used to explore movement through landscapes from a human perspective. Models of spatial least-cost-pathways based upon the ease of traversing topography defined by slope and elevation (Madry and Rakos, 1996; Conolly and Lake 2006) are used as a means of reflecting the human experience of moving within a given landscape. An obvious criticism of these approaches is that they assume that people move through landscapes in an entirely economical fashion - ie conservation of energy, as opposed to experiential, symbolic or historic factors, determines the establishment of pathways. As Fitzjohn (2007) has pointed out, weather and climate conditions as well as familiarity with the area will have a profound effect on routes taken through a landscape. Other studies have attempted to overcome this by combined least-cost pathways with viewshed analyses to provide a more complex representation of landscape movement (Bell and Lock 2000). In a study of the economic landscapes of Neolithic Brittany, Van Hove (2004) incorporates concepts of agency and taskscapes, by classifying environmental areas surrounding archaeological sites in terms of their potential for certain prehistoric activities and using this model of the landscape to construct interpretations about people's interaction with their surroundings.

The degree to which GIS, using the range of methods described above, can stand for hypothetical human engagements and therefore a form of digital

phenomenology is a moot point. Some archaeologists have argued that viewshed and least-cost pathway models allow archaeologists to recreate landscapes from particular view points or as a series of hypothetical human engagements (Trick, 2004). An initial problem is that phenomenology has emphasised the holistic, multi-sensuous nature of experience, while GIS is currently restricted to modeling specific aspects of perception, based upon the 'reception of information' rather than mental insight (Lake and Woodman, 2003). Having compared GIS generated viewshed and least-cost pathway models with accounts and descriptions of experiencing landscapes in Sicily, Fitzjohn (2007) concludes that GIS can only hope to provide incomplete or partial representations of embodied experience. More positively, however, he maintains that this realisation need not invalidate the contribution of GIS to these discussions. Llobera similarly argues, that while it would be 'wrong to pretend that we can reduce the complexities of past perception and experience to the reconstruction of past visibility patterns, such a study remains an essential component of any landscape project' (2007: 67). Assuming that perception relates in someway to a physical world that can be captured within GIS, then visibility analyses provide a perceptual base-line upon which an understanding can be constructed. As Wheatley (1996: 98) has pointed out, 'whilst a line of sight does not suggest visibility, visibility is not possible without a line-of-sight'. The degree to which models of experience reflect elements of embodied experience is ultimately at the core of these debates and is important if we are to assess the usefulness of these methods to inform about experiences in the past.

3.3.4 Epistemology and ontology

Beyond issues of application, it has also been questioned whether the inherent nature of GIS can *ever* engage with or accommodate the types of social spaces that concern discussions of place and landscape. GIS ultimately functions on the basis of fixed spatial relationships and data absolutes. Therefore, the representation of socio-spatial relationships within a GIS must ultimately be based upon Euclidean concepts of distance and location. Within the context of

this argument it is maintained that the relationship between people and their surroundings will always be essentially reductionist within GIS and that this renders the technology ontologically inadequate, or at least limited, in the most fundamental of ways (Lock 2001). Furthermore, because the technology of GIS has been designed to deal with quantitative forms of data and data analysis, it restricts the types of data that can be used and directs analysis towards quantitative rather than qualitative study. Conversely, however, others argue that the manifest advantage of GIS is the potential that it provides for quantitative analysis of data and results - ie the ability to answer questions such as *How common is this characteristic of place or landscape?* and *Are these places typical or unique within the landscape context?* This potential to demonstrate significance or 'prove' interpretations stands in direct contrast to phenomenological methods where the lack of similar forms of explanation are regarded as problematic. In fact, it is worth pointing out that GIS practitioners have contributed to the critique of phenomenological methods and a number of GIS visibility studies have been conducted in direct response to phenomenological type landscape studies where assertions about the visual characteristics of archaeological sites were found wanting in corroborative 'evidence' or the demonstration of statistical significance. For example, Llobera's (1996; 2001) and Wheatley's (1995) independent studies of long-barrow sites in the south-west of England, using cumulative viewshed models, a term coined by Wheatley in this publication, were in part constructed in response to comments made about visibility and Neolithic monuments by Bradley (1993) and Thomas respectively (1993b). Wheatley used statistical analysis of viewshed regions to investigate whether the extensive visibility of long-barrow sites in the Avebury area and on Salisbury plain were significant in comparison with random locations within the same landscape. Using a Kolmogov-Smirnov test, he demonstrated that viewsheds were significant for sites on the Salisbury Plain but not, however, for those in the Avebury area. Llobera states specifically that the aims of his research are to 'provide formal support for prevailing landscape accounts' (2001: 1005). As another example, Lake and Woodman (2003) used viewshed analysis, discussed previously, to

explore the quality of visual 'circularity' as proposed by a number of researchers including Bradley (1993; 1998) and Richards (1993; 1996) as a means of 'un-packing' these experientially sourced descriptions of certain archaeological landscapes.

The problem is that on the surface, these quantitative approaches do not sit easily with a post-positivist perspective in which the interpretation of place and landscape as experiential phenomena (outlined in Chapter 2) is firmly situated. If GIS is more appropriate and better suited to positivist epistemological positions, does this mean that the use of this technology is 'epistemologically inflexible' (Sui, 1994). Whether GIS is defined as a science or a tool (Goodchild *et al*. 1997) is a crucial question in assessing the potential role of GIS in this context (Conolly and Lake, 2006: 3). If 'doing GIS' is considered a science this implies that theory and methodology are implicit in the technology. Alternatively, if GIS is merely a tool, then theory and method are determined only at the point of application. It is perhaps more realistic to see this debate in terms of a continuum between the two positions (Goodchild, *et al*. 1997) whereby GIS represents an *essentially* atheoretical tool, but a tool for which not all theoretical approaches are as easily applied. Furthermore, whilst it can be acknowledged that GIS is not theoretically prescriptive, its use and application are always theoretically loaded no matter how 'common sense' the approach may seem (Wheatley, 1993: 134).

Another concern has been the way in which GIS representations of space influence epistemology. Part of the post-processual critique has involved critical analysis of the relationship between perception and knowledge creation. Within this context GIS has been seen as yet another medium, along with satellite images and aerial photography that perpetuates a 'Western voyeuristic and androcentric' notion of landscape (Thomas, 2001: 167) that seek to 'monitor and discipline the past' (Thomas, 1993a: 21-9). A basic problem relates to the detached way in which space is viewed within a GIS - at the time of this critique the standard visualisation methods were map-like perspectives. Critics

described this as an objectified view of the world, aptly termed the 'god's eye perspective' or 'a view from nowhere' (Kwan, 2002a). This means of visualisation is seen to propagate a false sense of objectivity and consequently supports specifically positivist types of knowledge creation (Kwan, 2002a; Sui, 1994). Some have taken this critique further and have argued that the types of knowledge that GIS creates is not impassive, but asserts and reinforces particular political and philosophical standpoints. In particular it is the apparent relationship between GIS and issues of surveillance and control that many critics object to and find ethically and morally indefensible (Curry, 1998; Kwan, 2002a; Sui, 1994; Thomas, 2001). For example, in the book *Digital Places: living with Geographic Information Systems* (Curry, 1998), the author dissects the relationship between GIS, commercial, military and governmental organisations and highlights how these associations impact upon GIS technology and GIS practices. Consequently, some individuals distrust GIS not merely because of the types of knowledge that GIS purports to create, but because of the social and political implications of these types of knowledge within modern society (see for example: Thomas, 2004). The important element of this debate however is whether or not these political and social connotations can be disentangled from the technology in its purest form.

Concerning methods of representation and visualisation it is important to highlight some recent GIS developments, notably 'fuzzy logic', 3D modeling, virtual reality, agent-based simulation models and object-orientated functionality. Although these have yet to be widely adopted within archaeology, it is expected that given time some of these technological developments will begin to feed into archaeology-based GIS practice and that this will enhance and even transform GIS-based research specifically as regards epistemological considerations (Conolly and Lake, 2006: 10; Lake, Woodman and Mithen, 1998). Both 3D modeling and virtual reality provide the potential for increasingly realistic visualisations and a move away from the much criticised map perspective (Faust, 1995). If the map perspective encourages an objectified view of the past and positivist epistemologies, then exploring increasingly 'realistic' methods of

visualisation in theory promotes alternative perspectives and types of knowledge creation (a full discussion of the merits and shortcomings of 3D modeling and virtual reality is beyond the confines of this thesis. Furthermore, as these technologies have yet to be fully integrated into archaeological practice it is perhaps of limited relevance to this discussion). Fuzzy logic is intended as an alternative to Boolean logic, expressing information as gradations of 'yes' and 'no' as opposed to absolutes and, it is proposed, can represent human decision making practices more accurately or at least more sensitively (Wheatley and Gillings 2000). Unfortunately, as Rajala points out (2004), whilst there has been considerable discussion about fuzzy logic, like developments such as 3D modeling or soundscapes, there have been very few practical applications. Object-orientated functionality, another recent development, is described as an alternative to raster and vector data formats, allowing objects to display different characteristics when triggered by different stimuli (Tschan, 1999). The implication is that 'meaning' can be contextual rather than absolute, and this has immense possibilities for exploring landscapes as flexible, dynamic and historically contextual entities. It has already been said that it is important for archaeologists to 'tailor make' GIS for their own needs, if it is to be archaeological research rather than 'off-the-shelf' GIS packages that dictate current practice (Lake, Woodman and Mithen, 1998). Additionally, if archaeologists want GIS to reflect critical and reflexive forms of knowledge, as opposed to generalised and universal ones, then archaeologists need to be active in the future development of this technology (Kwan, 2002b).

An alternative perspective on the role of GIS within the social sciences has been put forward by the geographer Kwan (2002a; 2002b). She argues that by acknowledging the partiality of the GIS perspective within a critical and reflexive research framework it should be possible to move beyond these epistemological boundaries. Such an approach necessitates re-contextualising and problematising the relationship between 'the researcher, the researched and the research project' (Kwan, 2002a) and acknowledging that GIS, as a practice, is neither a neutral or passive process (Wheatley, 2000). For Kwan,

the crux of this debate resides in the relationship between scientific methods of enquiry and positivist forms of knowledge creation, proposing that the two do not necessarily correlate. Lock has emphasised that results from GIS should be treated as an 'interim stage' in the interpretive process rather than the final explanation; 'a platform from which to launch new work' (2000: 61). Llobera (2007: 67) makes the important point that GIS data can be read in many ways and that the process of interpreting this data is an important element of the process. Similarly Van Hove describes the role of GIS in her research as providing 'hypothetical scenarios of, and alternative perspectives on, the spatial, inter-relationship that existed between people and their worlds (Van Hove, 2004; see also: Harris and Lock, 1995). What is common to these examples is the acknowledgement that explanation and interpretation are external rather than internal to the GIS process itself (Rajala, 2004).

3.4 Research Potential

Both the use of GIS and phenomenological field survey have suffered from a lack, or perceived lack, of integration into wider archaeological debates. One of the outcomes of this current circumstance has been that recent developments in both areas have gone largely un-recognised outside of these 'specialisms'. For example, Fleming's sustained critique of phenomenology over the last decade (1999; 2006; 2008) continues to pick holes in Tilley's research. In doing so, he chooses not only to base his arguments against phenomenology on some of the most provocative pieces of writing within the post-processsual landscape genre - Tilley's *Phenomenology of Landscape* (1994) and *Materiality of Stone* (2004) - but more importantly does so at the expense of other experiential landscape approaches or phenomenological works which take a more inclusive and moderate line and better reflect the direction in which phenomenology-inspired landscape research is now heading (e.g. Bender, Hamilton and Tilley, 1997; 2007; Cummings and Whittle, 2004; Hamilton and Whitehouse; 2006a; 2006b). Similarly, rejections of GIS from hardened post-

processualists fail to address more recent progress in this field. For example Thomas' sustained critique of GIS (1993a; 2001; 2004) lacks reference to many recent GIS publications (in particular comments in his most recent book *Archaeology and Modernity (2004))* and this demonstrates an unwillingness to consider the contribution GIS has and can make to interpretive landscape archaeology. What is notable in Thomas' case is his advocacy for a plurality of interpretations on the past (*ibid.*) while at the same time rejecting certain perspectives, such as those propagated by uses of GIS. Furthermore, in both cases an established internal critique within these areas has not been fully acknowledged. The tendency for GIS-based research to be published within specifically GIS or data-science orientated journals and edited volumes (for example *Internet Archaeology* and *Journal of Archaeological Science,* as well as archaeological articles published in the *International Journal of GIS* and the journal *Environment and Planning B: Planning and Design*) and discussed in similarly focused conferences and seminar series (for example the annual *Computer and Quantitative Methods in Archaeology* conference), rather than being integrated into wider archaeological discourse, is a notable hindrance. One reason is that the level of technical detail involved is frequently deemed inappropriate for the 'uninitiated'. Conversely, discussions with fellow archaeologists suggest that there remains a potent unwillingness to explore more conciliatory positions. A similar problem has been identified by geographers who attribute this to a deep-rooted dualism within geographical methodologies that finds GIS firmly situated on the site of positivism and quantitative analysis (Kwan 2002b; Schuurman and Proctor, 2002). If we reconsider the context in which GIS was introduced to archaeology then it becomes clear that the situations are very similar. The introduction of GIS to areas of archaeological research, coinciding with the development of post-processual critique, has caused GIS to be theoretically and methodologically pigeonholed and consequently, despite progress, it has been difficult for many archaeologists to move beyond their initial critique and thus conceive of alternative roles for this technology (Rajala, 2004). However, despite the fact that GIS might be better suited to scientific forms of analysis and that GIS

visualisations encourage objectified perspectives, this does not necessitate that all GIS research conforms to positivist doctrine – which proposes science as the *only* means of achieving truth and knowledge about the world. GIS is a tool, albeit with limitations, and consequently the potential for it to be used in a variety of ways and to contribute to a variety of knowledge making positions. If more researchers, troubled by the positivist implications associated with the use of this technology, chose to engage in productive rather than negative critique and to engage with the archaeological development of GIS, we would stand a better chance of using these tools to reveal aspects of the past from more interpretive theoretical positions. One way this might be achieved is by pursuing greater dialogue between GIS and other methods, such as phenomenology.

As regards the integration of phenomenology into wider archaeological practices, critics of these approaches have opposed vehemently the idea that post-processual landscape practices might replace existing techniques (Fleming, 2006). However, there is no evidence that practitioners have such intentions. In fact the majority of phenomenology field practice has already been incorporated with other, more traditional, techniques of archaeological excavation (Bender, Hamilton and Tilley, 1997; 2007) and landscape survey (Hamilton and Whitehouse, 2006a; 2006b). While GIS and subject-centered field survey have *individually* contributed to wider archaeological projects in the past (e.g. Cummings and Whittle, 2004; Bender, Hamilton and Tilley, 2007; Fitzjohn, 2007; Henley, 2005), methodologies that aim specifically to articulate these two approaches have not been fully explored. It is proposed here that by combining GIS and phenomenological field practices and by examining the potential for establishing a dialogue between these approaches, we can contribute more positively to these ongoing debates. Exploring this potential has been one of the main objectives of my research.

Chapter 4: Introduction and Background: The Outer Hebridean Iron Age

4.1 Introduction

This chapter provides a background to the applied case study, the Iron Age archaeology of the Outer Hebrides. The Outer Hebrides are a group of islands located off the west coast of Scotland (Figure 4.1) where the Iron Age is defined primarily by the appearance of monumental domestic architecture, notably brochs, duns and wheelhouses. These sites are also associated with the wider region of Atlantic Scotland. In this chapter I will outline the nature of the Scottish Atlantic Iron Age, focusing specifically on the Outer Hebridean Iron Age. Firstly I will describe how the Iron Age in Atlantic Scotland has been defined and dated. I will then discuss some limitations within current interpretations of the Outer Hebridean Iron Age and will explain why experiential archaeology is an appropriate approach for research in this area. A particular theme will be the way in which the island context has affected contemporary understanding of Iron Age occupation across the archipelago and how an alternative island approach might be achieved. Finally I will outline a number of questions about the Outer Hebridean Iron Age that this research aimed to address by drawing upon the theories and archaeological approaches described in the previous chapters.

4.2 Defining the Atlantic Scottish Iron Age

4.2.1 Introduction

The term Atlantic Scotland, first coined by Piggott (1966), refers to the northern and western coastal areas of Scotland incorporating both the Inner and Outer Hebrides, the Northern Isles of Orkney and Shetland as well as areas of the

coastal mainland. Piggott identified the region as one of his principal provinces of the Scottish Iron Age (c.800 BC - AD 500), an expansion of Childe's view of cultural groups (1935) and Hawkes' scheme for British Iron Age societies (1959). Whereas many other Iron Age regions, that were once identified as areas of discrete 'cultures', 'clans' and 'tribes', have been increasingly questioned by modern archaeological interpretations, the concept of a distinctive Atlantic Scottish Iron Age has been resilient (Harding, 2004: 6). The Atlantic Scottish Iron Age is associated with the use of decorated pottery and is defined primarily by the appearance of monumental roundhouses, brochs, duns and wheelhouses, the standing remains of which are distinctive in their prevalence across these contemporary landscapes. The emphasis on settlements in the Iron Age is a trend that can be identified within wider narratives of British prehistory and has been discussed in Chapter 2. This phenomenon, whereby settlements come to replace funerary sites as the important monuments within the social landscape, has its origins in the Early Bronze Age but reaches its fullest expression during the first millennium BC (Barrett, 1989: 114-115; Hill, 1995: 1178). By the Early Iron Age, ceremonial monuments, such as the stone circles at Calanais in Lewis in the Outer Hebrides, would have been long since abandoned. The construction of monumental roundhouses therefore represents the culmination of a trend whereby monumental expression shifts from more overtly 'ritual' to 'domestic' contexts (Armit and Finlayson, 1992: 670). The sheer number of visible Iron Age sites across Atlantic Scotland and the specifically monumental proportions of these buildings marks a change in attitudes to the home and domestic architecture as well as indicating a much more densely occupied landscape during this period. Similar phenomena are associated with the British Iron Age as a whole. During the course of the first millennium BC, increasingly complex settlement enclosures developed into the classic British hillforts which came to dominate the Iron Age landscapes across large parts of England, Wales and southern and eastern Scotland, representing a similar trend towards elaborate and conspicuous settlements during this period (Haselgrove and Pope, 2007b: 5). Across Orkney a number of simple, thick-walled roundhouse structures,

associated with Early Iron Age dates (c.800 BC - 400 BC), have been interpreted as native precursors to the broch or complex roundhouse tradition. However, the Early Iron Age currently remains fairly elusive within the Outer Hebrides and here the emergence of monumental architecture - brochs, duns and wheelhouses - is understood to be a largely Middle Iron Age (c.400 BC - AD 200) phenomena.

4.2.2 Iron Age chronologies

Overall the chronology of the Outer Hebridean Iron Age still remains fairly coarse and we are left dealing with a very long period of Iron Age occupation. There are a number of reasons for this lack of chronological detail (Armit, 1991). Despite the great number of broch, dun and wheelhouse type sites identified across the Outer Hebridean landscape, only a small proportion of these have been excavated, few excavations have been conducted to modern archaeological standards and fewer still have produced reliable radiocarbon dates. Suitable samples for radiocarbon dating are limited due to a lack of wood charcoal within Iron Age deposits. Furthermore, the reliability of wood samples is made problematic by the potential reuse of ancient timber within Iron Age contexts (Church, 2002), while the marine reservoir effect has implications for the reliability of many faunal samples for radiocarbon dating (Armit, 1991; Campbell, *et al*. 2004). The complexity of Iron Age site sequences and the apparent longevity of occupation at broch, dun and wheelhouse sites albeit comprising short periods of disuse, mean that the full sequences of Iron Age occupation have rarely been exposed. Inevitably, a number of early excavations failed to distinguish successive occupation phases and this too has contributed to confusion and a lack of chronologically refined data (Armit, 1992a). A lack of secure typologies of Outer Hebridean artefacts and a dearth of exotic imports for comparative dating represents another profound hurdle in the establishment of a detailed Iron Age chronology (Armit, 1991; Campbell, 2002; Hunter, 2007; Lane, 1990). The problem is not unique to the Outer Hebrides or to Atlantic Scotland; the quantity, variety and diagnostic qualities of material associated with Iron Age horizons across northern Britain are notably poor (Harding, 2004:

8). Whilst in areas of southern Britain the Iron Age is recognisable by the emergence of fine metalwork of both continental and insular types, as well as other diagnostic artefacts, in northern Britain similarly distinctive assemblages tend to be lacking (Harding, 2004: 7; Hunter, 2007: 287). This paucity of material further reinforces reliance upon sequences of settlement architecture within interpretations of Iron Age society. While the abundance of decorated Iron Age pottery is unique to Atlantic Scotland and the Outer Hebrides more specifically, due to such a wide variety of forms and complex decorations, this pottery has not lent itself well to typological analysis (Campbell, 2002; Campbell, *et al*. 2004; Lane, 1990; Topping, 1987). Hebridean pottery is handmade using similar methods throughout substantial periods of later prehistory, even up until the early historic period. Furthermore, fabric analysis indicates that during the Iron Age ceramics were manufactured locally using locally resourced materials (Topping, 1986; 1987) and this has further inhibited typological analysis on the basis of variance in ceramic technology and style. Consequently, increasing scepticism has been expressed over the value of ceramics for establishing chronology in this area (Campbell, *et al*. 2004; Topping, 1987).

Given these obstackles, it is difficult to attain consensus on meaningful methods of chronologically sub-dividing this 'long' Iron Age. Again these problems are also apparent in other areas of the British Iron Age where the identification of specifically Early, Middle and Late Iron Age material has been similarly problematic. One attempt at resolution has been to accept a simpler two period division of the British Iron Age that alternatively identifies a comparative *earlier* and *later* Iron Age. Two recent volumes dedicated to current Iron Age research apply this convention. Here the earlier Iron Age is defined roughly as the period from c.800 BC to 400/300 BC with the later Iron Age spanning the remaining period up until the Roman occupation (Haselgrove and Moore, 2007a; Haselgrove and Pope, 2007a). Others have suggested that this terminology oversimplifies the archaeological record (Davis, Sharples and Waddington, 2008b: 6). There is good reason to argue that this chronological division

inadequately reflects the Outer Hebridean Iron Age where the majority of archaeological evidences fall within the later rather than earlier Iron Age bracket in this convention. Harding applies a similar earlier and later Iron Age division in his synthesis of the northern British Iron Age material (2004). In his method this bias is reversed, with the earlier Iron Age spanning the entire chronological scope of the pre-Roman Iron Age (as defined by southern British Iron Age models). Inconsistency in the dating terminology associated with the British Iron Age is problematic and relates in part to the stress on regional approaches apparent since Cunliffe's (1974) seminal publication on *Iron Age communities.* This has, however, had the unintended effect of further isolating areas such as the Atlantic north from wider Iron Age debates. The image of a reconstructed broch is found on the cover of *The Later Iron Age in Britain and Beyond* (Haselgrove and Moore, 2007a) (although articles relating to the Atlantic Scottish Iron Age are notable by their absence) indicating that the editors consider brochs archetypal later Iron Age structures. Yet brochs fall firmly within Harding's earlier Iron Age chapters (2004: chapter 5). Conversely, others have argued that specific attempts to identify a universal British Iron Age chronology is misplaced (Davis, Sharples and Waddington, 2008b: 7).

In the context of the Outer Hebridean Iron Age, a principal problem with Harding's (2004) system is that the use of Atlantic roundhouse and wheelhouse sites are kept temporally discrete. This poses difficulties as archaeological evidence increasingly highlights a significant chronological overlap between the occupation of these two roundhouse types (Parker Pearson and Sharples, 1999: 359). The relationship between wheelhouses, brochs and duns is a particularly fascinating feature of the Outer Hebridean Iron Age, yet within Harding's terminology this dynamic is partially concealed. A more appropriate chronological division of the Hebridean material needs to distinguish between the Early Iron Age, associated with dates between the seventh and third centuries BC and the emergence of simple, thick-walled roundhouses as yet unidentified in the Outer Hebrides, and the Middle Iron Age, spanning the first few centuries BC into the first few centuries AD. Also the Middle Iron Age needs

to be recognised as encompassing the successive, but arguably related, phases of monumental domestic architectures of brochs, duns and wheelhouses (Armit, 1990a; 1997b). Within this chronological model the Later Iron Age is associated with the period following the decline of both broch and wheelhouse sites and their replacement with smaller, cellular type structures (Armit, 1997b; Gilmour, 2000; 2002). It is the Middle Iron Age thus defined that is the subject of this thesis.

4.2.3 The Outer Hebridean Iron Age

The Outer Hebrides are a group of islands located off the west coast of Scotland formed from an eroding platform of ancient metamorphic rock (Angus, 1997: 8-16). Unlike many of the Inner Hebridean Islands, which were linked to mainland Scotland during periods of glaciation, the Outer Hebrides have been separated from the mainland by the Minch, a deep sea channel, since their formation (ibid. 52). To a certain extent the Outer Hebrides therefore represent a geographically and geologically discrete island region during the Iron Age as they are today. Similarities in material culture, from the Neolithic onwards, suggest that the Outer Hebrides should be considered part of a broader Atlantic seaboard region incorporating the Inner Hebridean islands, Skye, the Orkneys and the Shetland islands (Armit, 1990a: 92-93; Henderson, 2000: 150). In terms of the Iron Age archaeology, there are a number of shared features with this wider area of Atlantic Scotland. However, there are several ways in which the Outer Hebridean Iron Age is unique. As has been discussed above, evidence for simple Iron Age roundhouses associated with the earlier part of this period are largely absent from the Outer Hebrides and subsequently it has been suggested that this distinctive architecture was imported fully developed from elsewhere (Armit, 1997a). Secondly, wheelhouse sites have yet to be discovered within the Orkney archipelago and are currently a unique form of Iron Age roundhouse identified only in the Outer Hebrides and across Shetland (although for an alternative interpretation see Crawford, 2002). Furthermore, while decorated pottery is synonymous with the wider region, there is little

similarity between Hebridean pottery and the pottery from either Orkney or Shetland, and analysis of decorations highlights local and even site-specific styles (Campbell, 2002; Henderson, 2000; MacKie 2002b; Hunter, 2007; Lane, 1990; Topping, 1986). The Outer Hebrides therefore emerge as a distinctive geographical, geological and archaeological region in which to research Iron Age society.

4.3 Brochs and Duns

4.3.1 Introduction

Brochs are large, dry-stone built roundhouses associated with long sequences of occupation spanning the second half of the first millennium BC into the first few centuries AD (Figure 4.2). These buildings are associated with tower-like proportions and a range of particular architectural features including hollowed or concentric walling, intra-mural galleries and stairs, scarcement ledges for secondary flooring, guard cells and long, narrow entrance passages (Armit, 2003). The roundhouse at Mousa in Shetland is the best preserved and perhaps best known example of a broch. The exterior of the broch at Mousa is typically featureless, except for the opening to the small, narrow entrance passage. The site is preserved to a surprising height of 13 metres, and the technique of tapering and narrowing roundhouse walls towards the apex accentuates the impression of height and grandeur. Some variation in broch architecture is evident. In particular, previous research has focused on the distinction between solid based brochs, where intra-mural galleries are found only above ground-level and, the fairly self-explanatory term, ground galleried brochs. Generally the former were found to concentrate in the Northern Isles and areas of mainland Scotland, while galleried brochs were thought to be more typical of the Outer Hebrides (MacKie, 1972). Given the reliance upon levels of preservation, the distinction between the two is often difficult to assess and has therefore been increasingly recognised as an unreliable and unhelpful means of analysis (Harding, 2004:118).

While brochs have long dominated discussions of the Atlantic Scottish Iron Age, the region is also associated with other types of roundhouses of Middle Iron Age date, including duns and wheelhouses (the latter are discussed in section 4.4). The term dun is associated with a range of different site types spanning a wide series of dates and a variety of functions. Most importantly, not all features or sites know as duns are Iron Age. The word dun derives from the old-Norse for fort and is associated with numerous field monuments including medieval forts, and occasionally natural places, such as islets bearing features similar to artificial fortifications. Nevertheless, a huge number of duns are undeniably later prehistoric in date and a great many of these can be demonstrated as having Iron Age associations. Iron Age duns typically consist of dry-stone roundhouses bearing similar traits to brochs but on a more modest scale and lacking the complex architectural features that have necessitated their inclusion within the broch class of sites.

4.3.2 Issues of classification

The classification of Iron Age sites, what constitutes a 'true' broch and the distinction between brochs and duns are issues that still precipitate intense archaeological debate (Armit, 1997b; Parker Pearson and Sharples, 1997). The first comprehensive survey of Iron Age sites across Atlantic Scotland was conducted by the Royal Commission on the Ancient and Historical Monuments of Scotland (RCAHMS) in 1928. In it, the word dun was taken as a generic term for all dry-stone built defensive structures, with brochs denoting a more specific type of structure displaying round, tower-like proportions. During the 1960s MacKie (1965) attempted to further clarify the situation by providing a specific set of architectural criteria upon which brochs could be identified, and thus distinguished from this more generic group of stone built roundhouses. MacKie's primary criterion was evidence of at least one intramural gallery above the ground floor, with concentric walling and tower-like proportions as secondary features. Sites such as Mousa on Shetland and Dun Carloway on the Isle of Lewis were considered archetypal brochs. At the same time, duns

were all but completely disregarded from MacKie's research. Up until the 1980s this basic definition was maintained as standard, continuing previous research traditions whereby the brochs dominated interest in later prehistoric settlement across Atlantic Scotland, while discussion of other site types, very often lumped together under the term 'dun', were largely neglected (Armit, 1988).

Arguing that this classification system was fundamentally vague and inadequate, Harding and Armit (Armit, 1988; 1992a; Armit and Harding, 1990; Harding, 1984; 2000) proposed a complete reassessment of Iron Age site typologies. Whilst it was accepted that terms such as broch required definition, they maintained that the existing method of classification, by focusing on differences rather than similarities in architecture, encouraged the isolated study of broch sites and inhibited an integrated understanding of the wider patterns of later prehistoric settlement (Harding, 1984: 217-218). Furthermore, it was argued that MacKie's classification system was heavily reliant on levels of preservation so that the difference between brochs and duns could only be satisfactorily assessed through excavation as opposed to field observation (Armit, 1990a). Whilst preservation of sites across the Atlantic area of Scotland is exceptionally high, few dry-stone structures survive to anything near full height, Dun Carloway and Mousa being notable exceptions (Armit, 1988). Furthermore, at this time only a small proportion of these sites had been excavated, and classification was therefore based largely upon field observations, which, as their research on the Bhaltos peninsula in Lewis (Harding and Armit, 1990) proved, could be highly misleading. The research project carried out at Bhaltos included an extensive archaeological survey of later prehistoric settlements across the peninsula (Harding and Armit, 1990) and the excavation of three Iron Age sites: Dun Bharabhat (Harding and Dixon 2000), Loch na Bheirigh (Harding and Gilmour 2000) and the Cnip wheelhouse (Armit 2006). The purpose of these excavations was to investigate one each of the conventional Iron Age site types: the classic broch, the Iron Age dun and the wheelhouse. The excavation of Dun Bharabhat (Harding and Armit, 1990; Harding and Dixon, 2000), regarded on the basis of field observations as a

modest dun lacking any identifiable broch type features, immediately revealed a number of architectural traits, such as concentric walling and internal galleries, a staircase with seven surviving steps and an entrance rebate with bar-hole, traditionally associated with broch architecture. Despite substantial differences in size, Dun Bharabhat showed remarkable similarity in architectural complexity to the neighbouring site at Loch na Bheirigh, considered a classic example of a broch. These excavations demonstrated convincingly that the original classification of these sites was deceptive and ultimately inaccurate. Based upon these findings, Armit constructed an alternative method for the classification of Iron Age sites using the idiom 'Atlantic roundhouse' as an umbrella term for a range of monumental Iron Age roundhouse types (Armit, 1992a). This classification system is maintained in this thesis and will be discussed in more detail in Chapter 5.

Armit identifies three principal forms of Atlantic roundhouse: simple roundhouses, complex roundhouses and broch towers (1990a: 436-438). To all intents and purposes, Armit's term 'complex roundhouse' can be regarded as synonymous with the conventional or popular use of the term broch, associated primarily with evidence for concentric walling and intra-mural galleries and cells. The term 'simple roundhouse' is applied where these architectural features cannot be identified, either due to lack of preservation or lack of excavation. The term 'broch tower' applies only where there is evidence for an upper floor. Crucially, Armit's method of classification is characteristically more inclusive than traditional models, taking into account the important issue of site preservation whilst still maintaining evidence for increasing architectural complexity as a basis. Wheelhouses, discussed below, are also included within the wider category of monumental roundhouse architecture. There have been a number of criticisms, however, of Armit's alternative method of site classification. A recurring concern seems to be that a number of structures that are not true brochs, or are not 'equivalent to brochs' are included in Armit's complex roundhouse class of sites (Sharples, 1998: 208; Parker Pearson and Sharples, 1997) and consequently several researchers prefer to 'call a spade a

spade' (Parker Pearson, Sharples and Symonds, 2004a: 83) and stick with the term broch. These critics fail to acknowledge that Armit's classification system does not negate the term broch, it merely stresses that the identification of these sites, in the absence of full excavation, is problematic and recognises the value of appreciating these buildings as part of a wider system of monumental roundhouse architecture. Crucially, Armit states that this classification system should be utilised as a 'research tool' rather than representing a definitive form of site typology (Armit, 1992a: 18) and the principal advantage of this revised approach to Iron Age site types for this research is that it provides the foundations for exploring wider Iron Age settlement patterns. Others have suggested that the system is too general and that differences and comparisons subsequently become vague and misleading (Ballin Smith, 1994: 267). The site classification debate continues as yet unresolved (Armit, 2003; Harding, 2004, Sharples, 2006; Parker Pearson, Sharples and Symonds, 2004a). As we shall see, however, these debates have implications beyond trivial semantics, relating to interpretations of Iron Age chronology and the nature of Iron Age society.

4.3.3 Dating brochs and duns

The origin of brochs and other complex roundhouses has long been a central concern of Iron Age archaeology in Atlantic Scotland. Traditional interpretations, subscribing to diffusionist theories of social change, rendered brochs the architectural expressions of migrating populations or the spread of technological innovations from southern Britain and the Continent (MacKie, 1969b; 1971). It is now more widely accepted, however, that complex roundhouse architecture is indigenous to Atlantic Scotland. Across Orkney a number of simple, thick-walled roundhouse structures, associated with Early Iron Age dates, appear to represent native precursors to the broch or complex roundhouse tradition. The simple roundhouse at Bu, for example, yielded radiocarbon dates in the mid-first millennium BC (Hedges, 1987). Other early Iron Age dates are associated with roundhouses at Pierowall (Sharples, 1984), Quanterness (Renfrew, 1979) and

the Howe (Ballin Smith, 1994) in Orkney, Crosskirk, in Caithness (Fairhurst, 1984), Dun Ardtreck, Skye (MacKie, 2000) and possibly Dun Bharabhat, in the Outer Hebrides (Harding and Dixon, 2000), which will be discussed below. Radiocarbon dates indicate that the more complex roundhouses or broch towers, such as Old Scatness (Dockrill, Outram and Batt, 2006), emerge in the Northern Isles from the Middle Iron Age (c. 400 BC - AD 400) onwards (see Appendix 1). Recent research has begun to question the reliability of pottery typologies that have associated the roundhouses sites of Jarlshof and Clickimin with Early Iron Age dates (Hamilton, 1956; 1968), and it may emerge that, like the Outer Hebrides, monumental architecture in the Shetlands must be regarded as a Middle Iron Age phenomenon until further supporting evidence is revealed (MacDonald, 2008).

As discussed above, a lack of Early Iron Age dates and simple Iron Age roundhouses across the Outer Hebrides has led to the interpretation that broch architecture was adopted here during the Middle Iron Age, having developed as an architectural tradition in the Northern Isles (Armit, 1990a; 1991). Some questions, however, have been raised over this model of architectural evolution, which is based upon the premise that roundhouse complexity increases uni-linearly over time (Barber, 2003: 28; Parker Pearson and Sharples, 1999: 355). Two sites in the Outer Hebrides have produced Early Iron Age dates (Figure 4.3). From Dun Bharabhat, charred roof timbers from a secondary structure seemingly destroyed by fire produced two radiocarbon dates, one centring on the later first millennium BC and the other in the first few centuries AD (Harding and Dixon, 2000: 22). A much earlier radiocarbon date, spanning the early to mid first millennium BC, was sourced from waterlogged timber recovered from a context that extended beneath the original roundhouse wall, relating potentially to primary occupation phases (ibid: 27). However, this interpretation does not take into account the possible age of the timbers that were dated, some of which may have been obtained as old driftwood and curated for sometime before their use in this building. It is therefore possible that Dun Bharabhat was constructed as much as a century earlier than suggested by these radiocarbon

dates (Church, 2002: 69-70). Nevertheless, the dates from Dun Bharabhat provide the indications for the earliest Iron Age occupation currently associated with Atlantic roundhouse structures across the Outer Hebrides. A building excavated at Eilean Olabhat, North Uist has produced radiocarbon dates focusing on the mid first millennium BC (Armit, Campbell and Dunwell, in press) and the excavation of a burnt mound and associated structures at Ceann nan Clachan, also North Uist, has revealed early to mid first millennium BC dates (Armit and Braby, 2002). These two sites currently represent the only other independently dated Early Iron Age horizons in the Outer Hebrides. However, in terms of known later prehistoric domestic structures, the simple, oval dry-stone buildings uncovered at Eilean Olabhat are largely unparalleled (Armit, Campbell and Dunwell, in press: 71). One of the cellular structures from Ceann nan Clachan (Structure 2) has been compared with building 640 excavated at Cladh Hallan, South Uist, and with the construction methods of buildings at Eilean Olabhat (Armit and Braby, 2002: 254-255). However, the small, cellular and oval structures associated with these dates represent non-monumental Iron Age buildings that do not appear to relate to the complex roundhouse tradition under discussion here. Very few Atlantic roundhouses in the Outer Hebrides have been excavated to primary occupation levels, and there therefore remains the possibility that Early Iron Age structures and/or simple roundhouse structures are currently concealed beneath the plethora of Iron Age sites across the region. Therefore, while this thesis discusses specifically Middle Iron Age landscape, it is likely that future research will reveal that this landscape has distinct Early Iron Age origins. Nevertheless, it is now largely agreed that the origin of monumental roundhouse architecture across Atlantic Scotland is most closely identifiable in the Northern Isles and in particular Orkney (Armit, 1990a; 1991), and on the basis of current evidence this remains the most convincing argument.

Only three Atlantic roundhouses across the Outer Hebrides, all identifiable as either complex roundhouses or broch towers, have provided radiocarbon dates (see Appendix 1). Radiocarbon samples from the site of Loch na Bheirigh date only secondary occupation phases associated with the first few centuries AD.

However, the multiple occupation phases prior to this dated horizon and the clear longevity of occupation hint at possible 'early' dates for primary roundhouse construction perhaps in the first few centuries BC (Harding and Gilmour, 2000). As described above, radiocarbon dates from the nearby site of Dun Bharabhat provide the greatest potential evidence for Early Iron Age occupation and it is likely that the primary complex roundhouse at Bharabhat was constructed at some point in the second half of the first millennium BC (Harding and Dixon, 2000). Two radiocarbon samples from Dun Mhullain, a broch (or complex roundhouse) in South Uist, possibly also point to primary occupation in the first few centuries BC (Parker Pearson and Sharples, 1999). However, neither sample is stratigraphically secure. One is derived from a layer that 'appears to be stratigraphically below the broch wall', the other from a deposit within the broch wall core which may be contemporaneous with the construction of the broch, or a secondary deposit (Parker Pearson and Sharples, 1999: 39-40). The primary occupation levels of the roundhouse at Mhullain were not excavated and the existing radiocarbon dates therefore remain inconclusive as to the origin and primary phase of occupation at this site.

4.4 Wheelhouses

4.4.1 Introduction

The other principal form of Iron Age roundhouse found across Atlantic Scotland is the wheelhouse. Wheelhouses are also dry-stone built roundhouses characterised by radial piers which sub-divide the interior roundhouse space into small bays around a central area frequently containing a hearth (Figure 4.4). These distinctive roundhouses are found widely across the Outer Hebrides. Examples are also found in Shetland, as at Jarlshof (Hamilton, 1956), but have yet to be positively identified in the Orkney islands, an obvious indication of regional variation within the narrative of the Atlantic Scottish Iron Age (Armit, 1996: 136). Recently Crawford has reinterpreted a number of sites

across Orkney as wheelhouses (2002), however, this view has not been acknowledged by other scholars and is generally perceived as misinterpretation of the data. There is also some variation in wheelhouse form. Upright stones occasionally separate the central area from the outlying bays, while in some instances an aisle is formed between the inner face of the outer wall and the radial piers, often referred to as an aisled roundhouse. Most frequently wheelhouses are found revetted into the ground so that they were semi-subterranean structures. Artists' reconstructions of wheelhouses, based upon the excavations at Cnip, Lewis, suggest that only the roof of these buildings would have been visible above ground level (Armit, 2006). Thus, in comparison with the brochs and duns, the remains of wheelhouses would not have been highly visible in the Iron Age landscape. Nevertheless, the interior space and potential height of the roof would have created impressive buildings from the inside and have therefore been aptly described as internally monumental structures (Armit, 1997b: 250). Unlike brochs and many of the Iron Age dun sites, wheelhouses tend not to survive as visible standing remains and have instead been revealed primarily as stonework eroding out of machair and beach deposits. The imprint upon the landscape is therefore less obvious, and one might surmise that their relative invisibility in the modern landscape has contributed to their secondary role within narratives of the Atlantic Scottish Iron Age.

Like brochs and duns, wheelhouses also vary in size. The classic site type is the Sollas wheelhouse, North Uist, excavated during the 1950s. With an external diametre of 11.9m Sollas is the largest wheelhouse known from the Outer Hebrides (Campbell, 1991; Armit, 1992a: 107), rivalled in size only by counterparts in Sheltand at Jarlshof (Hamilton, 1956) and Old Scatness (Nicholson and Dockrill, 1998). In comparison, the wheelhouses at Cnip, Lewis were less than seven metres in diametre (Armit, 2006).

4.4.2 Dating wheelhouses

Problems with dating, discussed above, are even more acute with regard to wheelhouse sites (Armit, 1992a: 69). Wheelhouses are now more conventionally regarded as a later Middle Iron Age tradition succeeding Atlantic roundhouses as the standard Iron Age dwelling (Armit and Ralston, 1997: 185). The Iron Age sequence at Jarlshof, Shetland included four post-broch wheelhouse type structures, one of which was constructed within the walls of the then abandoned broch (Hamilton, 1956). In the Outer Hebrides a similar sequence of Atlantic roundhouse to wheelhouse was identified at Eilean Maleit, North Uist. Here a wheelhouse was built into the remains of an abandoned Atlantic roundhouse although the excavators suggest that the original structure may never have been occupied (Armit, 1998a). This roundhouse-wheelhouse sequence is suggested in the antiquarian Beveridge's site plans (1911) and was clarified when the site was re-excavated in the 1990s (Armit, 1998a). Beveridge similarly described two further roundhouse sites on North Uist as wheelhouses constructed within earlier Iron Age roundhouses (Beveridge, 1911), a claim that re-excavation would confirm or refute. These stratigraphic relationships appear to demonstrate fairly conclusively that, in these instances at least, wheelhouses were constructed after Atlantic roundhouse or broch type sites had gone out of use.

Parker Pearson and Sharples, however, dispute this evidence and instead argue that wheelhouses were a contemporary if not earlier Iron Age tradition (1999: 359). Recent radiocarbon dates do highlight some much earlier dates for the occupation of wheelhouse sites. The possible wheelhouse site found eroding out of the beach at Hornish Point, South Uist, provided samples from occupation horizons associated with dates between the seventh and third centuries BC (Barber, 2003: 215-217). These samples were all derived from marine shell, and potential distortion due to the marine reservoir effect has cast doubt upon the validity of these dates (Ascough, *et al*. 2004). Attempts were made to calibrate this distortion by comparing marine samples with samples of carbonised grain and bone, generating revised dates between the first century

BC and the second century AD. However, the author admits that the number and context of comparative samples used in the calibration process were limited and therefore these reviewed dates should also be treated with caution (Barber, 2003: 220*)*.

The Sollas wheelhouse provides more conventional radiocarbon sequences, with calibrated dates centring on the first and second centuries AD (Campbell, 1991: 140). However, these are associated with the second of two wheelhouse phases and it is possible that occupation of this site had much earlier origins (Armit, 1996: 145). Similarly, secondary occupation at Cille Donnain wheelhouse, South Uist, is associated with one calibrated date between the second and fourth centuries AD and one much later date (Parker Pearson and Sharples, 1999: 358). The most useful dates derive from the Cnip wheelhouse (Armit, 2006), excavated as part of a wider excavation project focused on the Bhaltos peninsula in Lewis. The sequence of radiocarbon samples from this site, indicate that the site was occupied from as early as the first few centuries BC into the second century AD. The only other radiocarbon dates from wheelhouse horizons in the Outer Hebrides come from the Udal peninsula excavations in North Uist. This included the excavation of three wheelhouse sites apparently associated with occupation dates spanning the first few centuries BC to AD (Crawford and Switzer, 1977). However, the lack of published material from this excavation inhibits analysis of the context of these dated samples and this information remains of limited value. Overall, however, increasingly early radiocarbon horizons are emerging in association with wheelhouse type sites and a greater degree of overlap between wheelhouse and Atlantic roundhouse sites is therefore emerging as a more reasonable interpretation. Furthermore, building upon Armit's arguments for a more inclusive approach to later prehistoric settlement types in the Outer Hebrides, it is perhaps advisable to view wheelhouses and Atlantic roundhouses as part of a related Iron Age trend towards monumental roundhouse dwellings. In this sense, Iron Age settlement across the Outer Hebrides has links with a wider tradition of roundhouse dwelling associated with the British Iron Age.

4.5 Interpreting Iron Age society

4.5.1 Introduction

The Atlantic Scottish Iron Age has generally been interpreted as a period of increasing social complexity associated with a surge in population and growing economic specialisation and intensification. Traditional interpretations regarded the brochs as primarily defensive structures (Childe, 1935: 204) and this view is still popularly held, for example Blythe (2005). However, over the last 20 years, purely defensive explanations for these sites have been increasingly challenged (Parker Pearson and Sharples, 1999: 350), reflecting wider trends within the discipline (Bowden and McOmish, 1987; Fitzpatrick, 1997; Hill, 1989; 1995; Parker Pearson 1996), and it is now more readily suggested that the monumentality of these Iron Age sites would have stood for power and legitimacy within the landscape over and above the need actually to defend territory (Armit, 1997a: 249). Population pressures and the culmination or breaking point of long- term processes of environmental change that would have rendered landscape resources stretched are put forward as an impetus for the display of local power **(**Armit, 1990b; Hedges, 1987; Sharples, 2006). Others have regarded economic intensification as the catalyst for the development of monumental sites, with surplus grain products paving the way for a society based around brochs as redistributive centres and the residences of an emerging economic elite (Dickinson and Dickinson, 2000). An alternative perspective, based primarily on evidence from sites in Orkney and Shetland where agricultural intensification associated with later rather than earlier Iron Age horizons has been demonstrated, views intensive agricultural production as an outcome of a centralised society already focused on a broch-dwelling elite (Dockrill, 2002). In terms of the innovation for specific broch type architecture, several researchers have noted the similarities between complex Atlantic roundhouses and Neolithic tombs in Orkney. Hingley (1996; 1999; 2005) has suggested that the re-use of ancient sites reflected the desire to legitimise status, while MacDonald (2008) argues that communities appropriated earlier

monuments to create links to a mythical past that underpinned the development of a new social structure (see also Sharples, 2006).

Aside from concerns as to the motivations and origins of monumental architecture, which have focused on the Orkney material, ongoing debate about the organisation of Iron Age society and the relationship between monumental architecture and social elites currently dominates discussion of the Outer Hebridean Iron Age (Armit, 1997b; 2002; Parker Pearson and Sharples, 1997; Giles and Parker Pearson, 1999). Whether brochs or complex roundhouses are interpreted as catalyst or product of changes in economic practices, environmental pressures or the outcome of links with the past, the role of these sites as specific elite dwellings within the Outer Hebrides is still a contentious issue (Hingley, 1995; Armit, 1997b) and this debate is fundamental to how archaeologists interpret this Iron Age society.

4.5.2 Iron Age houses and lifestyles

Whether monumentality was inspired by defensive requirements or the need to express power symbolically, it has been demonstrated that the majority of brochs, duns and wheelhouses functioned primarily as domestic settlements (Parker Pearson and Sharples, 1999: 348). The types of material and artefact assemblages associated with Atlantic roundhouse and wheelhouse sites point to domestic use: animal and fish bone relating to food consumption, worked bone and antler, shell, pottery, burnt stone and bone, fragments of spindle whorls, loom weights, hammer stones and quern stones. These indicate that a range of 'domestic' activities was carried out at these sites, including food preparation, butchery, grain production, spinning, weaving and sewing. Numerous examples of worked bone and antler at various stages of completion at sites such as Foshigarry and Bac Mhic Connain indicate that bone and antler working took place in or around these roundhouses (Hallen, 1994). Analysis of certain food residues from pottery recovered from the Sollas wheelhouse has been interpreted as evidence for the consumption of venison (Campbell, 2000). Wild faunal remains retrieved from Iron Age sites include fish bones from deep

sea species, oyster and scallop shells and numerous other shore-derived resources including limpets, winkles and some whale and seal bone, suggesting regular but perhaps also fairly opportunistic shore based subsistence practices. Chemical residue analysis has also suggested that bird, marine and shell resources contributed minimally to Iron Age diets, although these results may reflect differential treatment of certain consumables (Campbell, 2000). Iron slag found within hearth deposits indicates that some metal working was also carried out at the wheelhouse A'Cheardach M'hor, South Uist (Young and Richardson, 1959). Possible evidence for metalworking was also recorded during excavations at the nearby site of A'Cheardach Bheag (Fairhurst, 1971) and the Allasdale wheelhouse, Barra (Young, 1955b). Generally, however, evidence for metal and metal working in the Outer Hebridean Iron Age is limited (Parker Pearson and Sharples, 1999: 348).

Excavations of wheelhouse sites frequently reveal hearths, and artists' reconstructions of these sites frequently portray domestic activities around the fire at the centre of the home (Parker Pearson and Sharples, 1999: 20, fig 1.9). Excavations at the Scalloway broch, Shetland have suggested that the ground floor space of this roundhouse would have been used for storage or byres (Sharples, 1998), and it is thought that hearths within brochs would been constructed on upper floors, as in the artists' reconstruction image of Carloway (Armit, 1996: 126, Fig 7.10). Atlantic roundhouses and wheelhouses and brochs, were therefore associated with a wide range of domestic activities, and for the majority of Iron Age communities these sites would have been the focal point of daily life and the most familiar places within their landscape.

As has been mentioned above, roundhouses, wheelhouses in particular, are also associated with deliberate deposits of material indicating elements of ritual activity incorporated into the home. The excavation of the wheelhouse at Sollas revealed more than 150 pits built into successive floors containing various deposits of articulated animal bone remains, cremated animal bone, antler, complete pots and sherds of pottery (Campbell, 1991). Successive phases of pit

construction were identified by the excavators, suggesting founding deposits as well as later depositional activity after the wheelhouse was in use, perhaps indicating the marking of sequential phases of site ownership as suggested by the excavators (ibid). Fragments of human remains and a partially articulated sheep burial were found behind the walls of the wheelhouse at Cnip as well as an almost complete pot recovered from within a recess in the exterior wheelhouse wall (Armit, 2006). Perhaps the most intriguing examples of deliberate deposition are the pits beneath the floor of the possible wheelhouse at Hornish Point, South Uist. These comprised four pits arranged evenly within the roundhouse interior, each containing the quartered remains of a single individual, probably a young adult or child (Barber, *et* al, 1989; Barber, 2003). Recent excavations of two wheelhouse sites at Sloc Sabhaidh, Baile Sear revealed a number of small pits containing semi-articulated animal remains and complete ceramic vessels beneath the wheelhouse walls (Figure 4.5). A series of deliberate deposits were also associated with a phase of abandonment comprising a rotary quern stone, burnt material containing cremated animal bone, a mixture of disarticulated and semi-articulated animal remains and a human mandible (MacDonald and McHardy, 2008; McHardy and Rennell, 2009). Human remains were also recovered from one of the chambers and the midden at Dun Mhullain (Parker Pearson and Sharples, 1999). Analysis of the distribution of deliberately deposited and waste material within roundhouse sites has contributed to research focusing on the structuring of activities within roundhouse spaces and the view that roundhouses embodied Iron Age cosmologies (Giles and Parker Pearson, 1999). For example, higher concentrations of pottery sherds and animal bone remains have been collected from the southern half of the wheelhouses, as at A'Cheardach Beag and A'Cheardach Mhor in South Uist (Fairhurst, 1971). It has been argued that activities within wheelhouse sites particularly were structured around the roundhouse in a sunwise direction, reflecting not only the sequence of daily life from sunrise to sunset, but also representative of seasonal changes from summer through to winter and life cycles of birth through to death (Parker Pearson and Sharples, 1999: 16-21; Parker Pearson, Sharples and Symonds,

2004a: 19-20). Other research has included the application of space syntax studies as a means of assessing access to and movement within the architectural spaces of Iron Age buildings (Foster, 1989; Hingley, 1984). Analysis of the treatment of certain animal products at Iron Age sites, including processes of consumption and deposition, have been used to indicate wider Iron Age belief systems relating to life, death, water, earth and fire (Campbell, 2000). Wheelhouses and Atlantic roundhouses are therefore understood to represent more than the building or locale in which mundane activities took place on a daily basis, but places where the template for Iron Age customs, beliefs and world views were reified to be learnt, reinforced and reproduced through the everyday practices of the communities who lived there. In this sense, the concept of 'domestic' is clearly an inadequate term to describe the range of activities associated with these sites.

