THE ARCHAEOLOGY OF PEOPLE AND TERRITORIALITY

Edited by

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The Archaeology of People and Territoriality

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The giant Sarsen stones of Stonehenge.
Photo: George Nash

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We have carefully chosen 16 chapters that best define territoriality, or *place*, a term that has appeared extensively within the archaeological and anthropological literature over the past 15 years or so. However, place can mean many things to many people and, in terms of its symbolic standing, can be the one focal point within a landscape that ritually binds people and communities together (or tears them apart). In terms of the available material culture, ancient place is difficult to define; the mindset of the people who created and used it is missing. Several chapters have boldly integrated a philosophical discourse in an effort to understand this ancient mindset (e.g. Kelleher – Dods *this volume*). The subject matter, ranging from rock-art in Australia and irrigation systems in the foothills of the Andes to the holy wells of medieval England, displays a fair degree of latitude, and the one defining aspect being a concern with the construction and use of *place*.

Space to place

This is probably not the place (forgive the quip) to launch into an extended essay about place, although much of what we would like to say will be said within the following chapters. There is however, a distinction to be made between place and space. *Space* is open and the focal points are many; space is also a continuous entity, usually set between two static identifiable points. In landscape terms, *space* could represent a body of water or a forest between two mountains. Visually, space is vast, open and devoid of any striking visual forms. Alternatively, place is the result of human interaction whereby one or more of these focal points have become socially, politically and symbolically encoded and the people using it empowered. Aristotle questioned and defined the meaning of place, establishing a series of personal statements that relate to the *self*, and asked: what is the fundamental relationship between self and our experience of place? He questioned:

> What then after all is place? ... We assume then:
> – Place is what contains that of which it is the place;
> – Place is no part of the thing;
> – The immediate place of a thing is neither less not greater than the thing;
> – Places can be left behind by the thing and is separable; and
> – All place admits of the distinction of up and down, and each of the bodies is naturally carried to its appropriate place and rests there, and this makes the place either up or down.

It is clear that place provides focus, both spatially and temporally. Place is an entity rather than just being a focal point, binding individuals and groups together. Place also separates itself from space and, in human terms, provides a cognitive fixture within a monotonous world. The physicality of ritual and symbolic place is set apart from place that is socially and politically encoded (this is, arguably, difficult to ascertain for the distant past). However, we suggest that politics and ritual are very much interlinked yet, in physical terms, their respective places are well-defined and set apart (e.g. the castle and the church); this is certainly true of special places that exist within contemporary western and non-western societies. Here, sacred and mundane places are clearly in opposition but at the same time intrinsically interlinked (e.g. house space, men's space and women's space). Apart from the physicality of place, this entity forms a metaphysical fixture that empowers the individual, setting him or her apart from others.

We have briefly considered what place is and no two individuals can fully agree on what a place represents. But what of place and the way it is/was constructed? Natural place is composed of physical features such as mountains, rivers, streams, spurs and woodland whilst human place is composed of things (artefacts), structures and the artificial division of place (e.g. political boundaries and communication links). The grammar of place and the surrounding landscape is therefore reliant on human interaction; in particular, the way ancestral geography of place is created and progresses from generation to generation, a concept that is pursued in the chapters that follow. According to anthropologist Claude Lévi-Strauss, place and landscape are each bound-up in ancestral myth and memory (1963, 1964). Certain rock-outcropping for example metamorphose into beasts, humans and inanimate objects and form stories that involve the creation of a world; a concept that is echoed in Paul Devereux's chapter (*this volume*). These metaphysical concepts of place, rarely used in mainstream archaeological discourse are in our view an essential ingredient in attempting to understand past landscapes.

Place as an ancient landscape

In personal terms we tend to identify place through a number of mainly static features (i.e. identifying certain mountains, rock-outcropping, rivers or streams). These images in turn cognitively embed themselves into the way we perceive and view *scapes*. We add to these scapes certain personal criteria that legitimise or not our presence, through knowledge, insignia, ownership and physical scarring (e.g. construction and ploughing). Within these scapes we are content and feel safe, for example, within a structure that we call home. One might have completely diverse feelings of, say, being in a graveyard or a cityscape at night. Through personal and family enculturation we learn to adapt to certain scapes and according to anthropologists these scapes or places are generically divided into public and private (e.g. Keesing 1981). Paradoxically, some places that we are familiar with are also strictly taboo, such as those areas of the house and *those* private spaces the bedroom, the cellar or father's book shelf. The anthropological and ethnographic evidence for such categorisation is abundant but identifying this process in the archaeological record is far more problematic.