As a consequence of the visual dominance and impressive monumentality associated with Middle Iron Age structures, in particular the enigmatic broch sites, research in the Outer Hebrides and across Atlantic Scotland more generally has tended to view and interpret Iron Age society through these buildings over and above other forms of evidence (Harding, 2000: 30). The scale and presence of these sites, in particular Atlantic roundhouses but also apparent in wheelhouses in their elaborate internal architecture, indicate a considerable investment of time and resources in these buildings. However, the construction of these sites also involved significant investment in the landscape and the creation of domestic places that were in use for several Iron Age generations. However, the associated investment in place has rarely been considered. Reference is occasionally made to the experiential qualities of Middle Iron Age sites within Outer Hebridean literature. Some people have described places as 'liminal' (Parker Pearson, Sharples and Symonds, 2004b: 39), 'extreme' or 'dramatic' (Branigan and Foster, 2002: 84). Earlier antiquarian authors such as Beveridge, have been more descriptive, commenting on spectacular and commanding views and locations of 'natural strength' (Beveridge, 1911: 132). However such references are largely incidental to the

archaeological text and have not been treated analytically. As has been discussed in Chapter 2, a distinct focus on symbolic and structuring principles of roundhouses has been a defining characteristic of British Iron Age studies over the last few decades (Fitzpatrick, 1997; Oswald, 1997; Parker Pearson, 1996). In comparison very little attention has been given to exploring how place and landscape may have themselves structured daily life within Iron Age communities. This research aims specifically to redress this balance.

4.5.3 Farmers, pastoralists and social elites

Different interpretations of the relationship between Atlantic roundhouses and wheelhouses hinge largely upon issues of site classification, differential dating of Iron Age sites and a peculiar form of island regionalism that has emerged within archaeological research across the Outer Hebrides. All of these factors inhibit cross-comparison and integration of data and interpretations. For example, where brochs are defined only through the identification of specific and detailed architectural features, as in MacKie's scheme (1965: 104), the total number of broch sites across the Outer Hebrides remains small and this initiates and supports the argument that brochs represented the exclusive residences of an emergent Iron Age elite (Armit, 1988: 79). Conversely, if a more inclusive method of site typology is proposed, taking into account issues of site preservation, then Atlantic roundhouses represent a more standard form of Iron Age dwelling. As an example of the latter, Armit (2002) has compared the number of Atlantic roundhouse sites across the islands of North Uist and Barra with 18th century island populations in order to argue that these would have been the dwellings of the Iron Age majority as opposed to an elite minority within the community. Maintaining a more specific definition of brochs, Parker Pearson and Sharples (1999) argue that on the island of South Uist, brochs represented the houses of an elite, with duns and wheelhouse sites representing the homesteads of an Iron Age underclass, envisaging a client based relationship between the occupants of these sites. At Bhaltos, Lewis, it has been suggested that the wheelhouse occupants would have lived in the

'shadow' of the broch at Loch na Bheirigh (Armit, 2006: 226). It is also suggested that Bheirigh retained its importance even during later occupation when the site was reduced significantly in size, as is indicated by finds of Samian ware, an exotic item rarely recovered from Iron Age contexts in the Outer Hebrides (ibid). By comparison no Samian or similarly exotic items were recovered from the nearby wheelhouse at Cnip (Armit, 2006: 233).

An understanding of social hierarchy and social structure is inevitably linked to interpretations of prehistoric subsistence and economy. Economic intensification and the development of specialised subsistence practices, namely intensive agricultural production and animal husbandry, are associated not only with Atlantic Scotland but are characteristic of the wider British Iron Age (Haselgrove and Pope 2007a; Haselgrove and Moore 2007a). Across Atlantic Scotland, six-row barley is the dominant cereal of this period (Dickinson and Dickinson, 2000) and large concentrations of charred grain remains within Iron Age houses indicate a shift from 'small-scale' to 'large-scale' processing (Bond, 2002). Chemical analysis of food residues on Sollas pottery indicates the use of barley at this site (Campbell, 2000). Quern stones are a common artefact associated with Iron Age houses, and in the Outer Hebrides they have been recovered from almost all excavated sites, highlighting the importance of grain production at all these places. Between the first and second centuries BC saddle querns are slowly replaced by the more efficient rotary quern and this phenomenon alone indicates increased potential for grain production throughout the life of these sites (Armit, 1991). Parker Pearson and Sharples (1999: 363) suggest that wheelhouses may have been associated more specifically with arable cultivation, while brochs, located on more 'marginal' land were focused towards pastoralism. Currently, however, there is an absence of evidence for brochs, other complex roundhouses, duns or wheelhouses differing in terms of the scale of grain processing activities. Rotary querns have been recovered from wheelhouses at A'Cheardach Mhor (Young and Richardson, 1959: 157), Cille Donnain (Parker Pearson, Sharples and Symonds, 2004a: 98-100) and Cnip (Armit, 2006). A later Iron Age cellular adaptation of a wheelhouse at Baile Sear

contained broken querns within the paving of a small cell indicating grain production in earlier site phases (MacDonald and McHardy, 2008). However, the evidence for grain production is by no means limited to wheelhouse sites. Rotary querns have also been recovered from the complex roundhouse sites of Dun Bharabhat (Harding and Dixon, 2000) and Loch na Berigh (Harding and Gilmour, 2000). Similar to the site at Baile Sear, at Loch na Berigh rotary quern fragments formed a paved floor at the base of a cell. Preserved barley grains were also recovered from this site, although these relate to a Later Iron Age phase of occupation (Harding and Gilmour, 2000: 80). A significant amount of preserved barley grain was recovered from the excavation at Dun Bharabhat and the majority derived from a context associated with the primary complex roundhouse (Harding and Dixon, 2000: 122, Appendix 3). Barley grains were also identified from a range of Iron Age contexts at Dun Mhullain (Smith, 1999).The substantial quantity of barley grains recovered from Dun Bharabhat currently stands out as significant. However, the significant quantity is undoubtedly due in part to exceptional preservation at this partly waterlogged site.

Preservation is a principal issue in this debate. Wheelhouses tend to be located on machair soils, which are precisely the type of environment, due to the high alkaline quality, in which grain is unlikely to survive. Conversely, brochs and other complex roundhouses, many located on islets, such as Dun Bharabhat, provide optimal preservation conditions through waterlogged contexts. In addition, a small number of published excavations have incorporated environmental sampling, inhibiting meaningful comparisons. Overall, then, there is little evidence yet to distinguish conclusively between brochs and wheelhouses in terms of grain processing, and current evidence indicates comparable practices across all Middle Iron Age sites. However, direct or indirect evidence for crop processing, even on a large scale, need not imply that arable agriculture was a principal practice associated with these sites; grain may well have been cultivated elsewhere, by different sections of the Iron Age community and brought into these sites for processing, storage, redistribution

and/or consumption. Unfortunately, plough marks, which would provide the most direct evidence for agricultural practices, tend not to survive in the fairly unstable machair soils, and within moorland environments they would be concealed by metres of peat growth. Plough marks found beneath the Bronze Age roundhouses at Cladh Hallan in South Uist are the only known example of preserved prehistoric agricultural surfaces in the Outer Hebrides **(**Parker Pearson, Sharples and Symonds, 2004a).

Therefore, the assertion that wheelhouse-dwelling communities would have been associated more specifically with arable cultivation, while the occupants of brochs were predominantly pastoralists (Parker Pearson and Sharples, 1999: 362-364), rests almost exclusively on observations about site location. Wheelhouses, it is rightly observed, tend to be located on the machair, which would have provided the most suitable soils for cultivation. Historically the machair has been the focus of agriculture across the islands (Boyd and Boyd, 1990; Lawson, 2004) and was also likely the prime location for agricultural activities across the Outer Hebrides from as early as the Neolithic and into the Iron Age (Mills, *et al*, 2004; Armit and *Finlayson*, 1992). In comparison, Parker Pearson, Sharples and Symonds (2004a) argue that brochs are frequently located on islets within a 'liminal' zone between moor and machair. The cultivation potential of moorland being very low, but grazing potential being high, indicates that broch dwellers were better located for pastoral activities. Where faunal assemblages are available from Iron Age sites, these tend to be dominated by domesticated sheep, cattle and pig. The faunal assemblage from Dun Bharabhat produced high quantities of cattle and sheep and also some pig. The presence of animal dung within structure two at Dun Bharabhat also indicates that animals might have been kept on site for some periods of time, perhaps brought into the site for shelter over winter months (Harding and Dixon, 2000). Analysis of body parts from the faunal assemblage from Dun Mhullain has suggested that sheep and cattle were brought to the site alive for slaughter rather than as pre-prepared products (Bond, 2002; Parker Pearson, Sharples and Mulville,1996) and a similar explanation could be applied to the evidence at

Dun Bharabhat. There is currently no similar evidence from wheelhouse sites for animals having been byred within the home, and the architecture of wheelhouses, with their long, narrow entrance passages, clearly would have prohibited their use in this way. Additional information about diet has been obtained from chemical analysis of food residues on Iron Age pottery, revealing that beef, lamb, pork and dairy products were principal elements in the diet of the communities living at the Sollas wheelhouse (Campbell, 2000).

The evidence necessary to argue for distinct differences between wheelhouse and Atlantic roundhouses in terms of diet and subsistence practices therefore remains debatable, and the validity of this interpretation essentially hangs on whether brochs are consistently located within these 'liminal' landscapes and whether the proximity or association between site type and environmental zone can be adequately demonstrated. To date this relationship has not been adequately investigated for the complete sample of sites across the Outer Hebrides. As an alternative interpretation, Cunliffe has suggested that brochs were located 'so that their resources potential' would have included different landscape zones relating to the full range of Iron Age subsistence practices. (Cunliffe, 1978: 238). Again, however, the argument is based upon the location and siting of Iron Age sites within the wider landscape and the relationship with the wider landscape. Although this may prove to be an accurate description of broch locations, this relationship has not been rigorously explored, and both Cunliffe's and Parker Pearson's comments appear to be fairly cursory and anecdotal. It is also necessary to note that moorland cultivation is well recorded historically, has been documented since the medieval period and is still practiced in some areas of the Outer Hebrides today (Dodgshon 1996). The remains of recent lazy bed cultivation can still be seen in many areas of the landscape. In the Northern Isles there is evidence of the use of oats during the Iron Age, a crop that is known to survive on much poorer soils and may well indicate exploitation of moorland environments (Bond, 2002). Compared to the Northern Isles, there is minimal evidence for oat grains in association with Iron Age sites in the Outer Hebrides. Analysis of environmental samples from Dun

Mhullain suggest that oats were not an important component of Hebridean diet until at least the medieval period (Smith, 1999: 298), when lazy bed cultivation of peat based soils become a common practice. Overall, however, it is reasonable to assume that areas of the moorland would have represented second-rate agricultural land and that intensive agricultural practices would have necessitated a focus of activity on the fertile machair soils.

The relative proportions of different animal species recovered from Iron Age roundhouses have been used to ascribe different social status to Iron Age communities. The culling of young cattle at Dun Mhullain has been associated with dairy farming and linked to intensive pastoral industry as well as the relative wealth of this community, thought to enable them to invest in secondary animal products (Mulville, 1999). Alternative interpretations are that these slaughter patterns indicate the killing of calves for meat at times of economic stress (Armit, 2006: 237; McCormick, 1992). Also at Dun Mhullain high proportions of pig are interpreted as an indictor of elite status (Parker Pearson, Sharples and Symonds, 2004a; Parker Pearson, Sharples and Mulville 1996). The consumption of pig within prehistoric societies is frequently associated with feasting practices and elite status (Green, 1992). That the surrounding landscape is ill-suited to pig rearing, principally because of the lack of trees and shelter, suggests that pigs would have been a scarce commodity and thus consumption would be indicative of high social status (Mulville *et al*, 2003; Serjeantson, 1990). The faunal assemblage from Dun Mhullain contrasts with the nearby wheelhouse site of A'Cheardch Mhor, where pig is mainly represented by skull fragments rather than meat yielding body parts (Parker Pearson, Sharples and Symonds, 2004a: 100). It has therefore been argued that pig consumption is mainly associated with brochs, implying the elite status of these sites, while pig is less represented at wheelhouse sites indicating the lesser economic wealth and social status of wheelhouse occupants (ibid*)*. Conversely, the high proportion of cow within faunal assemblages from Dun Bharabhat**,** Loch na Berigh and the Cnip wheelhouse, all sites located on the Bhaltos peninsula, Lewis, has been used to argue for the high social status of

the Iron Age occupants of this area (Armit, 2006; Harding and Dixon, 2000; Harding and Gilmour, 2000). Again, the unsuitability of the surrounding landscape for cattle grazing is cited as a further indication of high status. It must be noted, that in both the Lewis and South Uist projects, the same interpretations are made from very different faunal assemblages, and this begs the question whether high proportions of cattle and pig can really be used as useful indicators of social status within the Outer Hebridean Iron Age. Furthermore, the evidence from Bhaltos indicates that there was little difference between the wheelhouse, dun and broch sites in this area in terms of consumable meat products, although the excavators do note that the cattle bones from Cnip were apparently from smaller beasts than those at Loch na Bheirigh (Armit, 2006: 237). Analysis of faunal remains from Iron Age sites on Barra and smaller islands within the Sound of Barra, indicate little difference between site types (Branigan and Foster, 2002: 88). Less than 1% of the faunal assemblage from the broch on the small island of Pabbay was represented by pig, whereas sheep dominated, and it has been suggested the location of this site on a small island may have rendered this community economically and socially marginalised (ibid.). This again suggests that differences between brochs and wheelhouses may have been over-emphasised and that factors such as environment and location provide alternative perspectives on social status, subsistence practices and Iron Age social relationships across the archipelago.

It is a problem, however, that the number of Iron Age sites in the Outer Hebrides from which faunal remains have been both systematically retrieved and subsequently analysed is limited, and this restricts our ability to explore comparative subsistence practices across the range of settlements. During early excavation projects, only worked animal bone and antler tended to be collected, while during many modern excavations financial and logistical considerations frequently preclude suitable sampling and sieving techniques for the adequate collection of faunal material. The principal sites are therefore the three sites on the Bhaltos peninsula and Dun Mhullain and Cille Donnain on

South Uist. Comparing the faunal assemblages from these sites indicates that differences in subsistence practices may reflect inter-regional as opposed to simply social distinctions. The dominance of cattle at sites on Bhaltos compared with Dun Mhullain has already been noted. In addition, wild resources, principally red deer, are well represented in the faunal assemblages from the Iron Age sites at Bhaltos (Armit, 2006). These assemblages include antler as well as significant proportions of meat yielding body parts. Red deer remains are so prolifically represented in this assemblage that it has been suggested that red deer stocks living in landscape surrounding these sites on the Bhaltos peninsula in Lewis might have in fact been culled and managed during the Iron Age, in a manner similar to domestic species (Harding and Dixon, 2000). The high proportion of red deer bone remains, however, appears to be a particular phenomenon on the Bhaltos peninsula rather than representative of general Iron Age subsistence trends across the Outer Hebrides. Neither does this appear to be a phenomenon peculiar to complex roundhouse sites. Excavation of the Cnip wheelhouse, located on the Traigh Bhaltos machair less than two kilometres to the north-west of Dun Bharabhat, also produced similarly high proportions of red deer bone within the faunal assemblage (Armit, 2006). In comparison, analysis of faunal assemblages from sites on Uist shows that the deer remains were predominantly antler with few high meat yielding body parts and seemingly derived from collections of shed antlers as opposed to the hunting of animals (Mulville, *et al,* 2003). Re-analysis of the worked animal bone from Foshigarry and Mic Connain wheelhouses on North Uist in fact produced very few red deer bones (Hallen, 1994). At the wheelhouse site A'Cheardach Beag, South Uist, deer jaw bones decorated a central hearth, perhaps indicating that deer was revered rather than regarded as a consumable product. It has been suggested that the right to hunt deer may have been the preserve of certain people or groups within Iron Age society (Mulville, 1999: 273), Again, however, it is a problem that there are few comparable assemblages. Overall, the available evidence suggests that to distinguish between broch and wheelhouse in terms of social status and economic power is perhaps overly simplistic, and that other factors may have played a pivotal role in the formation

of social and economic relationships during the Middle Iron Age. This questioning of dominant interpretations is central to the arguments put forward in this thesis.

4.6 Iron Age environments and landscape settlement

4.6.1 Introduction

One of the limitations within dominant studies of the Outer Hebridean Iron Age is the inclination to interpret Iron Age society exclusively in terms of differences in architecture. Recent analysis of the ceramic material and the evidence for diet and subsistence patterns is beginning to indicate an alternative perspective. In this thesis I explore the landscape as an additional form of data for investigating Iron Age society. While the number of Middle Iron Age sites that have been excavated to primary occupation levels has been limited, extensive survey of the archaeological landscape across the Outer Hebrides has created a wealth of data on the location of Iron Age sites. In addition to the exceptional architectural preservation of many brochs, duns and wheelhouse sites, the minimal impact of modern development and the availability of palaeoenvironmental data provide immense potential for reconstructing the Iron Age landscape of the Outer Hebrides. There is therefore considerable scope for the application of experiential landscape archaeology in this area. In this section I will consider what is already known about the Iron Age landscape and outline why this approach is a suitable method for addressing some of the limitations evident within current syntheses.

4.6.2 The island landscape

Current understanding of the combined processes of coastal erosion and changes in sea level has highlighted changes to the physical geography of the Outer Hebrides since Iron Age occupation of these islands. The underlying geology of the Outer Hebridean islands is predominantly Lewisian Gneiss. While this bedrock foundation is resilient to typical erosion by the sea, any

weaknesses in the gneiss, defined by softer rocks, for example basalt, or surfaces such as peat based soils and glacial clays, are considerably more vulnerable (Angus, 1997, chapter 2). Exposure is a principal factor and therefore erosion is likely to have been more pronounced on the west coasts of the islands, fronting the Atlantic Ocean, than the comparatively sheltered east coasts facing the channel of water known as the Minch. Large parts of the west coasts are also defined by soft coastal features, rather than hard bedrock, and therefore vulnerability to erosion will have been more pronounced in these areas.

Although raised beaches are found in the Outer Hebrides (Gilbertson *et al*, 1996), these are rare in comparison with the mainland coast or the Inner Hebrides, indicating the minimal impact of post-glacial uplift upon this island region. Consequently, rises in sea level have had a greater impact here than elsewhere in Scotland, and across the Outer Hebrides there are instead numerous submerged beaches. Although sea levels have fluctuated over time, the available evidence points to a continuous rise in sea relative to land level since the beginning of the Holocene (Angus, 2001: 72, 242). Submerged and inter-tidal deposits of peat are visible at low tides, providing indications of rising sea levels. These have been used to mark the progression of the island coastline further inland. Radiocarbon dates have been obtained from three samples of inter-tidal deposits. Radiocarbon dates from inter-tidal deposits at Holm, Stornoway, have been used to argue that sea levels have risen by approximately five metres over the last 8,000 to 9,000 years on Lewis (Von Weymarn, 1974). Similarly on the basis of submerged and inter-tidal deposits at Borve, Benbecula and from the island of Pabbay in the Sound of Harris, Ritchie (1966; 1979; 1985) has proposed an estimate of sea level rise across the Uists in the region of four to five metres over the last 7,000 years. Although it would be unwise to apply these figures uniformly across the islands, this information suggests a two to three metre rise in sea level since the Iron Age.

The weathering of the predominant Lewisian Gneiss bedrock has formed naturally acidic soils across the islands and has shaped a specifically undulating topography where depressions frequently contain lochs. In addition, flooding of the landscape through rises in sea level has created numerous sea lochs, fjords and what are known as fjardic landscapes (Angus, 1997, chapter 3). An understanding of the lacustrine environment is particularly important to my study given the considerable evidence for Iron Age occupation and use of islets within the numerous loch systems across the Outer Hebrides.

The archipelago currently comprises more than 50 individual islands over 0.5 sq km in size and many much smaller islands, islets and skerries (Haswell-Smith, 1996: 165, 212). The archipelago can be roughly divided into islands south of the Sound of Barra (the larger islands here being Barra, Vatersay and Eriskay), the chain of islands known as Uist (comprising South Uist, Benbecula, North Uist, Grimsay, Baile Sear as well as a number of small tidal islands), the islands of the Sound of Harris (including Harris and Berneray amongst others) and the largest Island within the archipelago, Lewis and associated islands. The islands of Uist are currently connected via a number of causeways which span areas of inter-tidal sands at Creagorry (connecting South Uist and Benbecula), Gramsdale (connecting Benbecula, Grimsay and North Uist) and Cladach Baile Sear (connecting North Uist and Baile Sear). At low tide it is possible to cross between these islands on foot and therefore at certain points in the tidal cycle these separate islands represent instead a single landmass. It has been argued that the separation of the Uists occurred at some point around 2,200 BC (Parker Pearson, Sharples and Symonds, 2004a). However, given the evidence for sea level rise, estimated to be in the region of two metres over the last 2,500 years, it is clear that there would have been longer periods of physical connection between these islands during Iron Age occupation, if not semi-permanent land bridges linking them. The sea between these islands was therefore a permeable boundary and the need to consider these islands as potentially well-connected places is therefore apparent. In comparison the water that separates Barra from the Uists, known as the Sound of Barra, and that separating Harris from Uist,

the Sound of Harris, are both deep water channels, reaching depths of c. 30m, and it is estimated that these channels were formed more than 9,000 years ago, permanently separating Barra and Harris from the Uist landmass (Angus, 1997: 79). It is likely that the inter-tidal sands that divide a number of the smaller tidal islands such as Baile Sear, Vallay and Grimsay from North Uist, were not yet inundated by the sea during the Iron Age and therefore in a number of cases these would not have been the disjointed island landscapes that we see today. As discussed in Chapter 2, the concept of the island as a simple geographical boundary is overall simplistic. The sea can as much connect places as it separates them, depending upon boat technology, the nature of intervening waters, and also sociocultural proclivities towards marine-based practices and contact. There is as yet no firm evidence for the use of boats in the Outer Hebridean Iron Age. However, the evidence for simple log boats across Atlantic Europe abound, ranging in date from the Mesolithic through to the Iron Age and into historic periods (McGrail, 2001; Mowat, 1996). Twenty-seven log boat related finds have been recovered from across highland Scotland in close association with prehistoric crannog sites (Mowat, 1996). It therefore seems increasingly likely, given the simplicity of log boat design and the considerable suitability of log boats to the Outer Hebridean environment, that similar boat technology was utilised by at least some sections of the Iron Age community across these islands. The lack of direct evidence for boat technology should not preclude discussions of the social implications of boat travel within island societies where some form of maritime practice would undoubtedly have taken place (Farr, 2006: 90). Exploring how Iron Age people might have interacted with and engaged with the island landscape and the surrounding seascape is clearly important for understanding Iron Age societies in this area. This aspect of Iron Age dwelling within the Outer Hebrides has not yet been fully explored.

4.6.3 The Iron Age environment

Palaeoenvironmental research aimed at understanding changes in climate, vegetation and soil morphology of these islands has revealed much about the

nature of the Iron Age environment. The islands of the Outer Hebrides contain three principal environmental zones: rocky coasts defined by thin acidic soils and sparse heathland vegetation; coastal machair comprising sand-based soils supporting a wide variety of distinctive flora; and interior zones of comparatively inhospitable peat-based moorland. The machair is a unique type of ecological environment, formed from wind-blown sands and comprising a number of different landscape elements including beaches, dunes, machair grasslands and hill machair (Angus, 2001; Ritchie, 1979). Investigations into the development of machair reveal that these unique environments were formed over a period of approximately 8,000 years through processes of erosion and deposition, caused by a general excess of sand following deglaciation and strong oceanic winds (Ritchie, 1979). Machair is found almost exclusively along the west coast of the islands, and in some sheltered north coast regions. As an ecosystem, the machair is in a constant state of flux with erosion, sand deflation and accretion causing the steady movement of machair environments further eastward and landward over time. At Northton, Harris and the Udal, North Uist, Early Neolithic deposits are found above humic soils, indicating that machair had not yet retreated this far inland in these areas (Evans, 1971; Simpson, 1976; Barber, 2003). At both these sites the earliest sand-based soils are associated with dates in the mid second millennium BC. Late Bronze Age dwellings at Cladh Hallan, South Uist were built into sandy soils demonstrating the presence of machair here by this period (Parker Pearson and Sharples,1999). At Baile Sear, an island now defined entirely by machair soils, peat deposits can be seen eroding out of the beach beneath the remnants of earlier machair dunes indicating earlier, pre-machair soil horizons. However, the excavation of several later prehistoric sites on this beach indicates that machair had substantially developed in this area by the Iron Age (Barber, 2003; MacDonald and McHardy, 2008).

The environment of the Outer Hebrides is also distinguished by the almost complete lack of native arboreal vegetation. Until recently it was widely believed that the Outer Hebrides had never supported natural woodland. This

interpretation appeared to be confirmed by analysis of one of the earliest pollen core samples, taken from Little Loch Roag on the Isle of Lewis (Birks and Masden, 1979). The principal finding of this research was an almost complete absence of arboreal pollen species over all periods, which suggested that this area had never supported any significant woodland. However, this interpretation conflicted with the many historical accounts of sub-fossilised tree stumps found not only within inter-tidal zones but also at the base of peat cuttings (see for example Beveridge's account, 1911, Chapter 1). An earlier study of molluscs from Northton, Harris, associated with a multi-period occupation site, also suggested woodland cover prior to Neolithic occupation (Evans, 1971). An increasing number of environmental studies over the last 20 years have further supported this view and the emerging picture of the evolving island vegetation of an initially wooded landscape gradually replaced by heathland, moorland and blanket peat. The expanding corpus of pollen data suggest that arboreal species began to colonise the islands at the beginning of the Holocene. Prominent species included: *Pinus Sylvestris* (scots pine), *Betula* (birch), *Salix*, *Alnus* (alder), *Quercus* (oak) and *Corylus avellana* (hazel). From as early as c. 5950 BC, however, the pollen record begins to show a reduction in arboreal taxa, suggesting two main phases of woodland decline. A primary phase took place early in the Holocene, around 5950 BC, with a relatively pronounced and rapid effect, whilst the second major phase of decline, which occurred during the mid-Holocene between 3250 and 2050 BC, was more gradual and variable (Bohncke, 1988; Edwards and Brayshay, 1996; 2000; Edwards, Whittington and Hirons, 1995; Fossit, 1996). A number of sub-fossilised wood samples have now been radiocarbon dated across the islands and provide dates between 7,000 BC and 2,000 BC. These results are broadly consistent with the interpretation of prehistoric woodland environments drawn from the pollen data. In addition to the two principal phases of environmental change, the general trend indicates a steady reduction in woodland cover up until approximately 550 BC, by which time the Outer Hebrides appear to have been predominantly treeless.

The decline in arboreal species described above is largely synchronous with an increase in taxa associated with heath, moorland and peat environments, principally: *Gramineae* (heathland grasses), *Cyperaceae* (sedges), *Calluna Vulgaris* (heather) and *Saphgnum* (bog cotton). This suggests that woodland decline and the expansion of heath, moorland and peat environments were largely simultaneous and interdependent processes. Peat is formed when precipitation exceeds evaporation and water drainage, enabling organic materials to decompose in anaerobic conditions. The formation of peat is therefore affected by water drainage. The development of peat and associated environmental transformations appear to have occurred both as a result of natural changes toward wetter and windier climates as well as through the impact of human populations, woodland clearance, agricultural practices and deliberate management and maintenance of heath and moorland (Edwards, Whittington and Hirons, 1995). Peat deposits at Holm, Lewis indicate that peat was forming here from as early as c. 7,000 BC (Von Wyrnmar, 1974), and basal peat from Little Loch Roag has provided dates of 6376 BC - 5790 BC (Birks and Masden, 1979. See Appendix 1). However, the lack of peat deposits recorded beneath the Neolithic tombs of Cletraval and Unival (Scott, 1951), now surrounded and partially submerged by peat, indicates a later phase of peat development in some areas. Conversely, at the Neolithic site of Eilean Domhuill, there was evidence that peat was being used as fuel, which strongly indicates substantial formation by this period of time (Armit, 1988). Following the almost complete removal of woodland across the islands by c 550 BC, the expansion of heath, moorland and blanket peat appears to continue into the historic period (Angus, 2001; Edwards, *et al*, 2000; Fossit, 1996).

4.6.4 Iron Age settlement patterns

It has been argued that long-term settlement patterns across the Outer Hebrides shifted from the interior environments towards increasingly coastal landscape from the Late Bronze Age onwards (Armit and Finlayson, 1992; Armit, 1998b). The evidence for Neolithic and Early Bronze Age archaeology appears to focus on the central island zones. Sites of burial tombs and standing

stones are predominately across the island interior. Evidence for Neolithic settlements however, remains limited. There is growing evidence that islet sites were used as locations for Neolithic settlements as at the site of Eilean Domhnuill and Eileann an Tighe on North Uist (Armit, 1996; Scott, 1935; Beveridge, 1911; RCAHMS, 1928). In contrast there is limited evidence for Neolithic or Early Bronze Age occupation within coastal landscapes. However, it has been pointed out that any earlier inhabitation of coastal zones is likely to have been concealed beneath rising sea levels and/or long since eroded away (Barber, 2003). A recently identified Neolithic site on the tidal islet of Orosay off the west coast of South Uist, highlights the potential for earlier utilisation of this coastal margin during this period (MacLeod, pers comm; Sharples, pers comm.) It is not until the Late Bronze Age, however, when intensive occupation of the machair and these western coastal landscape emerges. The Late Bronze Age roundhouses at Cladh Hallen in South Uist, however, currently remain the only fully excavated Bronze Age settlements. In comparison, Iron Age settlement patterns indicate much wider use of the machair and coastal landscape. The common view is that this shift towards occupation of the machair reflects the increasing marginalisation of the environment and the increasing role of agriculture within Iron Age societies (Armit, 1992: 124-125). The excavation of the Neolithic tombs at Cletraval and Unival (Scott, 1935), both in the interior of North Uist, indicated that these sites were built upon till soils prior to the development of peat. Similarly, the stone circle complex at Calanais, Lewis, was excavated from within several metres of peat, indicating rapid peat growth within this area since this site went out of use by the Middle Bronze Age (Ashmore, 1995: 29-36). Increasing peat growth within the island's interior throughout later prehistory, would undoubtedly have rendered these particular landscapes less conducive to occupation and, perhaps more importantly, cultivation from Neolithic onwards. In terms of agricultural production, peat-based moorlands have a limited potential, particularly on an intensive scale. Lazy bed cultivation of the moorland has been a common crofting practice throughout recent history. However, the yield is limited and in the past cultivation has tended to operate on the basis of individual household

requirements. Intensive agricultural practices associated with the Iron Age would most likely have taken place within machair landscapes and associated black lands which would have provided the most suitable soils for arable cultivation, in particular barley that dominates the archaeological record.

There is a well established Iron Age data set in the Outer Hebrides and consequently this provides a good area in which to evaluate new methods and archaeological analysis (Armit, 2001: 24). A number of surveys of the archaeological landscapes of the Outer Hebrides have been carried out since the 19th century which have contributed to the record of Iron Age sites. The earliest was conducted by Captain Thomas (1868). The usefulness of Thomas's survey was that he recorded a number of archaeological sites that have since disappeared. While Thomas's field survey appears not have been particularly extensive or complete, the value lies in the fact that his publication provides in some cases the only descriptions of potential monumental Iron Age sites that have since disappeared. Another important survey of the late 19th century and early 20th century was carried out by Erskine Beveridge on the island of North Uist between 1897 and 1911 and published in his seminal book entitled *North Uist: its archaeology and topography*. During this period Beveridge lived on the tidal islet of Vallay located off the north coast of North Uist, and it is well known that the intensity of prehistoric field monuments identified by Beveridge diminishes with distance from the Vallay strand areas. Notwithstanding this inherent geographical bias in his work, Beveridge's publication represents one of the most exhaustive archaeological surveys of North Uist and has provided archaeologists with an extensive knowledge of Iron Age sites in the area. In the context of this research, the principal problem with Beveridge's work is that of mis-identification. Re-examination of a number of Beveridge's excavations, principally by Armit (1990; 1992), indicates that he failed to distinguish Later Iron Age re-occupation from primary occupation phases, and consequently a number of Middle Iron Age sites are mis-identified by Beveridge as being of Later Iron Age date. Armit's reinterpretation of Beveridge's reports has helped to make sense of this existing record and this now provides an important resource.

However, Beveridge's accounts are of particular value in the context of an experiential landscape approach, due to the fact that he visited all sites mentioned in this text and recorded extensively in the field. Therefore he included a number of photographs and descriptions of sites and, most pertinently, often provided a detailed description of their landscape context.

Following Beveridge's work, the next significant archaeological survey was the RCAHMS (1928) survey, carried out between 1914 and 1925, and conducted as part of the Royal Commission's national project to classify historical and ancient monuments across Scotland. This survey was not always conducted in great depth and the results of my research were able to clarify that many sites, particularly those located on islets and requiring the use of a boat, were not visited in person or recorded adequately. Nevertheless, the RCAHMS survey still provides the most geographically extensive knowledge of archaeological sites across the Outer Hebrides. Successive attempts to increase the number of known sites across the islands did not take place until the 1980s through the research efforts of Edinburgh University and its Callanish project based on Lewis, and SEARCH, a Sheffield and Cardiff university collaboration project focusing mainly on the southern islands of Barra and South Uist. The former included survey and excavation of a number of Iron Age sites on the Bhaltos peninsula (Armit and Harding 1990), including excavation of the Atlantic roundhouse sites of Dun Bharabhat (Harding and Dixon 2000) and Loch na Bheirigh (Harding and Gilmour 2000) and the Cnip wheelhouse (Armit 2006), and investigation of archaeological sites around Vallay, including re-investigation of Beveridge's excavated Atlantic roundhouse site of Eilean Maleit (Armit 1998) and the multi-period islet site of Eilean Olabhat (Armit, in press). The SEARCH project included survey and investigation in Barra, including the excavation of a wheelhouse at Alt Christal and the recording of a number of other potential Iron Age sites across the southern islands, the excavation of the broch Dun Mhullain in South Uist (Parker Pearson and Sharples 1999), the multi-period site at Cladh Hallan (Parker Pearson, Sharples, and Symonds 2004b) and the investigation of a large number of inland loch systems across

South Uist for the presence of islet dwellings (Raven, 2005). Through these research programmes and associated projects not only have a number of important Middle Iron Age sites been excavated in the Outer Hebrides, dramatically increasing knowledge of Iron Age settlement and society, but they have also massively increased the number of known Iron Age sites across the islands. Another notable and ongoing project has been conducted as part of the Scottish Coastal Archaeology and the Problem of Erosion (SCAPE) Trust, which has recorded a large number of archaeological sites along the Outer Hebridean coast threatened and exposed by coastal erosion (Branigan and Grattan, 1998; Johnson, *et* al, 2005; 2006; Moore and Wilson, 2005). The SCAPE Trust has subsequently commissioned the excavation of two wheelhouse sites exposed on the west coast of Baile Sear, a tidal islet connected at low tide to North Uist (MacDonald and McHardy 2008; McHardy and Rennell, 2009). The relevance of these sources within my research is discussed in Chapter 5.

4.7 Research Questions

As a consequence of the apparent ubiquity and visual dominance of monumental architecture, Iron Age research across Atlantic Scotland has tended to focus upon the study of these structures. Discussions concerning architectural terminology and typology have dominated archaeological debates (Armit, 1997; Parker Pearson and Sharples, 1997). What precise architectural features or characteristics distinguish a broch from a dun, for example, is a familiar topic of discussion. Studies of architectural space have aimed to explore the meaning and underlying structure of Iron Age roundhouse dwelling, yet these studies approach sites in isolation, detached from their landscape context. More than 20 years ago, Barrett (1981: 211), in criticism of extant approaches, argued that studies of the Iron Age in Atlantic Scotland had failed to consider the ‘totality’ and ‘context’ of settlement and to address adequately the relationship between material culture, people and social process. To a certain extent these comments are still pertinent. It is proposed here that by shifting the focus from the monumental roundhouse itself and discussions of

architectural typology to consideration of place and landscape we can provide an additional understanding of Iron Age sites. Furthermore, extensive survey of the archaeological landscape provides comprehensive information on Iron Age site locations, while available environmental data and the advantage of a landscape minimally affected by modern developments and other intrusive features provide the basis for reconstructing the Iron Age landscape. More importantly, many of the existing arguments abut the relationship between Iron Age sites draw upon elements of site location and associations with certain areas of the Iron Age landscape in the absence of any thorough consideration of place and landscape. In addition there is a notable absence in current archaeological discussion concerning the island context of Iron Age occupation across the Outer Hebrides. In particular this research aims to address the following questions:

1. There still remains too great an emphasis on the classification of domestic architecture of this period based on structural elements such as wall thickness, evidence for secondary floors, concentric walling, etc. Barrett (1981) suggests that by looking beyond these 'arbitrary traits' to new sources of data, we may 'recover principles which in fact cross-cut previously established classificatory schemes'. Do patterns in the types of place correlate with existing classification systems or do they, as Barrett postulates, cross-cut these established schemes? Furthermore, how does of place and landscape contribute to discussions about Iron Age social structure?

2. Although a degree of overlap between Atlantic roundhouses and wheelhouses is evident, towards the end of the Middle Iron Age, wheelhouses appear to have replaced Atlantic roundhouses as the dominant form of Iron Age roundhouse. This transition is also associated with a shift from external to internal architectural monumentality (Armit, 1988; 1989). What changes occur in the types of place associated with Atlantic roundhouses and the later wheelhouses, and what can this inform us about social transformations that accompanied these changes?

3. The Iron Age in the Outer Hebrides is associated with agricultural intensification and the development of specialised animal husbandry practices (Mulville, 1999; Mulville, *et al,* 2004). Sheep, pig and cattle dominate faunal remains, however wild deer and sea resources evidently also contributed to local diet (Bond, 2002; Dockrill, 2002). Iron Age people were thus involved in a wide range of subsistence practices that can be broadly associated with varying landscape zones – coast, upland and machair. Parker Pearson and Sharples (1999) suggest that wheelhouses may have been associated specifically with arable cultivation, while brochs, located on more 'marginal land' were focused toward pastoralism. What does a study of place and landscape suggest about the structure of Iron Age society in this respect?

4. Little attention has previously been give to exploring how Iron Age communities engaged with and experienced the island landscapes they inhabited. It is presumed that there were degrees of inter-island contact during this period, yet the precise nature of the relationship between Iron Age communities, the sea, coast and marine-based practices has not been adequately addressed. Furthermore, current research has led archaeologists to view the individual islands of the Outer Hebrides as distinct Iron Age communities where monumental domestic architecture played different social roles. What can an island approach contribute to our understanding of the Outer Hebridean Iron Age? By exploring place and landscape, can it be maintained that the individual island is an appropriate unit for studying the Outer Hebridean Iron Age? What does the study of place and landscape suggest about the appropriateness of the individual island unit for the Outer Hebridean Iron Age?

Chapter 5: Establishing a Methodology

5.1 Introduction

One aim of this research was to combine subject-centred field survey techniques with the use of GIS. In this chapter I outline the specific methods employed and the way in which the two approaches were integrated. Subject-centered field survey practices involved engaging with the Outer Hebridean landscape and investigating and recording experiential qualities of Iron Age places via a number of exploratory field practices. GIS was used as a means of mapping landscapes and modeling aspects of sensory experience associated with these Iron Age locales. GIS was also used as a database for collating and analysing data collected in the field and as a means of visualising and communicating various experiences of place. The overall methodology was reflexive, by which I mean that methods, analysis and interpretations were established out of the specific dialogue between the GIS and subject-centered field survey practices. Methods were developed during the course of the research with the results of an initial subject-centered field work project inspiring research questions and methods for GIS analysis, the results of which in turn prompted methods for further field-based research and so on (see Figure 5.1). The analytical and interpretive process similarly involved establishing a dialogue between the two strands of data. I have chosen specifically to integrate the results of both the GIS and subject-centered field survey practices *throughout* this thesis (Chapters 6, 7 and 8). Consequently one will not find result chapters dedicated to either the GIS or subject-centred field survey elements of this research. This deliberate method of presentation illustrates the reflexive nature of the methodology and maintains the objective to explore the potential for establishing a dialogue between the two approaches. In places I have used composite figures that combine maps, GIS models, photographs and descriptive comments as an integrated method of illustrating and

communicating the various results of this research. The reader may want to refer to these figures throughout sections of the text and therefore I have chosen to include the figures at the end of the thesis, in a separate volume. The structure of this thesis is therefore an essential element of the overall methodology and contributes to a wider debate about how archaeology is written and presented. While GIS and subject-centred field survey have *individually* contributed to archaeological projects in the past (e.g. Cummings and Whittle, 2004; Bender, Hamilton and Tilley, 2007), the specifically integrated manner in which this research was conducted, and is subsequently presented in this thesis, is an approach that has not yet been fully explored. The methodology was therefore purposefully experimental. The success of this combined method and a critical analysis of the presentation and structure of this thesis will be considered in Chapter 9. The specific methods were constructed to address research questions concerning the everyday Iron Age island landscapes of the Outer Hebrides isolated in Chapter 4 and interpretations of place and landscape were continually integrated with the evidence from existing resources of archaeological and environmental data. It has been argued in Chapter 3 that a lack of explanation with regard to GIS and subject-centred field survey methods has inhibited the accessibility of these approaches to the wider archaeological community. The purpose of this chapter is therefore to outline *explicitly* the specific survey, mapping and GIS modeling techniques that were undertaken and the reasons and objectives behind the methods that were developed.

5.2 Multi-scalar methods

5.2.1 Introduction

The methodology addressed a number of different scales, both in terms of engagement with place and landscape and in the spatial units of study. As we have seen in Chapter 3, one of the issues raised by post-processualism, and an idea that has been central to concepts of landscape and place, is the shift in

perspective from long-term and general narratives of the past, towards a re-focus on the more immediate context of the lived-experience, the short-term and the particular (see for example, Barrett, 1994: 3). More specifically, experiential landscape archaeology is concerned with addressing human scales of engagement. In comparison the technology of GIS is well suited to the analysis of patterns and thus for making general statements about spatially related phenomena - be they experience related or otherwise. Additionally GIS enables users to visually zoom in and out of a map and to re-sample and model data at various spatial scales (Lock and Molyneaux, 2006). In contrast subject-centered field survey is clearly restricted to a human-scaled perspective. Methods of recording place and landscape experience, however, allow the establishment of a comparative database where trends can be identified at wider scales. Therefore, by combining GIS and field survey techniques the methods employed in this research dealt with various scales of engagement - from the actual being in place and landscape, to forms of representing, modeling and finally analysing the experiential qualities in order to say something about the social parametres of Iron Age space. This research also attempted to define different scales of everyday engagement with the Iron Age landscape. Drawing upon existing studies of everyday landscape spaces (Hamilton and Whitehouse, 2006a; 2006b), traditional site-catchment analysis (Chisholm, 1962; Higgs and Vita-Finzi, 1972; Flannery, 1976) and specific experiences of the Outer Hebridean landscape, the concept of local, regional and distant landscape scales was established during the first phase of field work. These landscape scales are explained and defined in section 5.3. The concept of local, regional and distant landscapes were explored in further detail throughout the research and following final analysis were refined and revised alongside interpretations of Iron Age places.

Scale is also implicated in the selection of a suitable area of study and in the spatial units of analysis. The appropriateness of the island unit as an unproblematic and easily defined area for archaeological study has been disputed in Chapter 2. The area of study in this research was the archipelago of

islands known as the Outer Hebrides. As has been explained in Chapter 4, the Outer Hebrides represents a fairly discrete geographical and geological group of islands. Archaeologically, during Iron Age occupation the apparent sequence of monumental domestic architecture and similarities in material culture indicate a degree of shared cultural identity across these islands. Furthermore, rises in sea level and erosion of the coastline suggest that a number of the present day islands that make up this archipelago, most notably the main islands of Uist, would have been either represented as single land masses or at least physically connected for large periods of the tidal cycle during the Iron Age. In addition the potential for the sea to act as an important node within networks of inter-island contact as opposed to a cultural and experiential barrier, means that many of the contemporary island boundaries may have had little meaning to Iron Age communities who occupied these landscapes. The Outer Hebridean archipelago, therefore, represents a meaningful region, identified by geographical, geological as well as archaeological data, in which to *begin* a study of the Iron Age and subsequently to explore questions which arise concerning scales of island experience. Of course this archipelago did not represent an isolated cultural unit during this period and the significance of the Outer Hebridean Iron Age within a wider Atlantic Scottish and British Iron Age context has been discussed in Chapter 4. The methodology included two scales of investigation; a regional island-wide scale and a local landscape scale. These two scales allowed me to explore various degrees of engagement and to question the relevance of various island units with regard to the Outer Hebridean Iron Age.

5.2.2 Regional Island-Wide Scale

The regional island scale of research was designed to explore the full suite of landscapes and Iron Age places across the Outer Hebridean island region and included the complete sample of monumental Iron Age roundhouse sites within this study area. The purpose of the research conducted at the regional island scale was to to characterise the range of Iron Age site locations across the Outer Hebridean landscape in terms of experiential qualities of place, with

specific reference to a number of questions about these locations drawn from existing archaeological literature. By considering the complete number of Iron Age sites and associated landscapes the aim was to explore the archipelago and the individual islands that make up this study area as meaningful units of analysis. In addition, the aim was to develop from this regional research scale a strategy for investigating a sample of sites in greater detail at the local island scale. The process of investigation comprised three principal stages of research:

1. **Desk-based research**: This was carried out in order to establish a database of sites and to collate existing archaeological and environmental material and information (described in Section 5.3).

2. **Extensive field survey**: Here sites within the database were examined in the field in order to qualify information gathered through the desk based research. This work also assessed the accuracy of existing co-ordinate data and where necessary provide new GPS readings, and gathered new information on the landscape location and characteristics of place from the perspective of human experience (described in Section 5.4).

3. **GIS-based research**: The final stage of research at this scale involved map based research and the use of GIS to further explore these site locations and the characteristics of these places (described in Section 5.5).

5.2.3 Local Landscape Scale

The Local Landscape scale of investigation focused on 11 smaller study areas (outlined in section 5.6) that were established through the regional island scale as representative of the range of places and landscape locations that Iron Age sites occupied. This scale of investigation was concerned more specifically with exploring the local landscape surrounding Iron Age sites and researching potential practices and the everyday activities associated with these locales.

This stage of research focused on a specific spatial unit of analysis, described as the local landscape and selected during the regional island scale of research. The local island scale of investigation included two principal stages of research:

1. **Intensive field survey**: This included experimenting and developing various methods for exploring and recording the experiential qualities of Iron Age site locations and the wider landscape surrounding these locations. Specifically these experiments aimed to record multi-sensuous dimensions of these landscapes and experiential qualities relating to movement through these locales. The specific questions and experiments were directed by an understanding of everyday Iron Age practices (described in Section 5.7).

2. **GIS-based research**: The GIS-based research similarly explored more dynamic landscape experiences by modeling continuous visual experience. In addition the GIS was used to investigate how the potential monumentality of Iron Age sites might have affected experience of these places (described in section 5.8).

5.3 Regional Scale: desk-based research

5.3.1 Introduction

The first stage in this research was to use existing archaeological and environmental data to begin reconstructing the Iron Age landscape. I compiled a database including information on known Iron Age sites across the Outer Hebrides, available archaeological and environmental data as well as existing information on site location, landscape context and place. It should be emphasised, that it was never the aim of this research to increase the current record of Iron Age sites either through landscape survey or through reanalysis of existing sources. Nor was the aim to directly challenge existing classification systems for Iron Age sites. Instead the purpose was to assess, in detail and with

specific reference to human experience, the Iron Age landscape via the location of all *known* monumental roundhouse sites and re-constructions of the Iron Age environment. The following section outlines how the sample of Iron Age sites were collated for this research and the main sources of archaeological, environmental and location information that were incorporated into the working database.

5.3.2 Compiling the database

The definition and terminology associated with Middle Iron Age monumental roundhouse sites remains under considerable debate, as discussed in Chapter 4, and these debates have important implications regarding the identification of sites and the compilation of a working database. In this research I adopted Armit's method of classifying Iron Age sites. This method identifies two main types of domestic Iron Age architecture – Atlantic roundhouses (a term that encompasses the alternative site classifications of broch and dun) and wheelhouses (encompassing the alternative terms earth roundhouse and aisled roundhouse). The use of these terms in this research was not intended to imply the interpretive or meaningful value of these categories for Iron Age communities. Instead this classification system is implemented as a research tool. The usefulness of Armit's method for this research lies primarily in its inclusive, as opposed to exclusive, processes of site classification. Whereas alternative classification systems have focused on the architectural *differences* between proposed site types, Armit's method begins by recognising architectural similarities at a broad level. Consequently, sites otherwise termed brochs and duns are brought together under the term Atlantic roundhouse on the basis of a number of shared architectural features and owing to the observation that these architectural types can only be satisfactorily distinguished through excavation as opposed to field observations (Armit, 1988; 1990a). Where excavation or detailed examination of archaeological remains permit, the classification of Atlantic roundhouses can be further divided into sub-classes of monument: simple roundhouses, complex roundhouses and broch towers. Armit distinguishes wheelhouses from Atlantic roundhouses by the

presence of radial stone piers in their construction, surrounding a central area containing a hearth. Wheelhouses are generally semi-subterranean structures built into machair sands or earlier structures and this too is a distinguishing feature/characteristic in their identification. Most importantly for this study, Atlantic roundhouses and wheelhouses are regarded as both belonging to a wider class of dry-stone built, roofed, circular structures or monumental domestic Iron Age sites which are identified by Armit on the basis of the following criteria:

1. Evidence for substantial, dry-stone built, circular (or roughly circular) structures (thereby excluding linear structures such as souterrains).

2. Evidence that structures were potentially 'habitational' and potentially 'roofable' (thereby excluding non-domestically functioning sites such as walled or fortified islets or promontory forts).

This broad class of field monument, as defined by Armit, is the focus of this thesis. For the purposes of this research, where the central concern is place and landscape, this method provides the least restrictive system of site classification available and therefore one least likely to revert the focus back to narrow architectural debate. Armit's central concern is an understanding of the architectural form of these sites and this concern is reflected in his classification system. In contrast, the interest in my research is upon place and landscape locale and consequently the presence of architectural remains was not necessarily a pre-requisite for this study. Consequently my process of site characterisation was broadened to include locales/places where insufficient physical remains, or detailed records of physical remains, precluded inclusion within Armit's database, but where alternative information suggested the possible location of monumental Iron Age roundhouses. This included sites mentioned in antiquarian or historical documents as duns or indicated through place-name evidence. Places with evidence for datable Iron Age material, associated with semi-circular dry-stone remains were included in the database as potential monumental Iron Age roundhouse sites. The method of identifying

sites for inclusion in the database, which was developed from Armit's work, is based upon various data sources (material, architectural and historical documents) and as a result the database incorporates Iron Age site locations of varying certainty. This is summarised in Table 2. The most reliable locations identified for monumental, domestic Iron Age sites were where surviving field monuments had been subject to modern excavation or investigation, revealing architectural remains fitting Armit's definition of either Atlantic roundhouse or wheelhouse and where either securely associated Middle Iron Age material or absolute dating techniques could be used to assign a Middle Iron Age date of occupation. These sites form the model site types for known monumental domestic Iron Age sites and have been discussed in detail in Chapter 4. Where securely associated material or absolute dating were absent, but architectural remains fitted Armit's definition, these were defined as 'likely' locations of monumental Iron Age roundhouse sites. A number of sites investigated in antiquity fall into this category. Beveridge for example, surveyed and excavated a large number of prehistoric sites on the island of North Uist, including a large number of potential Iron Age sites. However, in many cases it is clear that secondary phases of occupation were confused and material mis-assigned to primary levels (Armit, 1992a) and therefore in these cases Middle Iron Age occupation cannot be unequivocally attributed. Field monuments described in antiquity fitting some but perhaps not all of the architectural criteria and where there were little or no extant remains for qualification, were defined as 'possible' locations of monumental Iron Age roundhouses sites. The final category of 'potential' sites are sourced primarily from place name evidence, historical maps and local knowledge of Iron Age field monuments. Most frequently these comprised descriptions or accounts of a place as an ancient dun, often associated with earthworks and evidence for stone walling.

Method of Identification	Confidence of Identification	Potential mis-identification
Architectural remains fitting Armit's definition and scientific dates or associated Iron Age material	Secure location of monumental, Iron Age roundhouse	
Architectural remains fitting Armit's definition, but no securely associated Iron Age material or scientific dates	Likely location of monumental, Iron Age roundhouse	Medieval site
Architectural remains attested in antiquity, possibly fitting Armit's definition. Insufficient remains for this to be now confirmed	Possible location of monumental, Iron Age roundhouse	Early historic, medieval duns or crannog sites
Tradition or place name evidence suggests presence of monumental, roundhouse of prehistoric date	Potential location of monumental, Iron Age roundhouse	Natural islet, early historic, medieval duns or crannog sites

Table 2: Process of Site Identification

5.3.3 Resulting database

The result of the desk based assessment was an Access database of 201 locations for Middle Iron Age, monumental roundhouse sites. The majority of these sites (n=113) were included on the basis of descriptions of identifiable/recognisable architectural features consistent with the interpretation of either Atlantic roundhouse sites or wheelhouse sites. Thirty three of these sites were further attested by the presence of Iron Age material, principally decorated Hebridean Ware indicative of Middle Iron Age occupation. Radiocarbon dates relating to the Middle Iron Age period were available for eight of these sites as a result of recent excavations (these sites are discussed in detail in Chapter 4. Radiocarbon dates are detailed in Appendix 1). The remaining 'places' included in the database were *possible* locations of monumental Iron Age sites either where architectural remains, consistent with monumental domestic Iron Age architecture, were described in antiquity or where place name evidence indicated the location of this type of site. All of the 'possible' locations are recorded by the RCAHMS as possible Iron Age duns (Atlantic roundhouses). Because recent excavation has indicated the profound

difficulty in distinguishing brochs and duns from field remains alone (Armit and Harding, 1990), plus the evidence that wheelhouse structures were occasionally built within earlier roundhouse structures (see for example: Armit, 1998a), these sites are best described in more generic terms, as potential sites of Iron Age monumental roundhouses. The majority of these 'possible' locations were recorded on islets within freshwater lochs. Islets are known locations for both Neolithic and later medieval settlements and this provides a possible source of misidentification. It is also likely that the term 'dun', meaning fort, has occasionally been applied to natural islets without archaeological remains but with physical features reminiscent of a dilapidated fortification or roundhouse. The possibility that the number of Iron Age islet sites had been overestimated needed to be considered. Additionally, not all islets within inland lochs had been subject to adequate archaeological survey. Through this survey a number of lochs were noted to contain islets with remains of possible roundhouse type structures for which no previous record was found to exist, and therefore it is likely that there remain other Iron Age islet sites yet to be identified.

5.4 Regional Scale: Extensive Field Survey

5.4.1 Aims

An extensive field survey was conducted over seven weeks during July and August 2005 to locate and visit the 201 site locations identified during the desk based assessment. The principal aims of the survey were:

1. To qualify the basic information within the database concerning site remains and the accuracy of available co-ordinate data for later GIS-based research and descriptions of landscape location.

2. To gather new/original information on landscape location and the characteristics of these places from a human experiential perspective.

5.4.2 Locating sites

Sites were located in the field with the aid of a Global Positioning System (Garmin Geko 201), Ordnance Survey Explorer maps (scale at 1:25000) and using available site co-ordinates and descriptions. Many sites were located considerable distances from roads or tracks, in remote and often inhospitable environments. The distances travelled to reach site locations often exceeded five kilometres, made more arduous by the roughness of topography, terrain and weather conditions in the Outer Hebrides. A large number of sites were located on islets in sea and freshwater lochs and in these cases an inflatable dinghy was carried to these places and then used to access these sites. Many of the sites had not been recorded since the RCAHMS survey (1928). In addition the field survey confirmed that many of the islet sites noted in the RCAHMS survey as well as other sources had clearly not been recorded in situ, but had instead been observed from the nearest shore line. As a consequence of these vague and often out of date records the physical remains of sites often differed from the existing descriptions and this made it difficult to actually identify site locations in some cases. Where pertinent the description of the physical archaeological remains were updated and the presence of specific roundhouse features qualified. National grid-coordinates for site locations were also updated using the GPS with an accuracy of approximately 10m. GPS readings were consistently taken from the centre of each site. The acquisition of reliable site coordinate data was a unique contribution to this subject area and was critical for the effective mapping and GIS based research which followed.

5.4.3 Recording sensory experiences of place and landscape

Having established the location of an Iron Age roundhouse site, recorded the grid co-ordinates and qualified existing site descriptions, the second task was to describe and record the landscape location. A principal objective of this fieldwork project was to *explicitly* and *comprehensively* document experiential components of Iron Age places lacking in current archaeological accounts. Approximately an hour was spent at each site location interpreting the Iron Age landscape and recording relevant experiences and characteristics using an

established *pro forma*. The *pro forma* was created to standardise elements of the recording process and to enable inter-site comparison of the field data (Figure 5.2). An instinctive description of place was prompted as well as responses to three specific research questions concerning landscape setting and sensory experiences of place. I will outline each section of the *pro forma* below (Section 5.4.4).

An initial question concerned the scale of landscape visibility. Similar visual characteristics were recorded during the Tavoliere-Gargano Prehistory Project as a method of defining landscape locations (Hamilton and Whitehouse, 2006b). In a similar vein and with regard to the Atlantic Scottish Iron Age, Fojut noted some time ago a tendency among brochs on Shetland to be located with good views of the immediate landscape, but with limited views of more regional or distant areas. Indeed some sites appeared to '*have been built in places which are particularly devoid of vantage-ground'* (Fojut 1982: 41). This observation prompted me to explore similar questions concerning the distances of landscape perception and to evaluate Fojut's claims with regard to similar Iron Age sites across the Outer Hebrides.

Landscape Spaces	Description	Social Space	Approximate measured distance
Local Landscape Space	At this scale people can be recognised . Sheep can be distinguished from natural rocky outcrops.	Roundhouse and immediate surroundings Intimate landscape knowledge Local community Identity: local status, age, gender Daily involvement	0-1500 m
Regional Landscape Space	At this scale houses, field systems and general landscape features can be recognised. People are blurry and individuals cannot be identified.	Familiarity with landscape Regional community Identity: family status	1500-4500 m
Distant Landscape Space	At this scale the landscape is hazy. Detailed landscape features cannot be identified. Sheep are difficult to distinguish from natural rocky outcrops.	Increasingly unfamiliar landscapes Identity: Clan or perhaps island based	4500m +

Table 3: Defining Social Scales

It was first necessary to define the scales of landscape that would form the basis to this investigation. Three scales of landscape engagement were devised; local, regional and distant. These scales were used to reflect varying scales of engagement that would be relevant to the way in which Iron Age communities would have interacted with their surroundings (Table 3). These scales were also rooted specifically in experiences of the Outer Hebridean landscape. The local area was regarded as relating immediately to the roundhouse location, such that the Iron Age site and its locality were frequently regarded as synonymous with the concept of 'place' or 'locale'. The local landscape also referred to areas that could be perceived as immediately accessible from these Iron Age roundhouses. In the field I used the clarity of people and animals (namely sheep and cattle which would have similarly occupied these landscapes during the Iron Age) as a method of defining these distances more explicitly. Local was described as distances across which people and their animals could be recognised, where sheep or cattle could be distinguished from rocky outcrops. In their discussion on dwelling within Neolithic ditched villages in Italy, Hamilton and Whitehouse refer to the immediate area around domestic sites as the 'home territory' (2006a:169-171). They describe this as an area where prehistoric communities would have spent the majority of their time, where most individuals would have grown up, forged identities and established social practices and define this as a 1km radius surrounding site locations. The authors note that, defined in this way, their concept of home territory is broadly comparable with the region identified by traditional site catchment analysis for intensive exploitation within farming communities (*ibid;* Chisholm, 1962; Higgs and Vita-Finzi, 1972*)*. The concept of a local landscape used in my research referenced these ideas. The regional landscape was envisaged as an area beyond this immediate locality but within relatively easy access from the site. Communities may well have interacted with the regional landscape on a regular basis. However, while Iron Age people would have had an intimate knowledge of their local landscape, they would have been *familiar* with the regional landscape. Traditional site catchment analysis again offers a comparable example described as a farming

communities' exploitation territory and defined by a 5km radius or 1 hour's walk from site location (Higgs and Vita-Finzi, 1972). Although the theoretical approach taken in this research differs considerably from a site catchment perspective, the ethnographic work that underwrites these approaches is useful for exploring varying scales of landscape engagement. In terms of field based experiences, the regional landscape was defined as areas where features such as field systems and houses could be recognised but across which the identification of people, individual sheep or cattle would be strained. The distant scale was used to denote areas of the landscape beyond these local and regional boundaries. These would be landscapes that while perhaps visible from the roundhouse, might be difficult to locate or access. These would include areas beyond reasonable daily journeys and would include increasingly unfamiliar places. In the context of the Outer Hebridean Iron Age, the distant landscape feasibly included unknown or unfamiliar islands. Defined in the field and applied throughout the extensive field survey, these three terms applied not to measured distances *per se* but to a sense of distance and variable degrees of possible sensory understanding and communication (Higuchi, 1983). In order to explore these landscape scales further, particularly through the application of GIS, it was necessary to translate these perceived scales to geometric distances. This is discussed in section 5.4.

A second question addressed how visibility was structured according to the perception of different environmental landscapes. Firstly, the sea and coast are vital elements of the Outer Hebridean islandscape. It has also been widely acknowledged that Atlantic roundhouse sites are located with particular proximity to the sea. On North Uist, Armit has demonstrated the statistical significance of this patterning by comparing the location of ARHs with random locations – 93% of ARHs were found to be located within 1km of the sea, in comparison with only 56% of the random sample (Armit 1990c). Similarly, on Shetland, Fojut has demonstrated that brochs are three times more likely to be located on the coast in comparison with random locations (Fojut 1982). The excavation of a number of sites suggest that the sea and coast provided a

number of vital resources for Iron Age communities and, as discussed in Chapter 4 also conceivably served as a resource for travel and communication. Fojut also highlights the important difference between proximity and accessibility in this context, suggesting that most sites were located on coastal cliffs as opposed to bays, providing less immediate access to the sea. Whilst proximity need not imply accessibility neither does it specify *how* and indeed *if* the sea was perceived from these sites. Another question addressed in the *pro forma*, therefore, was whether the sea was visible from these sites, and if so to what extent it dominated the landscape setting. Discussion with local fisherman and my own experience of these islands gained through previous research stressed the importance of being able to see the coast and out to sea in order to judge tidal and weather information. Similar forms of practical 'knowledge' would presumably have also been of importance to Iron Age people dwelling in these landscapes and involved in maritime activities. Consequently experience of the sea not only informs about the way in which Iron Age people might have perceived the island and coastal landscape, but also indicates what types of practical relationships these communities might have had with the sea.

The landscapes of the island's interior consists of several contrasting elements. The west coast is typified by the relatively fertile machair systems, the island interior by the comparatively inhospitable moorland and mountainous regions, while the east coast is typically rocky. These different elements were presumed to have distinct environmental and perceptual qualities as well as affording different possibilities for subsistence based practices. As has been described in Chapter 4, during Iron Age occupation of these landscapes machair environments would have represented highly prized land for agriculture while moorland and upland environments were likely to have been associated with pastoral practices. Cunliffe has suggested that brochs were located 'so that their resources potential' would have included different landscape zones relating to different subsistence practices (Cunliffe 1978). Drawing upon similar environmental variables, Parker Pearson, Sharples and Symonds (2004b: 39), note that brochs on South Uist are frequently located in rocky landscapes

between the cultivatable machair soils and the moorland, which they describe as 'liminal in every sense of the word'. As visibility of the sea has the potential to inform about coastal or maritime activities, visual relationships with varying environmental landscapes can also be used to infer likely Iron Age practices with reference to archaeological data.

5.4.4 The pro forma

The pro forma (Figure 5.2) incorporated six key elements described in detail below: a basic record of landscape location, an environmental assessment, a numerically represented assessment of the extent of landscape visibility and the relative visibility of different environments, a description of place and a site-centred landscape sketch. The date, time and weather conditions of each site visit were also recorded as these factors had obvious influences upon the experience of landscape and therefore needed to be considered alongside interpretations of the field data.

Landscape formation

This section of the *pro forma* provided information on the immediate spatial context of place that would be difficult to gauge from a map. A description of the local topography, immediate topographic land-form and soil types were required. Elevation data taken with the GPS was also recorded here.

Potential environmental impact

This section prompted an informed assessment of the relative impact of environmental factors upon the characteristics and experience of place. Assessments were made using data from the desk-based analysis and based upon an understanding of the principal factors and processes involved in environmental change since Iron Age occupation of these landscapes. Four principle environmental factors were considered: machair development and transformation, coastal erosion, peat growth and changes in water level and impact. These environmental factors were described as negligible, relevant or significant. At some sites certain environmental processes were potentially

irrelevant to the overall characteristics and experiences of place, such as coastal erosion at sites located some distance from the sea and with no visibility of the coast. At other sites there is the potential for environmental changes to have a huge effect upon the location and consequently the characteristics and experience of place. These assessments of environmental change contributed to the process by which field observations could be interpreted in terms of Iron Age experiences.

Percentage of general view

This section addressed the research question discussed above concerning scales of landscape experience and provided an additional means of characterising and recording Iron Age places. The recording method involved noting the contribution of local, regional and distant views to the overall vista as a percentage of the overall view for each cardinal direction. This numerical method of recording visual experience was implemented in the *pro forma* so that experiences could be compared directly between sites. Importantly the numerical figures and distance based landscape classes were not an attempt to quantify the prospective view but referred to a sense of distance and scale reflecting an impression of landscape perception.

Percentage of varying environments

Here visibility of the main types of landscape were recorded for each cardinal direction, again reflected as percentages of the complete landscape view. The purpose was primarily to address questions concerning perception of the sea and the different environmental zones relating to broader questions of social and economic interaction with the landscape outlined above.

Landscape sketch

The landscape sketch recorded perception of the landscape from a site centred perspective. This included illustrating restricted views and notable features such as distinctive mountains or the location of other archaeological sites. Where instructive, a sketch indicating the relative position of islet sites to the loch or

coastal landscape was also recorded. Drawing the landscape in sketch was part of a process of understanding and familiarising myself with the location. The resulting sketches also served as a visual memory aid in the subsequent analysis.

Description/Comments

The comments box was intended for recording general impressions of place, such as whether a site felt enclosed or open, personal comments and experiences. It also allowed information contained in the percentage of visibility tables and the landscape sketch to be further described. In addition visibility of other relevant archaeological sites were recorded here.

The idea behind this overall method of recording landscape location and experience was to move beyond noting the mere presence of absence of visible features toward a more comprehensive account of place reflecting how a person situated in the landscape might perceive and experience their surroundings on an *everyday* basis. By using a *pro forma* to standardise the method recording, observations could be compared between sites. In addition, descriptions and field sketches allowed a more immediate and nuanced interpretation of experience to be expressed. From each site the landscape was also photographed and where pertinent a site photograph was taken. Landscape photos were then stitched together using the programme Panorama Maker to create continuous panoramic images of the landscape surrounding each sites. These photographs served as a visual record of landscape visibility as described in the *pro forma,* as a memory aid for subsequent analysis and as a means of presenting and illustrating field observations. It is important to note here that experience is multi-sensuous and although during the extensive field survey there was a notable bias toward recording the visual experiences of place, by using the word perception it is implicit that other senses contribute to this experience. Furthermore, other sensual elements of perception, principally sound, were addressed during the local research scale and are discussed in

section 5.5. The numerical and text based results of the extensive field survey were input into the existing relational database.

5.5 Regional Scale: GIS and map-based research

5.5.1 Aims

At the Regional Scale the GIS based research firstly involved establishing geographical models of the Outer Hebridean landscape and a geographically referenced database of Iron Age site locations. This GIS database was subsequently used to model viewsheds for all the site locations within the regional study as a means of representing and analysing the visual structure of these landscape locales. All the GIS modelling and analysis in this research (at both the regional and local scale) were conducted using GRASS (version 6.2), an open-source UNIX based GIS software programme. The reasons for using GRASS for the analysis was that this software enables greater user control in generating and manipulating geographic models, in particular viewshed models, and is therefore most suitable for more exploratory GIS research. Furthermore, the command-line interface enables users to create shell-script programmes for automating specific commands, while the open-source nature of this software enabled me to use source code developed by other GIS users, such as r.cva discussed in section 5.7. Maps and database information created within GRASS were subsequently exported to ArcMap (version 9.2), a commercial GIS software programme, for presentation purposes. While GRASS is well suited for analysis, the layout and presentation capabilities of this software currently remain fairly limited. As discussed above, the manner in which experiential landscape archaeology is presented is an important element of this research and therefore the use of appropriate software for both analysis and subsequent map presentation was a key consideration in establishing this methodology.

5.5.2 Creating a spatially referenced database

The Outer Hebridean landscape was modeled using two base data sets. A digital elevation model (DEM) was obtained from Digimap (**www.edina.co.uk/digimap**) and comprised a 10m resolution rasterised topography map for the entire region of the Outer Hebrides. The result was a continuous surface map comprising elevation data for each 10m cell and where the sea was given a value of 0m. 50m, 20m and 10m vector contour maps were then created from this raster data within GRASS using the command r.contour. These contour maps were exported to ArcMap (r.out.ascii) for presentation purposes. A Landscape Character Assessment (LCA) map was also obtained from Scottish Natural Heritage (SNH). The LCA map comprised the results of a comprehensive survey to map the different environmental landscapes found across the Outer Hebrides. The data consisted of a vector map. This was converted within GRASS to a raster map using the tool v.to.rast to create a continuous surface map of environmental data. The location of Iron Age sites were imported from the GPS site coordinates collected during the extensive field survey (described above in section 5.3) into GRASS as a text file using the command v.in.ascii to a vector file. These basic GIS techniques established the initial GRASS and ArcMap databases for storing, querying and representing archaeological, environmental and landscape data.

Within ArcMap I was able to link the Access relational database to the geographical database. This created a spatially referenced, relational database, linking the various types of information, including the desk-based research data, the field work results and photographic records with mapped locations and enabled this information to be cross-referenced and to be analysed and queried against other spatially related data. This database can be found in Appendix 3. Having established this database, I was then able to explore different ways of analysing and querying the existing information. The purpose was to draw out ‘data’ for comparative, quantitative analysis of place and landscape and to provide a means of representing some of the characteristics of these places for a more qualitative and descriptive form of study. Inputting field survey data into

the geographical database for purposes of analysis and visualisation represents a simple but effective way in which GIS and subject-centred landscape methods were usefully integrated in this research.

5.5.3 Distanced-based viewshed models

Viewshed maps were generated for each site recorded during the extensive field survey as an additional means of exploring the characteristics of Iron Age places. Viewshed maps, discussed in Chapter 3, represent visible areas of a landscape from a given location based upon topographically derived line-of-sight calculations. Viewshed maps were generated within GRASS with the command r.los using the DEM as topographic base data. The command r.los enables the user to specify the viewing location, as a geographical coordinate, the maximum viewing distance and the viewer height, both in metres. The coordinates used were the site locations. The viewer height was set to 1.7m reflecting the author's height thereby enabling meaningful comparison with the survey data. The maximum viewing distance was set to 10,000m to reflect the furthest visible distance based upon observations in the field. Distances of visibility are affected profoundly by weather conditions and in optimum clarity it is potentially possible to see beyond 10,000m within a given landscape, however, the computational time involved in processing viewshed models increases significantly with size and it was decided that 10km was an adequate distance for the purposes of this investigation. 10km viewsheds were designed to reflect the ‘distant’ scale discussed in section 5.4.3 and were generated for all the site locations investigated in the extensive field survey.

The purpose of modeling viewsheds was not to corroborate or directly compare GIS data with data derived from the subject-centred practices of the Extensive Field Survey. Nevertheless a crucial question was the extent to which visual perception relates to the physical structure of a landscape. To reiterate briefly, GIS viewshed models, whether recalculated as distance-based viewsheds, total viewsheds or cumulative viewsheds (of which more will be said below), are determined by calculating a line-of-sight based upon a model of the topography

of a landscape. Therefore, a viewshed does not in fact model visibility but models the topographic structure of a landscape relative to a specific location. How this data is then manipulated, queried and interpreted is all important in terms of exploring visual qualities of place.

In order to grasp elements of the visual structure of places within the Outer Hebridean landscape the method involved re-calculating the viewshed models into distance based viewsheds. This method of recalculating viewsheds to reflect different distance zones was first implemented in archaeology by Wheatley and Gillings (2000). They termed this form of viewshed map a Higuchi viewshed the theory behind which has been discussed in Chapter 3. As described in section 5.2, the method of recording observations during the extensive field survey was to note visibility according to three different distance classes defined as 'local' 'regional' and distant'. In order to explore similar distance based parametres using GIS, the field observed distance classes were translated into absolute distances. This was achieved by comparing a sample of the recorded observations of visibility with a map and measuring distances to observed features. As expected the terms used in the field did not correspond precisely with Cartesian distances, however, it was possible to attribute approximate values. Table 3, discussed earlier, provides a translation of these experienced spaces into measured distance. The local landscape was defined by a radius of 1.5km, the regional landscape 4.5km and the distant landscape a maximum distance of 10km. The local and regional distances used here are comparable with, but not identical to, the distances associated with Hamilton and Whitehouse's 1km 'home territory' (2006a), the 1km zone of intensive agricultural exploitation as defined by Higgs and Vita-Finzi (1972) and Flannery's (1976) territory of exploitation (5km or 1 hour's walk). The subsequent viewshed maps incorporated elements of 'real' experience into an otherwise non-experiential process. This is another example of where this methodology has combined experiences in the field and subject-centred field survey data with the use of GIS and GIS modelling techniques.

In order to recalculate each viewshed map into distance classes within GRASS it was first necessary to create a buffer map around each site location using the command r.buffer. This command uses a binary raster map where the site location has a value 1 and all other locations value 0, and generates buffers around this location according to the specified distances. The distances used were 1500m (associated with the field term 'local'), 4500m (associated with the field term 'regional') and 10000m (associated with the field term 'distant'). The output was a raster map with cells surrounding a site location with the values 1 for the site location itself, 2 for the local distance, 3, for regional distance, 4 for distant distance and 0 for all other locations. The viewshed maps were then multiplied with the buffer maps using a map calculator command (r.mapcalc mapa=buffer_map,mapb=viewshed_map,formula=A*B,output=distanced_views hed_map). Prior to this, however, the viewshed maps needed to be converted into binary data maps. The command r.los automatically generates a viewshed map where visible cells are given the value of the angle, from the vertical, from which a line-of-sight is obtained. To output binary maps, where visible cells have the value 1 and non-visible cells value 0, it is necessary to reclassify null data cells as 0, using the command r.null, and then to use a map calculator (command r.mapcal) to divide each viewshed by itself (map calculator cannot be used where there are null values). Having undertaken this process the binary viewshed maps were then be multiplied by the buffer maps to create a Higuchi viewshed map (see above), or what I refer to here as a distanced-based viewshed. This convoluted process was automated for each site by writing a shell script containing these series of commands. I have included this shell script as well as details of all the GRASS commands used in the GIS analysis in Appendix 4 so that the process can be fully understood and if desired these results can be recreated.

The viewshed maps were analysed in a number of ways. A qualitative method was to overlay these maps onto contour maps within ArcMap and to visually compare the viewsheds with the field survey results, descriptions and photographs. This information is included in the site catalogue in Appendix 2

and on a site-by-site basis complimented the field survey data by strengthening an understanding of visual experience. The viewshed maps did not always reflect the field records however. Discrepancies are noted for relevant sites within Appendix 2 and discussed in Chapter 7. Reasons for these discrepancies are discussed in greater detail in Chapter 9. A more quantitative method of analysis taken was to query these maps using the command r.stats -c. This command generates area statistics for raster map layers. For the viewshed maps this command reported the number of visible cells within each distance class for each site viewshed map. This data was then input into the relational database where the relative contribution of local, regional and distant viewshed classes was then compared across sites.

5.5.4 Analysing distance from coast

A simple spatial query was carried out to calculate the distance between Iron Age site locations and the modern coastline. The proximity of Iron Age sites to the sea has frequently been noted yet this relationship has not been demonstrated for sites across all islands in the Outer Hebrides (Armit proved the significance of this patterning for North Uist). This was achieved in GRASS using the command v.distance. This command enables the user to query the distance between one series of vector features to another, in this case the site location vector file and a coastline vector file. Rather than using an adjusted palaeo-coastline, this query was based upon models of the modern coast isolated from the Landscape Character Assessment map. Because figures for sea level rise since the Iron Age are still vague and due to the fact that coastal erosion varies significantly across the islands it was decided that the modern coastline, as opposed to an adjusted paleocoastline based upon general estimates of marine and coastal changes, would be used in this analysis. The results of this query were uploaded as a new attribute data into the linked database and assessments were then made on a site by site basis as to the potential location and therefore distance from the Iron Age coastline.

5.6 Local Scale: Sampling Strategy

Ten study areas were drawn from the original database of sites for further investigation. The study areas were selected from two specific islands/island regions within the larger archipelago; North Uist and Lewis. As discussed in Chapter 4, it is important to recognise the diversity in landscape and environment across the islands that make up the Outer Hebrides, as well as differences in settlement patterns across the archipelago, through prehistory and history alike. The area of North Uist and Lewis represent examples of this diversity. The results of the regional survey of monumental domestic Iron Age places reinforced some of these observed differences in environment and settlement pattern and suggested these two areas for further comparative study. The characteristic environmental features of North Uist and the associated tidal islands of Vallay and Grimsay, are the abundant low lying, small and intricate, inland loch systems that dominate the landscape. It is well observed that on North Uist there is more standing water by area than land. In the context of the archipelago, these islands are relatively small providing small scale landscapes. In contrast the island of Lewis, the northernmost island in the archipelago, is the largest island in the Outer Hebrides where sweeping and relatively desolate moorlands dominate the vast interior. These islands have a more rugged appearance and notably fewer inland loch systems than one finds on North Uist. In terms of Iron Age settlement patterns on these islands, North Uist has the highest number of known domestic sites of this period despite its small size, while Lewis has only 15% of known sites. There are taphonomic reasons for this discrepancy, discussed in Chapter 10, nevertheless, accounting for these processes there remains good reason to believe that there were notable differences in the number and density of sites between these two island regions. Concerning the types of location in which Iron Age sites are found within these two island regions further reinforces differences between these places. On North Uist the majority of domestic Iron Age sites are located on islets and on low lying coastal machair whilst on Lewis a number of sites are

located on coastal promontories, a choice of location for these types of sites unknown on North Uist. Whilst the reasons for these differences in location can obviously be attributed to the different environmental landscapes these islands offer, this alone does not explain how these differences impacted upon the everyday experiences of Iron Age people dwelling at these places or how these varied experiences might have affected aspects of everyday life, practices and ultimately influenced social relationships and social structures across the Outer Hebrides. In order to explore the apparent variation within what might otherwise be presented as a homogenous island region, North Uist and Lewis were areas selected for further study.

The sampling strategy also aimed to investigate the full range of domestic Iron Age site types and the range of different landscape locations. Therefore in selecting study areas within these regions, islet site, coastal machair and coastal promontory sites were ensured within the sample. Other practical issues in the selection of areas for study were places that were relatively easy to access, areas where Iron Age sites had been investigated to some degree providing some comparative archaeological data, and areas with both Atlantic roundhouses and wheelhouse type sites. In addition, two relatively anomalous sites were selected; Cletraval, North Uist, is one of the few moorland wheelhouse sites. This site is also 'special' because it has been built within the remains of an earlier chambered cairn.

5.7 Local Scale: Intensive Field Survey

5.7.1 Aims

Intensive field survey of the ten study areas outlined above was conducted over ten weeks during the Summer of 2006 and 2007. Approximately a week was spent at each study area. The survey included exploring the local landscape region of these sites via specific journeys, investigating visibility and audibility at set locations within the local landscape region of key sites, examining the visual

and audible association/communication between key sites and significant other places.

5.7.2 Sensory grid survey

The local landscape survey aimed to obtain a more detailed perspective on the visual and audible qualities and parametres of the immediate landscape setting of Iron Age sites within the selected study areas. Furthermore, this process aimed to provide more comparative data than it was possible to collate while conducting field journeys. In doing this I was concerned with how people might have experienced, on a daily basis, the landscape they inhabited and in which they carried out daily activities; perhaps travelling between sites to landscapes associated with agriculture, or to tend to livestock in upland areas, collect resources from the shore or make journeys out to sea. Might people working on the hinterland of this immediate landscape have been visible or audible to those who remained closer to home? Or did the nature of these locations mean that beyond the immediacy of the home, people were out of sight, sound and perhaps mind? I was also interested in exploring the possibilities of communication between people within these landscapes – would it have been possible to communicate with people working at some distance from the location of these sites? Over what distances might the Iron Age inhabitants of these domestic sites have been able to keep an eye or ear on other members of the community, their children or animals? How visible or audible might neighbouring communities have been? Would people living in these places have been aware of the wider community beyond the immediate site or would they have experienced their place in the landscape as isolated or detached from other roundhouse communities?

Working in these landscapes, walking to and from site locations every day increased my own experiences and understanding of these places and I recorded some of these experiences and increasing familiarity of place and landscape in a fieldwork diary. However, I also wanted to find a way of recording experiences that could be compared between sites and could be better

communicated to a wider audience and contribute towards our understanding of the Iron Age. In order to do this I decided to use a sample of locations from within the area of the local landscape surrounding key sites and to record visual and audible qualities/parametres between the site and these places. The sample was established using locations every 500m within a 3km grid surrounding key sites in each study area (totalling 48 locations, excluding the central site location itself). With reference to methods established as part of the Bodmin Moor project in north Cornwall and the Tavoliere-Gargano project in Italy, I began by using florescent flags, attached to sticks of bamboo, and using the visibility of these flags as the basis of the recording system (Bender, Hamilton and Tilley, 2007; Hamilton and Whitehouse, 2006a). However, this quickly proved impractical as the strong winds in the Hebridean Islands tended to bow, snap and bend bamboo sticks when left for long periods of time. It was subsequently decided that the visibility of a human figure was not only a more robust standard to use for investigations of visibility but was also of greater relevance to understanding a *peopled* landscape than the use of abstract objects such as flags. It was however decided that participants in the survey would wear fluorescent jackets, to highlight their location. Two people took part in the survey (myself and one volunteer) with one person located permanently at a site location and the other moving between locations in the 3km grid. The grid locations were mapped and located using a GPS. From each location in a grid, both participants recorded the degree to which the other person was visible using an established *pro forma*. Where a line of sight was established between participants, the degree to which individuals were visible was recorded on the basis of recognising certain physical signals (waving arms, jumping, crouching, etc). Visibility was recorded as either ‘very clear’, ‘clear’, ‘moderate’, ‘faint’, ‘very faint’ or ‘out of sight’. At each location on these grids sound experiments were also carried out and records made. Participants shouted and the degree to which a person’s voice was audible, based upon the clarity of sound and the ability to decipher words, meaning or vocal intonation, was noted on the pro forma. Audibility was recorded as being either, ‘very clear’, ‘clear’, ‘moderate’, ‘faint’, ‘very faint’ or ‘inaudible’. Importantly, the pro forma prompted

a detailed description of weather conditions and, where relevant, tidal information and the effect of these conditions upon both sound and vision. The length of time it took to carry out each survey varied according to the terrain and weather conditions, and therefore the time to move between locations in the grid. This varied between 14 and 28 working hours. These differences were also noted. Basing this investigation of experience on the visibility and audibility of individuals reintroduces people to this study and provides parametres for exploring Iron Age experiences of specifically peopled landscapes. It subsequently offers an insight into the everyday experiences of the people within these landscapes, their ability to communicate with each other and to carry out their daily activities.

5.7.3 Inter-site sensory survey

Using the same survey methods and pro forma sheets described above, I also investigated the visual and audible relationship between broadly contemporary Iron Age sites within each local landscape study area. This was conducted in order to explore the potential relationship between Iron Age communities and the nature of local landscape dwelling. This was only possible where additional sites were recorded. Vallay Strand, Loch an Duin, Bhaltos and the Butt of Lewis provided the study areas where these investigations were carried out. At Cletraval the relationship between the wheelhouse site and surrounding Neolithic burial tombs and standing stone monuments were investigated instead.

5.8 Local Scale: GIS and Map-based Research

5.8.1 Aims

Like the field survey at the local scale of investigation, the use of GIS at this stage aimed to explore local landscapes in a more detailed and dynamic manner. Continuous viewshed models were used to model more dynamic approaches to landscape visibility. There was also a specific attempt to use GIS

to explore elements of the Iron Age landscape that could not be achieved in the field. In particular, how potential heights of roundhouse buildings might have affected Iron Age experiences of these sites and, similarly, how the landscape might have been viewed from these monumental structures. Finally, I re-analysed the viewshed models created during the local scale of research in order to explore alternative definitions of the local landscape based upon thresholds of visibility.

5.8.2 Continuous Viewshed models

One of the limitations of the viewshed analysis conducted at the regional research scale was that the visual structure of the landscape was modelled from fixed locations. While such a static approach to landscape experience is perhaps explicable within the context of special or ritual landscape settings, when considering lived-in landscapes of the everyday it is important to consider how people might have engaged with these places as they took part in daily activities and practices in and around these locales. The desire to explore more dynamic landscapes of experience led to the generation of continuous viewshed models for the sample sites. These models have been previously termed total viewsheds and have been applied within archaeology specifically by Llobera (2003). The continuous or total viewshed models generated in this research indicate the percentage of the local area surrounding a site location that might be visible from each cell *within* this localised area. In effect these models suggest how the visual structure of the landscape changes as one moves within the wider locale.

Continuous viewsheds are basically composite maps created by summing standard viewshed maps (described in section 5.4) for all viewing locations within a specified area. These maps can be generated manually within a GIS by using map calculator tools. In this research the command line programme r.cva was used within GRASS. This programme was developed specifically for archaeological purposes by Lake (see Lake, Woodman, and Mithen, 1998 for description) for use with GRASS GIS and essentially automates the calculations

necessary to produce total viewshed models (as well as cumulative viewshed models discussed below) based upon the r.los programme described above. Again the 10m resolution DEM obtained from Digimap was used as base data for the topographic defined line-of-sight calculations. As with r.los the command r.cva enables the user to specify the viewing location, as a geographical coordinate, the maximum viewing distance and the viewer height, both in metres. The sample site coordinates were used and the observer elevation set to 1.7m once again reflecting the author's height and thereby enabling meaningful comparison with the field survey data. The programme also enables the user to specify both target and viewpoint mask as a binary raster map in order to limit the number of either viewing or target locations. The purpose of the continuous viewshed maps in this research was specifically to model the visual structure of the local landscape surrounding site locations. Therefore the view point and target mask were set by a 1500m zone around each site location generated using the command r.buffer. The maximum viewing distance was set to 3,000m reflecting the maximum distance between cells within the local landscape area. To clarify, using the specific parametres described above, the programme r.cva generated maps where each cell within a 1500m 'local' area surrounding site locations was given the value of the number of cells, within this area, calculated as visible from this location at an observer height of 1.7m. In order to represent the data as the percentage of the landscape visible from each location (as opposed to the number of cells visible) the resulting map was divided by the total number of cells within the local area using the map calculator function.

5.8.3 Cumulative viewshed models

When assessing degrees of site inter-visibility during the field survey it was necessary for experiments to be based upon the visibility of people rather than roundhouse remains. The preservation of Iron Age buildings varies, but usually all that survives to mark these sites are mounds containing stonework perhaps standing to a few courses. The preservation of sites such as Dun Carloway, in Lewis or Dun Torcuil in North Uist are exceptional rather than representative of

standing Iron Age remains across the Outer Hebrides. Therefore, it was not possible to explore uniformly in the field how visible these sites would have been from the surrounding landscape. Consequently, the field based research was unable to inform directly about the impact of these sites as specifically monumental structures. While wheelhouses would appear to have been built as semi-subterranean structures, Atlantic roundhouses, in particular those commonly known as brochs, were essentially towers. The remarkably well preserved Atlantic roundhouse of Mousa, Shetland survives to almost 13m in height and although the extreme height of this roundhouse is almost certainly anomalous this example does highlight the need to consider the potential height of these structures when exploring elements of experience associated with Iron Age landscapes across Atlantic Scotland. Traditional interpretations have regarded brochs and duns to have functioned defensively (Childe, 1935: 204) while others have argued that the monumentality of these buildings would have symbolised local power and influence (Armit, 1997a: 249). In the case of either interpretation, what has been explored is how monumentality would have worked in terms of Iron Age people's everyday experiences of these place and landscapes? These research questions were explored by generating cumulative viewsheds representing *how* visible these buildings might have been from the surrounding landscape generated for a series of hypothetical roundhouse heights.

Cumulative viewshed maps, like the continuous viewsheds, are similar composite maps created by summing individual viewshed maps. Cumulative viewshed maps differ from continuous viewsheds in that they are calculated to indicate how visible a particular location is from locations or cells within a given area. To clarify, cumulative viewshed maps inform about visibility *of* rather than *from* specified locations or cells. This process can be manually calculated from individual line-of-sight maps using a mask to select particular information and a map calculator function. Conversely this process can be achieved using an automated function such as Lake's r.cva programme for GRASS described previously (2003). The r.cva programme was used here. When concerned with

how visible a particular location is, as opposed to *visibility from* specific locations, this needs to be specified for r.cva either by selecting this option in the tool box, or using the f flag on the command line. The programme requires that the user specifies both target and viewpoint masks as binary raster maps in order to limit the number of viewing or target locations. The viewpoint masks used were the same 1.5km regions defined for the continuous viewshed analysis described above. The target masks were binary maps of the site locations. Observer elevation was set at 1.7m, as before, to represent my own height. The command then involves several automated stages of modeling. Firstly a line-of-sight based viewshed for each location within the specified area is calculated using the target mask so that each map specifies only whether the roundhouse sites are visible. These maps are then added together so that in the resulting map the roundhouse location is coded by the number of cells from which this location is visible from within the surrounding local landscape. R.cva also allows users to specify the target elevation. In order to explore the visibility of Iron Age roundhouses at a series of potential roundhouse heights, the cumulative viewshed maps were generated for each site using 11 different target elevations at 1m intervals between 0m and a maximum of 10m. Finally, in order to represent this information as the percentage of the local landscape from which these sites would be visible, at the potential roundhouse heights, the resulting data was divided by the total number cells within the local area using the map calculator function.

5.8.4 Heightened viewshed models

Traditional interpretations of broch architecture associate their monumentality with defensive requirements and the possibility that the tower like proportions of many Iron Age sites enabled them to act as lookout towers. Again, for reasons described above, records of experience in the field were consistently made from the landscape at ground level. Through the GIS I was therefore interested in exploring how building ‘up’ in the landscape might have affected Iron Age people’s perception and experience of the surrounding landscape. If Iron Age people were able to look out from the heights of these buildings, one presumes

that this would afford a rare and privileged perspective of the Iron Age landscape otherwise only achieved from the heights of hills or mountains. In order to explore these questions a series of simple viewsheds were generated for site locations using the programme r.los, at a range of hypothetical roundhouse heights. Viewsheds had already been modelled at viewer heights of 1.7m during the regional scale of research. Here viewsheds were modeled firstly at 2m and then at 1m intervals to a maximum of 10m in viewer height. Due to the great computation time involved, it was only possible to generate these models for the regional landscape area defined by 4.5km surrounding each site location.

5.8.5 Redefining locality

The distances classes used in the original viewshed models were based upon estimates of experiences of landscape scale extrapolated from the field survey data. The results of these viewshed models indicated that these distance classes may not have accurately reflected the experiences of 'local', 'regional' and 'distant' landscapes as employed in the field. In order to re-evaluate these distance classes and as a means of assessing the concept of locality, based upon visual experience, viewshed models for the local scale sample of sites were remodelled to reflect more continuous changes in visibility with distance. The command r.buffer was used to generate buffer maps around site locations with values for every 100m to a maximum of 4500m. Using the map calculator function the original viewshed maps were multiplied by the buffer maps to create a viewshed surface classified for each 100m distance boundary around the site location. The command r.stats was then used to query these maps and the data input into the relational database. The results of these queries enabled me to analyse how visibility of the landscape changes with distance from the site location in greater detail than was carried out for the regional scale viewshed analysis. The results indicate the distances from each site where visibility significantly diminishes (or increases) and this provides an additional method of understanding the topographic structure of landscape location and

prompted reconsideration of the way in which a sense of the immediate locality to these places was defined.

5.9 Analysing and Integrating data

The GIS and subject-centred field survey data were brought together in the analysis of the data. Firstly, information collected during field survey was input into the GIS database as a means of storing, querying, analysing and representing this information. This may seem an obvious or trivial point to make. However, incorporating the data in this way represented an important stage in the interpretive process and highlights a basic but important link between the two techniques. Even Tilley's *Phenomenology of Landscape* (1994) is illustrated with a few maps and therefore it can be argued that the map perspective is still one that he relies upon for visualising, representing and communicating elements of an otherwise phenomenological process. Throughout the analytical process results were cross-referenced between the two approaches. It should be emphasised that the aim was not to pit the two approaches against each other, nor to use the GIS to corroborate or verify observations made in the field, or visa versa. Instead the aim was to consider each as contributing a different understanding and perspective on the Iron Age landscape. Furthermore, regarding the GIS I did not set out, as is often the case with GIS-based research, to prove hypotheses about landscape experience using statistical analysis and background samples. I argue that in the context of landscape experience whether a characteristic or phenomena is unique or not is irrelevant. Instead a more qualitative and comparative approach was taken in the analysis of the GIS data.

The results of both the GIS and field survey are integrated throughout the following chapters (Chapters 6, 7 and 8) and this method of presentation reflects the way in which I attempted to bring the two strands of information together throughout the interpretive process. In Chapter 6, the results of the

regional scale of research are presented according to island region. The implication is not that these island regions denote cultural boundaries relevant to Iron Age occupants of this landscape, nor that the modern island geography is directly comparable with the Iron Age geography of the archipelago. Instead this structure reflects the first stage in interpretation where I began to question the appropriateness of the individual island as a unit of study. Additionally this method of presentation provides a convenient and obvious method for dividing the data into manageable sections. The structure also reflects the sequence in which the extensive field survey was conducted and therefore the process by which I familiarised myself with this landscape, developed an understanding of Iron Age site locations and interpreted these places through my own experience. The following chapters (7 and 8) are structured by the principal types of location identified in Chapter 6. It should also be noted that the two approaches adopted in this research encourage different methods of presentation and in combination there is a visual emphasis in the presentation of this thesis. In places the subject-centered field survey is illustrated with photographic images and the use of descriptive accounts, while the GIS results are frequently supported with map images. Composite images combining these different forms and sources of information are also included. Creating these composite images was also part of the process of bringing together the two strands of information. By design this thesis, therefore, looks different from more traditional archaeological methods of presentation and as such engages with wider debates about the way in which archaeology is written and communicated.

Chapter 6: Results: Regional Island Landscapes

6.1 Introduction

This chapter summarises the results of the regional, island-wide scale of analysis, synthesising data from the extensive field survey and GIS analysis with contextual archaeological and palaeo-environmental data. Site names are followed by a reference number in brackets. Details of each site can be found within the catalogue in Appendix 2, indexed according to site reference number. Field survey and GIS data is collated in Appendices 3 and 4. Within each section the results are structured by individual island or island regions; Barra and Vatersay, South Uist, Benbecula, North Uist including the tidal islands of Grimsay, Baile Sear and Vallay, Harris and Berneray and finally Lewis and Great Benera. The implication is not that these individual islands reflect regions meaningful to the Iron Age occupants of these landscapes, nor that the modern island geography is directly comparable with the Iron Age geography of the archipelago. Instead this structure reflects the first stage in an interpretive process that began to question the appropriateness of the individual island as a unit of study. Additionally this method of presentation provides a convenient method for dividing the data into manageable sections as well as reflecting the order in which the extensive field survey was conducted and therefore the process by which I familiarised myself with this landscape, developed an understanding of Iron Age site locations and interpreted these places through my own experience.

For each island region, the Iron Age landscape and environment will be described. Particular attention will be given to how processes of coastal erosion and changes in sea level may have altered the island geography since the Iron Age and therefore whether these islands would have represented discrete landforms during the Iron Age as they do today. The distribution and location of

the 167 Iron Age sites locations identified and recorded in the field and the subject of subsequent GIS analysis will then be outlined. For each island region I will then discuss specific qualities of these places addressing the three research questions outlined in the previous chapter (Section 5.4.3); seascapes, landscape scale and varied landscapes. Throughout the chapter both subject-centred field survey and data derived or generated from GIS mapping of these sites and landscapes will be presented. The degree to which these strands of information inform each other will be discussed in Chapter 9. Based upon the results of this research I propose an alternative perspective based upon landscape experience. Four principal location types are identified in this chapter; lowland coastal, islet, upland and coastal headland. The resulting classification is based upon interpretations of the Iron Age landscape and sensory experiences of place, informed by the environmental data.

6.2 Reconstructing Iron Age Landscapes

6.2.1 Introduction

In Chapter 4 I provided a general picture of the environment and island geography of the Iron Age landscape. Overall the evidence points to an environment supporting very little tree cover, where blanket peat and moorland vegetation would have dominated the island interior and machair soils would have been substantially developed along areas of the north and west coasts. Estimates of sea level rise and processes of coastal erosion highlight distinct changes to the island coast, indicating that some of the individual islands within the archipelago may have formed over the last two thousand years. These environmental processes vary across the islands and while general models can be put forward, in order to reconstruct the Iron Age landscape in greater detail it is necessary to consider the available evidence on a more localised scale. Although pollen core data is often used to reconstruct regional environments, it has become increasingly clear, specifically in the Outer Hebrides where wind and exposure are important factors, that pollen samples potentially reflect highly

localised vegetation sequences. Pollen studies within the vicinity of Allt Bolagir woodland (Fossit, 1994) and Northbay plantation (Gearey and Gilbertson, 1997) revealed that at less than 100m from the woodland boundary, arboreal pollen within these samples dropped to background levels (Angus, 2001: 28). In terms of recreating Iron Age landscapes it is therefore necessary to be cautious in using generalised interpretations. In the following I will describe for each island region the physical and environmental landscapes that would have been familiar to Iron Age communities, drawing upon available environmental data and interpreting elements of the modern landscape (see Figure 6.7 for distribution of sources of environmental data and Table 4 for summary of pollen core data).

6.2.2 Barra and Vatersay

Barra and Vatersay are the southern most populated islands in the Outer Hebrides (Figure 6.1). A modern causeway connects the larger island of Barra with Vatersay to the south, prior to which access between the two islands was only possible by boat. The depth of the channel between these islands (see; Haswell-Smith, 1996; Richards, 1998) indicate, that even given informed approximations of sea level rise over the last two thousand years (Richie, 1966; 1985; Von Weymarn, 1974), that the islands of Barra and Vatersay would likely have been separated by a similarly narrow channel during the Iron Age as today. To the south of Vatersay and to the north of Barra are a number of other islands of habitable sizes; Sandraigh, Pabaigh, Miugulaigh and Bernerigh to the south; Fuday, Gighay, Hellisay, Flodday and Fuiay to the north. To the North of Barra are the islands of Eriskay and South Uist (discussed in section 6.2.3 this chapter). The Sound of Barra, which separates these islands, is a deep water channel and was in all probability formed more than nine thousand years ago (Angus, 1997: 79). The small island of Vatersay comprises two large rocky outcrops, known as Heishival Mor and Beinn Ruilibreac, connected by an eroding isthmus of sand. It is presumed that this area of sand has suffered some erosion over the last two thousand years, and that this isthmus would have been more substantial during Iron Age occupation.

The key environmental zones, reflected in the modern landscapes of Barra and Vatersay, would have been present during the Iron Age. Machair soils would have been found along parts of the west and north-west coasts as they are today (Branigan and Foster, 2002: 75). In contrast the east of the islands would have been characterised by rocky moorland and a significantly more rugged coastline. In addition to machair, the west coasts would also have been defined by areas of rugged cliffs fronting the Atlantic as they are today. The upland interior of Barra is heavily contoured, in areas reaching more than 350m. The pollen core evidence, sourced from different areas of Barra, demonstrate some variation in vegetation cover across the island throughout prehistory (Branigan and Foster, 1995; Edwards and Brayshay, 2000). The Port Caol core was taken from an inter-tidal peat deposit, located on the west coast of the island and to the north of Borve headland and indicates early woodland decline prior to evidence for human occupation of these landscapes, c.7,250 BC (Edwards and Braysay, 2000*:* 316). Another pollen core sample was derived from a sediment deposit retrieved from Lochan na Cartach, a small loch located within a sheltered valley on the northeast side of Barra (*ibid:* 310-311). This sample alternatively suggests woodland decline and the expansion of heath and moorland species from c. 4,380 BC and is more consistent with general trends for woodland decline across the Outer Hebrides. In contrast the Borve Valley core, taken from an inland, upper valley mire location, indicates that woodland species may not have declined until c. 1,450 BC (*ibid.)* suggesting that the island interior may have maintained some patches of woodland cover immediately prior to Iron Age occupation*.* Despite some variation, the principal phases of decline occur well in advance of Iron Age occupation and it is likely that during the Middle Iron Age even the interior island landscape would have been covered with sparse moorland vegetation and little or no arboreal vegetation as it is today.

Modern and historical settlement of Barra has focused heavily on the coastal margins of the island and the mountainous interior has remained largely uninhabited (Figure 6.8). Fifteen Iron Age sites are known across Barra and the

distribution pattern shows a similar proclivity towards the western and north-western coastal areas of the island with four sites located in low lying coastal regions on the west coast of the island. However, unlike the modern and historical settlement patterns, a large number of known Iron Age sites were located on small hilltops or hillocks either within the upland interior or upon high coastal headlands. Two Iron Age sites were studied on Vatersay; Dun Challois (S137) and Dun Vatersay (S138). Both these sites were located on hillsides, on either side of the Vatersay isthmus and immediately above the machair within increasingly acidic peat soils.

6.2.3 South Uist

South Uist is a long narrow island approximately 33km in length (Figure 6.2). A spine of mountains are found along the eastern length of the island, the highest being Beinn Mhor at 600m, surrounded by inhospitable moorland interspersed with small lochans that continue into the interior of the island. This mountain spine is broken by three sea lochs; Boisdale, Eynor, Sheilavaig, and Skiport. These large sea lochs, most of them glacial fjords, provide access from the Minch into the island interior. These geographical features would have similarly defined the Iron Age landscape. Six pollen core samples from across South Uist indicate primary phases of woodland decline between c.5,520 BC and 1,550 BC (Bennett, *et al*, 1990; Brayshay and Edwards, 1996; Edwards, Whittington and Hirons, 1995). Samples from Loch Lang on the east coast of South Uist, however, indicate that some woodland may have persisted into the Iron Age here (Bennett, *et al*, 1990).

The Atlantic west coast of South Uist is characterised by an almost continuous stretch of sandy beaches fronting extensive machair. Evidence for a number of Bronze Age houses built into these sandy soils demonstrate that machair was well established along parts of this coastline prior to Iron Age occupation (Parker Pearson, Sharples and Symonds, 2004a). In a transitional zone between the machair and the interior moorland is an area containing a number of small lochans. To the south of this island lies the island of Eriskay and the

two islands are presently connected by a modern causeway. The shortest crossing between these islands is approximately 2km and only possible with a boat. The depth of the channel between these islands suggests that they would also have been distinctive landmasses during Iron Age occupation of these landscapes.

Thirty-five Iron Age sites were located during the survey of South Uist (Figure 6.9). The distribution of known Iron Age sites focus almost exclusively on the west side of South Uist with sites found predominately on the machair or on islets within the lochans immediately beyond this coastal landscape. Several wheelhouse sites, exposed on the eroding machair in this area have been excavated, including Cille Pheardair wheelhouse (S165) (Lethbridge, 1952), the paired wheelhouses at A'Cheardach Mhor (S159) and the nearby site of A'Cheardach Beag (S160), (Young and Richardson, 1959; Young, 1960) and the wheelhouse at Cille Donnain (Parker Pearson and Sharples, 1999; Parker Pearson, Sharples and Symonds, 2004a; 2004b).

Twenty sites were located during the survey of South Uist on islets within small lochans. Most of these lochs were located immediately behind the coastal machair within fairly close proximity to the modern coastline to the west. These sites were defined as monumental domestic Iron Age sites primarily on the basis of field remains, there being little or no associated Iron Age material recovered from these sites. Across South Uist, the only Iron Age roundhouse located on an islet to be investigated archaeologically is Dun Mhullain (S114). This site was excavated during the 1990s to reveal a complex roundhouse structure comprising secondary floors, guard cells, etc. as well as several phases of secondary occupation. Radiocarbon dates have suggested that this building was constructed and occupied during the first few centuries BC (Parker Pearson and Sharples 1999), although, as discussed in Chapter 4, the reliability of these dates has been questioned (See Appendix 1). Dun Mhullain is currently located on an eroding promontory behind extensive machair at Bornais, however, environmental analysis of deposits immediately outside of the

roundhouse indicate that when this site was constructed it would have stood on a promontory or islet within a freshwater or brackish loch that would have been protected from the sea by a sand bar to the west (*ibid*.) During the 400 years of occupation at this site, the sand bar that separated this site from the sea became increasingly unstable and was finally breached so that the site is now almost completely surrounded by sea water (*Ibid*: 46-58). What remains of this site is currently under serious threat from continuing erosion (Moore and Wilson, 2005).

Three possible Iron Age sites are located on the far east coast of the island. This includes a possible wheelhouse (S162) and roundhouse (S112) at Usinish beyond Beinn Mor. Four possible Iron Age sites located within the peat upland landscapes are; Gro Grot (S112), Usinish (S162), Loch a Bharp (S212) and Loch Erisort (S115).

6.2.4 Benbecula

Within the modern landscape the island of Benbecula is connected to South Uist and North Uist via causeways (Figure 6.3). The ford between Benbecula and South Uist can currently be crossed at low tide and it is likely, given estimates of sea level rises (Richie, 1966; 1985; Von Weymarn, 1974), that connections between the two islands were even greater during the Iron Age. The north causeway connects Benbecula with North Uist via the smaller island of Grimsay (discussed in section 6.2.5). This ford is currently traversable on foot at low tide and it is likely that these islands were in fact connected more permanently during this time, perhaps even representing a single land mass.

In comparison with other islands there has been very little palaeo-environmental research carried out across Benbecula. General models of the Iron Age environment suggest that this landscape would have been defined on the west coast by significant areas of machair. The interior is likely to have been covered with boggy peat soils, pitted with numerous small lochans, supporting heathland vegetation and little or no arboreal species as found today. The eastern side of

Benbecula is characterised by rocky upland with the highest hill of Rubhal reaching 124m and a rocky coastline comprising numerous inlets, coves and off shore islands. Wiay is the largest of the many rocky islands that lie off the east coast of Benbecula, uninhabited since the early 19th century. No Iron Age archaeology has been recorded on this island nor the other small off shore islands in this area.

Sixteen Iron Age sites were surveyed on the island of Benbecula (Figure 6.10). Eleven of these were found located on islets within lochs largely within the interior of the island. None of these sites had been excavated and Iron Age association is based upon evidence for roundhouse structures as well as place name and documentary evidence. The remains of three further sites were found on small mounds within or adjacent to recently drained lochs and were interpreted as places likely to have been surrounded by water prior to drainage of the landscape. This included sites; (S100), (S97) and (S94). Two wheelhouse sites have been recorded beneath the runway at Benbecula airport, but would have been originally located on the machair that is found in the north-east of the island. Two sites, Dun Ob Saille (S101) and Loch na Berigh (S91) were recorded towards the east coast of Benbecula. Dun Ob Saille (S101) was a possible Iron Age site on an islet within Loch Ob Saille, a brackish loch that links to the narrow sea loch known as Cill Eireabhaigh, leading out to the Minch. It is likely that Loch Ob Saille developed into a brackish loch as the coast has eroded and the sea level risen and it is possible that during Iron Age occupation of this landscape this would have been a fresh water loch located slightly further inland.

6.2.5 North Uist

North Uist is the northern most island in the Uist chain (Figure 6.4). Along the north and west coasts of North Uist are found the small islands of Vallay, Orosay, Baile Sear and Kirkibost. These islands are all tidal and are currently accessible from the mainland of North Uist at low tide. The north and west coasts of North Uist are defined by low lying, soft, sand-based soil which means

these areas have been particularly vulnerable to coastal erosion and sea level rise. Estimates of sea level rise (Richie, 1966; 1985; Von Weymarn, 1974) suggest that these tidal islands would not have been separated from the mainland in the Iron Age landscape. This would appear to have been the case specifically at Vallay where it has been argued that the strand which separates this island from the mainland of North Uist would not have flooded until the first millennium AD (Armit 1998a; Dunwell, Johnson and Armit 2003). It is likely that the island of Orosay was also connected to North Uist and therefore this broad region, now defined by several tidal islands, was represented by extensive machair continuing from the Vallay Strand to the Udal peninsula. While these tidal islands currently support solely machair soils, peat eroding out of the beach at Baile Sear demonstrates that this has not always been the case. However, excavations of Iron Age roundhouses at Baile Sear and Vallay built into sand based soils indicate that the machair would have been well developed in these areas prior to Iron Age occupation and therefore these peat soils represent much earlier land surfaces (MacDonald and McHardy, 2008; McHardy and Rennell, 2009; Beveridge, 1911). In the north, excavations on the Udal peninsula indicate machair development in association with Beaker deposits and substantial machair in place prior to Iron Age occupation here (Crawford, ND; 1996; Crawford and Switsur, 1977).

Recent and historic erosion of the western coast of North Uist is well recorded. To the west of Baile Sear (which translates from Gaelic as ‘east town’) was once located the settlement of Baile Iar (‘west town’), which was apparently swept away by a tidal wave in the 16th century and local folklore tells that prior to this historical event, the offshore Monarch islands were connected to Baile Sear at low tide by a stretch of sand some 8km in length (Lawson, 2002; Angus, 1997). Whilst the latter perhaps represents an exaggeration of the effects of coastal erosion over the last 500 years, we should be careful not to underestimate the impact of erosion when reconstructing Iron Age coastal landscapes, particularly on the more exposed west coasts. Consequently, what are now coastal sites,

such as the Baile Sear wheelhouses, were likely set further back from the sea, perhaps behind coastal dunes, within their original Iron Age setting.

The interior landscape of North Uist is dominated by largely inhospitable peat moorland, interspersed with numerous small lochans. The evidence for Neolithic as well as Iron Age settlements on islets within many of these lochs (Armit, 1988; 1992b) indicates that these lacustrine environments would have similarly defined the prehistoric landscape here. Within the moorland interior several large hills, notably Cletraval and Unival in the north-west and Li a'tuath, Li a'Deas and Eaval in the east, would have provided Iron Age people with expansive views of these watery landscapes. The interior and east coast of North Uist, where the terrain becomes increasingly rocky, is likely to have been similarly treeless, supporting sparse heathland vegetation as it is today. Particularly in the eastern part of North Uist, evidence for prehistoric woodlands are associated with much earlier prehistoric, Neolithic and Bronze Age dates. Birch and hazel roots exposed on the shores of Loch Obasaraigh, for example, produced notably early radiocarbon dates calibrated to 7180 BC - 6690 BC (Fossit, 1996. See Appendix 1: Q-2681). Overall, the interior of North Uist is likely to have been dominated by treeless boggy moorland during the Iron Age and the moorland we see today would be largely familiar to Iron Age occupants of this landscape. However, in areas of the north coast small pockets of tree cover might have persisted into the Iron Age and characterised areas of the landscape. Analysis of pollen core samples from Loch Olabhat, a machair loch towards the north coast of the island containing several prehistoric settlements, indicates that final woodland clearance might not have occurred in this area until the first millennium AD (Armit, Campbell and Dunwell, in press). On the north coast of the island of Vallay the preserved roots of birch trees are occasionally revealed below the high water mark, samples of which have provide radiocarbon dates of 3500 BC - 3020 BC (Fossit 1996. See Appendix 1: Q-2682) suggesting the presence of woodland here during the earlier Bronze Age. Part of the northern coast of Vallay is also associated with the Gaelic place name *Bagh nan Craobhag,* which relates to trees (Angus 1997) perhaps

referring to the birch remains described above, or indicating living woodland during historical settlement of this area. Woodland is unlikely to have been a prevailing characteristic of the Iron Age landscape and instead this evidence likely points to small and relatively anomalous patches of tree cover.

Off the east coast of North Uist there are also two islands of habitable size; Grimsay and Ronay. Grimsay is a tidal island, connecting to the larger islands of North and South Uist at low tide and currently accessed along the main causewayed road. As is the case with other tidal islands, it is likely that Grimsay was permanently connected to the Uists during the Iron Age, or at the very least was more easily accessible at low tide than it is today. The island of Ronay lies to the east of Grimsay and the two are separated by a deep water channel which suggests that Ronay has been a separate island for some time. The Norse naming of Ronay indicates that this was an island by at least the later part of the first millennium AD (Nicholaisen, 2001). No archaeology has been recorded on Ronay and this island was therefore excluded from the survey.

Seventy-two Iron Age sites were recorded across North Uist and the associated tidal islands discussed above (Figure 6.11). Five sites were surveyed on Grimsay including four possible Atlantic roundhouses located on islets within freshwater lochs. On of these, Dun Ban (S88) was excavated in the late 19th century by Captain Thomas (1890). Grimsay also contains the remains of a wheelhouse (S214), located within peat based soils on the northern shore of the island and investigated in 2003 (MacKenzie, 2005). Ten site locations were surveyed on the island of Baile Sear. This included two wheelhouses at Sloc Sàbhaidh (Gaelic for ‘saw pit’) (S216) eroding out of the beach on the west coast. The wheelhouses at Baile Sear have been the focus of an ongoing community excavation project since 2005 (MacDonald and McHardy, 2008; McHardy and Rennell, 2009). Two site locations were surveyed on the tidal island of Vallay; a wheelhouse site built into the machair (A’Cheardach Ruadh, S155), and a substantial sized Atlantic roundhouse eroding on the coast looking across to North Uist (Dun Thomaidh, S44). These sites were both investigated

and recorded by the Antiquarian Beveridge (1911) in the early part of the 20th century. On the Vallay Strand, are a number of Iron Age sites which are discussed in more detail in Chapter 7. Many of these sites were investigated by Beveridge in the early part of the 20th century. One of these sites, Eilean Maleit located on a small islet, was re-excavated during the 1990s (Armit, 1998a) and this confirmed that here was an Atlantic roundhouse with a later wheelhouse inserted within the ruined walls. This site would have originally been built on a rocky mound surrounding by machair, prior to flooding of this area. The other tidal islands surrounding North Uist, Orosay, Ronnay and Kirkibost, were not included in the landscape survey and no Iron Age archaeology has yet been recorded on these islands.

Across North Uist itself, 47 locations were surveyed. These were found focused around the island coastline although with far less emphasis on the west coast in comparison with the distribution of known sites across South Uist, Benbecula and Barra. Thirty of these sites were located on islets. This included the exceptionally well preserved complex roundhouse Dun Torcuil (S56), investigated by Erskine Beveridge (1911) and located within a loch that also contains two other possible Iron Age sites (S53, S220). Of the islet sites across North Uist, 17 of these were located towards the east coast of the island and this included both freshwater and marine lochs. Of the latter, some of these sites were interpreted as having been probable eroded inland lochs. For example, two possible Iron Age sites Eilean na H-Iolaire 1 and 2 (S188) and (S189) were located on small islets within a sea loch just to the north of the island of Ronay. However, it is likely that this body of water would have been an inland loch during Iron Age occupation of this landscape, and that erosion has since exposed these waters to the sea. Intuitively, these types of locations are more easily understood if this were the case, as the current location was found to be highly exposed and treacherous and settlement within the current environment would have been incredibly difficult. Four non-islet sites were surveyed within the moorland interior of the island. On the slopes of Cletraval, a

wheelhouse site (S62) was built into the remains of an earlier Neolithic Clyde type chambered Cairn and excavated in the late 19th century (Scott, 1935).

6.2.6 Harris and Berneray

To the northeast of North Uist is the large island of Harris (Figure 6.5). The body of water between these islands, known as the Sound of Harris, is such a deep water channel that it would have separated these islands during the Iron Age as today (see; Haswell-Smith, 1996: 211). Within the Sound of Harris are a large number of small islands. The more sizable (potentially habitable) of these islands are; Berneray, Boreray, Pabbay, Killegray, Ensay and Shillay. Berneray is the only island still inhabited today and the only one of these islands where Iron Age archaeology has been recorded.

The interior of Harris is dominated by mountainous upland, covered with distinctively rocky formations shaped by glacial action during the last Ice Age, giving the landscape an almost lunar like appearance. South of Loch Tarbet, a large sea loch that almost divides the land of Harris in two, is extensive machair with a rocky peninsula at the southern extent. Towards the east is rocky moorland and here the coastline is rocky and heavily indented. To the north of Loch Tarbet, the landscape is even more heavily contoured and inhospitable. This mountainous area is known as the forest of Harris. Although now completely without arboreal vegetation, general models of environmental change suggest this area might have been heavily wooded up until approximately five thousand years ago. A sample of fossilised willow from Harris was radiocarbon dated to 2870 BC - 2490 BC (Wilkins, 1984. See Appendix 1: Q-2742) indicating woodland across this region into the Bronze Age. It is likely, that the bare mountainous environment we see today would have been largely familiar to Iron Age communities. However, as yet no Iron Age archaeology has been recorded across this vast area, although a recent but as yet unpublished survey in this area may alter this perception of the Iron Age landscape. On the north side of these mountains is the island of Lewis discussed in the following section.

Only five Iron Age sites were surveyed across Harris (Figure 6.12). These were all located in the area to the south of Loch Tarbet. Two sites were found located on islets; Dun Insegall (S35) on an islet within a very small tidal loch immediately inland from the sound of Harris. This location may have been within a freshwater loch during Iron Age occupation or this site may represent an area of flooded Iron Age coastline. Dun Loch Langavat (S31) was located within a fresh water loch within the interior of the island on the periphery of moorland and rocky upland. Two sites were located within upland moorland environments; Dun Rodel (S36) and Dun Borve (S30). One site (S32) was recorded on an eroding machair coastline at Toe Head peninsula, the remains of a roundhouse recorded beneath a small medieval chapel. On Berneray a possible Iron Age dun was included in the field survey. This site, Eillean An Dunain (S195) was located on an eroding coastal headland and comprised a small stoney mound.

6.2.7 Lewis

Lewis is the largest island within the Outer Hebridean archipelago (Figure 6.6). In comparison with Harris and Uist, Lewis has very little machair along the west coast and there would have been less fertile and easily cultivatable soils during the Iron Age. Instead the west coast is defined mainly by high cliffs and coastal headlands where one finds a number of sea stackks eroding from the coast edge. One of the few areas supporting substantial machair within the contemporary landscape is the Bhaltos peninsula on the west coast of Lewis. A number of Iron Age sites have been recorded in and around the machair here and excavation has demonstrated that machair was well developed in this part of the island in advance of Iron Age occupation (Armit and Harding, 1990). The importance of what would seem to have been one of the few areas of machair within the Iron Age landscape across Lewis cannot be underestimated.

The interior of the Lewis is defined by vast areas of undulating peat moorland, interspersed with small lochans and thick blanket peat. Four pollen core studies derived from loch sediments in western Lewis provide the bulk of information on

the Iron Age environment; Little Loch Roag (Birks and Madsen 1979), Loch an Builaval Beag (Fossit 1996b), Tob na Leibag, Calanais (Bohncke 1988) and Loch Bharabhat, from Bhaltos itself (Lomax and Edwards 2000). The Little Loch Roag sequence (Birks and Masden, 1979) suggests a complete absence of woodland over all periods and is a good indicator of prehistoric environments on the more exposed west coast of Lewis, where woodland regeneration would have been particularly difficult and the interpretation of an almost permanently deforested prehistoric landscape is most convincing. This interpretation is further supported by the pollen core sample taken from sediments at the base of Loch an Builaval Beag (Fossit, 1996). This sample suggests that woodland decline occurred relatively rapidly, over a period of only 100 years, from approximately 5950 BC. Following this decline, woodland appears never to have recovered in this area and there is considerable uniformity in the pollen records for the period c. 5950 BC to c. 5049 BC (*ibid.)*. Comparison with modern pollen assemblages suggests that the vegetation was very similar to the blanket peat and heath land habitats which dominate in this area today, combining *Calluna Vulgaris*, *Gramineae* and *Cyperaceae* species. Minimal frequencies of *Betula*, *Corylus* and *Salix* persist in the record up until the modern period and represent the only arboreal and shrub vegetation in this area (Fossit 1996).

However, due to the largely atypical character of Little Loch Roag, the relevance of this individual study to the rest of the Outer Hebrides, in particular the interior and east coast of Lewis, has recently been challenged (Armit 1990c Chapter 2; Bennett *et al*. 1990: 295). A number of sub-fossilised wood remains indicate that some woodland may have persisted beyond this period. There are 18 records of fossilised wood in the west of Lewis, three of which have been radiocarbon dated, and these are found beneath peat in areas of boggy moorland (Fossit, 1996a; Wilkins, 1984. see Appendix 1). The vast majority of these samples are of *betula* (birch) or *salix* (willow), with fewer examples of *pinus* (pine). One of the samples was recorded only 3km north-west of the location of Birks and Masdens pollen core study form Little Loch Roag. Here a

single stump of pine was recorded and associated with calibrated radiocarbon date between 3800 BC and 3520 BC (Wilkins 1984. See Appendix 1: Q-2743). There are two possible explanations for the apparent discrepancy between the pollen core sample from Little loch Roag and Loch an Builaval Beag and the fossilised wood remains. Firstly, tree pollen from this area may not have collected in the loch sediment because of strong westerly winds carrying pollen out to sea. An alternative explanation is that the remaining tree stumps represent individual and anomalous examples, which never formed dense woodland cover (Wilkins 1984: 257). The remaining two dated wood samples are from fossilised birch (Q-2739 and Q-2738), and both are associated with calibrated dates of 3630 - 3370 BC and 3330 - 2910 BC (see Appendix 1). The remaining two pollen core studies carried out in the west of Lewis also support an alternative sequence of environmental change in this area. Samples from sediments at the base of Loch Bharabhat, Bhaltos show woodland decline and an expansion of heath and moorland species in the late Neolithic, and final woodland clearance associated around 1750 BC (Lomax and Edwards 2000b). The pollen sample from Tob na Leobag, near Callanish, also indicates a similar sequence of environmental change, with woodland decline beginning around 5700 BC and final woodland clearance by c. 1550 BC (Bohncke 1988b). Overall, both the pollen core analysis and the evidence for fossilised wood samples suggest that this landscape would not have been overly conducive to woodland regeneration from the mid-Holocene onwards. In parts of west Lewis, perhaps including the Bhaltos peninsula and the area around Calanais, some woodland would appear to have survived into the late Neolithic, however, woodland would have been predominately cleared by c. 1750 BC, almost a millennia earlier than the Iron Age occupation of this landscape. It is therefore argued that the current treeless nature of the upland landscape, supporting instead sparse moorland vegetations, would have been very recognisable to the Iron Age occupants of this landscape some two thousand years ago.

Despite the comparatively large size of Lewis, there are relatively few Iron Age sites recorded here in comparison with Uist (Figure 6.13). Across Lewis 32 Iron

Age sites were surveyed. Seventeen of these were located on islets. Six sites were located in low lying west coastal regions and three of these sites were located on the distinctive machair on the Bhaltos peninsula. As will be discussed in greater detail in Chapters 7 and 8, the Iron Age settlement of the Bhaltos peninsula has often been presented as representing, in microcosm, wider patterns of the Iron Age landscape across the Outer Hebrides (Armit and Harding 1990: 71). It is noteworthy, however, that the location of Iron Age sites within this specific landscape are fairly unique in terms of the Iron Age settlement pattern on the island of Lewis. Six sites were surveyed on coastal headlands, promontories and coastal stackks. These sites were all found along the west coast of the island to the north of the tidal island of Great Benera and three of these sites, Dun Airnestan, Dun Mara and Dun Sobuil, are discussed in more detail in Chapter 7. Dun Airnestan (S4) and stack A'Chaisteil (S173) were both located on sea stackks inaccessible from the eroding coastline. It is possible that these sites were not constructed and occupied during the Iron Age in their current location (these locations are currently inaccessible without the aid of professional climbing equipment), but that the stackks formed at a later date.

6.2.8 Summary

The Iron Age landscapes of the Outer Hebrides would have been divided into three broadly longitudinal environmental zones. The east coast of the islands would have been more rocky and inhospitable than the west, while the interior would have been dominated by moorland zones with peat present and perhaps even intensifying its cover during this period (Armit, 1998b). Fewer Iron Age sites have been recorded in the eastern areas of the landscape, however North Uist differs from the other islands in this respect. In contrast, the west coast would have been associated with areas of fertile machair plains and it is these areas that small clusters of Iron Age houses are found. The islands of Uist, in particular, demonstrate well this tripartite landscape division (Parker Pearson, Sharples and Symonds, 2004b: 28-29). However, across the islands the underlying topographic structure of the landscape varies. Harris and the

southern part of Lewis are mountainous and the eroding granite in this area created a distinctively lunar-like landscape. The differences in topography across the islands have also impacted upon local climate, local vegetation and the development of peat and machair soils. Northern Lewis would have been dominated by wide open plains of blanket peat moorland, while North Uist, currently known for its mosaic landscape of lochs, would have been similarly distinctive during the Iron Age. The Iron Age landscape would have been defined by very little woodland. Any areas of extant tree cover are likely to have persisted towards the eastern parts of the islands, while the west coast would almost certainly have been devoid of any substantial arboreal vegetation. Machair would have been substantially developed along the west and sheltered north coast of the islands and blanket peat and heath and moorland vegetation, perhaps intensifying during or immediately prior to the Iron Age, within the island interior. The establishment of machair is significant as these areas would have represented the most fertile soils across the Outer Hebrides and therefore an important resource for Iron Age farming communities. Overall, the Iron Age environment would have been largely comparable with the modern landscape, particularly with regard to vegetation and soil morphology (Edwards and Brayshay, 2000: 26-27).

Site Name	Island	Primary phase of woodland decline	Expansion of heath species	Final woodland clearance	Reference
Loch Buailaval	Lewis	5950 BC			Fossit, 1996
Beag Tob na Leobag	Lewis	5700 BC		1550 BC	Bohncke, 1988
Little Loch Roag	Lewis	None	6050 BC	None	Birks and Masden, 1979
Dun Bharbhat	Lewis	Late Neolithic	Late Neolithic	1750 BC	Lomax and Edwards, 2000
Loch Olabhat	North Uist	3050 BC	3100 BC	1st Millennium AD	Armit, *et al*, 2004
Loch a'Phuinnd	South Uist	2050 BC	2050 BC	750 BC	Fossit, 1996
Loch Lang	South Uist	2350 BC	3550 BC	950 AD	Bennett, Sharpe, and Switsur, 1990
Peninerine	South Uist	6150 BC	6150 BC		Edwards, Whittington and Hirons, 1995
Loch an t-sil	South Uist	5520 BC	6850 BC		Brayshay and Edwards, 1996; Edwards, Whittington and Hirons, 1995
Loch Airigh na h-Aon	South Uist	3440 BC	7790 BC		Brayshay and Edwards, 1996; Edwards, Whittington and Hirons, 1995
Reineval	South Uist		2550 BC		Edwards, Whittington and Hirons, 1995
Loch na Cartach	Barra	4380 BC	4380 BC		Edwards and Brayshay, 2000
Borve Vallay	Barra	1450 BC			Edwards and Brayshay, 2000
Port Caol	Barra	7250 BC			Edwards and Brayshay, 2000

Table 4: Summary of Pollen Core Data

6.3 Iron Age Seascapes

6.3.1 Introduction

I have argued in Chapter 2 that it is important to think critically about the meaning and significance of island boundaries when studying island communities in the past. As has been explained above, it is likely that many of the individual islands that currently make up the Outer Hebridean archipelago would have been represented by single landmasses during the Iron Age, either permanently or for large parts of the tidal cycle. The physical and sensory relationship between Iron Age sites and the sea potentially informs about the way in which Iron Age communities would have engaged with and perceived the island landscape and surrounding seascape. This provides one way in which we can explore the nature of the landscape from an island perspective. In the following I outline specific results of the subject-centred field survey designed to explore the sensory relationship between Iron Age sites and the sea. I also note the proximity of Iron Age sites with respect to the coast, drawn from GIS analysis (Tables 5 – Table 9) and discuss the location of natural bays and harbours that are likely to have provided access to the sea. I use this information to hypothesise about potential relationships Iron Age communities may have had with the sea, the ability for inter-island contact and seafaring practices. Details of the field survey results can be found in Appendices 3 and 4.

6.3.2 Barra and Vatersay

The subject-centred field survey revealed that the sea was a prominent feature of the landscape, which is visible from the majority of sites surveyed across Barra and Vatersay. In particular the two Iron Age sites located on coastal headlands would have afforded dominating views of the sea, contributing more than 80% of the overall landscape visibility from both these site locations. From Dun Scurival (S124) the field survey found that the sea dominated views in almost all directions, with uninterrupted views not only across the Atlantic (to the west), but also across the Sound of Barra, beyond the Eoligarry isthmus, and with the islands of Fuday, Pabbay, Eriskay and South Uist all noted as visible in

the distance. From Dun Ban (S134) and the two Iron Age sites on Vatersay (S137 and S138) similarly wide views across the Atlantic were also recorded in the field. From the Vatersay sites, the neighbouring island of Barra and the small island of Muldonaich to the east were also clearly visible. These places were frequently described as affording 'extensive' or 'commanding' views of the sea. On a daily basis the Iron Age communities living in these places would therefore have been aware of the wider island landscape that they occupied, of neighbouring island communities and the surrounding seascape.

The five sites located within the upland interior of Barra were also found to provide expansive views of the island and seascape, primarily the Atlantic to the west. In contrast, however, views of the sea were limited from the three islet sites. From Dun Loch an Duin (S127) and Dun Loch nic Ruaidhe (S130) the sea was completely hidden from view, while from Dun Mhic Leoid (S135), the sea was only just visible to the north. The sea was consistently recorded as visible from sites within low lying west coast regions yet in contrast with the coastal headland sites described above, these were not described as extensive or uninterrupted views. From Borve Point (S169), for example, the field survey found that complete and commanding views of the sea were obscured by the intervening coastal dunes. Erosion of the low lying west coast of Barra will have been more pronounced than for areas of coastal headlands, and it is therefore likely that these sites were located further from the coast within the Iron Age landscape.

GIS analysis of the distance of site locations to the modern coastline indicate that Iron Age roundhouses across Barra were built in places with close proximity to the sea. Eighty percent of Iron Age sites (n=12) were located within 1.5km of the modern coastline and almost half of the site locations were located less than 500m from the sea. Most of these locations were found proximal to the Atlantic west coast as opposed to the Minch on the east coast. Like many of the islands across the Outer Hebrides, the west coasts of Barra and Vatersay would have provided little shelter for safe anchorage or harbour during the Iron Age. On the

east coast of Barra the principal places of natural harbour are found at Castlebay, the main township of Barra (a prosperous 19th century herring port and from where ferries currently link Barra to the Uists and the mainland), Brevig Bay, North Bay, Inner Oitir Mor and Eoligarry. On Vatersay natural harbours can be found at Vatersay bay and Cornaig Bay on the east of the island and prior to the construction of the causeway it is reported that safe anchorage may also have been sought on the northern coast of the island, within the Sound of Vatersay. These natural bays and harbours are likely to have provided the same places for launching and landing boats during the Iron Age. Therefore, despite proximity to the coast, and in the case of coastal headland and upland sites expansive views of the sea, Iron Age sites across Barra and Vatersay were not positioned in suitable places from where the sea would have been easily accessible, being located primarily along the west coast which is unlikely to have provided Iron Age occupants with places for natural harbour or shelter. Notable exceptions would have been the Atlantic roundhouses at Bay Hirvaige (129) and the wheelhouse at Alt Christal (178). Other than these two sites, we must conclude that access to the sea and seafaring practices were of limited importance in the everyday lives of the Iron Age communities occupying these places. Nevertheless, a visual sense of the wider island landscape, plus the potential for accessing other islands across the short stretches of intervening water, suggests that the island itself would not necessarily have been perceived as a distinctive unit and that differences between coastal and interior landscapes may have been of equal relevance to Iron Age communities here.

Site ID	Site Name	Island	Distance from coast (m)
130	Loch Nic Ruaidhe	Barra	617
178	Alt Chrisal	Barra	33
125	Dun Chlif	Barra	10
124	Dun Scurival	Barra	94
127	Dun An Duin	Barra	988
131	Dun Na Kille	Barra	0
169	Borve Point 2	Barra	152
134	Dun Ban	Barra	30
129	Bay Hirivagh	Barra	41
135	Dun Mhic Leoid	Barra	601
126	Dun Cuier	Barra	519
133	Balna Craig	Barra	2221
168	Tige Tilimanta	Barra	2057
209	Dun Borve	Barra	259
132	Dun An T'Sleibh	Barra	817

Table 5: Distance of Coastline from Iron Age Sites across Barra

6.3.3 South Uist

The subject-centred field survey indicates that from fewer than seven Iron Age site locations across South Uist would the sea have been visible. In particular, from sites located in low lying coastal landscapes the sea was only recorded as visible from two Iron Age places; Dun Mhullain (S114) and Dun Dorilain (S121). Within its current landscape setting, the sea was found to visually dominate the location of Dun Mhullain (S114), with particularly extensive views to the north and the south along the coastline. However, within the Iron Age landscape this site was probably located within a brackish loch, set behind a sea bar, perhaps incorporating coastal dunes (Parker Pearson and Sharples, 1999). Therefore this would have been an Iron Age islet site. Given these significant environmental changes, current views of the sea from this location do little to reflect Iron Age experiences of this place and it is likely that more limited views of the sea would have characterised this site during the Iron Age. The sea was found to be visible from Dun Dorilain (S121), a site recorded during the RCAHMS survey of 1965 as a dun, and subsequently recorded in Armit's

catalogue (1992) as a possible Iron Age roundhouse. It is likely that this islet has eroded from the mainland since the Iron Age as it is currently accessible across the sand at low tide. The site was found to comprise of a heavily eroding mound containing much stone, compacted peat ash, shell and some decorated prehistoric pottery, possibly Iron Age in date. However, a significant volume of worked quartz and flint flakes, and a polished stone mattock indicate earlier occupation, leading the Iron Age dating of this site to be more recently contested (Moore and Wilson, 2005).The remaining sites within low lying coastal landscapes were locations where the sea was not recorded as visible despite the immediacy of the modern coastline and would therefore have been places where the sea would have been equally out of sight during Iron Age occupation.

From what would have been inland islet sites, the sea was recorded as visible from only three locations; Dun Buidhe (S102), Dun Ardnamonie (S103) and Dun Loch an Duin (S122). From Dun Buidhe (S102) and Dun Ardnamonie (S103), now located within drained lochs, it was noted that these places afforded relatively extensive views of the surrounding landscape and in this respect differed from the other islet sites on South Uist. From the remaining islet sites surveyed on South Uist, the sea would not have been visible. These observations were further supported by consulting the GIS generated viewshed maps for these sites, which indicate a complete absence of lines-of-sight between these locations and the sea.

Site ID	Site Name	Island	Distance from coast (m)
165	Kilpheder	South Uist	265
107	Dun Mor	South Uist	2204
122	Loch An Duin	South Uist	326
121	An Doirlinn	South Uist	99
200	Loch Dun Na Cille	South Uist	1191
176	Dun An Duichal	South Uist	1137
183	Sgeir Ghlas	South Uist	1613
163	Sithean A'phiobaore	South Uist	348
164	Bruthach An Tigh Tallan	South Uist	198
115	Loch Erisort	South Uist	82
106	Dun Uiselan	South Uist	1050
103	Ardnamonie	South Uist	310
102	Dun Buidhe	South Uist	230
104	Dun Na Buail' Uachdraich	South Uist	392
105	Loch An Daill	South Uist	310
170	Geirnish	South Uist	168
108	Loch Cille Bhanain	South Uist	1514
159	A'cheardach Mhor	South Uist	354
161	A'cheardach Mhor 2	South Uist	165
160	A'cheardach Bheag	South Uist	359
113	Dun Nan Gallan	South Uist	491
120	Loch An Duin	South Uist	1638
109	Dun Aligarry	South Uist	1148
110	Dun Buidhe	South Uist	2071
114	Dun Vulan	South Uist	6
116	Upper Loch Bornish	South Uist	1804
112	Gro Ghot	South Uist	944
162	Usinish	South Uist	610
117	Kildonan Mill Loch	South Uist	1721
118	Mingary	South Uist	2187
119	Eillean An Staoir	South Uist	670
111	Dun Altabrug	South Uist	1147

Table 6: Distance of Coastline from Iron Age Sites across South Uist

Of the five upland sites surveyed on South Uist, the sea was recorded as visible from two possible wheelhouse sites on the east side of the island; Geirnish (S170) and Ushinish (S165). The wheelhouse at Gernish is located less than 200m from the shore of Loch Sheilavaig, a sea inlet that provides natural

harbour and shelter as well as convenient access out to the Minch. From this location both the sea and the Cullins on the Isle of Skye could be seen across the Minch. Nevertheless, this location was not described as providing particularly extensive or commanding views of the sea. The possible wheelhouse at Ushinish (S156) is located within Ushinish Vallay, on the eastern slopes of Thacla. From this site one was also afforded views out across the Minch and in clearer weather it might have been possible to see the Isle of Skye from here. From both these sites it is important to note that it was the Minch, as opposed to the Atlantic Ocean, which was recorded as visible. Again, consulting the GIS viewshed maps also highlights the significant contribution of the sea to potential visibility from these sites.

Modern and historical settlement of South Uist is focused heavily on the west coast of the island. Like Barra and Vatersay, the west coast provides virtually no shelter from the Atlantic and very few natural access points to the sea. Loch Be is a large inland loch that separates the north and south regions of the island. The significance of this is that large inland lochs, such as this, may have represented boundaries within the Iron Age landscape, as much as the short stretches of intervening sea. Iron Age sites on South Uist were located in close proximity to the modern coastline. The majority of Iron Age sites surveyed were located within 1000m of the modern coastline (70% of site locations surveyed) and 55% within 500m of the modern coastline. Significantly, the majority of these sites were proximal to the west rather than east coast (therefore Atlantic Ocean rather than the Minch) and few were located to enable easy access to the sea.

Exceptions to this pattern were three sites located within the moorland towards the east coast of the island. The possible Iron Age roundhouse constructed into the remains of a Chambered Cairn at Boisdale (S121) is positioned less then 50m from Loch a'Bharp, a waterway that links with the much larger sea inlet of Loch Boisdale at high tide providing access out to the Minch. Another potential site is located on the hillside above Loch Erisort, a waterway that opens out to

the sea inlet of Loch Aiernot. At Usinsih there is another possible Iron Age roundhouse on the western slopes of a small hill less than 100m from the east coast. From all of these site locations, however, views of the sea would have been restricted. The viewshed models for these sites indicate limited views of the sea, however they do not indicate complete absence of views of the sea as had been recorded in the field. The sites at Geirnish (S170) and Ushinish (S165), described above, would have provided views our across the Minch, sometimes as far as to the Isle of Skye, and were also better positioned for access to the sea. These five moorland sites have not been excavated and in comparison with low lying west coast occupation across South Uist, we know little about Iron Age dwelling on the east. However, in contrast with sites across Barra and despite similar proximity to the coast, the sea would appear not to have been a prominent feature of landscape visibility from Iron Age sites across the South Uist landscape.

6.3.4 Benbecula

The fords that currently separate Benbecula from the islands of South Uist, North Uist and Grimsay can be crossed at low tide, although these crossings, particularly between Benbecula and Grimsay, are known to be treacherous in bad weather and require suitable tides (Innes, 2006; Lawson, 2004). Similar journeys would have been open to communities occupying these landscapes during the Iron Age providing potential connections between these landmasses. It is also possible that these islands were more permanently connected by land during this time and therefore the island boundary of today has less significance for our understanding of Iron Age occupation. The eastern coast of Benbecula, with its numerous coves and inlets, would have provided Iron Age communities with numerous natural harbours and places of safe anchorage. Peter's port, Loch a Laip, Loch Keiravagh, Loch Meanervagh and Loch Uskavagh are currently well known places. Like South Uist, Barra and Vatersay, the west coast of Benbecula would have provided fewer natural harbours in the Iron Age landscape.

Site ID	Site Name	Island	Distance from coast (m)
157	Bruath A Tuath	Benbecula	449
100	Dun Fhearchair	Benbecula	475
193	Eilean An Duin	Benbecula	864
89	Loch An Duin	Benbecula	399
90	Dun Buidhe	Benbecula	1576
92	Eilean Iain	Benbecula	2326
93	Dun Torcusay	Benbecula	358
91	Loch Na Berie	Benbecula	426
94	Knockamonie	Benbecula	1349
97	Dun Shunish	Benbecula	1222
95	Dun Aonais	Benbecula	1873
98	Dun Mhic Uisdein	Benbecula	1409
99	Gunisary Bay	Benbecula	296
101	Dun Ob Saille	Benbecula	58
96	Dun Ruadh	Benbecula	1730

Table 7: Distance of Coastline from Iron Age sites across Benbecula

The majority of Iron Age sites surveyed on the island Benbecula were located within 1500m of the modern coastline (73% of site locations surveyed) and 46% within 500m of the modern coastline. As described above, however, the focus of known Iron Age sites is not so heavily focused on the west coast as was found to be the case on South Uist. There is more occupation within the interior of Benbecula and the proximal coastlines are the north, west and south coasts. Two sites (S101 and S91) were recorded on the east side of Benbecula and of these, Dun Ob Saille (S101), was located within xm of the east coast, although as noted above, this site was likely to have been located further inland during the Iron Age. Nevertheless, coastal erosion on the east coast of the islands has been far less significant than on the west coast so it is unlikely that the position of this site would have changed too profoundly. This area is currently known to provide numerous natural harbours and landing bays and it is likely that this location would similarly have provided Iron Age occupants with immediate access to the Minch. Although the coastline was less than 60m distant, from Dun Ob Saille (S101) the sea would not have been visible. The sea was not recorded as visible from any of the other places surveyed on this island and so

it was concluded that the sea was not a potent feature of experiences of this Iron Age landscape. The GIS generated viewshed models similarly indicate that the sea was either not visible from these locations or would have contributed very minimally to the landscape view.

6.3.5 North Uist

During the subject-centred field survey it was found that the sea would not have been visible from *any* of the inland islet sites across North Uist. In comparison, at sites located on marine islets within sea inlets or sea lochs, the sea was an unsurprisingly dominant visual feature with the sea surrounding the site location at high tide. However, it is likely that some of these Iron Age roundhouses were not built onto islets, but instead were located on small hillocks, or low coastal promontories close to the shore, that through processes of coastal erosion and rises in sea level have formed as isolated islets. This is likely to be the case at Eilean Maleit (S54), at Cladach Vallay, where it is possible that the current tidal sands of the Vallay Strand were represented by free draining machair soils during the Iron Age (Armit, 1998a). The Iron Age landscape of the Vallay Strand area will be discussed in greater detail in Chapter 7 (7.2.3). Similarly, the islet site Dun na Dise (S78), located on the tidal sands at Cladach Baile Sear, were perhaps also constructed prior to flooding of this area. The dominant views of the sea from these sites, therefore, do not necessarily correlate with Iron Age experiences of these places. Furthermore, despite the fact that the sea was recorded as visible from sea islet sites, none of these locations were described as affording either ‘extensive’ or ‘commanding’ views of the sea. Alternatively, a number of marine lochs, principally on the east coast, were interpreted as eroded inland lochs that had been exposed to the sea through erosion. These sites were then classified as inland islet sites.

The sea was recorded as visible from all of the sites located within low lying, machair type landscapes. However, it is likely that many of these sites would have been set further back from the Iron Age coastline, probably built behind coastal dunes which would have restricted views out to the sea. Even where the

sea was recorded as visible during the field survey, these views were not defined as ‘extensive’ or ‘commanding’ and it was concluded that these would not have been places from which Iron Age people would have been able to monitor the sea or coast. In contrast, in the subject-centred field survey I recorded expansive views of the sea from two sites within the upland island interior; the wheelhouse at Cletraval (S62) and the possible Iron Age roundhouse at Baile Risary (S57). The wheelhouse at Cletreval is discussed in greater detail in Chapter 7 (7.4.2). The other possible Iron Age site recorded as providing extensive views of the sea was Dun Caragarry (S202), an anomalous site built into the natural rock face of Li a’Tuath and described by Beveridge as comprising the remains of a dun. From this location expansive views to the east across the Minch over to the island of Skye (in optimum weather conditions) were recorded. These three sites were the only locations where expansive views of the sea and surrounding islandscape would have been possible during Iron Age occupation. Sites that would have been located on inland islets were recorded as having very restricted visibility of the sea or no visibility of the sea at all.

The eastern coastline of North Uist is inundated with coves, small offshore islands and rocky reefs which would have provided many good places for safe and sheltered harbour for Iron Age seafarers. It is important to note that a significant proportion of Iron Age sites are located on the east coast of North Uist, and that this distribution contrasts with Iron Age settlement patterns across the islands of Benbecula and, most notably, South Uist. Along this east coast several larger sea lochs would have provided access from the sea to the island interior, namely Loch nam Maddy, Loch Portain and Loch Euphort. Euphortis a long narrow loch that almost divides the island of North Uist and has historically been an important waterway in the island’s history (Lawson, 2004). The possibility for Loch Euphort to have provided access from the east coast to the island interior during the Iron Age must not be overlooked. The island of Grimsay would have provided many opportunities for easy and sheltered access to the Minch. The natural geography of this island has meant that

historically Grimsay has been an important fishing centre within the islands. In comparison with the eastern areas of North Uist, the west coast provides virtually no shelter nor places for natural harbour. There are, however, a few suitable landing places on the north coast, to the west of Orosay, in the Sound of Berneray and at Vallay. Overall, the contrast between the east and west coasts of North Uist would have been a similarly prevailing characteristic of the Iron Age landscape.

On North Uist, more than 95% of known Iron Age sites were located within 1.5km of the modern coastline, and 66% of known sites within 500m of the coast. Unlike sites across South Uist, on North Uist there was evidence for significant occupation on the east coast and greater evidence for Iron Age occupation within the island interior. In particular, sites in these areas were located on islets within the many lochs that cover the interior and eastern areas of the North Uist landscape. A number of islet sites would have been well located for access to the sea, in particular taking advantage of sea lochs, such as Loch Portain, Loch Euphort and Loch Nam Maddy mentioned above.

Site ID	Site Name	Island	Distance from coast (m)
194	Loch An Fhaing	North Uist	183
208	Loch Mor 2	North Uist	643
78	Dun Na Dise	North Uist	19
214	kate's wheelhouse	North Uist	37
88	Dun Ban Hacklet	North Uist	238
52	Dun Na Mairbhe	North Uist	64
72	Loch Hunder	North Uist	656
190	Loch A'mhuilinn	North Uist	377
191	Loch Hornary	North Uist	237
79	Dun Na H-ola	North Uist	718
75	Dun An Mor	North Uist	26
76	Dun Bailleray	North Uist	73
77	Dun Mor	North Uist	307
186	Loch Mor 3	North Uist	369
46	Dun Skellor	North Uist	959
71	Dun Leiravay	North Uist	41
68	Eilean Dubh	North Uist	176
207	Loch Mor 1	North Uist	656
185	Loch Mor 4	North Uist	371
210	GeIrisclett	North Uist	49
188	Eilean Na-h-Ioiaire 2	North Uist	80
189	Eilean Na-h-Iooaire 1	North Uist	10
73	Loch Nan St Ruban	North Uist	287
70	Dun Steingarry	North Uist	12
74	Dun Nighean Righ Lochlainn	North Uist	115
80	Bienn Na Coille	North Uist	1391
197	Bienn Na Coille	North Uist	1402
47	Dun Scolpaig	North Uist	538
84	Dun An T-Siamain	North Uist	424
43	Eilean A'ghallain	North Uist	460
85	Loch Nan Geaglag	North Uist	109
203	Loch Nan Geireann	North Uist	703
62	South Cletreval	North Uist	2891
202	Dun Caragarry	North Uist	414
64	An Caisteil	North Uist	25
61	Dun Grogary	North Uist	459
192	Dun Mhic Raouil	North Uist	1954
63	Dun Mhic Raouil	North Uist	1828
65	Dun Scarie	North Uist	1145

Site ID	Site Name	Island	Distance from coast (m)
66	Sithean Tuath	North Uist	761
41	Dun A Ghallain	North Uist	369
59	Loch Na Caigain	North Uist	264
149	The Udal	North Uist	243
199	Loch Na Buaile	North Uist	240
60	Tigharry	North Uist	1023
150	Foshigarry	North Uist	8
39	Loch Iosal An Duin	North Uist	437
48	Dun Toloman	North Uist	493
69	Dun Loch Sandray	North Uist	790
53	Dun Bru	North Uist	347
83	Loch Obisary 1	North Uist	774
58	Dun Loch Na Dubcha	North Uist	667
205	LOCH NA DUBCHA	North Uist	965
51	Cnoc A Comdhalach	North Uist	18
56	Dun Torcuill	North Uist	350
50	Garry Iochorach	North Uist	3
55	Dun Aonais	North Uist	388
54	Eilean Maleit	North Uist	48
57	Buaile Risary	North Uist	765
49	Oban Trumisgarry	North Uist	25
42	Dun Rosaill	North Uist	875
38	Dun An Sticer	North Uist	186
45	Oban Skibinish	North Uist	44
82	Dun Ban Hacklet	North Uist	902

Table 8: Distance of Coastline from Iron Age sites across North Uist

6.3.6 Harris and Berneray

Between Harris and North Uist, the Sound of Harris, would have been a similarly deep water channel during the Iron Age. The Sound of Harris, however, is unlikely to have been an absolute barrier to Iron Age communities and travel between these places would have been made all the more easier by the location of several smaller islands within the Sound. The so-called island of Harris is not in fact an island in the traditional sense, being part of the same landmass as Lewis (discussed below) both today and in antiquity. Instead of

water, what separates these two 'islands' is a range of inhospitable mountains that have historically divided these areas and the communities living in them in a very practical way. The mountains of Harris may therefore have formed as much, if not more of a boundary to Iron Age communities than the sea that separates these islands. There are a number of natural harbours in the southern part of the Harris, facing the Sound of Harris, and along the east coast. East and West Loch Tarbet provide obvious sheltered access to the sea. Once again, the majority of the machair defined Atlantic west coast of the island is unsheltered and would have been largely unsuitable for natural harbour.

Because there are very few known sites on Berneray and Harris, it is difficult to make general comment on the nature and qualities of these places. From Dun Loch Langavat (S31) the sea was not recorded as visible, a recurring characteristic of inland islet sites elsewhere across the archipelago. From Dun Inesgal (S35), located on an islet within a sea loch, the sea was visible but not extensively so. From the two upland site locations (S30 and S36) and the coastal headland site (S32) incredibly extensive and commanding views of the sea were found. From Dun Rodel (S36), for example, almost complete views across the Sound of Harris with the islands of Berneray and North Uist clearly discernible would have characterised this site during the Iron Age. These three sites were distinctive in these characteristics and it was noted during the survey that places with these qualities regarding visibility of the sea were similar to sites surveyed on Barra. From Eillean An Dunain (S195) views across the small stretch of sea to North Uist were recorded and the sea visually dominated this locale.

6.3.7 Lewis

For the island of Lewis, the subject-centred field survey revealed that from very few Iron Age sites located on inland islets would the sea have been visible. Of the 17 sites located within islets in fresh water lochs, from only two of these, Dun Sleibhe (S3) and Dun Arnol (S10), was the sea recorded as visible. In both cases the sea was only visible in the distance, contributing minimally to the

visual experience of these places as was found to be the case during the survey of islet sites across the other islands. The six sites located on low lying coastal landscapes were all recorded as having the sea visible but to varying degrees. The wheelhouse site of Cnip (S147), on the Bhaltos peninsula for example, was recorded as having fairly extensive views out to sea. However, the current location of this site on an eroding beach suggests that these wheelhouses were originally constructed behind coastal dune systems, in which case the sea would have been partially or even wholly obscured from view from this location (Armit, 2006: 19). Across Lewis a number of sites were located on high coastal headlands along the west coast. These sites afforded a fairly unique relationship with the sea and would have been characterised by the extensive views out across the Atlantic.

Across Lewis three large sea lochs on the west coast may have provided Iron Age communities with access to the sea, for example the large Loch Roag, which is sheltered from the Atlantic by the island of Great Benera. To the south-west of Loch Roag is the area known as Uig and the Bhaltos peninsula one of the few areas where machair is well established across Lewis. Further to the south the landscape becomes increasingly mountainous but here too are a number of other potentially important sea lochs such as Loch Resort. Similar to other islands, the west coast of Lewis is where the majority of Iron Age sites are found. The west coast of Lewis, with its numerous sea lochs and areas of high coastal cliffs, differs however from the west coastlines found across the other islands within the archipelago, namely Uist. The east coast, which would likely have been defined by sparse vegetation and a rugged coastline as today, would also have provided convenient access to the sea via one of a number of large sea lochs which penetrate the island interior; Loch Seaforth, Loch Sealag and Loch Erisort. Iron Age sites are also found in these areas. Half way up the island on the east coast is the Eye peninsula to the north of which is Board Bay and to the south the bay at Stornoway, both historically important harbours. The majority of Iron Age sites on the island of Lewis and Great Benera were also

found to be located in close proximity to the modern coastline (94% within 1500m). Fifty percent of sites were located within 500m of the sea.

Site ID	Site Name	Island	Distance from coast (m)
26	Dn Cromore	Lewis	54
22	Dun Bharabhat	Lewis	627
13	Dun Borosdale	Lewis	1682
7	Loch Shiavat	Lewis	1964
5	Dun Bharavhat	Lewis	855
172	Dun Loch An Duna	Lewis	741
16	An'Caisteal	Lewis	108
10	Dun Arnol	Lewis	184
18	Dun Bharabhat	Lewis	729
148	Mcleod's Wheelhouse	Lewis	335
147	Cnip	Lewis	18
24	Dun Borranish	Lewis	20
20	Loch Baravat	Lewis	657
11	Loch An Duna	Lewis	1045
14	Dun Stuigh	Lewis	9
17	Dun Baravat	Lewis	796
23	Dun Tiddaborra	Lewis	84
21	Dun Barraglom	Lewis	0
15	Dun Carloway School	Lewis	1133
25	Loch An Duin	Lewis	803
19	Loch Na Berie	Lewis	703
12	Dun Carloway	Lewis	617
174	Carloway Pier	Lewis	0
179	Dun Swordale	Lewis	1210
171	Dun Loch An Duin	Lewis	698
173	stack A'Chaisteil	Lewis	53
9	Loch An Duin	Lewis	1426
8	Dun Borve	Lewis	364
6	Dun Sabhuil	Lewis	19
4	Dun Airnestean	Lewis	7
3	Dun Sleibhe	Lewis	786
2	Dun Mara	Lewis	37

Table 9: Distance of Coastline from Iron Age site across Lewis

6.3.8 Summary

The distinctive contrast between the east and west coasts, in terms of topography, vegetation and climate, is apparent across all of the islands of the Outer Hebrides. These would have been a similarly defining feature of the Iron

Age landscape, particularly across Uist. The different potentials offered Iron Age communities for accessing the sea on the east and west island coasts would have been an important feature of the island landscape and it is therefore important to note that the majority of Iron Age settlement appears to focus on west coast areas. Overall, the geography of the west coast offers little advantages for seafaring communities in contrast with the east coast, suggesting that access to the sea, and seafaring practices were of limited importance in the everyday lives of the Iron Age communities occupying these places. The island of Lewis differs somewhat from this general observation, as here a number of sea lochs would have provided potential access to the sea. Across Lewis and Barra Iron Age sites are also found on highly elevated western coastlines. These sites are distinctive in that from these places, Iron Age people would have been afforded expansive views out across the Atlantic. In contrast, the field survey found that lowland coastal sites were less frequently associated with views of the sea and that where lines-of-sight were established, either through consulting the viewshed maps or in the field, it was concluded that these views could not have been extensive and would not have dominated these locales. Furthermore, in many examples it is likely that these Iron Age roundhouses would have been built and occupied behind coastal dunes, which would have further impeded views of and out to the sea. In contrast, where there is greater evidence for east coast occupation during the Iron Age, most notable across North Uist, sites located in this area of the island, namely islet sites, would have been well positioned for access to the sea. The potential for accessing other islands across the short stretches of intervening water, suggests that islands would not necessarily have been perceived as a distinctive unit and I argue that differences between coastal and interior landscapes may have been of equal relevance to Iron Age communities. Visually the sea was not visible from the majority of Iron Age sites. In particular from sites located within inland lochs, the sea would rarely have been visible. From lowland coastal sites, views of the sea were not extensive or commanding. In addition, these places were not ideally suited for access to the sea being located primarily on the west coast when natural bays and harbours

are largely absent. Coastal headland sites differed markedly in that these places were dominated by views out across the Atlantic. From these places and from upland sites, Iron Age communities would have been afforded a strong sense of the wider island landscape in which they were situated.

6.4 Landscape Scale

6.4.1 Introduction

The scale of landscape and range of environments visible from site locations informs about the potential interests, concerns and types of practices that would have defined the lives of Iron Age communities living in these places. In the following I will discuss the results of the GIS distance-based viewshed analysis and subject-centred field survey results designed specifically to explore the scale and environmental composition of landscape visibility. The *in situ* field survey results revealed distinct differences between sites located within low lying, coastal landscapes, sites located on coastal headlands and those located on islets within inland lochs. In contrast, these differences were not so apparent in the analysis of the scaled viewshed models. The full results of the GIS analysis can be found in Appendix 4 and details of the field survey results can be found in Appendix 3.

6.4.2 Barra and Vatersay

(See Figures 6.14 and 6.15)

The subject-centred field survey indicated that across Barra and Vatersay the majority of Iron Age sites located on low lying coastal machair would have been associated with predominantly localised landscape visibility, with limited visibility into regional and distant scales of landscape. Some sites were defined by more expansive views of regional and distant landscapes and these were found to be Iron Age places on coastal headlands located within the upland interior. These views would have been primarily out to sea but would also have included areas of the machair and surrounding moorland. The most localised landscape views,

however, were associated with the three inland islet sites, which were recorded in the field as providing the least varied landscape views, and limited views beyond the immediate locale. From these places, in addition to restricted views of the sea described above, views of the machair were similarly unrecorded. Overall, the field survey indicated that the majority of Iron Age places would have enabled views of the full range of landscape environments; sea, machair and upland/moorland. This is not surprising given the small size of these islands. However, places on the coastal machair would have provided the most varied landscape views.

Analysis of the relative contribution of different scales of landscape depicted by the viewshed models indicates that the three islet sites would have benefitted from moderate visibility of the local landscape, low visibility of the regional landscape and significantly limited views of the distant landscapes. Iron Age sites on the coastal machair provided more varied viewshed maps. The viewshed models for S127 and S130 indicate that less than 1% of the distant landscape would be visible from these locations. Other than Dun Borve (S209), the viewshed maps indicate that these places would have been structured by limited visibility of the distant landscape. In terms of overall landscape visibility, coastal headland sites produced the most extensive viewshed maps - i.e. places from where the largest area of landscape, including distant landscapes, were indicated as being visible. Upland sites yielded viewshed maps indicating that visibility was more evenly distributed between local, regional and distant areas. The distance-based viewshed maps for sites across Barra, therefore go some way to supporting the observations made in the field.

6.4.3 South Uist

(See Figures 6.16 and 6.17)

In comparison with the site locations on Barra and Vatersay, the Iron Age places surveyed across South Uist tended not to enable the full range of landscape visibility. Lowland coastal places were dominated by views of the machair and

the sea, but with limited visibility of the moorland or upland landscape zones. Similarly, places surveyed in the upland/moorland landscape were dominated by views of the surrounding moorland but revealed limited views of the vast areas of machair along the west coast. A number of these moorland sites, as described above, were located on the east of the mountains, and this not only precluded views of the west coast but also profoundly restricted access between these places. Places on islets were dominated by views of the loch and surrounding banks, but with limited views beyond the immediate locale, the machair, coast and sea. The overall impression was of a landscape that was much more divided than Barra and Vatersay, where Iron Age places were more segregated and experiences of these places, in terms of landscape visibility, more discrete. The field survey also indicated that Iron Age sites across South Uist would have been associated with even more localised landscapes, with limited visibility into regional and distant scales of landscape. Sites that differed from this general pattern were three of the upland sites which were defined by greater visibility of the regional and distant landscape, and the site of Dun Mhullain where the current landscape location afforded extensive visibility of the sea into the distant horizon. However, as discussed above, the current location of Dun Mhullain would not appear to represent the Iron Age context and it is likely that much more restricted, and therefore localised, views of the landscape would have characterised this place when occupied during the Iron Age.

Analysis of the relative contribution of different scales of landscape visibility depicted by the viewshed models indicates that the majority of islet sites were structured by moderate to high visibility of the local landscape, moderate visibility of the regional landscape and low visibility of the distant landscape. However, six islet sites (S120, S104, S122, S111, S182, S109) showed more extensive visibility, particularly of the distant landscape field. These sites were located within machair, rather than moorland lochs, and were therefore also located in closer proximity to the west coast. In terms of the scales of landscape visibility, the viewsheds indicate that these site locations had more in common with other sites located within low lying coastal and machair landscapes which

appear to be structured by more extensive, overall visibility. The viewshed for Dun Vulan (S114) also stands out with large viewsheds in local, regional and distant classes. Again, this characteristic relates to the modern landscape setting which we understand to differ substantially from its original Iron Age location. Surprisingly, the GIS viewsheds indicate that the upland sites would have been structured by notably small viewsheds. These results differ markedly from the impression of landscape visibility recorded in the field. Overall, the viewshed models for sites across South Uist demonstrate much more extensive visibility in comparison with sites on Barra. The sense that sites across South Uist provided more discrete visual experiences of the Iron Age landscape, compared for example to sites across Barra, was therefore not an observation that could be supported by the GIS analysis. In several ways the viewshed maps for sites across South Uist do not reflect the observations made in the field.

6.4.4 Benbecula

(See Figures 6.18 and 6.19)

Like the sites surveyed on South Uist, Iron Age places on Benbecula tended not to provide varied views of the available environmental zones. From 12 of the 14 islet places investigated coastal machair was not visible and instead these places were entirely dominated by views of the loch and surrounding moorland. The only exception was Dun Torqusay (S93), where now crofted machair was found to surround the loch and this as opposed to peat based soils visually dominated views from this place. Because there were only two places surveyed within the lowland coastal landscape of Benbecula it is difficult to generalise about the nature of these places. Furthermore, these sites were located beneath the modern runway at Benbecula airport and therefore it was incredibly difficult to assess in order to record experience and qualities of these places relevant to Iron Age occupation in this landscape. Beyond the runway itself, these locations were found to be surrounded visually and geographically by machair.

The majority of the sites investigated across Benbecula were recorded with predominantly local scale landscape views and there was no apparent difference between lowland coastal and islet places in this respect. Analysis of the relative contribution of different scales of landscape depicted by the viewshed models indicate that nine islet sites were represented by very limited regional and distant visibility classes (between 0% and 10% of the regional and distant landscape was indicated as visible). Five sites, however, were represented by larger overall viewsheds and more significant regional and distant viewsheds (S89, S99, S100, S94, S93). As with islet sites across South Uist, these viewshed maps correlate with sites found in lochs closer to the low lying west coast of the island, suggesting that there was, in fact, more variation in the visual structure of islet sites than had been observed through field survey alone.

6.4.5 North Uist

(see Figures 6.20 and 6.21)

The sites surveyed on North Uist tended not to provide significantly varied views of the available environmental zone. Eighty five percent of islet sites were recorded in the field as providing views solely of the loch and surrounding moorland - i.e. with no views of the machair, although lowland coastal sites provided more varied landscape views. The majority of site locations were also recorded in the field as providing very limited views of distant landscapes. Islet sites were recorded as providing views limited almost exclusively to the immediate locale, while both lowland coastal and upland sites incorporated more regional views. Analysis of the GIS viewsheds demonstrate that islet sites across North Uist were structured by moderate local visibility (average 15% of local landscape visible) and very low regional and distant visibility(average 3.41% and 1.71% respectively). In comparison, lowland coastal sites were structured by increased visibility of the local and regional landscape (average 28.43% and 15.23%), but similarly low visibility of the distant landscape (5.94%). Upland sites were associated with more equally distributed viewshed

sizes across the distance classes and structured by the moderate visibility of the distant landscape. Again, the distinctions in visual experience identified in the field were not apparent from the distance-based viewshed analysis. In particular, the specifically localised and restricted visibility associated with islet sites was not reflected in these GIS models.

6.4.6 Harris and Berneray

(See Figures 6.22 and 6.23)

Again, it is difficult to make generalisations about the scale and composition of landscape visibility from sites across Harris and Berneray because the number of sites is low. The single islet site (S31) was described in the field as affording specifically localised views of the landscape, dominated by the loch and the surrounding moorland. The sea and machair type landscapes were not recorded as visible. The viewshed models indicate that this location was structured by predominantly local landscape visibility, limited regional landscape visibility and no visibility into the distant landscape. The GIS viewshed indicates that the lowland coastal site (S35) was structured by very limited visibility and no visibility of the distant landscape. The upland sites (S36 and S30) were recorded in the field with more balanced views in terms of landscape scale. This is reflected in the viewshed for S36 in particular, but not for site S30.

6.4.7 Lewis

(see Figures 6.24 and 6.25)

Islet sites and lowland coastal sites across Lewis and Great Benera were recorded in the field as places dominated by visibility of the local landscape. In comparison coastal headland sites were recorded with extensive regional and distant landscapes visible. The GIS generated viewsheds indicate that islet places were structured by limited visibility of local, regional and distant landscapes. Lowland coastal sites were structured by similarly limited views of the regional and distant landscapes but increased views of the local landscape. Coastal headland sites across Lewis, like Barra, were shown to be structured by extensive visibility of all three distance-based landscapes. Surprisingly, upland

sites also generated small distant viewsheds and it was indicated that these places were structured by limited visibility of distant landscapes and only moderate visibility of local and regional landscapes. The sites surveyed across Lewis tended not to provide significantly varied views of the different environmental zones. The majority of islet sites were recorded in the field as providing views solely of the loch and surrounding moorland - i.e. with no views of the machair or the sea. Lowland coastal sites provided more varied landscape views and from coastal headland sites the sea tended to dominate the location.

6.4.8 Discussion

The *in situ* field survey results revealed distinct differences between sites located within low lying, coastal landscapes, sites located on coastal headlands and those located on islets within inland lochs (Figure 6.26). Differences between these types of place were more significant than differences between islands. In contrast, however, these types of place were not shown to be distinctive in the analysis of the distance-based viewshed models. In particular, the conspicuously localised landscape views associated with islet sites could not be demonstrated through the GIS analysis, where instead these types of site were shown to afford extensive visibility of both local and regional viewsheds. While many of these locations were shown to afford minimal views of the distant landscape, there was also considerable variation in this respect. Figure 6.27 shows the proportion of visible areas of the landscape in each distance-based field, as a proportion of the total area visibility from each site. In other words, this graph indicates not the amount of landscape visible within each distance-based class, as the previous graphs do, but how visibility of these areas of landscape contribute to the *overall* area visible. This method of analysing the data was considered a better way of representing how people actually perceive landscapes; when we view our surroundings we assess the proportions and scales of different areas on the basis of what *can* rather than what *cannot* be seen. Therefore, sites recorded in the field as providing predominant visibility of distant landscapes refers to the fact that these visible

areas were more defining in the overall vista of either local or regional landscapes, regardless of the actual areas involved. However, as Figure 6.27 shows, this alternative representation of the data still does not convey the distinctive visual qualities recorded in the field.

The lack of correlation in the results for the islet sites is particularly intriguing as the distinctiveness of these places was one of the most apparent outcomes of the field survey. This suggests either that there was more variation in the visual structure of islet sites than had been observed through field survey alone, or that these characteristics described in the field did not equate with the size of viewsheds in each distance-based field. With regard to the former, it is necessary to consider the nature of the field survey practices that produced these results. As the subject-centred fieldwork progressed, I became increasingly familiar with the settings of Iron Age sites within the landscape. Having found islet sites to be distinctive, familiarity with these types of places and a degree of expectation inevitably affected how I experienced subsequent sites. Reflecting upon the results of this survey, it is apparent that I came to identify islet sites with certain experiences, such as enclosure and localised landscape views, with a mind to previous experiences. Furthermore, when surveying islet sites, the banks of the surrounding lochs, even when of varying sizes, increasingly registered in my mind as a boundary and it is notable that within GIS viewshed models, as implemented here using continuous rasterised data as opposed to a vector format, we are unable to identify 'noticeable' features, as we tend to do when viewing a landscape. This point leads us to consider the degree to which distanced-based viewsheds are an adequate means of representing concepts such as 'enclosure'. These issues will be discussed further in Chapter 9. The viewshed analysis does suggest, however, that of the islet sites investigated in the field, those surrounded by machair rather than peat or rocky moorland, and in closer proximity to the west coast, would have afforded more extensive lines-of-sight into areas beyond the immediate landscape. These places may therefore have shared some visual characteristics with lowland coastal sites. Experience is of course complex, and

we should not expect that all places fit neatly into particular categories. Thus there is a degree of overlap between the visual experiences associated with lowland coastal sites and islet sites within low lying coastal regions of this landscape.

6.5 Conclusions

In this chapter I have outlined the results of the subject-centred survey and GIS viewshed analysis in light of the local environmental conditions for each region of the study area. At this level of analysis some broad trends begin to emerge, such as the distinctive contrast between the east and west coasts of the Hebridean islands and a seeming under-appreciation of proximity to the sea in Iron Age settlement distribution. Four different types of location have been identified; lowland coastal, inland islet, upland and coastal headlands. In regards to the methodologies employed here there is also a disjuncture between some aspects of the subject-centred survey and GIS viewshed analysis. In the following chapter I test these observations using data from select case studies.

Chapter 7: Results: Varied Island Experiences

7.1 Introduction

In the previous chapter (Chapter 6) I have identified four types of Iron Age places; lowland coastal, inland islet, coastal headland and upland. These categories were based upon landscape location and experiential characteristics of place and were drawn originally from the information gathered during the extensive field survey. As has been discussed in Chapter 6, the distance-based viewshed results did not convincingly highlight the differences between these categories of place as had been identified in the field, although some variation was apparent. In order to further explore these categories of place, ten smaller study areas were drawn from the original database of sites for investigation at the more detailed local research scale. Within each study area, research focused on one particular site and the relationship with the associated local landscape, defined in this research as a surrounding area of approximately 1.5km, and other broadly contemporary sites within this Iron Age landscape. The sampling strategy was designed to investigate the full range of domestic Iron Age site types (wheelhouses and Atlantic roundhouses, including complex examples of the latter) as well as the range of different landscape locations. In this chapter I introduce each of these study areas and attempt to further refine these landscape categories. The results of the local landscape research, focusing on these study areas, is then discussed in Chapter 8.

7.2 Lowland Coastal places

7.2.1 Introduction

Lowland coastal places were defined by Iron Age sites located within low elevated landscapes (less than 10m OD), near to the Atlantic Ocean on the

west or north island coasts (within 500m of the sea) and associated closely with machair type environments. The subject-centred field survey indicated that these places were associated with extensive visibility of local and regional landscapes, but limited views of more distant landscapes. They were also associated with limited views of the sea and would have been places where visibility would have instead focused upon the arable machair. These places were not positioned for easy access to the sea and it is suggested that seafaring practices would not have been an intimate part of dwelling in these landscapes. Instead, it is suggested that Iron Age communities living in lowland coastal landscapes would have been more focused towards agricultural practices such as improving soils and tending to crops on the surrounding machair. Most frequently Iron Age sites defined as lowland coastal places were built directly on the machair. In addition lowland coastal places included roundhouses built on islets within machair lochs and marine islet sites. In the case of the latter, it is likely that in the Iron Age landscapes many of these would not have been off-shore islands but small mounds that have since eroded from the coastline.

It is widely believed that Middle Iron Age settlement patterns across the Outer Hebrides centred on the machair (Armit, 1998b; Sharples, Parker Pearson and Symonds, 2004) and Iron Age sites within these environments have for some time been the focus of archaeological investigation. Consequently, sites classified in this research as lowland coastal places provide us with the majority of the archaeological data for this period and as a group of sites have played a very dominant role in shaping archaeologist's interpretations of the Outer Hebridean Iron Age. Forty two Middle Iron Age sites were classified in this research as lowland coastal places and included the full range of Middle Iron Age site types; Atlantic roundhouses, sites identified as complex roundhouses (aka brochs) and also wheelhouses. Two case studies were selected to further explore the nature of lowland coastal sites; the Vallay Strand, North Uist, focusing on the Atlantic roundhouse site Garry Iochdrach (S50), and the Udal

peninsula, North Uist focusing on one of the three wheelhouse sites excavated here (S149).

7.2.2 Udal

(see Figures 7.1 and 7.2)

The Udal peninsula is a 4km long spit of machair that protrudes into the Sound of Harris off the north coast of North Uist (Figure 7.1). A long-term research excavation project carried out on the Udal peninsula between the 1960s and 1970s revealed multiple phases of occupation on the Udal peninsula extending from the Early Bronze Age, through the Iron Age, Viking occupation and into the medieval period (Crawford, 1974; Crawford and Switsur, 1977). This excavation included the discovery of three previously unknown wheelhouse sites at Udal south and an additional wheelhouse type structure at Udal North. At the southern sites, wheelhouses A and B exceeded 10m in diametre and were comparable with the wheelhouse at Sollas which remains the largest example of a wheelhouse site currently identified in the Outer Hebrides (Campbell, 1991; Crawford, 2003). My research on the Udal peninsula focused on the location of Wheelhouse A. The excavation of this site revealed a roundhouse with 11 free-standing, corbelled piers, and evidence for central hearths. Wheelhouse 'B' was of a comparable size and construction, while wheelhouse 'C' was of a more modest 8m in diametre with evidence for only seven complete piers (Crawford,1974; Crawford, 2003; Crawford and Switsur, 1977). Virtually no information is available for the wheelhouse at Udal North. Whilst a number of radiocarbon dates indicate occupation at these sites between the 1st century BC and the 2nd century AD (see Appendix 1), the lack of clearly published material makes it difficult to ascertain the context of these samples and the sequence of occupation at Udal is unclear. It is supposed that these wheelhouse sites would have been broadly contemporary and that at least some of these sites would have been occupied concurrently. A lack of fully published material from this excavation, however, inhibits understanding of these sites. Other examples of clustered wheelhouse sites within lowland coastal landscapes are found at A'Cheardach Mhor and Beag, South Uist (Fairhurst, 1971), Baile Sear

(McHardy and MacDonald, 2008; McHardy and Rennell, 2009), and at Cnip, Lewis (Armit, 2006). It would therefore appear that small groups of wheelhouse sites are a phenomenon of Middle Iron Age settlement patterns. However, at Cnip only one of the two wheelhouses was occupied in its original wheelhouse form (Armit, 2006).

Machair was well established on the Udal peninsula by the Iron Age. Crawford's evaluation of the environmental development of the Udal associates stages of machair accumulation with Beaker deposits (c. 2,500 to 2,000 BC) and the Middle Iron Age wheelhouses were built within windblown sandhills (Crawford 1974; Crawford and Switsur, 1977). The wheelhouses and later occupation were covered with further wind-blown sand prior to their exposure in the 1960s, and Crawford's excavation points to episodes of machair change and fluctuation over the last 2,500 years caused by natural processes of sand deflation and accumulation as well as agricultural practices which still occur here (Crawford and Switsur, 1977). The interior of the peninsula, within the coastal dunes, are comprised of undulating machair plain and small cultivated agricultural plots, which due to ploughing and working of these soils are somewhat flatter. Although the Udal peninsula has not been populated since 16th century settlers abandoned their homes here, the area is still quite intensively cultivated and is regarded as important agricultural land (Lawson, 2004). The agricultural potential of this area would also have been apparent to Iron Age occupants. It is likely that the Udal peninsula would have been cultivated during the Iron Age and alternative areas of flatter, ploughed soils and undulating accumulations of sand would have characterised this landscape as it does today.

The west coast of the Udal peninsula is characterised by high dunes which fall away sharply to more gently undulating machair plains and a number of small beaches. The east coast is more sheltered and here the machair dunes rise more gradually giving way to an area of inter-tidal sands. Rises in sea level and the processes of coastal erosion have clearly affected this landscape and during Iron Age occupation the land mass of this peninsula was most likely of

greater extent, although the contrast between the east and west coasts at Udal would have remained stark. The sea on the west coast, exposed to the Atlantic swell, is rough and the beaches along here are currently popular with surfers and wind surfers. The sea on the east coast is far gentler and the inter-tidal sands are a well known spot for harvesting cockles and razor clams. Similar coastal resources, combining rocky and sandy shore shellfish and the possibility for shore-based fishing would have been available to the Iron Age communities living in this landscape. Many Iron Age sites excavated across the Outer Hebrides are associated with shell middens and although it has been suggested that fish and shellfish contributed minimally to Iron Age diets, it is clear that these resources contributed to Iron Age diets in some form. These resources would have been fairly abundant within the Iron Age landscape and would have provided a convenient source of sustenance, perhaps when other food products were in short supply. It is therefore likely that at least some sections of the Iron Age community associated with the Udal wheelhouses had a intimate knowledge and experience of the nearby shore.

From the wheelhouses on the Udal peninsula, views of the surrounding landscape would have been dominated by the machair of the peninsula itself and views of the sea (Figure 7.2). Views would have been restricted to local and regional landscapes with limited views into the distance. However, the mountains on the island of Harris would have been visible on the distant horizon and therefore this community would have been aware of the wider island context in which they lived and places further afield. From wheelhouse ‘A’, looking south down the length of the peninsula, Iron Age people would have had fairly extensive views of the machair. Beyond the machair, low hills form a horizon in the regional distance, with more substantial hills just visible beyond this. To the east for example, the sea is largely concealed from view, yet these restrictions of visibility are a result of more recent impacts upon this environment – namely the accumulation of windblown sand and the subsequent excavation of these wheelhouse sites out of the established sand hills. During

the Iron Age occupation of these sites, views of the immediate landscape from these places would have been less inhibited.

7.2.3 Vallay Strand

(See Figures 7.3 and 7.4)

The Vallay Strand is a low lying area of coastal machair on the north coast of North Uist, fronting a large area of inter-tidal sand flats that separate the island of Vallay from North Uist at high tide (Figure 7.3). Along the modern coastline of the strand are found four Iron Age roundhouse sites; Eilean Maleit (S54), Garry Iochdrach (S50), Cnoc a'Chomdhalach (S51)and Geriscleit (S210). My research on the Vallay Strand focused specifically on the site of Garry Iochdrach (S50) and the relationship between this site and the other roundhouses within the surrounding local landscape.

The site of Garry Iochdrach (S50) is located within 10m of the current high water mark, immediate above the inter-tidal sands that separate the island of Vallay from North Uist. This site was investigated by the antiquarian Beveridge around the turn of the 20th century and although his methods of investigation preclude distinguishing phases of occupation, his work does enable this site to be identified as an Atlantic roundhouse type structure. Beveridge also identifies radial piers within the roundhouse and this confuses conventional classification of this site. The more recent excavation of the nearby site of Eilean Maleit (S54) (Armit, 1998a) has however suggested ways of interpreting the remains of the roundhouse at Garry Iochdroch and Beveridge's excavation plans (Armit, 1992a).

The site of Eilean Maleit (S54), is located on a small rocky islet within the Vallay Strand approximately 90m south of Garry Iochdrach across the tidal sands. At this site the remains of stone walling indicate a sub-circular structure, some 8m in diametre, containing a number of internal stone features. This roundhouse was also originally investigated by the Beveridge (1911) who describes a

roundhouse structure, comprising substantial walling, several intra-mural cells and an entrance passage. Within the external walls, as at Garry Iochdrach, Beveridge also identified four radial piers that he believed to be secondary features (*ibid):* 207-209). The more recent excavation carried out at this site (Armit, 1998a), indicated that the piers identified by Beveridge were in fact part of a later wheelhouse structure built within the walls of an earlier Atlantic roundhouse. The remains of this earlier structure, although not fully explored, appeared to have been incomplete when the wheelhouse was constructed within its exterior walls. The excavators have suggested either that a period of time had elapsed between these two phases of occupation, allowing the former to have deteriorated, or that this site had never in fact been completed prior to the insertion of a wheelhouse into this original site (ibid). The remnants of midden material apparently pre-dating the wheelhouse would, however, support the former interpretation.

On the basis of Beveridge's published material on this site and in light of the evidence from Eilean Maleit, Armit suggests that the site of Garry Iochdrach might represent the remains of an Atlantic roundhouse containing a later wheelhouse structure, as indicated by the presence of radial piers (Armit, 1992a). Finds from Beveridge's investigation at Garry Iochdrach can be associated with a wide span of dates, however, none of these can be confidently associated with the original occupation of this site or with the possible wheelhouse inserted within the roundhouse walls. A large number of Atlantic roundhouse and wheelhouse sites across the Outer Hebrides have revealed evidence for Late Iron Age or Pictish period reuse (Armit, 2006; Gilmour, 2000; Parker Pearson and Sharples, 1999; Harding and Gilmour, 2000; Harding and Dixon, 2000) and it is feasible that this site was also occupied into these later periods and, furthermore, that these later phases of activity might have gone unrecognised by Beveridge. Therefore, artefacts such as the coin of Constantitus II, found within the entrance passage at Garry Iochdrach and indicating rather later Iron Age dates (4th century AD onwards), might relate to neither wheelhouse or Atlantic roundhouse phases, but an even

later phase of occupation. During the more recent excavations at Eilean Maleit, similar pottery to types found by Beveridge were recovered from the wheelhouse wall core and interior (Armit, 1998a*)*. Although there were few diagnostic sherds within these assemblages, a few decorated pieces, some with wavy cordon designs, have been compared with material from the second wheelhouse phase at Cnip, the Allasdale wheelhouse on Barra and the Sollas Wheelhouse, North Uist, suggesting that this site was in occupation during the later centuries BC and early centuries AD (ibid).

Another roundhouse, known as Cnoc a Chomhdhalach (S51) meaning 'knoll of meeting'(Beveridge 1911: 200), is located on the coast between Eilean Maleit (S54) and Garry Iochdrach (S50). This site was also investigated by Beveridge and his account of this excavation, photographs and site plan suggest another Atlantic roundhouse, with substantial walling, a number of intra-mural cells and a long entrance passage. Again, Beveridge's excavation revealed a number of radial piers and as Armit suggests, if these were also later additions to this site, they likely represent a similar wheelhouse structure built within the earlier roundhouse walls (Armit, 1992a). Beveridge collected decorated pottery and a number of small bone, flint and bronze objects from this site. Again, these finds, cannot be assigned to any specific phase of occupation or context and this sadly limits the use of this data. As a general assemblage, however, the finds at least indicate broadly Iron Age dates (Beveridge, 1911: 200-207.)

A possible wheelhouse is also located further north still along the Vallay Stand coastline, on the small headland of Geirisclett (S210). This area contains the remains of a number of prehistoric and historic field monuments. These include a severely eroded Neolithic burial cairn located on the coast, of which the internal chamber is all that remains, as well as the remnants of a number of walls and structures relating to an abandoned post-medieval settlement (Dunwell, Johnson, and Armit 2003). In addition, upon a small knoll within the centre of this promontory, are found the remains of a number of sub-circular stone walls. Following brief investigation of these remains, Beveridge (1911:

206-207), suggested the presence of a structure resembling Cnoc a'Chomhdhalach beneath modern rectangular buildings. He describes a small central chamber containing an oblong hearth, surrounded by small cells. The range of finds from this potentially multi-period site included decorated pottery, flaked pieces of flint, hammer stones and large amounts of worked bone and a few pieces of worked antler (ibid). Armit (1992a) does not include this site in his catalogue of later prehistoric sites in the Outer Hebrides. Nevertheless, Beveridge's description of field remains and the finds assemblage suggest that this might have been a Middle Iron Age site similar to the radial pier structures at Eillean Maleit, Cnoc Chomhdhalach and Garry Iochdrach and, on this basis, was included in my research on the Vallay Strand.

Within the modern and historical landscape, the island of Vallay has only been accessible at low tides, when one can safely cross the tidal sands of the Vallay Strand. However, if interpretations of sea level changes are an accurate estimation of environmental change in this area, then the landscape between what is now the Vallay Strand and the island of Vallay are likely to have been covered with machair. The site of Eilean Maleit is therefore unlikely to have been originally constructed on an islet, but would have been built on a small area of higher ground, becoming an islet after the coastal erosion of this landscape. This islet is currently connected to the shore by a stone causeway approximately 30m in length, however, at low tide it is possible to walk across the sand to this site. It is also well documented that stone was taken from this site during the 19th century in order to build the nearby bridge at Clachan (Beveridge, 1911; Lawson, 2004) and this further suggests that this causeway is not contemporary with Iron Age occupation at this site, but instead constructed in order to facilitate the use of this islet as a ready-made stone quarry. If continuous machair covered what are now inter-tidal sands, then the Iron Age occupants of this landscape would have had access to a vast area of cultivatable land and a similar environment to that found at the Udal peninsula, discussed in section 7.2.2. The island of Vallay currently provides good farming land and when part of the wealthy Beveridge Estate, this area was intensively

worked and cultivated (Lawson, 2004). Vallay is still farmed today, despite the logistical difficulties of accessing and tending to this tidal island landscape. In addition, if areas of the Vallay Strand had already started to flood during the Iron Age, creating small pockets of inter-tidal sand flats, then the area might also have been rich in species of sandy shore habitat fish and shell fish such as mussels, cockles and winkles, dabs and flounders that can be harvested and fished for in this area today. Sea pools and channels are also seasonally very rich in salmon and sea trout.

Our understanding of the Iron Age landscape also indicates the importance of considering Iron Age occupation of Vallay alongside that of the Vallay Strand. Beveridge identified three Iron Age roundhouse sites on Vallay. Beveridge's (1911: 287) excavation of a small mound at Bac mic Connain on Vallay revealed a number of different Iron Age structures, the earliest of which Beveridge describes as a wheelhouse with eight bonded piers. Following abandonment of this wheelhouse, it was reused as a metal working site. Another sub-circular structure was identified by Beveridge immediately to the east of this wheelhouse, also with evidence for radial piers suggesting a similar type of site (ibid: *288)*. Towards the eastern end of Vallay are the remains of another large roundhouse Rudh an Duin (ibid: 215). Erosion by the sea has removed most of the southern half of this roundhouse; however, on the north-east side concentric walling is preserved to a height of c.0.5 m, indicating that the original diametre of this roundhouse would have been in excess of 20m. A long, narrow entrance passage to this roundhouse can also be determined on the north-east arc of the walling and these features, indicating a complex roundhouse. When Beveridge investigated this site in the early 20th century, he described lintels across this entrance passage still in place and inner walling preserved to over a metre in height (ibid: 216). The finds assemblage, once again unassigned to context, includes decorated pottery synonymous with the Hebridean Iron Age.

To the north-west of the inter-tidal sands begins the Sound of Vallay, a channel of water that does not fully drain at low tide and opens out into the Sound of

Harris. Within this body of water is the small islet of Dun Thomaidh, joined to the southern coast of Vallay by a long causeway approximately 80m in length and exposed at lower tides. On this islet are found a complex series of stone remains. Beveridge indicates a substantial roundhouse containing a number of internal cells and other structural features (1911: 213). Armit's attempt to make sense of these plans suggest a complex roundhouse with evidence for intra-mural cells and containing a number of later cellular structures (Armit ,1992a). Again, it must be questioned however, whether this probable Iron Age site was originally constructed on an islet or whether this aspect of location is a later transformation caused by rising sea levels. Despite the shallow and flat topography of the Vallay Strand, the Sound of Vallay is a relatively deep water channel where a number of boats are current moored and a working fishing pier is located and this area is therefore more likely to have been similarly underwater during the Iron Age in comparison with the flat sands across what is now the Vallay Strand. The depth of this channel, however, suggests that even given a 2-3m rise in sea level Dun Thomaidh would have been located on an islet within the Iron Age landscape and this area may have provided access out to the Atlantic and the Sound of Harris.

To the south of the modern inter-tidal Vallay Strand, peat covered boggy moorland extends into hilly uplands. From the four Iron Age sites located around the Vallay Strand, these hilly uplands, and particular the hill of Beinn Risary, would have defined the visible horizon. In this area is located another roundhouse site investigated by Beveridge (1911: 209), seemingly set apart from the remaining lowland coastal sites, situated on the slopes of Beinn Risary. Buaile Risary is large mound covered with a mass of tumbled stone comprising a number of rectangular buildings and shielings but also the remains of a sub-circular structure with evidence for a number of small internal piers. Today this site is located in a small clearing in one of the few successful modern forest plantations on North Uist. Although this modern plantation bears no resemblance to the Iron Age environment it does remind us to consider the question of tree cover in the Iron Age landscape. Analysis of pollen cores from

Loch Olabhat, approximately 4km to the west of Vallay, suggest that final woodland clearance may not have occurred until the first millennium AD (Mills et al, 2004). On the north coast of the island of Vallay, the preserved roots of birch trees are occasionally revealed below the high water mark. Radiocarbon samples, however, suggest early dates between 3500 BC and 3020BC (Q-2682) (Fossit, 1996). Overall, the upland landscape surrounding the sites on the Vallay Strand is likely to have been dominated by treeless boggy moorland during the Iron Age and the interior moorland of North Uist today would be largely familiar to Iron Age occupants of this landscape. Nevertheless, small pockets of tree cover might have persisted into the Iron Age.

Evidence for monumental domestic Iron Age sites in and around the modern Vallay Strand are prolific, however, the chronology of this settlement pattern is more difficult to gauge and whilst this area seems densely populated during the Iron Age these sites are not necessarily all contemporary. Beveridge's excavations provide indications of general Iron Age date, but little or no stratigraphically reliable material or scientific dates. In many cases Beveridge appears not to have correctly identified secondary phases at these sites and consequently some material is mistakenly associated with primary occupation, providing inaccurate 'late' Iron Age, Pictish and even Viking period dates for these settlements. The only site within this study area that has been excavated to modern standards is Eillean Maleit, re-excavated during the 1990s (Armit, 1998a). Comparative analysis of the pottery from the wheelhouse at Eillean Maleit suggests occupation during the early centuries AD. Direct comparisons of pottery decorations have been made with material from the second wheelhouse phase at Cnip, the Allasdale wheelhouse on Barra and the Sollas Wheelhouse on North Uist. These comparisons are consistent with dates in the early centuries AD. Armit's excavation also showed that the wheelhouse at Eillean Maleit was certainly a later architectural development, and therefore this site was in occupation prior to these dates (Armit, 1998a; Beveridge, 1911). In comparison, none of the material excavated from the wheelhouse Bac Mhic Connain can be confidently associated with the primary wheelhouse

occupation. Metalworking material, including clay and stone moulds, almost certainly derive from post-domestic occupation phases at this site when a metal working furnace was inserted into the abandoned wheelhouse. This range of material, although not stratigraphically secure, indicate dates between the 1st and 2nd centuries AD, and it can be tentatively suggested that the wheelhouse was originally occupied prior to this (Armit, 1992a). The presence of a saddle quern, apparently derived from within the wheelhouse walls, supports an early date for activity on this site, prior to the quern transition (Armit, 1992a). However, this activity might not have been associated with the wheelhouse itself, but was perhaps a remnant from an earlier site associated with the midden material identified by Beveridge beneath the wheelhouse floor. In any case, as noted above, this site was probably occupied over a long period of time, perhaps over a period of several generations, prior to its use during the 1st or 2nd centuries as a metal working site. Beveridge associates material from the wheelhouse at Geirisclett with the material derived from Cnoc A'Comdhalach. In both cases, however, it is impossible to assign material to particular phases. At Geirisclett Beveridge describes flints, a few hammer stones, and a large number of fine bone artefacts, most likely of an early medieval date relating to secondary phases of occupation. Similarly, the material derived from Beveridge's excavation at Garry Iochdrach (S50), another example of wheelhouse type structure built into an existing roundhouse, can not be confidently assigned to primary occupation. Although no finds can be satisfactorily associated with primary occupation, the presence of two saddle querns at Dun Thomaidh suggest that this site might have been occupied early in the Iron Age period. A similar situation is found regarding material from the excavation of the Atlantic roundhouse Rudh an Duin. Pottery derived from this excavation is broadly associated with other Hebridean Iron Age wares, and one sherd was identified by MacKie as Iron Age type 'A' pottery, dating from 400BC (MacKie, 1972: 129), suggesting that like Dun Thomaidh, also located on the tidal islet of Vallay, this site can perhaps be ascribed an early date within the sequence of Iron Age occupation of this landscape. The emerging picture of chronological development of the domestic Iron Age landscape of the Vallay

Strand suggests Dun Thomaidh and Rudh an Duin as the earliest Iron Age sites within this area. The wheelhouses at Eillean Maleit, Bac Mhic Connain and Garry Iochdrach likely represent later and final phases of Middle Iron Age settlement, although at all three sites evidence for earlier roundhouse structures associated with earlier Iron Age dates suggest they were perhaps contemporary with Dun Thomaidh and Rudh an Duin.

The results of the regional research (Figure 7.4). suggest that from Garry Iochdrach and the other Iron Age sites located around the Vallay Strand, visibility would would have been limited to local and regional areas, with restricted views into the distant landscape. To the south, from all these sites, the hills of Beinn Risary would have defined the limit of the visible horizon in this direction. From these sites, visibility of what would have been vast machair would have been fairly extensive. Lines-of-sight across the now inter-tidal sands enable relatively uninterrupted views due to the flat topography, however, because most of the sites on the Vallay Strand are located at points of low elevation (the exception being the possible wheelhouse at Geirisclett), these places did not afford particularly commanding or extensive views of the surrounding landscape and it is likely that similar characteristics would have defined Iron Age experiences.

7.2.4 Summary

On the whole, sites defined as lowland coastal were located on machair soils on the west and north coasts of the islands. 42 sites were surveyed within lowland coastal landscapes and these places were generally associated with fairly localised landscape views, and with occasional but rarely extensive views out to sea or of the wider island landscape. The soft and low lying machair defined west coastlines of the islands are considerably more vulnerable to the effects of coastal erosion and changes in sea level than the harder, rock defined east coastlines. General models of Machair development (Ritchie, 1979; Angus, 1997) and estimates of sea level rise suggest that the majority of lowland coastal sites would have been located behind coastal dunes during Iron Age

occupation, that have since shifted further inland. The wheehouse sites of A'Cheardach Mhor (S43 and S41) and A'Cheardach Beag (S42) on the South Uist machair are still located behind coastal dunes and these places provide an idea of how sites, such as the recently exposed wheelhouses discovered eroding out of the beach at Baile Sear (S216 and S217), might have been positioned within the Iron Age landscape. The presence of machair dunes between these lowland coastal sites and the Atlantic would have created places where views of the sea and shore were more restricted than were recorded in the modern landscape. Across the islands, lowland coastal places were not well located for convenient or immediate access to the sea as the western coasts of the islands provide few places for natural harbour and little shelter from the Atlantic. The channel of water leading out from the Vallay Strand is perhaps an exception. The Lowland coastal sites were found predominantly across the Uists (South Uist, Benbecula and North Uist). In comparison fewer lowland coastal sites were identified on the islands of Barra and Lewis where lowland, west coast machair environments are less common.

7.3 Islet places

7.3.1 Introduction

Despite the apparent focus of archaeological investigation on Iron Age sites within the lowland coastal regions of the Outer Hebridean landscape, islets within freshwater inland lochs are in fact the most common type of location for known and possible monumental domestic Iron Age sites. Currently, no roundhouse identified as a wheelhouse has been identified on a freshwater inland islet and, instead, domestic use of islets during the Iron Age seems to be restricted to the construction of Atlantic roundhouse type sites. However, given that very few inland loch sites have been fully investigated we must consider the possibility that wheelhouses are yet to be found within these types of location. In terms of their location and sensory experiences of the Iron Age landscape, islets within inland freshwater lochs are considered distinct from coastal islet

sites such as Eillean Maleit (S54), located on an islet within the Vallay Strand and discussed above (section 7.2), and from many machair loch sites. In a number of examples, as at Eillean Maleit (S54), it is likely that these roundhouses were not originally constructed upon marine islets but on what would have been the low lying Iron Age coastline. Also, many marine islets were found not to share the same distinct characteristics of place and landscape experience associated with inland loch sites. Iron Age inland islet sites proliferate across the island regions of North Uist and Benbecula. Yet very few of these sites have been investigated archaeologically and hence our understanding of islet dwelling is incomplete. Four islet landscapes were explored in detail as part of the Intensive Field Survey and the local scale of analysis; Dun Torcuil within Loch an Duin, North Uist; Dun Ban within Loch Hornary, Grimsay , the dun within Loch Thundair, North Uist and Dun Bharabhat, Lewis. The landscape and archaeological context of these study areas are described below.

In this section I also discuss landscape location with respect to possible water-based connections. By their very nature islet sites are surrounded by water and access requires either the use of boat or traversing a causeway. Yet discussions of islets rarely consider the possibility of water-based travel. It is unclear whether the majority of Iron Age islet sites were built with causeways or not; original causeways may well have eroded inhibiting their identification, they may be concealed by rising water levels or where examples do survive they may not be contemporary with Iron Age occupation. Many islet sites were re-occupied in the early historic period and have been reused as shepherd's shelters and robbed of their stone in more recent times. A common practice still used today is to keep livestock on small islands, in particular to separate ewes and rams at certain times of year. Consequently, causeways have been reinforced, rebuilt and perhaps constructed anew in a number of cases. Therefore, to assume that the presence of causeways in a number of examples renders the use of boats in the Iron Age superfluous is erroneous. Instead it is sensible to consider that water-based travel was, at least potentially, an intimate part of islet dwelling

during the Iron Age, despite the fact that little consideration has previously been given to the use of boats in association with these sites and the wider landscape connections that this might have afforded Iron Age occupants. With respect to crannog sites in mainland Scotland, Morrison (1985) has described how 'finger' lochs would have allowed people to traverse some of Scotland's most inhospitable terrain. Similarly, McGrail (2001: 171) talks of tides and tidal flows being utilised within Atlantic estuaries to provide a 'free ride' on the basis of tidal propulsion. As discussed in Chapter 4, there is no direct evidence for boat technology in association with the Outer Hebridean Iron Age, however, particularly within an island context the lack of boat material should not prohibit this discussion from a landscape perspective.

7.3.2 Loch an Duin

(See Figures 7.5 and 7.6)

Loch an Duin is a large inland loch in North Uist containing three possible Iron Age sites located on small islets (Figure 7.5). Dun Torcuil (S56) is an exceptionally well preserved site, with walls surviving to approximately 3m in height with surviving concentric walling and a number of small inter-mural chambers or galleries. The sheer size of this site and the evidence for these complex architectural features mean that Dun Torcuil (S56) has traditionally been regarded as a 'broch' type roundhouse and in the context of this research, is identified as a complex Atlantic roundhouse. The site of Dun Torcuil was selected as the focus of research in the Loch an Duin study area because it is the most reliable Iron Age site within Loch an Duin, and because it represents a complex roundhouse structure. 800m to the east of Dun Torcuil, however, another potential Iron Age roundhouse is located within Loch Bu, a subsidiary of Loch an Duin, and known as Dun Bu. This site is of more modest size with an internal diametre of approximately 10m to Dun Torcuil's 18.6m and is therefore conventionally described as a dun rather than a broch. A further site within Loch an Duin of possible Iron Age date is Dunan Dubh. This site is described by Beveridge as an Iron Age site and noted on the Ordnance Survey 1:25,000 maps, although there are no surviving features other than what appears to be a

low wall along the perimetre of the islet and a curved causeway. No datable material has been derived from either of these islet sites and therefore Iron Age dates are only ascribed on the basis of structural remains and the contemporaneity of these sites with Dun Torcuil can only be conjectured.

Loch an Duin is a large brackish inland loch, partially tidal on account of a small sea inlet. The loch contains numerous branches and connected subsidiary lochs, such as Loch Bu, creating an intricate, labyrinthine, watery landscape. Small changes to the complex coastline of this loch and changes to the water table will have inevitably taken place since the Iron Age, but are difficult to reconstruct in any detail. It is likely, however, that at one time Loch an Duin was a true fresh water loch, becoming increasingly brackish over time as the small sea inlet was eroded. This process has now been halted by the construction of the Loch Portain road which forms a barrier between Loch Dheoir, a sea loch proper, and Loch an Duin. Considering this loch-scape with a mind to potential water-based travel suggests a number of potential access routes between the Iron Age sites within Loch an Duin and regions much further a field via the sea lochs of Loch Blathaisbhal, Loch Dheoir and Loch Portain. Historical links between the area of Loch Portain and the major township of Loch Maddy, on the east coast of the island, are well documented (Lawson, 2004): places that are a mere two miles apart across water, but today within a road based transport perspective, become completely unrelated areas, seven road miles distant. Comparing land-based and water-based travel between the Iron Age sites within Loch an Duin is also illuminating. Walking between Dun Torcuil and Dunan Dubh during the extensive field survey involved lengthy navigation around the perimetre of Loch an Duin, with limited visibility of the general geography of the area and the destination locales. In contrast, journeys made using a dinghy (in amenable weather and wind conditions) were found to significantly reduce the time and distance between these places and provided a different perspective on their potential relationship.

Surrounding Loch an Duin is a mainly treeless boggy moorland. A small plantation of non-indigenous firs is found to the south of Loch an Duin but is a very recent addition to this landscape. As discussed in Chapters 4 and 6, available evidence suggests a steady decline in woodland cover across North Uist from as early as 5,950 BC to approximately 550 BC, by which time it is surmised that the majority of the Outer Hebrides were largely treeless as they are today. As has been discussed in section 7.2.3 above, pollen core samples from Eilean Olabhat suggest that final woodland clearance might not have occurred until the first millennium AD (ibid). However, given differences between the environments of the north and east of the island in terms of climate and vegetation, the relevance of this data to the area surrounding Loch an Duin is debatable. The environment surrounding Loch Obasaraigh is more comparable with Loch an Duin and here fossilised wood remains were associated with much earlier dates. On the whole therefore, it is reasonable to assume that the treeless boggy peat moorland around Loch an Duin would have been largely comparable with the Iron Age environment and the landscape experiences of Iron Age communities dwelling here. Nevertheless, the evidence from Grimnish and Vallay alert us to the possibility that small pockets of tree cover might have persisted into the Iron Age. To the north and south-west are located the hills of Beinn Mhor and Crogearraidh Beag. From Dun Torcuil, Dun Bu and Dunan Dubh these hills define the visible horizon behind the banks of the loch and these features of the surrounding landscape would have been very familiar to the communities occupying this landscape during the Iron Age.

Approximately 1.7km to northwest of Loch an Duin are the expansive machair plains of Clachan – an area still farmed today and also a likely focus of Iron Age agriculture. Current understanding of the processes of machair development (Angus, 2001; Ritchie, 1979) suggest that the machair would not have extended as far inland during the Iron Age. However, the presence of a number of souterrains at Clachan and Newton Lodge built into the machair sand and of assumed Iron Age date, suggest that machair was at least substantially developed at this point along the coast where we also find three other Atlantic

roundhouse sites. From all three of the islet sites within Loch an Duin these expansive machair plains of Clachan are not visible and, assuming that the machair has, if anything, retreated further inland since the Iron Age, then this lack of visibility is highly relevant to our understanding of the Iron Age occupation of these sites. The lack of visibility suggests a disassociation between Iron Age communities dwelling within Loch an Duin and these areas of likely agricultural cultivation.

The results of the regional research (Figure 7.6) suggest that restricted, predominantly localised landscape views were characteristic of Dun Torcuil and the other islet sites within Loch an Duin. Views beyond the banks into regional and distant visibility classes would have been limited from these places and instead visibility of the landscape would have focused on the immediate locale, dominated by views of the loch and the surrounding banks. Yet these places were found not to provide a good vista across the loch-scape due to the complex geography of Loch an Duin itself, as well as the low, loch level location of these sites. Landscape visibility was generally found to be small scale and localised. The hills of Beinn Mhor and Crogearraidh Beag would have defined the limits of the visible horizon to the north-east and south-west respectively. The sea, coast and the extensive machair of Clachan would have been areas notably out of sight from these islet sites.

7.3.3 Loch Thundair

(See Figures 7.7 and 7.8)

Loch Thundair is a large freshwater loch found on the eastern side of North Uist (Figure 7.7). This loch contains the remains of an Atlantic roundhouse on an islet very close to the east shore. One striking characteristic of this site is the elaborate series of interconnecting causeways that link this site to the shore (discussed in further detail below). The roundhouse has not been excavated, but the standing remains preserve walls to a height of approximately two metres and two obvious inter-mural galleries can still be identified, suggesting complex

roundhouse architecture. In size, however, this dun is relatively small with an external diametre of c.12m, comparable with the small site of Dun Bharabhat on the Bhaltos peninsula, Lewis. No finds have been recovered from this site and it cannot be accurately dated, but it is considered to be of Middle Iron Age date on the basis of these field remains. There are four other small islets currently visible within Loch Thundair. One of these is recorded on the Ordnance Survey 1:25,000 map as Dun Ban, this name suggesting the location of a prehistoric or historic 'fort' or roundhouse structure. However, the only physical remains visible here are the remnants of what appears to be a small, low wall around the waters edge. Beveridge (Beveridge, 1911), visiting this site in the early 1900s describes, in addition to this outer walling, a slightly more substantial 'inner rampart' although I was not able to qualify this information as the interior was too overgrown when this islet was visited in 2005, 2006 and 2007. If there had a been a substantial roundhouse built on this islet at some point, it must be presumed that the original stone has since been robbed. If this were the case, however, it is curious that the stone remains were entirely exhausted from this islet, located in the middle of Loch Thundair almost equidistant from either shore and with no visible causeway, while the other dun, located on an islet considerably more accessible, still preserves at least five courses of good stone walling. It is possible, of course, that the stone was robbed from Dun Ban in order to build this complex roundhouse, suggesting the former to have been an earlier site. It is odder still, however, that one of the most substantial remaining dun sites in North Uist is not associated with its own name, yet a neighbouring islet with little physical characteristics to associate it with an ancient fort is named Dun Ban. It is my suspicion, that the name of Dun Ban originally applied to the remains of the complex roundhouse as opposed to the walled islet and that at some point during the mapping of this area these islets have been confused. The prehistoric and/or Iron Age association of the islet know as Dun Ban is therefore considered unlikely. The three other small natural islets are found close to the north shore of Loch Thundair. None of these islets show indication of human alteration or construction, although at one of them the

remnants of a causeway is preserved. Loch Thundair therefore appears to include only one Iron Age site.

Access to the islet dun within Loch Thundair is attained by a series of interconnecting causeways that link the dun, an additional larger islet and the shore in a roughly rectangular formation. One of these causeways connects the dun directly with the shore, spanning a distance of approximately 36m. An additional causeway extends from the opposite side of the islet, curving southwards to join with a much larger islet some 20m distant. The remains of insubstantial perimetre walling are just identifiable around this larger islet, which then connects back to the shore towards the east. This intricate series of causeways while intriguing are not completely unprecedented in association with Iron Age sites across the Outer Hebrides. A similarly staggered causeway is found at Dun an Stucier (S38), also in North Uist, where the curving causeway between shore and islet is connected via a natural rocky outcrop that protrudes above the water line. There are two other examples of staggered causeways at islet dwellings, although those associated with the dun in Loch Thundair clearly represent the most elaborate example. The staggered causeway at Loch Thundair is the more curious however, because it does not seem to facilitate access to the islet which can instead be approached directly from the shorter, north causeway. The lines of stone between the islet dun, the walled islet and the shore could however be interpreted as having functions beyond those of site accessibility. The walling does, for example, partition-off an area of the loch and might therefore have functioned as something akin to a fish trap or fish keep for occupants of this site rather than merely providing access to the islet. Loch Thundair currently contains fish farm nets for young salmon and this loch (like most lochs across North Uist) is naturally stocked with brown trout and eels. It is possible that Iron Age communities similarly managed or controlled fish stocks in these lochs, although excavations of Iron Age sites have produced very limited evidence for the exploitation of freshwater species and the assemblage from Dun Bharahat (discussed below) notably revealed none (Harding and Dixon, 2000). As with all islet sites, however, the

contemporaneity of these causeways with the Iron Age occupation cannot be demonstrated without excavation and it is possible that these staggered causeways/linear features were a post-Iron Age addition to this islet.

Like Loch an Duin, Loch Thundair is also part of a much wider watery landscape; the large inland lochs of Loch Scadabhagh and Loch Deoireabhat lie immediately to the west. In addition, the landscape to the north and west is so littered with bog lochs, small inland lochans and numerous rivers that one senses there is more standing water than land in this area. To the south of Loch Thundiar lies Loch Euphort, a long narrow sea loch which opens from the Minch and cuts deep into the island interior of North Uist. Loch Euphort was until the mid 20th century used as a major thoroughfare into North Uist and was reportedly a busy place for commercial liners. A small modern pontoon is currently found on the southern side of Loch Thundair, facilitating access to the fish farm mentioned above and here overflow from Loch Thundair drains down into Loch Euphort. However, it is not clear whether this landscape feature is natural or has been more recently engineered. Without this overflow, the water level at Loch Thundair would potentially be much higher and I suggest that the overall watery nature of this landscape would have been largely recognisable to Iron Age occupants, even if slight changes to the water level might have altered specific loch boundaries. The relatively steep banks of Loch Thundair would require an incredible rise in water levels in order for this loch to rupture its banks and therefore discrepancy in water levels would more likely impact upon water depth as opposed to the horizontal extent of this loch. The causeways connecting the complex roundhouse to the shore, if contemporary with Iron Age occupation of this site, are not submerged or cut off, which might imply that the current water table compares with Iron Age water levels. Beveridge's photograph of this site shows that water levels have changed little over the last 90 years (1911: 160). Water levels, however, fluctuate periodically, even daily in these environments and while surveying this landscape I encountered varying water levels at this loch and varying exposure of the causeways. An afternoon of heavy rain, for example, can have a recognisable affect upon the water level

of this loch and, more generally, the amount of ground water in the surrounding boggy moorland.

From Loch Thundair a number of possible routes through the landscape would have been possible if Iron Age communities had had the use of simple log boats which could have been carried or dragged across the moorland in order to access larger lochs, such as Loch Scadabhagh and Loch Deoireabhat. Having walked large parts of this landscape as part of the fieldwork for this research, which necessitated negotiating numerous intervening lochs, the advantages of using a boat to help traverse this area proved clear. Perhaps most importantly, however, is the potential for Loch Euphort to be used as a direct route into the interior of North Uist. Loch Euphort is a tidal inlet and is a perfect example of where one can use tidal cycles in order to gain, as McGrail describes, a 'free ride' and I have myself used this same strategy on Loch Euphort to access to other Iron Age sites. In terms of the modern and the Iron Age landscape the dun within Loch Thundair is one of the more remote Iron Age sites identified in this research. Within the modern landscape, Loch Thundair is located a considerable distance from any road and access to this site is gained via two different routes; either walking across the loch strewn moorland from the Lochmaddy region arriving at this site from the north-west, or embarking from the Loch Euphort road and crossing Loch Euphort in a boat. In terms of the Iron Age landscape, the dun within Loch Thundair is removed from the main focus of Iron Age occupation across North Uist. However, Loch Euphort links this relatively remote place with much wider areas of the Iron Age landscape. In particular, at the western end of Loch Euphort one finds a landscape with a concentration of earliy Neolithic sites, including at least seven large Neolithic chambered cairns, and the standing stone circle of Pobul Fhinn. These earlier prehistoric sites sites would have been recognisable features of the Iron Age landscape and there is considerable evidence to suggest that Iron Age communities across Atlantic Scotland had a particular interest and fascination in these ancestral places (Hingley, 1996; 1999; 2005; MacDonald, 2008; Sharples, 2006).

Loch Thundair is surrounded by extensive, treeless boggy moorland below a range of eastern mountains comprising some of the highest peaks on this island; Li a Deas at 280m and Li a Tuath at 265m. As with the interpretation of the Loch an Duin landscape, an understanding of the environment surrounding Loch Thundair is largely based upon very general models of the Outer Hebridean palaeoenvironement indicating that a decline in woodland cover and the development of moorland environments first occurred some 5,000 years before the earliest Iron Age occupation of these landscapes. The most comparable source of environmental data are the remains of birch and hazel roots exposed on the shores of Loch Obasaraigh just south of Loch Euphort which have yielded notably early radiocarbon dates (see Appendix 1). It is therefore likely that the current environment surrounding Loch Thundair, in terms of topography and vegetation cover, are largely comparable with the Iron Age environment.

Modern and historical use of this landscape, other than the placement of a small fish farm within Loch Thundair, has had almost a negligible impact on this area. Loch Thundair is located a considerable walking distance from any modern settlement or road and these eastern parts of the islands have been virtually uninhabited from the late Medieval period onwards. In 1850 crofters cleared from the areas of Sollas and Sgealair on the north coast of North Uist, refusing emigration to Canada, were encouraged to settle on land around Loch Euphort including this area north of Eurphort around Loch Thundair. However, attempts to work this landscape were a complete disaster and settlements were apparently abandoned just a few years later (Lawson, 2004: 101-102). On the south side of Loch Euphort crofters were more successful in improving this rather inhospitable environment and this area was more intensively settled and here one currently finds semi-improved, rough, grassland crofts (ibid*:105;* Richards, 1998). Erosion of the hard rocky, east coast of these islands is far less profound than on the north and western coastlines. Loch Euphort is a relatively sheltered inlet where erosion is also a more minor consideration.

Consequently the general geography of this landscape is likely to have changed very little since the Iron Age.

The results of the regional research (Figure 7.8) revealed that from the dun within Loch Thundair, the banks of the loch would have enclosed the view of the surrounding landscape, limiting visibility from this site across the local area. The water of the loch and its surrounding banks would have dominated people's sense of place. However, the islet would not have been a place from which the Iron Age occupants would have been able to view or monitor the entire extent of Loch Thundiar, particularly the northern regions of the loch which are heavily obscured from view. From here also, the wider watery landscape and the maze of lochs beyond Loch an Duin would not have been visible. The substantial sea loch, Loch Euphort that stretches to the south and the sea and coast located beyond the mountains of Li to the east were also out of sight from the location of this roundhouse. This place was therefore not found during the field survey to provide a good vantage point of either the immediate or the wider landscape. To the east the mountains of Li a Tuath and Li a Deas would have loomed over the site and in the distance to the south the distinctive peaks of Eaval would also have been visible. The viewshed models generated at 'local' and 'regional' viewing distances for the location of the dun within Loch Thundair reflect these field observations and this combination of information highlights the restricted, predominantly localised landscape views that would have characterised this place during the Iron Age. These results are comparable with the results from Dun Torcuil and a characteristic of other islet sites across the Outer Hebrides.

7.3.4 Dun Ban, Loch Hornoray

(see Figures 7.9 and 7.10)

Loch Hornoray, on the island of Grimsay contains the remains of Dun Ban which was the focus of my research in this study area. Grimsay is a tidal island that lies between the larger islands of Benbecula and North Uist now connected to the latter across a ford at low tide (Figure 7.9). As discussed in Chapters 4 and 6, it is likely that Grimsay was permanently connected to the Uists during

Iron Age occupation or at the very least more easily accessible at low tide than it is today. The name Dun Ban is a common name given to islet duns in the Outer Hebrides, also associated with the islet in Loch Thundair discussed above. The Grimsay Dun Ban is located on an islet in the eastern end of Loch Honoray approximately 30m from the southern shore. The islet is currently overgrown with dense brambles and hawthorn bushes and it was therefore very difficult to assess the nature of the physical remains of this site. Substantial external walling was found preserved to approximately 1.5m in height for almost the entire circumference of the roundhouse. Inside this walling, large amounts of collapsed stone, overgrown with dense brambles prohibited identification of further architectural features. Dun Ban was investigated by Captain Thomas in the later part of the nineteenth century and this excavation apparently revealed substantial external walling, an entrance with a guard cell and evidence for the beginnings of a stairway (Thomas, 1868; 1890). This description indicates architectural features consistent with this site being identified as a complex roundhouse (Armit, 1992a). Thomas also describes the interior of the roundhouse as containing 'bee hive cells' roofed with overlapping stones beginning to form a dome. It is possible that these features represent later cellular structures built within the roundhouse walls as is commonly found in association with Iron Age roundhouses. A curved, almost 'S' shaped causeway connects this islet to the shore, however, during site visits in 2005 and 2006 this was found to be submerged under approximately one metre of water and it was therefore necessary to access this site using a dinghy. Thomas' assemblage of finds from this site included only un-diagnostic items; broken craggans and water worn stones which Beveridge re-interpreted as possible hammer stones (Beveridge, 1911: 172). The craggans described by Thomas were of a type still being made in parts of Lewis at this time and it is therefore likely that these artefacts relate to much later occupation at this site. An Iron Age date is therefore ascribed to this site primarily on the strength of Thomas' account and plan of the structural remains. At the west end of Loch Hornoray another islet approximately 35m from the shore betrays the remnants of a low perimetre wall and a possible causeway to the north-west shore, submerged beneath the

current water level. It is therefore possible that this islet also contains the remains of another islet dun, perhaps Iron Age in date, although further investigation would be required in order to clarify this. Beyond the banks of Loch Hornoray, almost directly north of the western margins of this loch, are the remains of a roundhouse, within the boggy moorland and along the coast of a small sea inlet. A recent excavation (MacKenzie, 2005) revealed the remains of an Iron Age wheelhouse structure, notable as one of a small number of wheelhouses constructed into peat rather than machair soils. Unfortunately the excavation has not yet been fully published and, together with the poor standard of excavation at Dun Ban, our understanding of the chronological relationship between these sites and the wider Iron Age occupation of this landscape is limited. Two other substantial lochs in Grimsay, Loch Carabhat to the west, and Loch a'Mhullinn to the east, both contain the remains of at least one Iron Age roundhouse. Grimsay is currently a fairly well populated area given the small size of this island it would seem also to have been fairly densely populated during the Iron Age.

Loch Hornoray is a long narrow inland loch, approximately 1.1km in length and 0.4km at its widest span, situated in a small valley and surrounded by very steep and substantial banks. The banks of Loch Hornoray are large enough that the top is plateaued and for most of the perimetre one can actually walk along the top of these banks. The banks are not only steep sided on the loch verge, but also on the landward side, so that in many places the banks are risen above the surrounding landscape and appear more like artificial ramparts than natural features. This would have been a similarly distinctive feature to Iron Age inhabitants. The two islets described above are located at the north-west and south-east extremities of this Loch. The depths of water prohibited wading to this site and due to the submerged nature of the associated causeways, it was necessary to row to these islets using a dinghy. Changes to water level will undoubtedly have occurred since the Iron Age occupation of this landscape. When Beveridge visited this site prior to 1911, he described the causeway as being underwater to a similar depth and suggests that this might also have been

the case during the Iron Age during which time a concealed causeway might have been desirable (Beveridge, 1911: 174). This is an intriguing argument, as elsewhere Beveridge maintains that the *exposed* causeway at Dun Torcuil indicated similar water levels at Loch an Duin to Iron Age water levels (ibid: 150*)*. As has been discussed above, the contemporenaity of causeways with Iron Age islet sites cannot be assumed and it must be concluded that the relative position and exposure of associated causeways at these sites are at best misleading as regards reconstruction of Iron Age lacustrine environments. However, the lochs across Grimsay and Loch Hornoray specifically, tend to be defined by very deep depressions in the landscape, creating steep and highly elevated banks and therefore changes to water level, unless on a incredibly substantial scale that is unlikely to have occurred as a consequence of natural processes, would be unlikely to alter the overall geography of standing water in this landscape. In consideration of these factors, it is believed that the current geography of this lochscape would be largely familiar to Iron Age occupants of Dun Ban.

The landscape surrounding Loch Hornoray is dominated by rocky moorland, giving way to boggier moorland environments toward the interior of Grimsay. This landscape also contains a number of other small lochans and the larger lochs of Carabhat and a'Mhullinn mentioned above. To the south-east, this moorland landscape slopes away to a rugged shoreline comprising low lying rocky promontories and small offshore islets. Beyond this shore to the east is the mountainous island of Ronay and beyond this the Little Minch – the name given to the area of sea between North Uist and Skye. Overall, the landscape of this eastern island region of Grimsay and Ronay is characterised by rugged, rocky geology and dominated by sparse moorland supporting heathland vegetation and lacking any woodland. As discussed in detail above, the treeless moorland across the eastern area of North Uist and the associated tidal islets such as Grimsay, are likely to be largely comparable with the Iron Age environment. Coastal erosion on these rocky east coasts will also have been less severe than on the west coast, although these processes are by no means

negligible and it can be assumed that this coastline will have retreated further inland, however marginally, since Iron Age occupation of this landscape. The natural coastline of Grimsay provides convenient access to the sea and consequently this area has been historically associated with fishing practices and there is still a thriving fishing community based at Kallin in Grimsay. It is possible that similar opportunities availed themselves to Iron Age settlers in this area. It is interesting to note that the Monarch Isles, a group of five islands approximately 8km from Uist, has traditionally been the fishing ground for the people of Grimsay (Norton, 2000: 2), despite these islands being located off the west rather than east coast of the Uist. The fact that it has been the Grimsay community and not communities residing on the west coast of the islands that have claimed these fishing rights emphasises the long established association between east coast communities and fishing practices in the history of the Outer Hebrides. With regard to the overall landscape of Grimsay, the use of log boats would be ideally suited for negotiating the intricate island coastline in this area and this would also have provided Iron Age communities with links to much wider areas of the landscape than would be possible on foot alone. Furthermore, the view of Grimsay as a distinct Iron Age region requires some revision in the context of potential water-based travel and inter-island connections at low tide.

In terms of landscape experience, Dun Ban is a perfect, almost exaggerated example of the characteristics associated with Iron Age islet sites across the Outer Hebrides (Figure 7.10). From Dun Ban Iron Age people would have had incredibly restricted views of the landscape, enclosed by the huge banks of this loch, which would have limited visibility beyond this immediate location to an even greater degree that found at either Dun Torcuil or the dun within Loch Thundair. Views of the surrounding landscape would have been almost entirely contained to within areas of the loch itself, although the mountains on Ronay would have been visible beyond the banks to the east, and to the north the distinctive peak of Eaval would be discernible. The local and regional viewshed models fairly accurately represent landscape visibility described from Dun Ban.

The viewshed model indicates that visible areas are almost exclusively restricted to within the banks of Loch Hornoray. The peaks of Eaval and the mountains on Ronary are also shown to be within sight whilst the other islet within Loch Hornoray and the landscape location of the nearby wheelhouse are shown to be outside fields of visibility. Comparing the extent and relative composition of the regional and local viewsheds modelled for islet sites across the Outer Hebrides, Dun Ban is clearly represented as affording some of the most restricted landscape views.

7.3.5 Loch Bharabhat

(See Figure 7.11 and 7.12)

Loch Bharabhat is a small inland loch within the rocky upland interior of the Bhaltos peninsula, Lewis. Loch Bharabhat contains the remains of a single Iron Age roundhouse, Dun Bharabhat, located on a natural islet. This site was excavated during the 1980s as part of an Edinburgh University led research project focusing on Later Prehistoric occupation at Bhaltos (discussed in Chapter 4) and is one of only three Iron Age Atlantic roundhouse sites (that we know were originally located on islets within freshwater lochs) to have been extensively excavated. Because Bhaltos contains not only the full range of Iron Age site types but also combines almost all of the different environments regarded as characteristic of the Outer Hebridean islands – sweeping machair, sheltered beaches and an upland moorland – it has been tempting for archaeologists to regard the Iron Age settlement of the Bhaltos peninsula as representing in microcosm the wider Iron Age landscape of the Outer Hebrides (Armit and Harding, 1990: 71). The site of Dun Bharabhat is a prime example of an Iron Age islet dwelling within the Outer Hebrides. The emerging chronology of Iron Age occupation of the Bhaltos peninsula suggests that Dun Bharabhat was the first monumental domestic Iron Age site to be built within this landscape. Radiocarbon dates taken from beneath the primary roundhouse provide calibrated dates between 800 BC and 510 BC. While secondary occupation of the roundhouse, in the form of a much smaller cellular structure built within the original roundhouse wall, is associated with calibrated dates of

360BC – 20AD and 190BC – 90AD. These results suggest one of the earliest dates for the construction of Atlantic roundhouses in the Outer Hebrides, perhaps as early as the 5th century BC (Harding and Dixon, 2000). The excavation of site of Loch na Berigh, less than 500m to the east of Dun Bharabhat, revealed a slightly more complex structural history (Harding and Gilmour, 2000); here a primary complex roundhouse was replaced over time by a single storey roundhouse of simpler form, followed by a number of later cellular phases. The earliest phase to be securely dated is the secondary roundhouse, associated with calibrated radiocarbon dates in the 2nd and 4th centuries AD. The most convincing interpretation is that the site of Loch na Berigh was constructed some time after the establishment of Dun Bharabhat in this area, although there was likely a period of time during which both sites were occupied in their original form. Following this, however, the site of Dun Bharabhat seems to have gone into quite rapid decline and appears to have been abandoned at roughly the same time that the complex roundhouse at Loch na Berigh was replaced by a smaller, secondary roundhouse (Armit, 2006; Harding and Gilmour, 2000; Harding and Dixon, 2000).

In order to understand the relationship between these two neighbouring sites, it is important to recognise that they were constructed on very different scales despite similarities in architectural complexity. The complex roundhouse at Loch na Berigh is one of the largest Iron Age roundhouses identified in the Outer Hebrides - the external walls are some 4m in width and the external diametre of the primary roundhouse c. 20m, rivalled only by the remains of Dun Mara (discussed below) in Lewis and Rudh an Duin (described briefly above) on Vallay. In comparison Dun Bharabhat features a mere 11 metres in external diametre and is therefore considerably smaller than other known ‘broch’ sites. The dominant interpretation is that the construction of the roundhouse at Loch na Berigh directly challenged the authority and status of the residents of Dun Bharabhat and that those who constructed Loch na Berigh subsequently came to replace these people in the immediate social hierarchy (Armit, 2006). As Armit and Harding note, the relationship between these two sites is central to

our understanding of the later prehistory of the area (Armit and Harding, 1990: 94). Contrasting the situation of these sites within the Iron Age landscape and the sensory experiences associated with these places provides an additional means of assessing this relationship.

Loch Bharabhat is a small contained upland lochan. The site of Dun Bharabhat occupies the only substantial islet within this loch. Other substantial lochans within this upland zone include Loch Triliallabhat and Loch Lionais although neither of these provide any evidence for Iron Age occupation. In fact, Dun Bharabhat is not just the only prehistoric settlement identified within the upland lochans of Bhaltos, but the only prehistoric site located within this wide interior upland zone. The Bronze Age landscape appears to have been similarly focused upon the lowland machair, as is the evidence for later Viking settlements and burials in this area (Armit, 2006). Whilst it would be naive to consider that our knowledge of Iron Age sites within upland areas is free from issues of taphonomy, the potential processes that work to conceal or remove drystone built roundhouse remains from upland environments are less potent than those at play within the lowland machair. A greater impediment to our knowledge of the distribution of monumental Iron Age sites within the uplands of the Outer Hebrides more generally has been the lack of archaeological investigation and survey within these often inhospitable and inaccessible landscapes. However, one of the unique characteristics of the Bhaltos peninsula, is the small scale of this landscape and the relative accessibility of the rocky interior. In addition, the fact that this landscape was the subject of intense archaeological investigation by Edinburgh University, fieldwork that included the excavation of Dun Bharabhat itself, and drawing upon my own knowledge of this landscape achieved through survey practices, I believe it is reasonable to consider the relative paucity of known Iron Age sites in this area to be fairly reflective of the original Iron Age occupation. In comparison with the apparently crowded Iron Age landscape of the lowland machair, the Iron Age occupation of this interior landscape suggests a certain uniqueness to the occupation of this site.

Surrounding Loch Bharabhat, the treeless, rocky uplands with sparse moorland vegetation currently dominate views from this site and would have remained largely unchanged since the Iron Age. The environmental evidence has already been discussed in some detail in Chapter 6. Although the relevance of the Little Loch Roag study has been debated in the context of wider narratives of palaeoenvironemntal change across the Outer Hebrides, this study can be taken as a fairly good indicator of prehistoric environments on the exposed west coast of Lewis, where woodland regeneration would have been particularly difficult and the interpretation of an almost permanently deforested prehistoric landscape is most convincing (Armit, 1990c Chapter 2; Bennett *et al*, 1990: 295). Samples from sediments at the base of Loch Bharabhat itself show woodland decline and the expansion of heath and moorland species late in the Neolithic and final woodland clearance associated with 3,700 BP (Lomax and Edwards, 2000). This sample is clearly the most relevant to the landscape in question here, particularly given the potential for pollen core samples to collect highly localised data. Overall, the range of environmental data from western Lewis indicates that Bhaltos would not have been overly conducive to woodland regeneration from the mid-Holocene onwards. In parts of west Lewis, perhaps including the Bhaltos peninsula and the area around Calanish, some woodland would appear to have survived into late Neolithic, however, woodland would have been predominately cleared by c.1750 BC, almost a millennia earlier than the Iron Age occupation of this landscape. It is therefore argued that the current treeless nature of the upland landscape, supporting instead moorland vegetation, would have been familiar to the Iron Age occupants of this landscape some 2000 years ago.

To the north, east and west of Loch na Berigh the upland interior declines steeply to extensive machair plains of the Traigh Bhaltos, Traigh na Berigh and Traigh na Clibhe respectively. The lowland machair and the associated beach and shore are almost entirely concealed from view. The complex, dynamic and generally unstable nature of machair systems mean that it is difficult to

reconstruct specific Iron Age machair environments in any detailed or precise way. The key mechanisms of machair development as outlined by Ritchie, however, are largely consistent with the evidence from the excavated machair sites on Bhaltos and this provides a general narrative of environmental change, involving dune erosion, sand deposition and deflation and overall progressive machair retreat further inland from the Iron Age onwards (Angus, 2001; Ritchie, 1979). The effects of recent erosion of the Triagh Bhaltos coastline is perhaps best illustrated by the unexpected exposure here of the previously unknown wheelhouse in 1986 following seasonal storm damage (Armit, 2006). Local accounts of erosion as well as historical documents and maps further highlight the impact of intense periods of erosion upon this particular coastline throughout recent and historical times and suggest that the Iron Age coastline may well have been considerably different from the one we see today. Nevertheless, the wheelhouse at Cnip was built into machair sand and therefore this area was at least still part of an Iron Age machair system in this area, albeit further inland. Armit argues that the Cnip wheelhouse could not have been built far from the Iron Age coast, due to the fact the wheelhouse was built onto clean wind blown sand and he places its original location behind machair dunes, no longer in place, with the Iron Age coastline between 25 and 150m distant from the present shore (Armit, 2006: 19). Similar arguments can be proposed for Iron Age sites in other machair coastal environments. Similar processes of machair retreat have also affected the expansive Traigh na Berigh. Cores from Loch na Berigh indicate that during the earliest occupation of the roundhouse here, contemporary with occupation at Dun Bharabaht, this loch was originally a much larger freshwater or brackish inland loch, located *behind* the machair plain. Therefore, since the early Iron Age occupation of this landscape, it is evident that the machair to the north has been gradually retreating inland causing Loch na Berigh to become partially filled and the surrounding landscape to emerge as a salt marsh, flooded on a regular basis (Armit, 1992a: 27). These processes are entirely consistent with general theories on the mechanisms for machair development within the Outer Hebrides (Angus, 2001;Ritchie, 1979). Similar environmental processes have clearly taken place

at Loch na Cuilic, another machair loch on the Traigh na Berigh at the base of the rocky moorland that rises steeply here into the peninsula interior. This loch also frequently floods, such that the surrounding area becomes an impenetrable salt marsh and this is likely the result of retreating machair into the base of the surrounding hills. The lack of coring evidence from this loch, however, means that the chronology of these environmental processes cannot be well established. Some 300m to the north-east of Loch na Cuilic is the location of MacLeod's wheelhouse, the remnants of which are visible as one of a series of small mounds on the machair plain. As at Cnip, this wheelhouse was built into sand and therefore we know that this area was part of the Traigh na Berigh machair system when this site was originally built. Like Cnip, this site might also have originally been located behind a system of machair dunes which would have sheltered this place from the sea.

The results of the regional scale of research suggested that the location of Dun Bharabhat would have afforded conspicuously enclosed, restricted and localised views of the surrounding landscape. From here Iron Age people would have found that the surrounding water of the loch dominated their view of the surrounding landscape and their location would have been enclosed by the rocky moorland that rises steeply from the surrounding banks. These characteristics are redolent of many other Iron Age islet sites found across the Outer Hebrides. The location of the coast and the expansive machair almost immediately to the north were recorded as almost completely hidden from this site, except for a small window of visibility providing a glimpse of the sea. The lack of visibility of the sea is a recurring characteristic of Iron Age islet sites. The viewshed models generated for the site of Dun Bharabhat at 'local' and 'regional' viewing distances were found to correlate well with these field observations and these results (both field observations and the viewshed models) further illustrate the restricted, predominantly localised landscape characteristics that were found to be distinctive of this type of islet location.

In comparison with the islet sites of Dun Torcuil, the dun within Loch Thundiar and Dun Ban, the advantages of potential water-based travel are less apparent with regard to Dun Bharabhat. The knock and lochan landscape that is characteristic of the Bhaltos interior comprises mainly small lochans, as opposed to larger stretches of inland waters, and here there is less to be gained by the use of boat. Along the coastline of Bhaltos however, water-based travel potentially links this peninsula with the island of Great Benera, where there are four known Iron Age Atlantic roundhouses, and further to the north-east, the monumental landscapes of Callanish comprising numerous late Neolithic monuments likely to have been equally potent within the Iron Age landscapes as they are today. However, while these sea based connections were possibly well utilised by Iron Age occupants of this wider area, it is hard to see how they would have been an intimate part of islet dwelling at Dun Bharabhat, situated within the Bhaltos interior and unlike the sites of Dun Torcuil and the dun within Loch Thundair specifically, not part of an extensive watery landscape.

7.3.6 Summary

The experiences associated with the islet sites described above can be summarised as affording small scale landscape views, and due to banks that surround these inland lochs, enclosed landscape experiences. Views were recurrently restricted to the loch and surrounding moorland, with limited or no recorded visibility of lowland machair regions, the coast or the sea. Similar experiences of place were recorded for other islet sites investigated in this research. In comparison with lowland coastal sites, islet sites within freshwater lochs were associated with quite different characteristics. 94 sites were surveyed on islets within freshwater lochs and were common to all the islands within the archipelago although most numerous on North Uist. From these sites the sea was frequently found to be out of sight. These places were associated with highly restricted views of the surrounding landscape, limited by the surrounding banks to the immediate locale. They were frequently described as being in *enclosed* or *bounded* areas of the landscape. Re-considering the landscapes surrounding Dun Ban, Dun Torcuil, the roundhouse within Loch

Thundair, and Dun Bharabhat, with a mind to potential water-based travel and seafaring practices provides an additional perspective on these places and the nature of Iron Age dwelling within these landscapes. Dun Bharabhat, the only west coast islet site discussed here, stands out as having less obvious connections with wider water-based landscapes. The association between the east coast communities and seafaring practices has historical precedence and important implications for how we understand Iron Age settlement and the potential practices associated with various forms of dwelling within this landscape.

7.4 Upland and Coastal Headland sites

7.4.1 Ness/Butt of Lewis

(see Figures 7.13 and 7.14)

Coastal headland sites were found exclusively across the islands of Lewis, Harris and Barra. A concentration of these types of site was found along the west coast of Lewis between Carloway and the Butt of Lewis which is defined by high, rocky coastal headland comprising coastal promontories and sea stacks. From this region I selected the sites of Dun Mara and Dun Sobhil for further investigation. Neither of these sites have been excavated, but all were included in the RCAHMS survey (1928) and identified by Armit as Atlantic roundhouse sites. The site of Dun Mara comprises the remains of a large oval stone built structure approximately 20m by 26m. The walls were recorded to a maximum of 2m thick. There are clearly at least two, possibly three smaller structures, of oval or circular shape, within the walls of dun as identified by Armit (1992) and during the survey conducted by the RCAHMS (1928). Armit's plan indicates a sand bar, causeway or other linear feature running west from the site presumably into the Atlantic, however, this feature was not identified in the field. If Dun Mara is an Iron Age roundhouse, with later features built within it, then it represents one of the largest Atlantic roundhouse sites in the Outer Hebrides. Elsewhere this site has been classified as promontory enclosure of

unknown date (Frodsham *et al*, 1999: 95-102). The relationship between promontory forts or enclosures and Atlantic roundhouse architecture has not been fully explored. Armit (1992a) distinguishes between promontory enclosures and Atlantic roundhouses on the basis of potential for roofing and thus their interpretation as domestic settlement sites. Dun Mara is feasibly a roofable semi-round structure and thus Armit defines this as a possible Atlantic roundhouse. The site of Dun Sobhuil is located on a highly eroded headland approximately 5 km south of Dun Mara. The site appears to comprise a section of walling of at least four course of stonework with individual stone slabs between 0.3 and 0.75m. This is likely the outer walling of a sub-circular structure. Two sections of walling protrude at a right angle to this outer walling, perhaps the remnants of piers or what Armit described as evidence for an inter-mural cell (1992a). A short section of wall described in the RCAHMS survey (1928) on the north-west side of the site could not be identified. It is presumed that this has since eroded into the sea. No extensive erosion, however, was noted between site visits in 2005 and 2007 and the remains are fairly consistent with Armit's description from 1990. Between Dun Mara and Dun Sobhuil is another possible Iron Age site, Dun Airnestean. Dun Airnestean is located on a small sea stack separated from the west coast of Lewis by less 10m. It was not possible to access this site for safety reasons. However, the RCAHMS (1928) survey records the remains of a circular, drystone built structure and Iron Age pottery. A recent unpublished survey of sea stack sites across Lewis has however cast some doubt upon the Iron Age association with Dun Airnestean (McHardy, pers comm.).

The area inland from Dun Mara Inland is dominated by sparse boggy moorland, inundated with fresh-water lochs of varying sizes some rather large and often connected by small rivers. The boggy moorland interior of northern Lewis is relatively inhospitable and largely uninhabited. On the northern most tip of Lewis, and in a number of small areas along the west coast, are found large linear crofts within relatively flat open areas of the landscape, although more recent increases in population of this area have disrupted this traditional crofting

landscape with the introduction of increasing numbers of settlements and more complex and variable settlements patterns (Richards, 1998: 12-15). There is little direct evidence for environmental change specific to this area of north-west Lewis. In terms of the interpretation of vegetation cover during the Iron Age it can be argued that this area, like west Lewis (discussed in Section 7.3.5) also exposed to strong coastal winds, would not have been conducive to woodland regeneration from the mid-Holocene onwards. Approximately 6km inland from the modern coastline, within an area of dense blanket peat moorland, a single sample of fossilised *Betula* has been recorded, associated with radiocarbon dates of 4700BP (reference). Areas of the interior might therefore have retained some woodland into the early Bronze Age. Two lochs on Barvas moor are associated with the name Loch na Craoibhe, a Gaelic name relating to trees, indicating that some arboreal species may have continued to thrive here in more recent periods (Angus, 2001). There is also an example of a wood related place name on croft land, surprisingly less than 1 km from the coast, a place in Ness called *Sgeir Coillt.* Nevertheless, given the range of evidence, it seems unlikely that any substantial woodland would have been maintained into the Iron Age. There is very little machair proper within this northern area of Lewis. Coastal erosion, however, is a significant factor in understanding the Iron Age environment. It is possible, for example, that the sea stack upon which Dun Airnestan is currently located had not separated from the Lewis coastline by the Iron Age.

Even taking into account potentially extensive erosion of the coastline in this area, it is likely that the three coastal headland sites would have been locations where Iron Age people would have been afforded uninterrupted views out across the Atlantic to the west. Views inland, however, would have been more restricted to the immediate locale. To the north and south, the coastline was visible for a short distance. The focus of visibility out to the west is particularly well illustrated by the viewshed models for these sites. While all these sites would have been situated in close proximity to the Iron Age coastline, these were not places from which the sea could be easily accessed and this sheds

some light on the potential practices associated with occupants of these roundhouses.

The remains of Dun Sobhuil (S6) were found eroding out of the coast, giving an indication of the degree of destruction the sea has wrought along this coastline. Importantly these sites are not surrounded by machair soils, but by thin layers of peat based soils lying immediately above hard geology. The erosion of this type of hard rock coastline, in comparison with machair defined coastal regions, is therefore less severe and in most cases it seems reasonable to assume that these sites were built within fairly close proximity to the Iron Age coastline. The location of Dun Carloway (S12), positioned on a small hill less than 300m from the west coast, is perhaps a good illustration of how these sites may have originally been situated within the landscape. Dun Carloway is one of the best preserved Atlantic roundhouse sites in the Outer Hebrides and hence one of the best known.

7.4.2 Cletraval

(See Figures 7.15 and 7.16)

The upland category of place, as defined in this research, included a wider variety of specific landscape locations, associated with a range of sensory experiences of the Iron Age landscape. The wheelhouse at Cletraval was selected to further explore this largely heterogenous category of sites. The wheelhouse here was built into the remains of a Neolithic, Clyde type Chamber (Henshal, 1972: 507) Cairn on the southern slopes of Cletraval, a large hill within the interior of North Uist. I chose this site in order to also explore the relationship between Iron Age roundhouses and Early Neoltihic monuments. Cletraval and the surrounding area are defined by peat-based soils and heath type vegetation. The Iron Age site was excavated by Scott during the 1930s and 1940s. Scott (1935) described this site as an ‘aisled roundhouse’, whilst others have classified this as a classic wheelhouse site (Armit, 1992a; Crawford, 2003). As we have seen wheelhouses tend to be located on the machair or on the coast and this is therefore an anomalous location for this type of site. A

comparable wheelhouse site has been excavated at Allasdale, Barra, also located inland and built into peat rather than machair. This location is also fairly anomalous for Iron Age roundhouses more generally. Across North Uist the only comparable site is Baile Risary (S57), a possible Atlantic roundhouse site discussed in the context of the Vallay Strand landscape (section 7.2.3) and located to the north of Cletraval on the northern slopes of Bein Risary. The wheelhouse at Clettraval measures approximately 7.5m in diametre, with walls c. 2.2m thick, c. 1.2m high. Four original piers are preserved within the walls. Both the Allasdale and Cletraval wheelhouses are enclosed with small enclosures or small external structures (Armit, 1996: 144-145).

The pottery from the Iron Age roundhouse at Cletraval was regarded by MacKie as constituting one of seven Iron Age 'wares' which he named 'Cletraval Ware', defined as middle Iron Age in date (MacKie, 1974; see also: MacKie, 2002b). MacKie's pottery sequence suggests dates towards the end of the 1st century BC (Scott, 1935; Scott, 1948) for the occupation of this site. Some sherds dated to the 5th and 6th centuries AD were also recovered from the excavation, however, these are likely to relate to secondary occupation of this site. This date is comparable with the radiocarbon dates from the wheelhouses at the Udal. The dating of Cletraval and other wheelhouse sites has been discussed more extensively in Chapter 4.

There are a number of other earlier sites associated with the area around Cletraval. To the south-east there are the remains of another burial cairn, known as Tigh Cloiche which translates from Gaelic as 'stone house', or 'South Clettraval'. This site appears to be of the Hebridean passage grave type, although the site has been much disturbed and it is difficult to make out the plan of this site in any detail (Henshall, 1972). There are also two standing stones recorded: one at NF 7501 7118 of grey granite stone, recorded by Beveridge as being 'nearly nearly 5ft above ground, 3ft 9ins wide and 2ft 7ins thick' (Beveridge ,1911 p.254- 255). A large rectangular boulder, 2m by 0.8m by 1.5m

high, which appears to have been placed on end is recorded as another possible standing stone (RCAHMS, 1928).

The wheelhouse at Cletraval is located some distance from other known Iron Age sites. The nearest sites is Dun Mhic Raouill (S63), located on an islet. Other broadly contemporary Iron Age sites are found to the north around the Vallay Strand (discussed above). These sites, however, are located on the other side of Cletraval and are therefore, in terms of accessibility and visibility, beyond the local area of this site. The relative 'remoteness' of this site is interesting, as is the anomalous nature of the wheelhouse location upon a hillside in thick moorland, some distance from the sea. This remoteness provides an interesting context in which to understand the apparent and very direct relationship between this Iron Age site and these places of earlier 'burial' and 'ritual' significance. From Cletraval one is afforded views of the lowland coastal landscape to the south and west and extensive views out to the Atlantic. On a clear day it is possible to identify the islands of St Kilda to the north-west. Views to the north and east, beyond the summit of Cletraval are inhibited. The viewshed map demonstrates the exclusively southern and western focus of landscape visibility from this site location. The viewshed also indicates that the majority of known site locations in the lowland landscape below should be within sight.

7.4.4 Summary

Twelve sites were recorded on coastal headlands. These sites were markedly different from lowland coastal, inland islet or coastal islet sites. From these places the sea was often a dominant feature, providing uninterrupted and extensive views into the regional and distant landscapes. Coastal headland sites were recorded on the islands of Barra, Vatersay, Lewis and Harris but were notably absent from the islands of Uist. A simple explanation for this observation is that coastal headlands are largely absent along the west coast of the Uists but are a fairly defining features of the remaining islands within the archipelago. Although this provides a reason for this patterning, this does not

alone explain how these different types of Iron Age places would have been experienced or would have functioned within Iron Age society and what this might suggest about Iron Age society at large. As might be anticipated, coastal headland sites were found to afford extensive and commanding views of the sea. If Iron Age people had need or desire for instructive views of the sea (in order to monitor weather conditions out at sea, or perhaps to control passing or incoming seafarers), these would be the types of places where this would be possible. Nevertheless, these locations would not have been best placed for immediate or convenient access to the sea. A small number of sites were recorded within upland moorland landscapes. These places were found to be similar to coastal headland sites in that they afforded expansive views across local, regional and distant landscapes and with extensive views of the sea. These sites contrast markedly, in terms of the landscape setting and visual experience, from lowland coastal and inland islet sites.

Having now provided a background to the sample study areas, in the next chapter I will consider the results drawn from the local landscape scale of investigation.

Chapter 8: Results: Dwelling in Iron Age places

8.1 Introduction

This chapter presents the results of the local landscape scale of investigation focusing on the study areas outlined in the previous chapter (Chapter 7). The specific methods employed at this scale of the research have been discussed in detail in Chapter 5. Firstly I will consider experiences associated with the wider locale of these sites drawing upon the results of the subject-centred field survey grids and the investigation of some of the specific sensory parametres that these landscapes afford (section 8.2). In section 8.3 I will consider what the results of GIS continuous viewshed models add to an understanding of these locales, illustrating these results with information gathered during fieldwork designed to explore journeys through these same landscapes. In section 8.4 I outline the results of field experiments to investigate inter-audibility and inter-visibility between specific Iron Age places. In the final section (8.6) the results of the GIS analysis designed to explore specifically the visibility of Iron Age buildings within the landscape as well as the potential visibility of the landscape from the heights of these roundhouse structures will be considered.

8.2 Sensory grid survey results

8.2.1 Introduction

The aim of the sensory grid surveys was to obtain more specific records on the visual and audible parametres within which Iron Age people would have occupied these landscapes. More specifically this survey, which involved exercises developed to establish the possibilities and characteristics of visual and auditory communication between people, allowed me to consider elements of social interaction within the Iron Age and to explore a *peopled* Iron Age

landscape. As outlined in the methodology (Chapter 5), the survey grid was carried out so that I, a female participant, was consistently located at each of the sites, while the other participant (male) moved between landscape locations. This was conducted in order to standardise the results. This method also provided some data on sensory parametres according to gender that will be discussed in section 8.2.5. As has already been outlined in Chapter 5, the grid survey was only carried out at locations that could be assessed on land and for logistical reasons did not include locations in the sea. To make it clear in the accompanying figures, grid locations that were investigated but produced negative results are represented by crosses, while uninvestigated grid locations are left blank.

8.2.2 Lowland Coastal sites

Within the landscape surrounding the wheelhouses at Udal, inter-visibility between people at the site and people in the surrounding landscape was recorded at 11 grid points out of a total of 38 investigated (Figure 8.1). These grid points were all located on the machair which covers the entire Udal peninsula as it would have done during Iron Age occupation. This study of visibility suggests that these Iron Age houses would have been linked visually with the surrounding machair. The results further demonstrate the variable and frequently limiting nature of visibility within this landscape as revealed through descriptions of landscape journeys above. Within the landscape surrounding the site of Garry Iochdrach (S50) on the Vallay Strand, inter-visibility between people at this site and people in the surrounding landscape was again possible at 11 grid points. Here it was possible to investigate 41 of the grid points at low tide (Figure 8.2). Inter-visible locations were limited almost exclusively to places on the inter-tidal zone and the surrounding coastline - places that are likely to have been covered by machair within the Iron Age landscape. Only one location within the moorland to the south was inter-visible with this site. These results, however, were slightly biased because a number of the grid points within the surrounding upland area of the local landscape were located within a modern forest plantation where visibility was impeded due to modern vegetation cover.

Evaluations of environmental change within this area suggest that the Vallay Strand and surrounding area would not have supported substantial woodland during the Iron Age and therefore we must infer that visibility from these upland areas would have been greater during Iron Age occupation of this landscape than was estimated during the fieldwork. The location of the site Buaile Risary (S57) within a small clearing on the slopes of Beinn Risary provided an opportune place to consider visibility of the Iron Age sites within the Vallay Strand from upland areas where modern vegetation was absent. From here Iron Age people would have been afforded complete, almost map-like, views of the Vallay strand landscape and the Iron Age roundhouses located below. Visually the experience of the landscape from this location would have contrasted significantly with experiences of this landscape from the Iron Age sites located *within* the Vallay Strand and this emphasised the predominantly local and regional scales of visibility associated with lowland coastal landscapes.

Investigations of sound both at Udal and Vallay demonstrated that when people shouted they were audible in areas fully outside of visual contact and this immediately confirmed the importance of exploring sound in addition to vision as an insight into the sensory functioning of Iron Age domestic landscapes (Figure 8.3 and 8.4). From Garry Iochdrach (S50), a person shouting was heard from a number of grid points located across what would have been Iron Age machair and from a few locations to the west in areas of moorland. At Udal, audibility was found to be more restricted that at Vallay. Here human voices and shouts were only positively identified at one grid point 500m to the south of the wheelhouse. While the visibility of people was generally found to be reciprocal between participants, reciprocity was not often found to be the case with audibility. At Udal, in contrast to the limited audibility of people situated within the surrounding landscape, voices and shouts *from* the site were heard from a further four surrounding grid locations to a maximum of 1500m away.

Investigations of sound at Vallay and Udal raised a number of issues about audibility within these landscapes. Because these places are now located within

relatively flat topography, in windy weather conditions the noise of the wind itself was found to overwhelm most other sounds, voices in particular. Therefore, within these types of landscape and prevailing weather conditions, audibility is not simply determined by the topography and distance from sound source but also affected profoundly by wind direction, wind speed and the relative exposure of one's location. Inter-audibility between locations, unlike inter-visibility, was therefore not always common and this goes some way toward explaining the results at Udal where the sand dunes surrounding the wheelhouse sites provided unusually sheltered locations in comparison with many of the surrounding grid points. It was also the case that during the course of fieldwork conducted at Udal, there was a persistent strong south to south-westerly wind and this is evident in the fieldwork results for this landscape (see Appendix 4 for full details of the grid survey results). An additional experience within these lowland coastal landscapes was the effect of water upon sound transmission. At Vallay, voices projected across the water at high tide were significantly less audible than at low tide. It is unlikely, however, that these conditions are comparable with the sensory parametres relevant to the Iron Age landscape.

If, as has been argued previously, the Vallay Strand was flooded since Iron Age occupation of this landscape then this observation is perhaps less informative as to an understanding of Iron Age experiences here. Other weather conditions, such as rain and fog were also found to have a significant impact on visual clarity. Nevertheless, these observations reflect how sound can be affected in these types of lowland coastal landscapes and alert us to the range of variables that affect landscape experience and the ability for people to communicate within these locales. Overall, the results of the fieldwork grids at Vallay and Udal suggest that occupants of lowland coastal landscapes would have had strong visual and audible links with areas of surrounding machair, but more limited communication with upland moorland areas.

8.2.3 Islet sites

Within the landscape surrounding Dun Torcuil (S56), inter-visibility between people in the landscape and people located at this roundhouse was recorded at nine locations in the grid of 49 (Figure 8.5). These locations were limited exclusively to the surrounding boggy moorland and to the rocky hills to the north and west of Loch an Duin. Individuals on the machair to the north-west were not found to be inter-visible with people at Dun Torcuil, even given the most amenable weather conditions (i.e. clear skies with no rain). From places within the surrounding hills of Beinn Mhor and Crogearraidh Beag, Iron Age people would have achieved a particularly clear view of Dun Torcuil, and from the heights of these surrounding hills the intricate geography of Loch an Duin and its wider landscape was also better understood. In contrast, from within the low lying boggy moorland surrounding Loch an Duin, inter-visibility was frequently impeded due to the banks of the loch and these observations further reinforced the sense that Dun Torcuil was located in a relatively hidden part of this landscape. From Dun Torcuil the sound of a person's voice was most clearly audible from the surrounding boggy moorland but was found to be faint or inaudible from the machair even in good weather conditions (i.e. no rain and calm winds) and with a north-easterly wind which helped to carry sounds from this area towards the listener (Figure 8.6). The audibility of voices emanating from the elevated hills was also found to be relatively limited. Different results were found concerning the audibility of voices emanating from Dun Torcuil, which were limited solely to places within the surrounding boggy moorland and were never recorded in the areas on the machair or in the hills. In fact, words were only clearly recognisable from two locations.

Within the landscape surrounding the dun within Loch Thundair, visual parametres were recorded. From only eight locations in the grid of 49 was inter-visibility between people at this roundhouse and people within the surrounding landscape recorded (Figures 8.7 and 8.8). These places of inter-visibility were focused towards the slopes of Li a Deas to the east and to intermittent points around the banks of Loch Thundair. From elevated areas of the mountains of Li

the roundhouse in Loch Thundair was easily located and from these places one was able to appreciate the extent of standing water across this landscape. From very few locations to the north and to the west were the dun or people at the dun visible and this was due to the high banks surrounding the loch on these sides and the low elevation of the landscape beyond. People at these places were also not found to be visible from the dun even in amenable weather conditions.

At Dun Ban on Grimsay, the pronounced nature of restricted landscape visibility from this place was illustrated by the fact that from *no* locations within the surrounding grid, was visibility or audibility between people positively recorded (Figures 8.9 and 8.10). The majority of the grid locations that were investigated were beyond the banks of the loch. The lack of inter-audibility and inter-visibility between Dun Ban and the surrounding grid points betrayed the restricted experiences associated with this site but also suggested that within this particular locale the grid provided an inadequate sample of locations in which to investigate the sensory parametres of this landscape. Because visibility and audibility were heavily restricted to the domains of the loch itself, and since all of the grid locations happened to fall outside of this area, the scale of the grid was too coarse to inform on some of the more subtle experiences of these places. Therefore, in addition to the standardised grid locations, a number of spot locations around the perimetre of Loch Hornoray were also investigated in order to explore some of the more detailed sensory opportunities and parametres within this landscape. The results of this additional survey at Dun Ban highlighted just how inhibiting the banks of this loch were upon visual and audible landscape parametres. Locations on the loch side of the banks, even when some distance from the site itself, tended to afford relatively good visual and audible communication between participants in the field survey, while places immediately beyond the banks on the landward side were very much removed from audible and visual capabilities. As a result, there was an overall sense of people being either ‘within’ this locale or outside of it, and the concept of a local landscape became most suitably defined by the banks of the loch as

opposed to physical distances from this location. Whilst these sensory limitations were most pronounced at Dun Ban, a similar sense and experience of space and what constituted the extent of these localities was encountered both at Loch an Duin and Loch Thundair.

From all of the grid locations investigated within the landscape surrounding Dun Bharabhat, neither Loch Bharabhat, nor individuals standing at the site were found to be visible from any of the grid points even in extremely amenable weather conditions (Figure 8.11). Likewise, from the location of Dun Bharabhat, individuals located at these grid points were not seen. The conclusion was made during the fieldwork that these results reflected the lack of uninterrupted lines of sight between these places, rather than effects of weather conditions or the participants' inability to recognise particular places or people. The underlying topography to the surrounding knock and lochan environment appeared to inhibit visibility within this landscape and it is suggested that these observations would be relevant to the Iron Age landscape, regardless of environmental changes in this area (for example; vegetation cover, machair development or coastal erosion). While the grid points represented only a sample of locations the survey journeys similarly failed to identify places where inter-visibility would be possible and therefore these results appear reflect a distinct characteristic of this landscape. Concerning the sound of a human voice, similar limitations/restrictions were also found (Figure 8.12). In very good weather conditions, individuals shouting at Dun Bharabhat were still only audible from two locations within the grid; from a location 700m away within the knock and lochan landscape to the south-west, and 500m to the east, on the base of the knock and lochan and flooded machair. In moderate to bad weather conditions the audibility of voices at Dun Bharabhat were limited to within only a few hundred metres. In particular, it emerged that there was limited potential for audible contact between the people at Dun Bharabhat and those on the lowland machair. Again, these finds are comparable with the results from Dun Ban, Dun Torcuil and the dun within Loch Thundair and are representative of islet landscapes within the Outer Hebrides more generally.

Whilst lines of sight between people located at these roundhouse sites and people within the landscape were found to be almost consistently reciprocal (although the clarity of visibility varied), this was not the case for the audibility of people's voices. At all three islet sites investigated, the audibility of a person's voice cast from the islet itself was considerably more impeded than the audibility of voices cast from the landscape and perceived from these sites. This discrepancy in results was partly a consequence of differences in male and female pitch of voice (discussed below). In addition however these results reflect elements of the landscape structure. Shouting and other sounds at these sites could be heard echoing loudly around the loch when located there, yet frequently these sounds were completely inaudible to recipients elsewhere in the landscape. It appeared that the topography of the immediate location, effectively basin-like structures, caused sound to reverberate and amplify within the banks of the loch, but also to be contained within this area and hence to minimise audibility beyond this place. The second observation was that the distance range of audibility was noticeably less across water than across land. This phenomenon is likely to be, in part, caused by the background noises of the loch conflicting with the sound of people's voices but is also an effect of the moisture of the surrounding air through which sound waves travel less easily. The experience of bad weather conditions (i.e. strong winds and rain) further inhibited audibility within these landscapes.

Overall, the results of the fieldwork grids at islet sites suggest that Iron Age occupants of these roundhouses would have had limited visual and audible links with areas beyond the banks of the surrounding lochs other than the slopes of nearby hills. Iron Age machair landscapes were consistently found to be beyond these regions of immediate experience and communication. The limits of audible communication between individuals was found to be more restricted than within lowland coastal landscapes, within the region of 500m and 1100m depending on weather conditions (see Table 21). Furthermore, based upon experience and the ability for individuals to communicate within these

locales, a sense of what constituted the 'local' landscape was better defined by the banks of the loch as opposed to measured distances.

8.2.4 Upland and coastal headland sites

Of the locations investigated at Dun Mara (n=32), inter-visibility was recorded at eight grid points. These locations were distributed along the coastline (Figure 8.13) rather than with locations further inland. Investigations of inter-audibility were found to be even more restricted (Figure 8.14). The audibility of individuals shouting within the landscape surrounding from Dun Mara was recorded from only two locations on the coast and to the north-east of the site. Similarly, audibility of individuals shouting at Dun Mara and heard from the surrounding landscape was established at only one grid point on the coast and to the south-west of the roundhouse. The distribution of these three audible locations reflected the prevailing south-east wind during the field survey - i.e. it was difficult to hear sounds when facing into the wind. Overall, the exposed nature of this landscape with the wind coming in off the Atlantic or sweeping up the coast made it notably difficult to identify sound sources across the landscape. Audibility within this landscape was also affected by the sea. The sound of waves crashing against the coast and the frequent sound of sea birds dominated this location. The greatest distance over which people's voices could be identified and words recognised was within 500m. In this respect Iron Age occupants of coastal headland sites would have had markedly different everyday experiences to those communities dwelling within lowland coastal landscapes who by contrast lived in landscapes which much wider sensory parametres. In terms of visibility, stronger links with areas of the coast as opposed to landward regions of the surrounding landscape would have defined Iron Age experiences of coastal headland landscapes.

Within the landscape surrounding the Cletraval wheelhouse it was possible to investigate sensory parametres for the complete number of grid locations (n=48) (Figure 8.15). Inter-visibility was established at eight grid locations. These locations were focused on the moorland immediately beneath the site to

the south and south-west. Locations beyond the summit of the hill to the north were not found to be inter-visible. Otherwise inter-visible locations were found to be fairly randomly distributed within the local landscape area. Overall these results indicate incomplete and interspersed points of inter-visibility between people at the Iron Age wheelhouse and people within the surrounding local landscape. While extensive and relatively complete views of regional and distant landscapes would have been possible from this place, views of the proximate landscape were comparatively limited.

Within the landscape surrounding the Cletraval wheelhouse inter-audibility was found to be more evenly distributed around the site location (Figure, 8.16). Audibility of individuals shouting within the surrounding landscape and heard from the wheelhouse was recorded for 21 grid locations. The furthest distance across which a person's voice was audible was 1800m. The audibility of individuals located at the site, heard from the surrounding landscape was more restricted but similarly distributed. Overall it was surprising to find that the location of the Cletraval wheelhouse was not particularly well positioned to monitor the surrounding local landscape nor to communicate with individuals across the area. The results of the grid survey and the process of working within this landscape strengthened the opinion that while this place had awe-inspiring and dramatic views of the wider landscape and seascape, in terms of sensory experience this locale enabled few immediate or practical interfaces with the surrounding moorland. Furthermore, these results highlighted profound differences between upland and coastal headland sites that had not been identified during the regional scale of research and the extensive field survey.

8.2.5 Gender differences

A recurring discrepancy was noted between the audibility of female voices and the audibility of male voices during the grid survey. Whilst lines of sight between people located at roundhouse sites and people within the landscape were found to be almost consistently reciprocal, regardless of gender, this was not the case for the audibility of people's voices. This was particularly apparent at islet sites.

At all three islet sites investigated, the audibility of a person's voice cast from the islet itself was considerably more impeded than the audibility of voices cast from the landscape and perceived from these sites. This discrepancy in results was partly a consequence of differences in male and female pitch of voice. As outlined in the methodology, the investigation of these landscape grids were organised so that I, as the female participant, was consistently located at each of the sites, while the male participant moved between landscape locations.

8.3 Continuous viewshed models

8.3.1 Introduction

The Continuous viewshed models indicated the percentage of the local area surrounding a given site location that might be visible from each cell *within* this localised area. In effect these models provide information on the visual qualities encountered as people might have moved throughout the local landscape surrounding Iron Age roundhouses. The resulting maps strengthened the information recorded during the in situ-field work journeys and I have therefore chosen to combine these results here. The results of the continuous viewshed models also compliment the field survey grid results described above. A difference between these two forms of data, both of which relate to the visual parametres within the local landscape surrounding Iron Age sites, are that for the viewsheds information is provided for a greater sample of locations; each of the continuous viewshed models comprise line-of-sight calculations for 706 landscape points (each 10m raster cell), in contrast with the 48 locations investigated during the sensory grid survey. In addition, the continuous viewshed model informs specifically about the extent of landscape visibility from these locations as opposed to inter-visibility between people in the landscape and people at the roundhouse location. For each site the reader will want to refer to the appropriate figures for further illustration of these results.

8.3.2 Lowland coastal landscapes

Returning to the wheelhouses at Udal from the south, walking the length of the Udal peninsula, the location of the wheelhouses were only visible intermittently through the undulating machair (Figure 8.17). In certain areas along the peninsula the machair was found to be quite flat where it is currently under cultivation, and from these places I was granted brief views of the wheelhouse locations. During Iron Age occupation of this peninsula it is likely that this landscape would have been similarly cultivated in areas and alternating zones of flatter ploughed machair and undulating sand dunes would probably have also characterised this Iron Age landscape. Approaching these sites from western and eastern points of the peninsula, the nearest accessible locations being on the opposing beaches, the wheelhouse sites were out of sight and located beyond the intervening sand dunes. Crossing the costal dunes into the interior of the peninsula once again, the location of the wheelhouses were intermittently visible as I walked across the gently undulating machair. Again, in parts of this landscape under cultivation and where the topography was more even, the remains of the wheelhouse sites themselves and the immediate landscape become increasingly visible. The northern-most point of the Udal peninsula terminates in an elevated rocky outcrop. This location provides complete views of the peninsula and from here I was able to achieve an illuminating perspective on the immediate geography of this landscape**.** The sand hills within which the wheelhouse sites are located, can be pinpointed, although the location is not conspicuous. Overall the wheelhouses and their general location were never overtly prominent throughout these journeys. It is likely that the wheelhouses would have been similarly hidden when fully constructed, as only the roofs would have been visible above ground level.

Walking to the site of Garry Iochdrach around the coastline of the Vallay Strand, the location of the roundhouse was intermittently visible as I traversed the gently undulating terrain (Figure 8.18). A number of the journeys from and to Garry Iochdrach were difficult to undertake across the strand unless at low tide. During journeys made across the inter-tidal sands the location of this

roundhouse, and the three other Iron Age roundhouse sites in the area were found to be consistently visible. This part of the landscape, however, is likely to have been defined by extensive machair during Iron Age occupation where the variable and intermittent visibility recorded during other journeys around Vallay would be comparable. Again, we need to consider that these areas of the local landscape surrounding Iron Age sites at the Vallay Strand would have been cultivated by the occupants of these roundhouses and journeys between these homes and this local area would have been a daily occurrence. Overall, the journeys made within lowland coastal landscapes from Iron Age sites on the Udal and at the Vallay Strand demonstrated the variable nature of landscape visibility that would have been characteristic of these general locales.

The Continuous viewshed models model indicates that in the landscape surrounding the site of Garry Iochdrach (S50) within the Vallay Strand study area, the inter-tidal sands and the surrounding coastal machair afford moderate to low and occasional places of low landscape visibility (between 0% and 40% of local area is visible). The location of the other Iron Age sites, Eillean Maleit (S54) and Cnoc a Comhdalach (S51) are located in areas of moderate to low visibility while the possible wheelhouse at Gerisclett (S210), located on a small hill, affords high landscape visibility (70-80% of the local area is visible). The maximum visibility within this landscape is almost 80% although these tend to be places on the slopes of the hills to the south of the strand area. The mean percentage of landscape visibility is low, while the standard deviation figure of 18.3% and the maximum percentage of 79.6% highlight the fluctuating characteristic of visual experiences. The continuous viewshed models strengthen the interpretation of these landscapes based upon field survey data alone, indicating fairly high but also fluctuating and therefore variable scales of visibility (Table 10).

8.3.3 Islet landscapes

Undertaking journeys from and to Dun Torcuil on foot, it was necessary to circumnavigate the edge of the water and moving within the low, loch-level

landscape around Dun Torcuil general landscape visibility was inhibited and accessing places within the maze of Loch an Duin and subsidiary waters was difficult without an established knowledge of this complex landscape (Figure 8.19). Even with a GPS to guide my journey, I was frequently 'caught out' by a further cove or inlet of the loch that had been concealed from view, and this often found me cut-off from my destination and frequently necessitated the tiresome task of retracing my steps, sometimes quite a considerable distance. During these journeys Dun Torcuil was recorded as visible only momentarily at points of higher elevation, becoming hidden again as I followed the landscape around small inlets of the loch.

The Continuous viewshed model generated for Dun Torcuil indicates that the area of the loch itself affords moderate to low landscape visibility (between 20 and 40% of the local area is visible). This strengthens the idea that islet sites within Loch an Duin are located within enclosed and visually restricted areas of the landscape. The model also indicates, however, that the areas of this landscape with the lowest visibility (less than 20% of local area is visible) are the boggy moorland areas surrounding, and on the margins, of Loch an Duin. It is perhaps this feature of this landscape structure that affords the distinct experience of Dun Torcuil's locale as 'hidden' or 'concealed'. The upland areas of Beinn Mhor and Crogearraidh Beag are the only parts of this landscape that can be interpreted from this viewshed model as having extensive views of this area (40 -75% local area visible) while the small zone of machair on the north-west periphery of this local area is shown to be one of the areas of lowest local landscape visibility.

Walking to the dun within Loch Thundair from the surrounding landscape, this site was, like Dun Torcuil, hidden from view for the majority of the journeys made (Figure 8.20). Walking to the site from the north, south and west each involved circumnavigating the loch perimetre and this route through the landscape infrequently provided a good vantage point. As at Loch an Duin, I often found myself misjudging the immediate geography of this area and

realising a further inlet of the loch between my location and the site. Approaching the site from the slopes of Lee to the east, afforded extensive views of Loch Thundair and allowed me to realise the full extent of standing water within this landscape. Towards the base of these mountains, however, this vantage point was quickly lost.

The Continuous viewshed models for Loch Thundair, highlights similar characteristics of landscape experience; the area of the loch itself is indicated as affording moderate to low landscape visibility (between 20 and 40% of the local area is visible) while the surrounding boggy moorland is characterised by low visibility (less than 20% of local area is visible). Again, as one would expect, the slopes of the mountains of Lee provide the only areas of this landscape affording high visibility.

At Dun Ban, this roundhouse site was even more acutely concealed from the surrounding landscape than either Dun Torcuil or the dun within Loch Thundair (Figure 8.21). The standardised 1.5km north, south, east and west journeys to Dun Ban were unfortunately often difficult to undertake here, due the specific island geography of Grimsay. The north and east locations 1.5km away from Dun Ban were located in the sea and across the sea on the island of Ronay respectively. It was therefore necessary to modify these standardised journeys to suit this landscape. Walking from the north the 500m between the coast and Dun Ban, the site and the loch itself remained out of sight until I reached the heights of the surrounding bank. The first point at which Dun Ban was visible on this journey was at a distance of 220m and only continually visible from 100m. Similarly, arriving at Dun Ban from the furthest eastern point on Grimsay, 520m away, the site was concealed from view until within 140m and when located on the banks or within the banks of Loch Hornoray. Arriving from the south, the site and the loch were hidden from view for almost all of the of the 1.5km distance, and the location of Dun Ban was once again only revealed upon scaling the banks of the loch at a distance of 90m from the site. All these journeys involved waking through rocky moorland, affording limited scales of visibility of the

surrounding landscape and occasional views of the sea, but during which the presence of the substantial remains of Dun Ban within Loch Hornoray were largely unknown. Walking from the east first required navigating Loch Carabhat, crossing relatively low lying, boggy moorland again with limited visibility. From the top of a small intervening hill, however, it was possible to see Loch Hornoray for the first time, although Dun Ban itself remained out of sight. Again, Dun Ban was only clearly visible from the top of the surrounding banks and from here, looking down into Loch Hornoray, the enclosed nature of this site could be well observed.

Approaching Dun Bharabhat involved moving from lowland landscapes into the upland interior and in all cases the roundhouse and its immediate location remained completely hidden from view until within less than 200m of the site (Figure 8.22). From the north, journeys were made from the Traigh na Berigh machair from where the upland interior of the peninsula rises very abruptly and accessing Dun Bharabhat required a steep climb. Climbing the almost vertical rock face that bounds the knock and lochan interior, views of the machair and the coast increased yet the location of Dun Bharabhat was revealed only once I reached the top and was within 140m of the site itself. Journeys to this site from the east involved crossing the traigh na Berigh machair once again, from where the remains of the complex roundhouse of Loch na Berigh was visible, and then climbing fairly rocky moorland in order to access the interior landscape. I was interested to find that the first point at which Dun Bharabhat was visible on this journey, I was no longer able to see the remains of Loch na Berigh and further investigation revealed that there were very few places within this landscape from where both sites could be viewed. Journeys made to the site from the west and south also involved climbing fairly steep rocky moorland in order to access the knock and lochan interior and the site was first sighted approximately 400m away at an intervening point of high elevation, but was not consistently visible until within 200m.

The Continuous viewshed models for Dun Bharabhat and Dun Ban are similar. These models indicate the predominance of *very* low landscape visibility (less than 20% of local area is visible) throughout the greater part of these locales. Within the banks of Loch Hornoray, for example, less than 6% of the surrounding landscape is shown to be visible from here and the only places from which wider views are indicated are the hills on the island Ronay, and a few intermittent hillocks. Comparing the statistics yielded from the Total Viewshed models indicates surprisingly similar results for the landscapes of Loch an Duin and Loch Thundair, and distinct similarities again between Loch Hornoray and Loch Bharabhat. At both Loch an Duin and Loch Thundair, the maximum landscape visibility within these local areas is relatively high (above 80%) and this can be attributed to the mountains and hills of Beinn Mhor, Crogearraidh Beag, Li a Tuath and Li a Deas, which were described during the field journeys as places affording extensive views of these respective lochscapes. These figures, however, are not representative of the landscape as a whole and mean landscape visibility is much less (10.7% and 10.5% of local landscape visible). However, these landscapes also produced relatively high standard deviation figures (15.4% and 15.3%), and this indicates significant variability in landscape visibility throughout the area. In comparison, the landscapes surrounding Dun Ban and Dun Bharabhat produce much lower maximum and mean percentages of landscapes visibility and these results appear to reflect the especially limited visibility encountered in these places. Standard deviation figures of 7.4 and 7.3 percent also indicate less variability in visibility across these landscapes.

8.3.4 Upland/Coastal headland

The standardised cardinal journeys made to and from Dun Mara were interesting as they exposed how one would not intuitively move through this landscape. Walking inland from Dun Mara, it was surprising to note how markedly the topography changed and how little the location of this site was visible (Figure 8.23). The results of the Continuous viewshed models generated for Dun Mara are misleading, as a large proportion of the model is taken up by

views from the sea. What the viewshed model is in effect indicating is the minimal views of the locale around Dun Mara from the sea itself. Similarly, the high standard deviation figure indicates the distinct disparity between views from the sea and from the land. On reflection, it would have been interesting to have explored in the field visibility of this site from the sea.

The results from Cletraval are also surprising (Figure 8.24) - in particular the low maximum landscape visibility figure (43.20%). What this suggests is that views from this site are extensive of regional and distant landscapes but that walking throughout the immediate locale, views of this area are not dominant. Thus it can be argued that this type of location would have enabled people to monitor the wider landscape better than the immediate one and perhaps therefore the greater importance of activities or tasks taking place away from the immediacy of the roundhouse. If the decision to construct this Iron Age roundhouse were motivated more specifically by a desire to associate with the Early Neolithic burial tomb in which it is partially constructed, this perhaps explains the unique qualities of this location. One might consider, for example, that visibility of the immediate landscape would have been a minimal consideration in locating the original burial site. Instead extensive views and thus visual links with the wider regional and distant landscapes may well of been of primary consideration (Henley, 2005). In comparison with lowland coastal and islet sites, both of which are indicated as affording stronger visual links with the immediate landscape over distant areas, daily life at Cletraval would clearly have functioned in a different way. The fact that Iron Age people chose to build a wheelhouse in what appears to be a fairly anomalous location for these types of site, particular as regards sensory experiences of the landscape, as well as deliberately reusing an earlier burial monument, begs the question of how exactly this site was used. Where wheelhouse sites have been excavated, this has indicate that these buildings functioned primarily as settlements and it has been assumed that all these types of roundhouses functioned in this manner. The anomalous characteristics of the site at Cletraval suggests perhaps alternative or additional uses of this site.

Site	Maximum % of landscape visible	Mean % of landscape visible	Standard Deviation of % of landscape visible
Dun Torcuil	82.3%	10.7%	15.4%
Loch Thundair	81.5%	10.5%	15.3%
Dun Ban	59.6%	5.0%	7.4%
Dun Bharabhat	48.2%	4.8%	7.3%
Garry Iochdrach	79.60%	16.34%	18.30%
Udal	75.20%	25.21%	17.24%
Dun Mara	64.10%	16.70%	23.80%
Cletraval	43.20%	6.30%	9.10%

Table 10: Statistics Extracted from the Continuous Viewshed Models

8.3.5 Summary

Comparing the figures from the Continuous viewshed analysis highlights some distinct differences in the sensory affordances provided by these different landscape locales. The lowland coastal landscapes investigated by this analysis, Udal and the Vallay Strand, both show high degrees of variability in landscape visibility. Importantly, however, within these landscapes the highly restricted areas of visibility associated with areas surrounding islet sites is not apparent. These results help explain how the topography of these landscapes would have affected a sense of enclosure; the areas of low landscape visibility indicated by these viewshed models are more concentrated than at either Udal and Vallay, indicative of more distinct boundaries between areas of restricted and then open views. The computational time involved in generating these models was substantial; between 288 and 460 hours for each site. Had the

processing time involved not been so extensive, it would have been useful to have generated results for a much greater sample of sites.

8.4 Communicating between Iron Age places: field survey results

8.4.1 Introduction

Specific parametres for sensory communication were explored between Iron Age roundhouse sites within each study area as a means of exploring the potential for Iron Age communities to have interacted within these landscapes.

8.4.2 Lowland Coastal sites

Investigations of inter-visibility and inter-audibility between roundhouse locations within the Vallay Strand Study Area demonstrated high levels of sensory communication between Iron Age sites (Table 11). In particular, between the sites of Garry Iochdrach (S50), Eilean Maleit (S54), Cnoc a'Comdhalach (S51) it was possible to conduct intelligible conversation between these places even in bad weather conditions (i.e. strong wind and rain) and to recognise physical signals relatively easily. Another interesting observation concerned the relationship between the chambered cairn at Geiriscelett and the Iron Age sites. This location was visible from three of the Iron Age sites (Figure 8.25), and inter-audible from another three. The remains of this chambered cairn have been affected quite considerably by coastal erosion, and today only part of the internal chamber remains. Erskine Beveridge, however, describes much more substantial remains in 1911 and recent survey and partial excavation of this site has suggested that it was once a very substantial site (Dunwell, Johnson, and Armit 2003). It is perhaps likely that during the Iron Age this site was still relatively well preserved and therefore that this place would have been even more noticeable within this local landscape. In situ field survey results indicate that had Iron Age communities used the location of this earlier site, perhaps as a well known meeting point or a

place for people congregating at certain times, then these activities would have been visible and audible from the roundhouse sites that surround it. Inter-visibility and inter-audibility between the locations of the three wheelhouses with the South Udal sand hill was, like the sites at Vallay, well established during the fieldwork. As at Vallay, this is partly due to the close proximity of these sites. While excavating the two wheelhouses at Sloc Slabhain, Baile Sear, I noted similar possibilities for communicating between locales within lowland coastal landscapes. In amenable weather conditions we could, by shouting, communicate between the two trenches. In high winds communication across even these short distances was inhibited. However, even in bad weather conditions it was possible for members of the excavation team working at wheelhouse A to signal effectively to people working at wheelhouse B in order to ascertain the whereabouts of certain pieces of equipment, for example.

	Viewing location:				
Views to:	**Eillean Maleit**	**Garry Iochdrach**	**Cnoc a'Comdhalach**	**Geirisclett**	**Chambered Cairn**
Eillean Maleit		**X (S)**	**X (S)**	**X**	**X**
Garry Iochdrach	**X (S)**		**X (S)**	**-**	**-**
Cnoc a'Comdhalach	**X (S)**	**X (S)**		**X (S)**	**X (S)**
Geirisclett	**X**	**-**	**X (S)**		**X (S)**
Chambered Cairn	X	**-**	**X (S)**	**X (S)**	

Table 11: Inter-visibility between Iron Age sites within the Vallay Strand Study Area.

8.4.3 Islet Sites

Despite the close proximity of the islet sites within Loch an Duin, investigation in this landscape found inter-visibility and inter-audibility between these places to be minimal (Tables 12 and 13). From Dun Torcuil neither the islet of Dun Bru nor Dunan Dubh could be located, a consequence of the complex geography of Loch an Duin itself and the low lying loch level of these islet sites which precludes a good vantage point of the surrounding landscape. The sound of a person's voice at Dunan Dubh could only be heard faintly from Dun Tocuil and visa versa. Inter-audibility between the other Iron Age places within Loch an Duin was impossible. Travel by land (rather than boat) also removes these otherwise proximal places from immediate access.

From the complex roundhouse within Loch Thundair the islet known as Dun Ban was quite clearly visible, if not particularly prominent. Investigation of sound

between Dun Ban and the complex roundhouse indicate that people shouting are quite clearly audible between these places on calm days, although they become increasingly faint with deteriorating weather conditions as audibility was impeded across the waters of this loch. As discussed in Chapter 7, the physical remains at Dun Ban may not be Middle Iron Age in date and therefore these observations may have less relevance to our understanding to the Iron Age occupation of this landscape than initial supposed. No other known or possible Iron Age sites are located within the local landscape.

Within Loch Hornoray, while views from Dun Ban were found to focus within the banks of the loch, the loch curves slightly to the north-east and so the full length of the water is not visible from here. Overall, it was recorded that this location did not provide a particularly good vantage point of the immediate area within the loch banks. The other islet site within Loch Hornoray is consequently hidden from here and investigations of sound between these places indicated that people were unable to communicate between these islets even in amenable weather conditions. Upon first visiting this site, the location of the wheelhouse to the north-west and beyond the banks of the loch, was not noted as visible from Dun Ban. However, further investigation revealed that people at these places were actually inter-visible and inter-audible, although the roundhouse itself and its immediate location could not be visually determined (Figure 8.26, Table 14 and 15).

	Viewing location		
Views to:	**Dun Torcuil**	**Dun Bru**	**Dunan Dubh**
Dun Torcuil		-	-
Dun Bru	-		-
Dunan Dubh	-	-	

Table 12: Inter-visibility between Iron Age sites within the Loch an Duin Study Area

	Hearing location		
Heard from:	**Dun Torcuil**	**Dun Bru**	**Dunan Dubh**
Dun Torcuil		-	X (1)-
Dun Bru	-		-
Dunan Dubh	X (1)	-	

Table 13: Inter-audibility between Iron Age sites withi n the Loch an Duin Study Area

	Viewing location		
Views to:	**Dun Ban**	**Dun Hornoary**	**wheelhouse**
Dun Torcuil		-	X
Dun Hornoary	-		-
Wheelhouse	X	-	

Table 14: Inter-visibility between Iron Age sites within the Loch Hornoray Study Area

	Hearing location		
Heard from:	**Dun Ban**	**Dun Hornoray**	**Wheelhouse**
Dun Ban		-	X (1)-
Dun Hornoary	-		-
Wheelhouse	X (1)	-	

Table 15: Inter-audibility between Iron Age sites within the Loch Hornoray Study Area

From Dun Bharabhat, none of the other Iron Age sites within the area were found to be inter-visible or inter-audible places. This is explicable in that all other known Iron Age occupation at Bhaltos is focused on the lowland machair and Dun Bharabhat is set apart from these places within the rocky interior. My experiences of this landscape came increasingly to focus upon the experiential boundary between places on the lowland machair and those within the rocky upland and a recurring sense was that one was either very much 'outside' of Dun Bharabhat's local landscape, and this included all the areas of Iron Age

occupation on the lowland coastal machair, or one was 'within' this landscape. Little visual or audible communication was consequently recorded between zones. At Bharabhat this further reinforced the sense that this place was isolated from the wider Iron Age landscape at Bhaltos despite the apparent proximity of sites.

8.4.4 Upland/coastal headland sites

In the north-west coastal area of Lewis only the locations of Dun Mara and Dun Airnestean were found to be inter-visible (Table 16 and 17). Dun Sleibhe, located some distance further south along the coast was out of sight from the other site locations. Investigations of sound, however, revealed that none of these places were inter-audible. The principal reason for this was that the sound of the Atlantic sea dominated these places due to the exposed nature of these sites.

At Cletraval there were no other Iron Age sites located in the immediate landscape. Investigations instead focused on the relationship between the wheelhouse and earlier archaeological sites; two standing stone monuments and a chambered cairn. The location of both standing stone monuments were clearly inter-visible and inter-audible with the wheelhouse (Figure 8.27, Table 18 and 19). The chamber cairn site, South Cletraval, was not inter-visible or inter-audible with the wheelhouse being located over the brow the hill to the south-east. Although not directly relevant to this discussion, it is perhaps noteworthy that the two Neolithic burial cairns on Cletraval, one housing the later Iron Age wheelhouse site, while built in close proximity were seemingly positioned on opposing sides of the hill such that these locations and any activities taking place at these sites would not have been inter-visible or broadly inter-audible.

	Viewing location:		
Views to:	**Dun Mara**	**Dun Airnestean**	**Dun Sleibhe**
Dun Mara		YES	NO
Dun Airnestean	YES		NO
Dun Sleibhe	NO	NO	

Table 16: Inter-visibility between Iron Age sites within the Barvas/Ness Study Area

	Human Voice heard from:		
Sound Source:	**Dun Mara**	**Dun Airnestean**	**Dun Sleibhe**
Dun Mara		NO	NO
Dun Airnestean	NO		NO
Dun Sleibhe	NO	NO	

Table 17: Inter-audibility between Iron Age sites within the Barvas/Ness Study Area

	Viewing location:			
Views to:	**Wheelhouse**	**Standing Stone 1**	**Standing Stone 2**	**South Cletraval Chamber cairn**
Wheelhouse		YES	YES	NO
Standing Stone 1	YES		YES	NO
Standing Stone 2	YES	YES		YES
South Cletraval Chamber cairn	NO	YES	NO	

Table 18: Inter-visibility between Wheelhouse and earlier sites at Cletraval

	Heard from:			
Sound source:	**Wheelhouse**	**Standing Stone 1**	**Standing Stone 2**	**South Cletraval Chamber cairn**
Wheelhouse		X (6)	X (6)	-
Standing Stone 1	X (6)		X (6)	-
Standing Stone 2	X (6)	X (6)		X (4)
South Cletraval Chamber cairn	-	X (4)	-	

Table 19: Inter-audibility between Wheelhouse and earlier sites at Cletraval

8.5 Monumental Landscapes

8.5.1 Introduction

In this section I will outline the results of GIS analysis designed to explore how the monumental aspect of Iron Age roundhouse sites might have been afforded certain experiences. I will also consider what this suggests about the purpose and impact of monumental roundhouse architecture and how this reflects upon Iron Age social constructs. It is frequently assumed that social status is demonstrated and maintained through phenomena such as monumental architecture. Here I will re-evaluate how architectural magnitude and the assumed visual prominence associated with monumental architecture might have been played out through the experiences of the Iron Age landscape. The complex architectural features and the substantial dimensions preserved in plan at these sites indicate monumental proportions and as discussed in previous chapters, the inherent monumentality of these sites must be considered as a vital part of Iron Age conceptions and perceptions of these places. The results of the heightened viewshed models enable us to explore how the Iron Age landscape might have been viewed from the height of monumental roundhouse structures and to question whether the monumental characteristics of these sites might have facilitated lookout type functions. By contrast, the results of the cumulative viewshed models enable us to consider how these monumental structures might themselves been viewed from the surrounding landscape – in other words, how the visual impact of monumental architecture might have been perceived. The cumulative viewshed models indicate areas within the surrounding landscape where the location of these islet sites might be visible at increasingly potential roundhouse heights. In effect they model the increasing visual prominence of these sites, according to degrees of vertical monumentality. These investigations were only conducted where it could be demonstrated that sites were possibly constructed to significant heights - ie these models were of minimal relevance to the investigation of wheelhouse sites which it is understood were semi-subterranean in construction method and

were therefore not outwardly monumental. For example, there is no indication that the wheelhouse sites at Udal were built into or upon the foundations of earlier Iron Age roundhouses, as demonstrated for a number of the wheelhouse sites on the Vallay Strand. Neither is there any evidence for Atlantic roundhouse sites elsewhere on the Udal peninsula. Therefore it would be misleading to consider potential landscape visibility from increased viewer heights as current understanding of wheelhouse architecture precludes the possibility that these sites would have comprised significant elevations.

8.5.2 Lowland Coastal sites

The series of heightened viewsheds generated for sites across the Vallay Strand indicate that as viewer height increases, here intended to represent potential roundhouse heights, the percentage of the local and regional landscape visible increases from between 10 and 20% of the overall landscape to a maximum of 35% at a viewer height of 10m (Figure 8.28). In terms of how the landscape composition changes, for all three sites on the Vallay Strand, viewer height increases visibility of the sea. The rate of increase in visibility with viewer height is fairly similar between these sites. Nevertheless, even at heights of 10m the proportion of the local and regional landscape visible, remains substantially less than from the location of coastal headland sites at viewer heights of 1.7m. For example, at the location of Dun Mara (S2) in Lewis 38% of the local and regional landscape is visible at a simple viewer height. One might infer from this that monumental roundhouses within lowland coastal landscapes would not have been well positioned to view the surrounding landscape.

Cumulative viewshed analysis was conducted for four of the lowland coastal sites within the Vallay Strand study area (S50, S51, S54 and S210) (Figure 8.29). Cumulative viewsheds generated at 0m indicate that sites S50, S51 and S210 would be visible from approximately 40% of the local landscape surrounding these locales. In comparison the location of Eilean Maleit (S54) is shown as visible from less than 10% of the surrounding landscape. These models indicate that all the sites are predominately visible from areas that are

now represented by inter-tidal sands but would likely have been extensive machair during Iron Age occupation of this landscape. These site locations are also shown to be visible along the current coast line and from some areas on the slopes of Beinn Risary.

As the potential roundhouse height increases the areas of the surrounding landscape from which these sites would be visible increases. At a potential height of 10m, the site of Garry Iochdrach (S50) is indicated as visible from almost all of the surrounding local landscape (81%), excluding only two small areas behind intervening hillocks. The models indicate that the most profound change in the visibility of sites on the Vallay Strand would occur if the roundhouses were built to heights of 2m. At 2m in height, the models indicate that roundhouses in these locations would be visible from between 55% and 68% of the surrounding landscape. In particular the visibility of the roundhouse at Eilean Maleit (S54) increases significantly at a potential height of 2m. The models indicate that building above 3m would have less affect upon the visibility of these sites from the surrounding landscape. At heights of 10m all the roundhouse sites would be visible from more than 70% of the surrounding landscape.

8.5.3 Islet sites

All the roundhouse sites investigated in the islet study areas were potentially built to some height. Dun Torcuil (S56) preserves evidence for stairways leading to a second storey and the substantial size of this site in plan indicates it could have supported considerable monumentality (Beveridge, 1911; Armit, 1992). Thomas' (1868) account of Dun Ban (S88) also describes stairs and other complex architectural features indicative of secondary storeys. There is no direct evidence that the dun within Loch Thundair (S72) was built with additional storeys or particular height and the remains of this site preserve a roundhouse considerably smaller in diametre than either Dun Ban (S88) or Dun Torcuil, (S56). Nevertheless, the similarly modest sized roundhouse of Dun Bharabhat (S18), revealed evidence for stairs and additional floors (Harding and Dixon,

2000) and it is therefore possibility that this site too was constructed to monumental proportions. Cumulative viewsheds were also generated for the site Loch na Berigh (S19) in order to make comparisons with the nearby site of Dun Bharabhat (S18).

The series of heightened viewshed models (Figure 8.30) indicate how the landscape might have been viewed from these sites. For Dun Torcuil the models indicate that as viewer height increases, one might have secured greater views of Loch an Duin and the surrounding boggy moorland within the immediate locale. However, views of the machair, the coast and the sea would remain largely out of sight regardless. At a viewer height of 6m and more, it is likely that the site of Dun Bru would be visible, however, the location of Dunan Dubh appears to remain hidden even at the hypothetical viewer height of 10m. The model suggests that the most profound increase in visible area occurs between viewer heights of 2m and 3m after which there is much less to be gained in terms of achieving a substantial vantage point of the surrounding landscape. Heightened viewshed models generated for the dun within Loch Thundair indicate that as viewer height increases, views of the immediate area of Loch Thundair and the landscape between the loch and the mountains of Lee would become less interrupted and more complete. However, visibility into regions further afield changes very little and in this sense visual perception of the wider landscape location is not significantly expanded. Furthermore, the viewshed models indicate that Loch Euphort, the sea and the coast would remain out of sight even at a hypothetical roundhouse elevation of 10m. It is suggested therefore, that the overall characteristics of landscape experience, of predominantly localised and effectively enclosed views of the surrounding landscape and with restricted view of the sea and coast, would be maintained regardless of roundhouse, and hypothetically viewer, height. At Dun Ban because the stone remains are so well preserved, despite being so overgrown as to preclude detailed analysis of their structural form, it was possible to climb to the top of the surviving walls in order to achieve a heightened viewer position. From the height of these walls, approximately 1.5m above the water level,

visibility remained largely unchanged. From this height, the banks of the loch still restricted visibility beyond the immediate locale and the full extent of Loch Hornoray and the islet at the north-west end of this loch were still out of sight. Models of visibility from Dun Ban at increasing viewer heights, however, suggest that at a viewer height of 3m the sea begins to come into sight and areas of the surrounding boggy moorland to the south-west also increase. At a viewer height of 6m the majority of Loch Hornoray is indicated as visible including the other islet within the loch. At a viewer height of 10m the model suggests uninterrupted views to a distance of 500m to the south-west over and beyond the banks of the loch in this direction and increased lines-of-sight toward the sea to the south-east. At Dun Bharabhat (S18) increasing the viewer height indicates that visibility of the machair and the coast to the north increases as well as visibility of the sea between the coast and the offshore islands of Pabaigh Mor and Bhacsiagh. It is supposed that machair would have extended further into the area that is now sea during the Iron Age and therefore that this suggests increased visibility of what would have been extensive machair in this area. The Iron Age sites of Loch na Berigh (S19) and the wheelhouse at Cnip (S148) are not shown to be visible from Dun Bharabhat even at a viewer height of 10m.

The cumulative viewshed models (Figure 8.31) generated for the site of Dun Torcuil (S56) indicate that this location is only visible from 25% of the surrounding local landscape. As the potential height of the roundhouse increases so does the proportion of the local landscape from which this roundhouse might be visible. The most significant change in roundhouse visibility occurs between roundhouse heights of 1m and 3m. At a roundhouse height of 3m, the site is indicated as visible from 60% of the landscape. Beyond this height, the model indicates that there would have been relatively little to be gained in terms of the visibility of this site within the local area. The cumulative viewshed models generated for Dun Ban (S88), Dun Bharabhat (S18), and the Dun within Loch Hunder (S72) demonstrate less impact upon visual prominence with increased roundhouse height. Even at hypothetical roundhouse elevations

of 10m, the cumulative viewshed models indicate that these sites would remain visible from less than 40% of the local landscape.

Looking specifically at Iron Age sites across the Bhaltos peninsula, the cumulative viewshed models highlight the degree to which the location of dun Bharabhat (S18) is hidden from the surrounding landscape. This location is indicated as visible from only 5% of the local landscape and these are restricted to places within the upland interior. At a roundhouse height of 2m, however, these models indicate that Dun Bharabhat (S18) might begin to be visible from areas beyond the upland interior, especially from areas of machair to the north and perhaps also visible from the sea. Visibility from this area of lowland machair further increases with an increase in roundhouse height as well as visibility from the slopes of Tairaval to the east and areas of the flooded machair immediately below these hills and to the south of the Traigh na Berie. It is perhaps notable, however, that even at a potential height of 10m, Dun Bharabhat would still remain out of sight from the Iron Age sites at Loch na Berie and the wheelhouse at Cnip. A similar lack of visibility of the roundhouse Loch na Berigh (S19) is also indicated by the cumulative viewshed data. The location of this site is shown to be slightly more visible from the surrounding local landscape than the location of Dun Bharabhat (S18) - visible from 10% of the surrounding landscape. Nevertheless, even at a potential height of 10m the roundhouse at Loch na Berigh would remain out of sight from Dun Bharabhat, from the wheelhouse at Cnip and in fact only visible from 23% of the surrounding local landscape.

Overall the potential for constructing highly visible or visually dominant roundhouse sites in inland islet locations is limited in comparison with lowland coastal landscapes discussed above. Dun Torcuil differs slightly from this observation. Yet still, it would be necessary for the roundhouse here to have reached heights of at least 4m in order to be as visually prominent within the surrounding landscape as sites on the Vallay Strand built to between 1m and

2m. These results allow us to question the motivations and the impact of building monumental roundhouses within islet locales.

8.5.4 Upland and Coastal Headland sites

It is unlikely, given what is currently understood about the architecture and construction of wheelhouses, that the Iron Age sites at Cletraval would have been constructed to any significant height. It is also supposed that the way in which wheelhouses were roofed would not have enabled occupants to look out of these buildings from any elevated position. However, it is worth briefly considering how visible this locale would have been from the surrounding landscape particularly given the association with earlier prehistoric burial sites. The cumulative viewshed model (Figure 8.32) indicates that this location is visible from 36% of the surrounding local landscape. Unsurprisingly these locations are found predominantly on the western slopes of the hill beneath the site locale. Because the site is located on the slopes of the hill and not the summit the site location is not overtly visible within the landscape. Again it is necessary to draw attention to the fact that the Iron Age wheelhouse is built into an earlier Neolithic burial tomb. The nature of the landscape location is fairly common for Hebridean Neolithic burial tombs (Henley, 2005: 198-203). Across North Uist two other Neolithic cairns, Barpa Langass and Unival share very similar positions on the slopes of similarly sized hills.

The cumulative viewshed models generated for the locations of Dun Mara (S2), Dun Sobhuil (S6), and Dun Airnstean (S4) indicate that these places were highly visible from the surrounding landscape in comparison with both islet and lowland coastal sites. Before examining potential roundhouse elevation, these locations were shown to be visible from 35%, 46% and 52% of the surrounding local landscape respectively. What seems significant is that these locations are more visible prior to the construction of monumental roundhouses than islet or lowland coastal sites even when constructed to a hypothetical height of 10m. However, the visibility of roundhouses in these coastal headland locations seems not to be influenced greatly by site height. At roundhouse heights of 10m

the cumulative viewshed models indicate that these roundhouses would be visible from approximately 60% of the surrounding landscape. It is also important to highlight, that the areas of the landscape from which these sites would be visible is the sea.

8.6 Summary

By defining locality in terms of multi-sensory association it has been possible to further refine an understanding of the different landscape categories put forward in Chapter 6. Furthermore, by also using the GIS to model potential views *of* and *to* roundhouse sites, something clearly difficult to assess through field survey, I have been able to consider how the monumentality of Iron Age buildings might have been experienced within these landscapes. Building increasingly tall roundhouse structures would afford various visual impacts depending on the landscape locations. The data goes on to suggest that the location of, for example, lowland coastal landscape, would prove more beneficial for visual prominence than the height of the roundhouse itself. Furthermore, there would have been greater opportunities for roundhouses to be *perceived* as imposing and monumental within coastal headland landscapes, than for example, many of the islet locations. The results of the local research scale presented here lend themselves to a new discussion on the complementary relationship between the two, traditionally opposed, approaches to experiential landscape archaeology; GIS and subject-centred field survey. It is to this topic that we must now turn our attention. Having discussed this relationship in the following chapter, we are then able to consider how these results inform an understanding of the Outer Hebridean Iron Age in Chapter 10.

Chapter 9: Discussion: Understanding Place and Landscape

9.1 Introduction

Having outlined the regional and local scale results of this research, derived from the GIS and Field survey practices, in this chapter I reflect upon the relative contributions of the methods employed in this research towards an understanding of place and landscape. I will begin by discussing what this combined methodology reveals about the two approaches and will critically analyse the usefulness and application of the specific practices involved in this research. I will then examine what this research contributes to ongoing debates about the role of GIS and subject-centred field survey to interpretive and experiential landscape archaeology. Finally, I will consider how the specifically integrated approach adopted in this research has helped me engage with and explore places and landscapes of the Outer Hebridean Iron Age. I will argue that the ability to communicate and convey a sense of place through combining these two methods has been a particular strength of this approach and that the alternative interpretations offered by these different methods can provide a more nuanced and enriched understanding of the past.

9.2 Reflecting on the Subject-centred field survey

9.2.1 Introduction

The subject-centred field survey employed in this research involved a number of basic practices. Firstly, drawing upon the available environmental and archaeological data and by situating myself within the landscape, I attempted to engage with Iron Age places and record elements of sensory experience that

would be relevant to Iron Age communities occupying these landscapes in the past. A number of difficulties and limitations were revealed by this research. A principal concern related to weather and other environmental conditions which affected the ability to conduct, successfully, certain field survey practices as well as the meaningfulness of results gleaned from these investigations. Some of these factors were specific to the study area, others pertinent to island or coastal landscapes more generally and some of relevance to landscape field survey more generally.

9.2.2 Weather, climate and tidal variation

A principal factor was the tide. Working in lowland coastal landscapes, such as the Vallay Strand and the Udal, the tide profoundly affected not only sensory experiences of these places but also the ability to conduct field work within these landscapes. In the case of the Vallay Strand, where large regions of the landscape under study comprised inter-tidal sands, the opportunities for conducting fieldwork were dictated by the tide to a significant degree. Low tide at the Vallay Strand varied between three and six hours relative to the tide cycle, therefore limiting the time during which the inter-tidal sands were accessible. In terms of recording sensory experience the effect of the tide was found to have a potent impact upon auditory parametres within this landscape. Generally it was found that at higher tides sounds were less audible across the survey area than at lower tides. It is presumed that audibility was inhibited by the amount of standing water in the area. As noted in Chapter 8, journeys made between sites on the Vallay Strand also changed significantly according to high or low tide conditions. During the extensive field survey the tide determined the ease with which coastal islet sites, such as Orosay (S211) in South Uist could be reached. Importantly, the tide also affected weather and the duration over which the sea might have been visible from these locales. Sensory experiences of place within island landscapes clearly vary throughout the daily as well as across monthly tidal cycles. Other than consistently conducting site visits during the same periods of the tidal cycle, which for obvious logistical reasons would not have been possible, it was difficult to control this variability through the

course of the field survey. The potential impact and significance of the tide upon both the physical and sensory nature of Iron Age places within this landscape was, however, well noted. Importantly, the tide, as well as a range of environmental factors, will have meant that the Iron Age island boundary, like the modern boundary, was never fixed but would have fluctuated according to daily and lunar cycles as well as the longer-term processes such as coastal erosion and rises in sea level.

Variability in weather conditions was also a principal consideration. In particular the Outer Hebrides are very windy islands, where the full force of the Atlantic combined with little shelter on the west coast makes for highly exposed landscapes. Wind affected records of sensory experience profoundly. In particular, the direction of the wind determined degrees of audibility. In the most exposed landscapes, such as the Vallay Strand, Udal and the coastal headland landscapes of north-west Lewis, it was impossible to hear individuals shouting against strong winds even over short distances. Overcast conditions, heavy rain and fog also affected auditory and visual clarity.

The variability in weather, climate and tidal conditions restricted the degree to which the field survey data could be compared within subsequent analysis. Despite attempts to standardise the conditions in which field experiments were conducted, due to logistical considerations (principally time limitations) it was not possible to ensure that field experiments were conducted over the same period of the tidal cycle or within particular weather conditions. As a consequence it was problematic comparing some of the sensory qualities of place and landscape. The tide, weather and wind conditions were consistently recorded throughout the fieldwork and some of this data is presented in tables 9.1 and 9.2. These tables demonstrate the significant variability in weather conditions throughout the course of the field survey. In particular, the high winds and therefore ‘bad’ auditory conditions during the course of the local landscape field survey at Udal are highlighted. The nature of this data and the large number of variables, however, does not lend itself well to meaningful analysis.

Some of this data has been extracted from the sensory grid survey results, and this has allowed me to explore the parametres for auditory communication within different Outer Hebridean landscapes (Chapter 8).

9.2.3 Environmental change

Another important consideration was environmental change. As has been discussed throughout the results chapters, there are important ways in which the modern environment differs from what is understood about that of the Iron Age. The most obvious and most profound are the impacts of coastal erosion and sea level rise, where current research indicates as much as a 3m rise in sea level over the last two and a half thousand years (Richie, 1966; 1985; Von Weymarn, 1974). This has had particular relevance to the study and interpretation of lowland coastal landscapes. In these ways the field survey results and records of landscape experience, such as the many photographs that illustrate these results, are divorced from prehistory by these essential differences to the Outer Hebridean environment. As discussed in Chapter 5, while I considered in detail the evidence for environmental change in order to understand the Iron Age landscape, it was difficult, given ranges of uncertainty, to reconstruct continuous elements of the palaeoenvironment while in the field. Therefore, the specific results of the subject-centred field survey remained rooted in embodied experiences within the *present* landscape of the Outer Hebrides, and this presented a potent barrier between the landscapes I sought to understand and the landscapes inhabited in the present. Nevertheless, being able to consult the environmental data and assess current interpretations of the Iron Age palaeoenvironment in the field, enabled me to make informed judgements about the sensory parametres within which Iron Age people would have experienced the landscape. These observations, therefore, do not invalidate phenomenological approaches within archaeology, yet I believe it is necessary as part of critical methodology to reflect upon these factors. These issues also led me to question the degree to which the term phenomenology was appropriate in defining these methods of approach, an issue discussed below.

9.2.4 Phenomenology

The setting out of specific research questions prior to the field survey, and constructing a *pro forma* in order to address these questions, heightens one's sensory experience to these particular elements of landscape and place and thus the process of *experience* is directed towards certain themes. Consequently, the 'data' or information gathered during this type of field survey cannot be used to analyse or reveal patterns implicit in it, but instead reflects an interpretation that has already revealed itself to practitioners through the experience itself. In other words it became clear that the information gathered during the field experiments could not be treated simply as raw data, because the subject-centred field survey was itself an interpretive process. Thus the 'results' of this element of the research were the outcome of an intuitive process of interpretation that occurred through embodied engagement and experience within the given surroundings. The information, therefore, provided data that it was difficult to analyse in a quantitative, in many cases even comparative, manner; instead this information is better described as a record of the phenomenological process.

The process of describing, documenting and recording sensory experience, as discussed above, and finally communicating these findings, represent stages of removal from the experience itself. The very nature of experience, which is an immediate and transitory phenomenon, belies attempts to harness it and to hold it up to rationale and subsequent analysis. To firstly consider what an experience is comprised of, then to isolate and record distinct elements of sensory perception, is a process that disconnects us from the experience in an absolute sense. Thus the academic process, requiring deconstruction, description, analysis and communication are at odds with the very nature of everyday experiences that the process seeks to understand. Nevertheless, these processes are necessary if the study of the experiential qualities of place and landscape are to contribute meaningfully to archaeology. Without these processes the practice ceases to be archaeological but becomes a personal or artistic exercise. The use of maps and models of experience within a GIS

represent practices that are also detached from experience in this absolute sense. There is clearly a relationship between experiences of place and landscape (either past or present) on the one hand, and records and analysis of sensory qualities of place on the other. However, there are problems with this process – particularly when contained under the banner of 'phenomenology'.

The analytical process, which included use of a database to draw out patterns in the field records, clearly differs from how patterns or elements of variability would have been apparent to the Iron Age communities, creating places and dwelling in the Outer Hebridean landscape. Although this may appear a fairly obvious or even trivial point, if we consider the process by which field survey data must inevitably be analysed and finally communicated within a meaningful narrative about the past, it becomes clear that the method, by necessity, progressively shifts away from the perspective of embodied, experiencing individuals. As we shall see, similar methodological concerns are associated with GIS practices.

The reader will probably have noted that although in Chapters 2 and 3 I described the *phenomenological* background to the field survey methods carried out for this research, I have referred to my own fieldwork not as phenomenology, but as subject-centred or embodied field survey. As I have explained in Chapter 3, the term 'phenomenology' has controversial associations and consequently it would appear that while embodied landscape survey approaches have become increasingly prevalent, the term phenomenology itself has lost some popularity. I did not come to this field survey with a blank canvas, but with ideas about these landscapes, with research questions about sensory experience, interpretations of the Iron Age landscape and preconceptions about the islandness of these places. Taking these factors into consideration, and the need to use available archaeological and environmental data in order to attempt reconstruction of the Iron Age landscape, it is clearly not possible to achieve what phenomenological philosophers have termed the 'phenomenological reduction'; a state of

experiencing the world in an absolute sense (Merleau-Ponty, 1962). These observations by no means invalidate the experiential, subject-centred field survey methods; this research has shown how such an approach can inform about the types of sensory parametres in which Iron Age people would have experienced the landscapes they inhabited. My approach has been influenced by phenomenological philosophy and this underpins the way in which the methods were developed. However, I believe that it would be misleading to define these methods as a specifically phenomenological practice.

	Audibility Conditions				
Study Area	**Very Bad**	**Bad**	**Moderate**	**Good**	**Very Good**
Vallay	3%	39%	15%	27%	15%
Dun Hornoray	0%	0%	92%	0%	8%
Udal	100%	0%	0%	0%	0%
NW Lewis	7%	50%	36%	7%	0%
Bhaltos	0%	19%	37%	22%	22%
Loch an Duin	24%	5%	11%	17%	43%
Loch Thundair	22%	0%	56%	0%	22%
Cletraval	0%	30%	17%	53%	0%

Table 20: Audibility conditions during local scale survey

Records of Audibility		Landscape Location		
		Lowland Coastal	**Islet**	**Coastal Headland/ Upland**
Greatest distance over which voices were recorded as audible (m)	**Good to very good**	2100	1800	700
	Moderate	2100	1500	700
	Bad to very bad	1500	1500	700
Greatest distance over which words could be recognised over which (m)	**Good to very good**	1800	1100	<500
	Moderate	1800	1000	<500
	Bad to very bad	1500	<500	<500

Table 21: Variation in parametres of audibility

9.3 Reflecting on methods of GIS

9.3.2 Recreating experience

While it was not the explicit aim of this research to use GIS to recreate, corroborate or qualify field survey observations, some of the results of this research do contribute to debates about the relationship between GIS models of experience and experience itself. As we have seen in Chapter 6, the distance-based viewshed models did not always reflect the field survey results with regard to some of the visual characteristics of place. For example, the results of the field survey indicated that inland islets sites across the archipelago were distinctive in affording highly localised views and restricted visibility of local and regional landscapes. However, these differences were not easily identifiable in the results of the viewshed analysis and overall these results did not strengthen this interpretation. There are a number of potential explanations for this.

Firstly, there are potentially issues relating to data. The viewsheds are fundamentally *models* of lines-of-sight, and are therefore only as accurate as the base data used to generate these maps. The base data used in this research was a 10m resolution DEM. Analysis of the DEM reveals that in certain areas, more subtle topographic features, such as the banks of smaller lochs or gently undulating machair, were not well represented by the resolution of this data. Consequently, the line-of-sight models used to construct the viewshed maps may have inherent inaccuracies.

Of more relevance to this discussion, however, is that viewshed size appears not to be analogous to the concept of extensive or restrictive fields of view. The GIS generated viewsheds, while based upon lines-of-sight, essentially inform about the topographic structure of a landscape and the potential visual capacity within this landscape. In comparison, the field survey data relates to visual experience and, as discussed above, is therefore already an interpretation of topographic setting mediated through the practitioners experience. The magnitude of a viewshed, i.e. the size of the area potentially visible from a given location, is not necessarily the same as visual experience being defined as 'extensive'. A fundamental difference is that when people view a landscape, they do not interpret the surrounding vista as 'extensive' on the basis of the proportion of what can or cannot be seen. Instead, an extensive view relates to factors such as the proportion of uninterrupted lines of visibility and the relative contribution of different landscape scales within the overall vista. There are also fundamental differences between seeing and noticing (Couclelis, 1992). The field survey results indicate that islet sites tended to be defined by experiences whereby visibility of the local landscape was dominant and proportional visibility of regional and distant areas of the landscape limited. Yet these characteristics were not distinctive in the scaled GIS viewshed models.

It is of course the case that visual experience is not possible without a line-of-sight (Wheatley, 1996) and therefore that viewshed maps provide parametres within which visual experience is contained. However, this is not equivalent to

saying that viewshed models provide the same, or even similar, information as descriptive, qualitative or photographic records of visual experience. The weather and environmental variables described above are obvious differences. Examples of less obvious factors are noticing and recognising features mentioned above. Considering the relationship between descriptions or records of extensive visibility and large viewshed models highlights how these methods differ. The GIS models are quantitative illustrations of the magnitude of visible areas within different scaled fields of view (Wheatley and Gillings, 2000), while the field records relate to a human translation (interpretation) of these visual fields. Where the GIS models demonstrate convincingly (i.e. taking account of data resolution issues and environmental change) that the topographic structure of certain locations would have enabled uninterrupted lines-of-sight to extensive areas, yet this place was described in the field as having restrictive views, this prompts the question – what characteristics of landscape setting would yield both these qualities? The answer would appear to be, in this case, that while the location enables views of large areas of the landscape, these areas might not have been recognised as extensive because they were located at too great a distance from the site and thus did not register as an informative area of visibility. In fact, the problem is that the concept of 'visual enclosure' is less straightforward than one might suppose and differs from the sense of place that one can extract from the distance-based viewshed models implemented in this research. People view landscapes not as a continuous field of visible or non visible locations, as a viewshed map indicates, but as a landscape containing identifiable features; we register features such as the base of a valley, the brow of a hill, rather than the 'missing' visible points between these features. What I have termed distance-based viewsheds in this research, based upon the Higuchi viewsheds established by Wheatley and Gillings (2000), identify different fields of vision. Instead, what I have been trying to ascertain is the structure of a location based upon the identification of specific features, independent of any specific distance-based visibility fields, and how people make *meaningful* the features they identify.

Further modelling and manipulation of GIS viewsheds would be a useful way of un-packing this concept further, as Lake and Woodman (2003) have demonstrated for the concept of 'circularity'. I suspect that such research would reveal that enclosure relates minimally to the size of the area that is visible from a particular location, but more to the distance and consistency of the most immediate horizons, regardless of the extent of visibility beyond these points. Experience of these places indicated that the banks that surround lochs in which Iron Age roundhouses are located, particularly towards to the east coast of the islands within moorland environments, provided an impression of enclosure and circularity.

9.4 Complementary Dialogue

9.4.1 Introduction

The subject-centred field survey, in line with other research of a similar nature, incorporated a range of methods common to more traditional landscape archaeology; records of location by grid-coordinate, descriptions of environment, topography and the subsequent mapping of this information. Inputting the field survey information into a geographical database for purposes of analysis and visualisations represents a simple but effective way in which GIS and subject-centred landscape methods were successfully integrated in this research.

9.4.2 Exploring Variability

I have discussed above how the many variables (weather, tide and environment) hindered comparisons of the field survey data. These inherent limitations have been widely commented upon. I reiterate these points here in order to consider critically the nature of the perspective that this research offers and to enable me to consider alternative positions and viewpoints. It is, therefore, worth briefly outlining some other characteristics that define *my* particular field survey perspective. My height is 1.7m, I am slightly long-sighted

and have average hearing. Different individuals or groups of individuals would have recorded different sensory experiences within these landscapes. My experiences were also affected by my own preconceptions of these landscapes. For example, I was first drawn to the concept of the modern island boundary and this was reflected in the extensive field survey methods. As an urban visitor to these places, my experience of these landscapes was initially associated with ideas of tranquility, isolation, wilderness and other aesthetic qualities. These preconceptions and cultural biases undoubtedly affected how I perceived these landscapes. Increasing familiarity with the landscape was another factor. As the extensive field survey progressed my experience of places began to develop. Having visited a number of islet sites, for example, an impression of these locales developed. Therefore, experiences of islet sites drew upon previous experiences of these types of place and affected how I recorded these places. My ability to assess or experience places from a fresh perspective was lost as soon as I began exploring the landscape in further detail. The apparent uniqueness of locales recorded early on in the field survey diminished towards the end of the survey. The qualities of certain locales were experienced in contrast to previous places and in contrast to experiences of the wider landscape setting. Analysing the field survey records it was also clear that weather affected how sites were recorded; not only the specific sensory parametres within the landscape, but also the amount of time that was spent at particular locales, my mood and overall perspective on these places. These factors obviously affect comparative anlaysis of the field survey data. Quite obviously, similar variables are not an inherent problem in the generation of GIS models of sensory landscape experience; some of these variables, such as viewer height, can be specified in the programme, and there is therefore a degree of control and potential for direct comparison between models using alternative input data and parametres.

Nevertheless, despite the difficulties of dealing with this data, Iron Age communities would have been susceptible to similar types of variables. Therefore, these experiences consequently informed about sensory conditions

within which Iron Age experiences would have been afforded. Throughout the fieldwork I developed a greater depth of understanding about how these landscapes were structured and the types of places within them. For example, my understanding of tides and the dynamics of the coastal island landscape developed. A similar knowledge and experience would have been an intimate part of living in coastal areas of the Iron Age landscapes. Furthermore, the overall experience of working in these places highlighted potential practices that Iron Age people could have been engaged in. For example, the combination of a low and spring tide means that previously inaccessible islands are temporarily within reach across land. A high neap tide obviously means the opposite. In some areas certain tidal conditions mean the possibility of collecting certain sea resources such as razor fish. A north wind brings bitter cold, while a south wind is in comparison remarkably warm. Strong easterly winds might have prohibited boats going out into the Minch. One might argue that these are merely trivial anecdotes that anyone could bring back from a trip to the Outer Hebrides. The importance, however, is that these details could not have been drawn from the GIS analysis and yet these variables are the features that add texture and nuance to an understanding of the everyday lives of Iron Age communities occupying these landscapes. The field survey was therefore also a highly stimulating activity that provided a situated environment in which an interpretation of the Iron Age in the Outer Hebrides unfolded. I therefore argue that these experiences of landscape and place bring us closer to understanding how people in the past engaged with their world. Thus, if archaeologists aim to grasp the essence of these places and what it would have been like for Iron Age people who lived in these landscape settings, then a situated perspective such as that offered by subject-centred field survey methods, should be an essential part of archaeological research.

In fact, these ‘subjective’ factors highlight the complexity of place making and remind us that place and landscape are difficult and highly intangible concepts to grasp. Therefore, a method that seeks to engage with landscape and place needs to embrace the fact that the processes of familarisation and perception of

other subjective qualities, are an integral part of the process of understanding. A sense of place is not an isolated phenomenon, but relates to other places and to subjective experiences of a wider landscape context.

9.4.3 Communicating experience

In Chapter 3 it was said that the methods for convincingly communicating subject-centred field survey have been a recurring concern (Cummings, 2008). In fact, communicating a sense of place as an outcome of both the GIS and subject-centred aspects of this research was an important consideration, firstly in establishing methods of practice and secondly in writing this thesis. One of the main challenges of the subject-centred field survey was in finding ways of recording the experiential aspects of place and sensory characteristics of landscape. Unlike more conventional methods of archaeological survey, there are few published documents that guide researchers in methods of subject-centred or phenomenological field survey. This is not unexpected as the approach is still fairly novel, however, the lack of explicitness on this topic is endemic and presents a profound barrier to prospective practitioners (exceptions include Hamilton and Whitehouse, 2006a; 2006b). In particular, I struggled to find ways of recording the sensory qualities of place that enabled this information to be compared between study areas or sites, and to be communicated to others in what would be deemed a ‘professional’ and ‘academic’ manner. Consequently, the results presented in this thesis relate to only some of the fieldwork that I carried out; there were survey practices that I experimented with that proved to be unsuccessful, either as method of recording or in that the process produced results that it was impossible to communicate adequately.

For example, as part of the local scale of research, journeys were made through the local landscape surrounding Iron Age sites with the initial purpose of familiarising myself with these locales. These journeys were also designed to *stand* for the various activities and practices that Iron Age communities might have been involved in. These activities and practices, such as tending to crops

or animals, would have involved occupants moving through and engaging with this landscape immediate to their homes on a daily basis. The specific methods have been discussed in Chapter 5. Although data was recorded with comparative analysis in mind, these journeys functioned primarily as a method of familiarising oneself with these landscapes and were an important part of a process of more qualitative, personal interpretation of these landscape locales. Communicating the ideas from these exercises proved to be much more difficult. Consequently, within Chapter 8 I chose to use this information to help interpret the continuous viewshed models. The continuous viewshed models were found to effectively highlight differences between general locales, far better in fact than the other viewshed models. One of the reasons for this is that a sense of place does not relate to a static moment of visual experience, but the process of being within a locale, walking to and arriving at a place. Thus the strength of the continuous viewshed models was that they informed more about the nature of visual experiences associated with a wider locale. In particular, the results of this analysis drew out and strengthened some of the observations that were made during the field journeys that I had otherwise struggled to convey. Similarly, I found that while the results of the continuous viewshed models were convincing, the resulting maps and data alone would have done little to convey a sense of place. The composite figures, combining descriptions and photographs from these journeys with the continuous viewshed maps, were not only considered a more successful way of communicating these ideas (although the reader must be the ultimate judge of this), but also reflected the process of interpretation.

9.5 Conclusions

It has been argued that the many of the epistemological ‘problems’ associated with the use of GIS might be overcome by maintaining a reflexive and critical approach, by examining excluded perspectives and critically analysing the process by which results, explanation and meanings are created (Kwan, 2002a;

2002b). From this perspective 'results' need not be treated as generalisations or universal truths about an objective world, but can be conceived as 'illuminating aspects of experiences' (Kwan, 2002a). This research supports this interpretation and argues that GIS and subject-centred field survey can be played off one another to strengthen an understanding, highlight alternative perspectives and communicate ideas about place.

Importantly, it should be noted that in terms of constructing an integrated methodology, on reflection this research was weighted more heavily towards field survey than the GIS when it came to interpretation. One reason for this is that I found the field survey a more immediately thought-provoking and creative process than the GIS-based study, which involved being removed from the physical environment and what I perceived as a further degree of detachment from the Iron Age landscape. This affected how I approached the two strands of research and inevitably, the weight I afforded these respective methods in the overall research design. This was not intentional but perhaps inevitable. In addition, it is also difficult not to afford primacy to one's own experiences and therefore I frequently found myself considering why the GIS did not reflect what were clear to me as 'real' qualities and properties of these landscapes. This provides a further reason why this thesis presents just one of many ways in which the Iron Age places of the Outer Hebrides might be explored using these methods, as well as one of many ways in which a dialogue between the two approaches could have been established. Alternative practices, both GIS and field survey based amongst others, will reveal further elements about place and landscape experience relevant to the Iron Age across the Outer Hebrides. Having been explicit about the methods involved it is hoped that these ideas can be critically analysed, and reinterpreted and that others might build upon the ideas presented via similarly landscape-orientated research. The ability to re-evaluate in this sense is an essential part of any research that claims to advocate critical, reflexive methods and the exploration of alternative perspectives.

While it is commonly conceived that there exists an insurpassable theoretical divide between phenomenology inspired field survey and methods of modelling lanscape experience in GIS, I argue that by exploring the practices involved in these it becomes apparent that this divide is less schismatic than previously supposed. Instead, these practices can be located at different ends of a scale that ranges between; on the one side the ephemeral experiences of the past and, at the other extreme, the communication and interpretation of experiences within an archaeological context in order to say something about the past.

It is evident that GIS models of sensory experience provide only a partial representation of landscape experience. Nevertheless, they can provide a base-line upon which other forms of subject-centred data can be pinned. Furthermore, the value of a subject-centred approach is that it offers an alternative point of entry into the past, and in combination with other methods and forms of analysis provides layering of information and insights into our archaeology. Conversely, it is equally problematic to conceive that complex concepts such as place can be grasped in anything close to their entirety through subject-centred field survey methods. The two methods are both partial, although in different ways and for different reasons. The upshot is that neither approach can ever claim to provide the answer to a concept as tricky and elusive as that of place within studies of past landscapes. As has been discussed above, through neither approaches does the data speak for itself, and in several examples it has been through negotiating between these two forms of information that *an* understanding has been reached. While other projects have combined phenomenological practices with other methods, for example the combination of excavation, survey and phenomenology utilised in the Bodmin Moor project (Bender, Hamilton and Tilley, 1997; 2007), this research has offered a unique insight into these approaches by *specifically* setting out to integrate phenomenology-derived field methods with available GIS tools for modeling landscape experience. This has enabled me to explore more explicitly how these practices relate at both methodological as well as analytical stages of archaeological research.

By incorporating multiple methods of approach this research has offered a varied and textured understanding of the types of places in which monumental Iron Age roundhouses are located within the Outer Hebridean landscape. The dialogue that was established between field survey practices and the use of GIS has facilitated an understanding of the Iron Age occupation of Outer Hebridean lanscapes by illuminating varied perspectives. Furthermore, this methodology encouraged, through the tension of engaging with alternative archaeological practices, the investigation of new avenues of investigation and led to new methods of practice, and also enabled a more reflective and critical approach where alternative perspectives could be explored.

Chapter 10: Discussion: Re-engaging with the Outer Hebridean Iron Age

10.1 Introduction

Having considered the ways in which the two strands of this research complement an understanding of place and landscape, in this chapter I will discuss how these results can contribute to current interpretations of the Outer Hebridean Iron Age. The results highlight the fact that existing models of the Outer Hebridean Iron Age remain limited because they have not enabled consideration for the totality and variability of Iron Age occupation across these landscapes. Current research has tended to focus on individual island regions within the archipelago with little consideration for the wider settlement patterns. Indeed, archaeological survey and excavation across the Hebrides have been biased towards the investigation of west coast, machair landscapes at the expense of Iron Age occupation on the east coast, moorland and coastal headlands. Thus what has so far emerged is an incomplete and partial narrative of Iron Age society. The results of this research indicate that monumental 'domestic' roundhouse sites (Atlantic roundhouses and wheelhouses) were found in markedly diverse places within the Iron Age landscape and that these places provided locales in which dwelling would have by necessity functioned within distinctly different parametres. These formats cross-cut existing classification systems based upon the architecture of Iron Age sites. It is argued that existing research has placed too great an emphasis upon monumental domestic architecture as the primary medium through which social relationships and structures are understood, displayed and formulated. Instead it is suggested that similarities in Outer Hebridean Iron Age architecture may be misleading and that similar site types may have functioned in very different ways according to where in the Iron Age landscape people created these

places. Furthermore, that the relationship between communities dwelling within different landscape locales would have provided an additional medium through which differences would have formulated within Iron Age society. This research suggests also that from these places, communities would have been afforded different relationships to, and experiences of, the sea and consequently alternative perspectives on the wider island landscape. Limited attention has previously been given to the relationship between Iron Age societies and the sea and to addressing the specific nature of *island* dwelling during this period. This thesis therefore offers a range of alternative perspectives, based upon an understanding of place and landscape locale from the perspective of human experiences and consideration of an island perspective.

10.2 Creating places in the Iron Age landscape

10.2.1 Introduction

As has been discussed in chapter 8, the GIS and field survey results point to distinct variations in the qualities of place and landscape associated with Iron Age sites. Four types of Iron Age places, associated with distinct landscape experiences, were identified: places within lowland coastal landscapes, islet places, upland places and places on coastal headlands. The lowland coastal sites were characterised by their close proximity to the modern coastline, but limited views of the sea. Evidence for environmental change suggests that during the Iron Age the majority of lowland coastal sites located on the machair would have been positioned further from the coast, behind coastal dunes and therefore would have been associated with even more restricted views of the sea that within the contemporary landscape. In contrast the sites on coastal headlands afforded extensive views of the sea. The nature of the coastline upon which coastal headland sites are situated suggests that these sites would have afforded similar visual qualities during Iron Age occupation. Iron Age places established within upland landscapes, on the slopes of hills, were less common. These places also afforded extensive views of the sea as well as views of the

wider landscape. By contrast. islet sites were characterised by the restricted nature of landscape visibility and a prevailing sense of enclosure and isolation. The results of the Local Scale studies revealed further differences between these places in terms of everyday experience and dwelling in these locales. These results are summarised in Tables 22 and 23.

Method of Field Investigation			Iron Age Places			
			Lowland Coastal	Islet	Upland	Coastal Headland
Landscape Grid	Visibility	Iron Age places	Mod	Low	Low	Mod
		locale	Mod	Low	Low	Low
	Audibility	Iron Age places	High	Low	Low	Low
		locale	High	Mod	Low	Low
Inter-site Survey	Visibility		High	Low	N/A	Mod
	Audibility		High	Low	N/A	Low
Landscape Journeys			Local scale views Variable experiences	Intimate Hidden	Divided	Open Exposed

Table 22: Summary of field survey results by type of place

10.2.2 Lowland Coastal sites

The Iron Age sites located in lowland coastal parts of the landscape have for some time been the focus of archaeological investigation into the Outer Hebridean Iron Age and represent the main source of archaeological data for this period. Consequently, sites from these areas in the Iron Age landscape have played a large part in shaping contemporary understanding of the Outer Hebridean Iron Age. This research has highlighted that lowland coastal sites represent only part of a wider Iron Age settlement pattern and that this bias in archaeological investigation has led to a misrepresentation of the social landscape of the Outer Hebridean Iron Age. The west coast distribution of Iron Age sites is most apparent on South Uist, where Iron Age settlement patterns appear to mirror modern and historical settlement locales across the island. This relationship between Iron Age and historical settlement patterns has been

used to suggest similar systems of land tenure during prehistory, and the argument that Iron Age land divisions were a precursor to historical organisiations of the landscape (Parker Pearson, Sharples and Symonds, 2004b). This pattern, however, is not so easily recognisable elsewhere within the archipelago. Furthermore, there is reason to believe that there may be more Iron Age (and incidentally other prehistoric) occupation on the east coast of South Uist specifically and across the Outer Hebridean islands more generally, that has hitherto gone unrecognised. To date, excavation and survey have focused almost exclusively on the west coast of the islands. In South Uist, the number of known sites has been increased through discoveries during the construction of a military firing range along the huge stretch of machair between Iochar and Vulan which exposed a number of sites, and through Sheffield and Cardiff Universities' collaborative SEARCH Project. Additional sites were identified during SCAPE's coastal erosion survey of the island (Moore and Wilson, 2005). Extensive survey of the coastal machair of South Uist as part of the SEARCH project also revealed a number of other prehistoric sites, including a cluster of Late Bronze Age/Early Iron Age settlements at Kildonan and Cladh Hallen (Parker Pearson, Sharples and Symonds, 2004a; 2004b). In comparison minimal archaeological investigation has focused on the east coast of South Uist, other than along the principal sea lochs. The recent SCAPE coastal surveys (Branigan and Grattan, 1998; Johnson, *et al*, 2005; 2006; Moore and Wilson, 2005) otherwise fully comprehensive in coastal extent, omitted large areas of the east coast of the islands other than those areas made accessible by the existing road systems that follow the principal sea lochs. The exclusion of these east coast areas from the SCAPE survey was motivated by logistical considerations (Dawson, pers comm), access to these coastal areas requiring either a boat or traversing the large mountain ranges thereby precluding daily excursions. The problem with our current understanding of the distribution of Iron Age sites and subsequently Iron Age settlement patterns, is that methods of archaeological survey have perpetuated the impression of a dominant west coast. The fact that these areas have frequently been omitted from research is interesting from a landscape perspective as it highlights the east-west coast

divisions that define the geography of South Uist and strengthens the idea that any settlements on the eastern areas during the Iron Age are likely to have been considered remote from west coast occupation. There are many valid reasons to suppose that the west coast was highly desirable for Iron Age communities – its machair soils would have represented the most fertile areas of the Iron Age landscape as they do today. Nevertheless, without more comprehensive investigation of the eastern and interior areas of South Uist, interpretations of Iron Age society in the Outer Hebrides based solely upon the distribution patterns of roundhouse sites on the west coast should perhaps be more cautiously espoused. The island of North Uist, by virtue of the antiquarian Beveridge's extensive work, is the most comprehensively surveyed landscape of the islands, and here we know of several Iron Age sites located on the east coast. Thus it is likely that more extensive survey across islands such as South Uist would reveal similar evidence for occupation. Lowland coastal sites nevertheless represent a vital element of the domestic Iron Age landscape and the qualities of these places point to some interesting observations about Iron Age dwelling.

Method of GIS modelling		Iron Age Places			
		Lowland Coastal	Islet	Upland	Coastal Headland
Total Viewshed Models	General Landscape Visibility	High	Low to mod	Low	High
	Variation in Landscape Visibility	Mod to hight	low to mod	Low	High
Heightend Viewshed models		Significant	Limited	N/A	Moderate
Viewing monumental sites		Significant	Limited	N/A	Significant

Table 23: Summary of GIS results by types of place

The density of occupation with lowland coastal landscapes has already been noted. Examples include the numerous Iron Age sites across the Vallay Strand study area, the three wheelhouse sites at Udal and the paired wheelhouses at Baile Sear and Geirinis. My research suggests that these would have been

noisy and busy places to live. The sound of people tending to nearby crops, animals, children and also the sound of the sea would have filled these places. From outside the roundhouse, people would have been able to see other members of the community working in the landscape; tending to crops, perhaps bringing animals back home for slaughter. The sounds of people and animals at neighbouring roundhouse sites would have been heard on all but the windiest days and when out of sound range, activities around these nearby places would have been visible. There would have been limited privacy for the occupants of these landscapes and daily experiences of these places would have strengthened the strong social links between people, emphasising the public and communal character of large areas of these landscapes. Alternatively, this closeness and lack of privacy within these lowland coastal landscapes may have meant that boundaries between communities required strong social expressions and concepts of territory and land ownership might have been emphasised in ways that do not survive archaeologically.

The dynamic nature of living within lowland coastal areas would have been a very potent element of these communities' shared experiences. Daily and monthly tidal cycles would have dictated any shore based subsistence practices, such as the collection of shell fish, shore-based fishing, and the collection of seaweed for improving machair soils. Constant sand movement, deflation and accretion and the general instability of coastal dunes would have been major concerns. The importance of agricultural land and the threat to these areas through longer-term environmental changes would have increased competition and claims to land between communities in these comparatively populated and busy landscapes. Seasonal cycles affecting the weather would also have imprinted themselves on these places. Excavation of several lowland coastal sites has indicated that wind blown sand was a persistent problem for the occupants of these sites. At Cnip the excavators believe that adaptations to the original wheelhouse, including an extended entrance passage and guard cell, were modifications motivated by the need to combat the accumulating sands within the roundhouse (Armit, 2006). Similarly, at Udal, Crawford (ND)

comments on the problems of sand incursion at wheelhouse B. Iron Age occupants of these lowland coastal landscapes would therefore have been accustomed to the dynamic nature of living in these places, and this would have established a particular tempo and series of concerns central to living in these fragile machair landscapes.

10.2.3 Islet sites

The excavations of Dun Bharabhat (S18), Loch na Berigh (S19) and Dun Mhullain (S114) are the only modern excavations of these prolific Iron Age settlement types in the Outer Hebrides. As has been discussed in Chapter 6, islet sites such Dun Mhullain and Loch na Berigh, located in machair lochs as opposed to moorland lochs, shared a number of characteristics with the lowland coastal sites discussed above; close proximity to the west coast and to cultivatable machair, fairly expansive views of the regional landscape, less restricted visibility due to the more even topography and less pronounced banks to these lochs. Based upon conventional archaeological data, our understanding of inland, east coast loch settlement sites surrounded by moorland, is significantly more limited. The excavation at Dun Bharabhat (S18) indicates a very similar range of activities associated with this roundhouse as at the nearby wheelhouse, Cnip (S148) located within the lowland coastal landscape. Yet the nature of these places would have meant that everyday experiences differed considerably between these locales. Daily experiences of islet dwelling would have emphasised a sense of remoteness and removal from the wider landscape. These would have been places where visibility of one's surroundings were relatively inhibited and where small scale views would have been a dominant characteristic of people's daily life. Views of the surrounding landscape would have been largely restricted to the surrounding loch waters and to areas within the banks of these lochs which would have defined a sense of the immediate locality. The structure of these landscapes created natural boundaries and barriers which contained visual and audible experience. Therefore experientially, practically and symbolically these landscapes allowed Iron Age communities to create bounded places in way that was not possible

within lowland coastal landscapes. These boundaries would have been integral to Iron Age communities who lived in these places. In some examples, these places would have been physically remote from other Iron Age sites; there were no other Iron Age roundhouses within 5km of the Dun at Loch Thundair, apart from a dubious site on the other side of the mountain South Lee. In particular many islet sites would have been peripheral to more densely occupied lowland coastal landscapes. The roundhouses within Loch Bharabhat (S18) and Loch na Berigh (S19) and the site of Dun Mhullain (S114) differ in this respect. The first two of these sites are located within the small scale landscape of the Bhaltos peninsula and thus in fairly close proximity to a number of other Iron Age settlements as well as what would have been extensive Iron Age machair and therefore potentially areas of intensive agriculture. However, the particular location of Dun Bharabhat (S18) would have created a heightened sense of removal from this wider landscape and from the islet. The other roundhouse sites and the extensive machair below would have been out of sight and people within these landscapes would have been well beyond visual and auditory ranges of communication. Therefore, for the Iron Age communities living at Dun Bharabhat, this would have seemed a more isolated place than its proximity to other Iron Age sites would suggest. At Dun Torcuil, the two other islet sites within Loch an Duin and its subsiduary Loch Bru, these possible places of Iron Age roundhouses would similarly have been out of sight, and, one might also suggest, out of mind. The sounds of people carrying out activities at and around the roundhouse at Loch na Berigh and the wheelhouse at Cnip, likely to have been built while Bharabhat was still in occupation (Armit, 2006; 235), would have been very distant to the occupants of Bharabhat roundhouse. Similarly, the noises emanating from the roundhouse itself, even people shouting, would have been contained within the banks of the loch, echoing around the site and further accentuating an impression of isolation and seclusion. Only three lochs across the Outer Hebrides contain evidence for more than one Iron Age site. In none of these examples are all of the sites certainly Iron Age in date and therefore, as yet, there is no firm evidence that multiple islet sites were occupied contemporaneously. In comparison with lowland coastal sites, the

experience of living within islet places may have emphasised the independence of these people from other Iron Age communities and may have facilitated a separate sense of identity.

As with lowland coastal places, islet dwelling would have encompassed dynamic characteristics - excavation at Dun Bharabhat indicated that the occupants regularly had to rebuild the site in order to combat the rising water levels (Harding and Dixon, 2000). Similar evidence was found at the Neolithic islet site of Eillean Domhuil in North Uist (Armit, 1996) indicating that these conditions have persisted throughout prehistoric occupation of these locales. Water levels will have changed as a consequence of fluctuating periods of heavy rain or drought, either on a seasonal basis or following exceptional weather conditions. These transformations would have affected the nature of these places profoundly as these roundhouses would inevitably have been cut-off from the shore for some if not lengthy periods of the time. Any changes in vegetation would have influenced the amount of standing water and therefore longer-term environmental changes may have been a concern for these Iron Age communities. During periods of high water levels or bad weather the experience and physical reality of separation and removal from the surrounding landscape would have been particularly potent. Overall, the tempo and catalysts for environmental change would have been profoundly different to those affecting communities dwelling within the lowland coastal landscapes and these different experiences and series of concerns would have distinguished these people.

These places were concealed and hidden from view from the surrounding landscape and people working within the wider landscape or approaching this place from elsewhere beyond the loch banks would be largely unknown. Access to areas beyond the immediate site would have necessitated traversing a causeway, using a boat, or wading through the water – very physical experiences of the nature of separation from the wider landscape. From the majority of islet sites, the surrounding locale would have been dominated by

moorland environments and on foot these areas would have been accessible from the near shore. Proximity to these environments suggest that communities living on islets were likely to have been involved in pastoral activities over other subsistence practices that we associate with the Iron Age. The machair, coast and sea at the majority of islet sites would have been some distance from these places and may well have been regarded as peripheral, existing on the margins of visual and audible communication. Therefore, cultivation and care for these landscapes may not have been principal concerns for the occupants of islet sites.

10.2.4 Upland and Coastal Headland sites

While the majority of the Iron Age community would appear to have created domestic places within lowland coastal landscapes or the landscapes of inland lochs, some monumental architecture of this period was placed within upland and coastal headland landscapes. The latter are particularly intriguing locations from a dwelling perspective. These sites would have enabled occupants extensive views out to sea. However, despite these visual qualities and proximity, these would not have been places from which the sea could be easily accessed. These places would not have afforded immediate access to cultivatable machair. Nor were they well located, like islet sites, for utilising the moorland for pastoral purposes. However, our understanding of these sites is very limited as none have been the subject of extensive excavation. The anomalous and enigmatic nature of these locations suggests that they may have functioned in very different, perhaps non-domestic, ways despite apparent similarity in architecture. Coastal headland sites are notably absent across Uist but are common to Barra and Lewis where they are found distributed along the west coast. A simple explanation for this pattern is the lack of similar coastal headland landscapes on the west coast of Uist. However, this alone does not explain how coastal headland sites function, nor why specifically west coast headlands were favoured. Upland sites were found to be similarly uncommon. The particular relationship between the wheelhouse built on the slopes of Cletraval, North Uist, and the chambered cairn points to the possibility that this

site had a special meaning or function with Outer Hebridean Iron Age society. Sadly, the early excavation of this site tells us little about the Iron Age practices associated with this place. Upland and coastal headland places were similar in that unlike both islet and lowland coastal places, they provided distinctively extensive views of the sea and of regional and distant landscapes.

10.3 Island Landscapes

Iron Age communities across the Outer Hebrides had varying experiences and relationships with the island landscapes which they inhabited. This variation can be interpreted in two ways. Firstly, there appears to be a contrast between the greater number of Iron Age places dominated by views of the immediate locality and with an inward/landward focus, primarily lowland coastal and islet sites, and a minority of places with views of the regional and distant landscapes and specifically outward/seaward looking perspectives (coastal headland and upland sites). In the case of the former, we might envisage a specifically local understanding and knowledge of landscape, with everyday experiences reinforcing local, perhaps intra-island identities. Similarly, daily activities might have been increasingly focused within the immediate landscape, perhaps relating to increasing investment in the immediate locality and the intensification of localised subsistence practices. In comparison, a smaller section of this Iron Age society, living in places with wider views of the regional landscape and perhaps extensive views out to sea, might have associated themselves with a larger social group – perhaps through seafaring activities developing inter rather than intra-island concerns and identities. Within coastal headland and upland landscapes daily activities had the possibility of taking place within a wider area, perhaps involving subsistence practices taking place further afield or the procurement or movement of materials from ‘other’ places. Similarly contrasting interpretations have been drawn from more traditional analysis of Iron Age material (see Table 24). For example, both decorated ceramics and monumental domestic architecture indicate a high degree of cultural contact

between the Outer Hebrides and other island regions within Atlantic Scotland during this period. Henderson describes how contact enabled this area to become a 'recognisable zone, prone to simulating itself, (and) creating broad similarities over long distances' (Henderson 2000: 150) suggesting an active relationship between island communities and perhaps a sense of shared inter-island regional identity. Alternatively, Armit comments on the relative dearth of imported Iron Age items, pottery or otherwise, within the Outer Hebrides and highlights distinct sequences in the development of monumental architectures that distinguishes the Outer Hebrides from wider Iron Age processes, as indicative of a progressively 'inward looking island people' (Armit 1996) presumably focused towards more local concerns. Both interpretations can be reconciled within this study of place and landscape, suggesting that Iron Age society was complex and potentially incorporated varying social perspectives, identities and social practices.

However, the contrast between east and west coast island dwelling can also be interpreted in a different way. The concentration of west coast settlements has been widely observed but has rarely been discussed in terms of what these places in the landscape might have afforded occupants in terms of resources, the potential for certain subsistence activities or what these places may have contributed in terms of a particular perception of the islandscape. As has been emphasised, a prevailing characteristic of the Outer Hebridean island geography is the vital contrast between the Atlantic west coast and the Minch coast on the east and the potential these areas of the island landscape would have afforded Iron Age communities. Generally, the east coast would have provided the principal areas for sheltered and safe anchorage and thus the opportunity for seafaring practices, perhaps relating to subsistence such as deep sea fishing, although evidence for this is largely absent from the archaeological record, or as means of communicating and accessing wider areas for social reasons. In contrast, the west coast of the Outer Hebrides would have provided minimal opportunities for accessing the sea. Within the islands today, fishermen only contemplate working off the west coast of the

islands during summer months, and even then only in suitably calm weather conditions. In contrast boats enter the Minch all year round. The west coast would, however, have provided greater potential for shore based subsistence activities such as collecting shellfish, gathering seaweed and driftwood. The east and west coasts would also have afforded distinctly different opportunities for sensory experience. Across the Atlantic there is little between the Outer Hebridean islands and the American continent and this in combination with a prevailing westerly wind, makes for a distinctively exposed and windswept western coastline. In comparison, while the landscape of the east coast is far more rugged the sea across the Minch is less volatile and this coastline significantly more sheltered. The major townships across the islands, Castlebay, Lochboisdale, Lochmaddy, Portree and Stornoway, are all located on the east coast. These are important ports for the fishing industry as well as serving the major ferries between the islands and the mainland.

In light of these differences, the density of Iron Age occupation on the western coastline, within what has been defined as lowland coastal landscapes, prompts a number of questions. These sites appear not to have been located in places where people could easily view or monitor the sea. Neither were these places associated with natural bays or harbours and it is unlikely then that experiences of living in these landscapes provided an intimate link with the sea, beyond the shore and coastline. Nevertheless, the sea and coast would have been within accessible distances. People would have been able to hear the sea as well as sea birds, and the smell of seaweed and salt in the air would have been a constant reminder of the sea's proximity. Shell middens associated with lowland coastal sites, such as the Baile Sear wheelhouses, indicate high proportions of whelk (winkle) and limpet shells that could have been collected by Iron Age communities from these westerly shores. Evidence for deep-sea fish is minimal across all Iron Age sites. However, a general lack of fishbone analysis and minimal strategies for fishbone retrieval during excavation, mean that these results require some further attention. On the basis of location, however, it is unlikely that these communities had an intimate relationship with the sea,

beyond the confines of the shore. In contrast, communities located on the east coast would have had greater potential for accessing the sea, for involvement in sea based as opposed to shore-based subsistence practices, and contact with mainland communities. Table 25 summarises some of the contrasting experiences, concerns and activities associated with east and west island settlement.

Water based communications were also potentially an intimate part of islet dwelling in these parts of the landscape. Although little consideration has previously been given to the use of boats in association with these sites, the assumption being that causeways precluded their necessity, it is argued in this thesis that the available evidence demands that this possibility is given greater consideration. If the Iron Age occupants of these roundhouses had access to log boats or other water-borne vessels, then this would have had a profound effect upon their experiences, knowledge and understanding of these places and the wider landscape via the complex maze of inland lochans, sea lochs and the sea itself. The possibility that islet dwellers were using boats also demands that we review the concept of islet sites as separated or cut-off from the surrounding landscape. Instead of experiencing these places as physically and experientially isolated, Iron Age people might well have regarded these places as highly connected and dynamic locations. Returning to the themes raised in association with an 'Island Approach' (Chapter 2), it appears that islet sites, like islands more generally, can be understood to combine elements of isolation and connection. These locations might also have provided Iron Age occupants of these sites with links to other parts of the landscape through the complex loch and sea loch systems that would have dominated these Iron Age environments. These alternative experiences and knowledge of the landscape may well have reaffirmed differences within the community between islet dwelling and lowland coastal dwelling sections of this Iron Age society.

Local experiences	Regional experiences
Land	Sea
Intra-island identity	Inter-island identity
Local material culture	Regional material culture

Table 24: Contrasting scales of island experience

West	East
Atlantic	Minch
Land/coast	Sea/Water
Agriculture	Pastoralism
Shore collection	Deep sea fishing?
Machair	Moorland
Lowland coastal	Islets
Public	Private
	Links with mainland

Table 25: Contrasting east and west coast dwelling

10.4 Place, landscape and monumental architecture

Research in the Outer Hebrides has tended to focus upon the origins for, and architectural classifications of, monumental domestic architecture (see for example; MacKie, 2006). Instead this research has enabled the author to explore questions about the way in which monumental sites were established and structured within the landscape and therefore *how* monumentality might have been experienced by Iron Age communities. Firstly, it needs to be emphasised that monumental roundhouse architecture is found within a range of landscape locations. These locations provide places in which the monumentality of these sites would have been structured in different ways. It

has been argued that an important difference between wheelhouse and Atlantic roundhouse architecture relates to the external monumentality of these sites. While Atlantic roundhouses, in particular complex Atlantic roundhouses or brochs, were constructed to be highly visible and imposing from the outside, wheelhouse sites were apparently more modest from an exterior perspective yet similarly monumental when viewed (or experienced) from their interior. It has also been suggested, with reference specifically to location of Iron Age sites on the Bhaltos peninsula, Lewis, that wheelhouse sites were established within 'hidden' locations, while Atlantic roundhouses were built within more prominent places (Armit, 2006: 256). This research suggests that the locations of Iron Age sites provided quite different experiences. Wheelhouse sites, predominantly located within lowland coastal landscapes, were not found to be 'hidden' locales. Instead the experience of these places indicated that they were highly communal, relatively exposed and accessible places in the landscape. Atlantic roundhouses were found within a wider variety of locales. Those sites built on islets within freshwater lochs, such as Dun Bharabhat on the Bhaltos peninsula, tended to be concealed with the landscape. Analysis of visibility of these sites, given potentials for original height, suggests that even built to 10m (an unlikely height given the small diametre of Dun Bharabhat) these place would still not have achieved the prominence that has hitherto been described. This suggests that the monumentality associated with Atlantic roundhouse sites, at least where sites were built on islets like Dun Bharabhat, did not function as visually imposing sites as has been presumed. In contrast, Atlantic roundhouses sites within lowland coastal and coastal headland settings would have had much greater potential for visual prominence. This suggests that monumental architecture served a variety of functions and was used in a variety of ways within Iron Age society.

The use of islets and the qualities of these places that have been revealed through this research are fascinating in the context of monumental forms of architecture. If the establishment of monumental domestic architecture during the Iron Age is regarded as a symbolic means of legitimising rights to land,

demonstrating ownership and local identity (Armit 1997b), how do these interpretations of place further inform our understanding of Iron Age society? Perhaps certain Iron Age communities sought to actively harness these senses and experiences of isolation, associated with islet locations, in order to separate themselves from other parts of the community and to reinforce and maintain their identity. The creation of place within certain parts of the landscape might therefore have been a strategy, alongside the establishment of distinctively elaborate and monumental architecture, for demonstrating local power.

10.5 Place, landscape and social practices

It has been proposed (Parker Pearson and Sharples, 1999: 362-364; Parker Pearson, Sharples and Symonds, 2004b), that economic and subsistence practices would have been differentially divided between broch and wheelhouse dwelling communities; the former, associated more specifically with pastoral activities, the latter with agriculture. These differences are understood to relate to differences in social status between the occupants of these sites. However, as was discussed in Chapter 4, the limited number of comparative faunal assemblages or other evidence to associate these different site types with alternative subsistence strategies is lacking and ultimately this argument is reliant upon the perceived distribution of these sites across the South Uist landscape and the simple association between wheelhouses and the machair and brochs in what are described as *liminal* zones.

In this research I have considered the relationship between potential subsistence practices and different types of place, rather than focusing on strict architectural based distinctions between Iron Age sites. The results highlight that choosing to live in certain parts of the landscape, on islets rather than on the coast for example, *would* have had economic and subsistence based implications for Iron Age communities. However, I argue that the links between types of architecture and certain practices is spurious. Instead, I propose that

the different landscape locations highlighted in this research can be linked to different types of subsistence practices and environmental resources, but that these types of place cross-cut existing classifications of Iron Age site types.

An important element of lowland coastal places would have been their close proximity to highly fertile machair. Consequently we can infer that agricultural practices were likely to have been important to the subsistence practices of these particular communities. Complex Atlantic roundhouses, brochs, duns and wheelhouses are all found in these types of location. My research has also highlighted strong sensory relationships between roundhouses in these areas and what would have been cultivatable machair surrounding these places; people involved in grain processing activities, winnowing and grinding for example, at these sites or within the immediate vicinity, would have been able to call out to people working on the machair, tending to crops or working the land, and there were probably quite strong links between the house and the landscape as a working resource. The fact that many wheelhouse sites were constructed so that they were physically embedded in the machair soil and that midden material from the house may have been used to fertilise and improve agricultural soils, would have further emphasised conceptual links between the home and the agricultural potential of the surrounding landscape. Given the lack of physical or experiential boundaries and the closeness of dwellings in these landscapes, the different roundhouse communities in these areas may well have invested in the agricultural potential of this landscape communally.

The upland landscapes, in which we find a number of Iron Age sites, would have been better suited to the keeping of animals, principally sheep, rather than agriculture. The majority of islet sites would also have been better located for access to these types of environmental zones. Islet sites were the most common type of location for Iron Age sites across the islands as a whole. It is likely that these communities living on islets would have invested more time in pastoral activities – moving cattle and sheep among grazing land and perhaps bringing them into the islet-dwelling for winter byre or slaughter as suggested by

some excavations (Harding and Dixon, 2000; Parker Pearson and Sharples, 1999). Many islet sites were located some distance from the areas of prime agricultural land described above. Therefore despite evidence for the production and storage of grain at some islet sites, such as Dun Bharabhat (Harding and Dixon, 2000), the lack of immediate access to land suitable for cultivation might imply that this material arrived at these sites through means other than direct involvement in agricultural activities, such as through links with other communities. At Dun Torcuil, in terms of accessibility and landscape perception, zones of coastal machair were found to be peripheral to the site in terms of access and sensory associations. Instead stronger links would have been with the surrounding moorland and, via interconnecting waterways, with east coast and moorland areas even further afield. It is also interesting to note that historically islets have been used to segregate sections of grazing herds at certain times of year, hence place names within the Outer Hebrides such as "Soay" meaning goat island (Nicholaisen, 2001; Lawson, 2004). We might envisage that similar uses of islets were associated with islet communities suggesting further potential links between islet locations and pastoral activities. Some islet sites, however, were located in closer proximity to agricultural land, islets located within machair lochs, for instance. However, for the vast majority of islet sites, particularly across the island of North Uist, this was not the case.

My research has highlighted that associations between Iron Age sites and different environmental zones, implying the predominance of certain economic practices, were not found to correspond to divisions based upon architectural typology. In particular, Atlantic roundhouses or brochs and duns, are found in all of the categories of place – upland, coastal headland, islet and coastal lowland landscapes.

Even accepting that Parker Pearson and Sharples (1999) interpretation is an accurate assessment of the Iron Age landscape across South Uist, this model of Iron Age society is far less convincing when transposed to neighbouring island regions such as North Uist, Lewis and Barra. In particular, across North Uist, the

west coast distribution of sites is not as emphasised as it is in South Uist, and here brochs and wheelhouses do not have these specific landscape relationships. Instead, clear evidence for complex Atlantic roundhouse sites is found largely on the east coast of the island within rocky moorland landscapes; Dun Torcuil, Dun Ban and the Dun within Loch Thundair are all examples of complex Atlantic roundhouses occupying these types of landscape location. As has been discussed in Chapters 6, 7 and 8, these places would not have enabled occupants to monitor the surrounding landscape. They were not located in areas that would have enabled access to focal points of Iron Age agriculture and in this respect would have been relatively remote and isolated from these other areas of occupation. The South Uist model fails to explain how *these* sites fit into this hierarchical model of Iron Age society. There is also ample evidence for Atlantic roundhouse sites constructed within lowland coastal landscapes, most notably the range of sites across the Vallay Strand area. How can we reconcile an interpretation of Iron Age sites and Iron Age social structure that suits only a sub-set of the archaeological data, with the overwhelming evidence for shared material culture and similar uses of landscape across the Outer Hebrides? It is of course plausible that across different islands monumental Iron Age architecture was utilised in different ways and represented alternative social structures. Armit, for example, has already highlighted differences in the overall number and distribution of sites between Lewis, North Uist and Barra (2002). In particular, the number and density of Atlantic roundhouse sites across Barra and North Uist is noted and used to argue that these could not have been elite residences, as argued by Parker Pearson and Sharples (1999; see also Parker Pearson, Sharples and Symonds, 2004a) but instead must have represented a more standard form of Iron Age dwelling. These different interpretations, however, are in part a reflection of the different site classification systems employed by the respective researchers. What is relevant here, however, is the idea that different Iron Age societies might be identifiable on different islands and prompts us to consider the relevance and meaning of the island boundary within this context.

As has been discussed in some detail, the physical connections between the islands that make up Uist (South Uist, Benbecula and North Uist) would have been greater during the Iron Age even than they are now, when it is still possible to walk between these land masses at low tide. Instead physical barriers within the landscape are more likely to have taken the form of mountain ranges, such as the Harris mountains that separate Harris from Lewis or the mountains of South Uist (Hecla and Ben Mor) which separate the east and west coast of the islands. Large inland water systems such as Loch Be in South Uist are likely to have also divided the landscape. These physical features indicate potential intra-island divisions and a prevailing contrast between the eastern and western areas as discussed above. As has been widely acknowledged, the island unit, although convenient for archaeologists, does not necessarily correlate with the way in which island communities interact with the spaces around them and their experiences of island life. Religious differences that form a notable north-south boundary within the islands, might be cited to strengthen an individual island identity model. However, we should be cautious in using convenient modern political and religious differences as a template for interpreting prehistoric societies that may have related to the island landscape in a very different way. Overall, this research leads me to conclude that Parker Pearson and Sharples model for Iron Age society, set out specifically for South Uist, is overly simplistic, failing to incorporate the diversity of settlement across the Iron Age landscape which was perhaps defined by alternative divisions such as the east/west coast contrasts described above.

A more robust way of addressing questions about the relationship between Iron Age sites and access to different environmental zones could be achieved through further GIS analysis. Developing upon the different landscape scales put forward here, future research might consider modelling areas around roundhouse sites in order to analyse potential scales of interaction with surrounding environments (see for example: Van Hove, 2004). In keeping with the methodology outlined in this thesis, by using cost-surface models that incorporated figures from field survey as to the energy expenditure associated

with certain vegetation and topography within this landscape, such an approach could aim to address these questions from a more experiential perspective.

10.6 Evolving Iron Age Landscapes

10.6.1 Introduction

The lack of chronological detail within the Outer Hebridean Iron Age necessitated a broad temporal study of Middle Iron Age landscape occupation. While there is evidence to suggest that Iron Age roundhouses, both Atlantic roundhouses and wheelhouses, were occupied over considerable periods of time, we are by no means dealing with a static temporal landscape.

10.6.2 Ancient Landscapes

Firstly, Iron Age landscapes and places were created within a landscape that was already embedded with places of meaning, significance and culture. Whether intentionally or otherwise, Iron Age places referenced and were contingent to these pre-existing landscapes and places. The most prominent visual markers in the landscape would have been the burial monuments of Early Neolithic communities, as well as the standing stone monuments and circles of the Late Neolithic and Early Bronze Age landscape. Settlements of these earlier periods would have been less visible across the landscape, but the locations of these sites would probably have been well known. The islet settlements of very early island communities such as Eillean Domhnuill and Eilean an Tighe, both on North Uist, were also perhaps recognizable places within the Iron Age landscape and may well have acted as templates for Iron Age islet settlements.

There is growing evidence to suggest that Iron Age communities across Atlantic Scotland had a particular fascination and interest in these ancestral landscapes (Hingley, 1996; 1999; 2005; MacDonald, 2008; Sharples, 2006). In particular, the conspicuous chambered cairn monuments of Early Neolithic communities had a particular significance for Iron Age people. Across Orkney at least three

recently excavated Maes-Howe type tombs revealed Early Iron Age roundhouses built within the Neolithic structures (MacDonald, 2008). Elsewhere in the Outer Hebrides two Neolithic burial tombs were reused as locations for Iron Age roundhouses and there is evidence that a number of tombs were disturbed and perhaps re-used during this period (Hingley 1996;Hingley 1999;Sharples 2006). In fact it has been argued that Iron Age monumental domestic roundhouses across Atlantic Scotland, brochs in particular, were built with direct reference to the architectural forms of Early Neolithic burial monuments, using links with the past to legitimise a new social order (MacDonald, 2008). Although the majority of this evidence comes from Iron Age sites in Orkney, my research contributes some interesting ideas about the relationship between the Iron Age communities and the landscapes they inhabited. The chambered cairn at Geirscleit would have been a highly conspicuous monument during Iron Age occupation of the Vallay Strand landscape. The site would have been highly visible from three of the four surrounding Iron Age settlements, and acted as a pre-existing, permanent and important feature in this landscape. Although excavation at this site failed to produce evidence for Iron Age activity, this does not preclude the possibility that, for the Iron Age communities that inhabited this landscape, the ancient burial monument was a central place for communal gatherings or special occasions, where people and their activities would be highly visible and audible from the surrounding Iron Age houses.

The wheelhouse at Cletraval is clearly another example where we can consider the relationship between Iron Age sites and earlier landscape features. The uniqueness of the landscape location of this wheelhouse and the sensory qualities, landscape associations and removal from other areas of Iron Age settlement, suggest that the re-use of the early chambered cairn was a deliberate and defining factor in the construction of this roundhouse rather than a fortuitous reuse of available stone and foundations. The fact that the entrance to the chamber is maintained in the construction of this site supports this interpretation. Crawford (2002: 127-128) has proposed that wheelhouse sites

had specifically ‘religious’ as opposed to domestic functions within Iron Age society. He draws attention to evidence for votive deposits and to specific elements of their architecture that he describes as analogous to church or amphitheatre structures. Crawford’s interpretation is fairly eccentric in the context of dominant interpretations and is largely unsustainable in light of many recent wheelhouse excavations which quite clearly demonstrate that these were domestic buildings, occupied over long periods of time, and associated with a range of recognisable 'domestic' practices as well as some more distinctively 'ritual' behaviour. However, it may well transpire that not all wheelhouse sites were used mainly for domestic purposes and Crawford’s idiosyncratic interpretation may be more explicable in certain contexts, such as the Cletraval wheelhouse and other upland sites. Campbell has emphasised how the structured deposits at Sollas wheelhouse may have marked this particular building as ‘special’ (2000). As discussed in Chapter 2, there are also clearly problems in rigidly defining the use of sites, places or landscapes within the strict confines of a domestic/ritual dichotomy. However, it is worth considering that similar forms of architecture may have functioned in different ways when within different contexts and/or landscape settings and that different uses of these buildings may have been deemed more appropriate in certain landscape settings.

10.6.3 Developing Iron Age landscapes

Whilst our current understanding of the chronology of domestic settlement within the Outer Hebrides lacks detail, broadly speaking, wheelhouse type sites were occupied later into the Middle Iron Age period than Atlantic roundhouses, in their original form. This provides a basic, even if rather crude, chronological framework which can be used to hypothesize about changes in Iron Age occupation of the the Outer Hebridean landscape. Within the Vallay Strand Study Area at least one Atlantic roundhouse site, perhaps as many as three, contained a later wheelhouse structure within the roundhouse walls, a further indication that wheelhouses were a later Iron Age phenomena (Armit, 1998; Beveridge, 1911). Despite changes in domestic architecture, from ‘external’ to

'internal' forms of monumentality, the reuse of these sites indicates elements of continuity in use of place and the associated experiences of landscape that have already been outlined. In particular, the communal nature of living within the Vallay Strand landscape would have been maintained, assuming that the three later wheelhouse sites were occupied broadly contemporaneously.

Furthermore, if the freestanding wheelhouse at Geirsclett was contemporary with these 'squatter' wheelhouse sites, then this suggests that this particular landscape may have become busier and more heavily populated over time. In this example, an association between these domestic locales and the local landscape is maintained, suggesting continuity in subsistence practices, presumably still focused on the Vallay machair, as well as continuity with regard to broad social concerns and daily experiences. The recent re-excavation of the Iron Age site of Eillean Maleit, indicated that the Atlantic roundhouse was likely to be in a state of ruin prior to the construction of the wheelhouse here (Armit 1998b). This may have been an anomaly and other than this site, this landscape may have been in occupation continually throughout the Iron Age period and across the apparent transition between these forms of architecture. Alternatively, the situation at Eillean Maleit might reflect a genuine hiatus in occupation across the Vallay Strand, with the 'wheelhouse' phase representing the re-occupation of this whole landscape. This an interesting question to resolve in a future excavation.

What is interesting is that while Atlantic roundhouse and wheelhouses are found in similar upland and lowland coastal locations, currently no wheelhouse type site has been positively identified either on inland loch islets or on coastal headlands. Continuing with the assumption that wheelhouses reflect later Middle Iron Age settlement patterns, what does this observation suggest about changes to this Iron Age society? Perhaps in these locations, the form of specifically external monumental architecture was integral to an Iron Age understanding and conception of these places and therefore the shift toward wheelhouse type architecture was not deemed suitable in these contexts.

Alternatively, as a strategy for expressing local identity, perhaps the creation of place within these rather distinct locales (enclosed islets and coastal headlands with expansive sea views) was less effective than in other landscape locations, failing either in terms of everyday practicality, perhaps due to isolation from the focus of agricultural production, or failing to function socially and thereby to provide the occupants with the prestige and power necessary to carry on as monumental home owners. The very large number of Iron Age islet sites across the Outer Hebrides, however, suggests that islets in particular were very 'successful' places, and it is perhaps more likely that the need to express local identity changed throughout the Iron Age and instead these social changes rendered the continued use of these landscape locations increasingly defunct. Nevertheless, occupation of the Atlantic roundhouse in Loch na Berie, Lewis, continued into the second and third centuries AD, albeit in a somewhat simpler roundhouse style (Harding and Gilmour, 2000), and therefore there is no reason to believe that islet sites actually went out of use with the shift to wheelhouse architecture. However, the existing evidence suggests that the establishment of new Iron Age dwellings in this later wheelhouse period did not involve islet sites. Perhaps the strong conceptual links between islets and tower-like roundhouse construction remains the most plausible explanation for the lack of wheelhouse sites in these places. Further refinement in the chronology of Iron Age sites would clearly aid this study.

10.7 Conclusions

This thesis has presented some alternative ways of interpreting Iron Age society in the Outer Hebrides. There has been focus on exploring variability in Iron Age experiences and in identifying different ways in which places were established within the Iron Age landscape. Recognition of the contrasting landscape settings in which Iron Age people created domestic places has added an informative dimension to discussions concerning social structure and social interaction in the Outer Hebridean Iron Age. Four main types of place have been identified and it has been suggested that differences in the everyday experience of places

can be associated with different perspectives of the Iron Age landscape and potentially with different subsistence practices relating to economic specialisation. Moreover, these different everyday experiences were as relevant to Iron Age people as similarities or differences in the use of architectural styles to the way in which they identified themselves, played out their day to day lives and structured social relationships. It has also been suggested that the creation of place in these different landscape settings could have been motivated by a combination of practical economic rationale and the need to demonstrate local identity within the landscape. However, regardless of incentive, the outcome of these strategies of place making provided Iron Age people with a range of distinct everyday experiences, that would have informed a different understanding and knowledge of the Iron Age landscape and influenced how Iron Age people carried out their daily lives. In conclusion it is argued that future research into the Outer Hebridean Iron Age would benefit from further exploring the dynamics between these different types of Iron Age places, in particular the dynamics between lowland coastal settlements and inland islet settlements. An alternative perspective on the island landscape has also been proposed whereby differences within islands, rather than between them, may have represented important divisions within Iron Age society. This discussion has also offered a number of alternative perspectives on island and islet dwelling in the Outer Hebridean Iron Age. Rather than presenting a single interpretation, this research, through its specifically reflexive methodology, has explored the potential for a dialogue between alternative perspectives. These alternative interpretation illuminate our understanding of what were undoubtably complex societies, where similar tensions and contradictions in understanding, involvement and experience likely prevailed.

Overall, it is argued that by embracing different archaeological perspectives we can better explore the complexity of Iron Age societies. Furthermore, these results highlight the need for further investigation into the dynamic between these apparently contrasting Iron Age communities and understanding how these parallel communities developed and changed over time. The creation of

domestic Iron Age places in these contrasting landscape settings adds a new dimension to discussions concerning social structure and social interaction in the Outer Hebridean Iron Age.

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