Prehistoric landscapes can evoke a sense of foreboding, especially when, in the modern mindset, we look at prehistoric monuments that are sited in rather odd places. These monuments evoke further intrigue and sensitivity when experienced in certain light and/or atmospheric conditions (e.g. day and darkness light intensity, cloud, fog, fire) (Gheorghiu – Nash 2007; Tilley 2005). A case in point is Stonehenge and the enigmatic landscape in which it stands. For many, Stonehenge is merely an ancient site with an unclear, subversive and complex archaeology and history, to others it is a living structure, offering solitude, contemplation and spirituality; Stonehenge is therefore many places to many people (Chippindale *et al.* 1990). Such multiplicity associated with one monument begs the questions: how does place become universally focused, accepted and meaningful, given the physical changes in meaning over time? More importantly how do such mechanisms maintain significance?

However, before we discuss this we would like to reflect on another prehistoric funerary site that we consider offers, we hope, a similar paradigm. Stonehenge is Stonehenge because of its relationship with other unique monuments, the way each is sited within the landscape and their complex history that extends to the present day (Chippindale *et al.* 1990). Stonehenge, located at the centre of this landscape, visually draws the eye and thus establishes physical place. The ambience of place can also be considered for most ancient monuments, evoking ancestry and, in architectural terms, a *sense of occasion*. One such monument is the Neolithic passage grave of La Hougue Bie in Jersey, Channel

Islands, which was excavated in 1924 (Baal *et al.* 1925) and later, between 1991 and 1996 (Nash 1998, 1999; Patton – Finch 1992, 1993). Excavation focused on the facade area, located at the eastern side of the monument (*Figure 1*). Based on previous archaeological knowledge of the immediate area, no other monuments are known (Hawks 1939). However, the height of the monument, currently 12.6m high and originally 19m, would have commanded an extensive landscape encompassing both immediate inland and marine environments for up to a radius of 3 km, if not further (Nash 1997). The physical trait of 'standing out' is also witnessed with Stonehenge, its enormity and ambience empowering all who view. Apart from its position within the landscape La Hougue Bie, like Stonehenge, exerts power and prestige from the way it is constructed and the raw materials used. The mound, measuring c. 50m in diameter is constructed mainly from locally quarried stone – igmanbrite. The core is of rubble, whilst the mound surface is carefully faced. Igmanbrite accounts for around 80% of the material used (Patton – Finch 1993). However, other geology is used such as pink granite from the southern shoreline of Jersey and diorite and dolerite from the north-western part of the island. The pink granite was used to construct the passage, chamber walls and ceiling, whilst dolerite was incorporated into the visible area of the mound, either side of the entrance (*Figures 2* and *3*). Similar to the inner and outer bluestone rings at Stonehenge, the incorporation of exotic raw materials such as pink granite, diorite and dolerite extends the power of the monument beyond La Hougue Bie's immediate landscape; drawing far away landscapes into the monument and thus is becomes many places.

Figure 1. The ambience of the facade at La Hougue Bie (Photograph: G. H. Nash).

The people using such a monument would have become empowered and in the case of the Neolithic builders and users of Stonehenge wield great social, political and economic influence outside the sphere of the Wessex downland.

The present Stonehenge landscape (and assuming that landscapes are dynamic over time) comprises mainly open grass downland; a landscape shaped by sheep, limited cereal cultivation and tourism. Much of this immediate landscape appears to have been recently enclosed using mainly fencing whilst some areas have been utilised for tree planting. To the north of the Stonehenge complex and paradoxically preserving the ancient landscape is a military landscape. To east of the village of Durrington is the

Figure 2. The pink granite orthostats and capstones of the passage at La Hougue Bie (Photograph: Adam Stanford).

Figure 3. Legitimising far away landscapes: dolerite incorporated into the mainly igmanbrite façade of La Hougue Bie (Photograph: G. H. Nash).

military camp of Larkhill and excavation undertaken by one of the authors in 2002 concluded that the eastern slopes of Boscombe Down were under cultivation, recorded as [undated] plough scars into the upper section of the chalk (Nash 2002).[1] To the south, on Wilsford Down some fields have been enclosed

1 Based on the irregular linear scarring, it is more than probable that these features are contemporary with the later phasing of Stonehenge and the construction and use of the Wessex barrows.

using a series of strip coppices that partly follow the shallow contours of the downland. Where linear coppicing is absent, low earthen banks are present indicating the probability of ancient field systems. Dispersed within this working space are a small number of *tumuli* which probably predate the field systems and indicate a multiple nature to the landscape; here the meaning of place appears to have diversely changed over time.

The topography around Stonehenge can be described as slightly undulating, with an altitude of between 90 and 110m above sea level. Approximately 0.5 km to the east the River Avon flows roughly north to south and in places cuts into the surrounding downland, creating a series of weathered rounded slopes that converge onto this potentially symbolic water course. It is within this area that the recent *Stonehenge Riverside Project* (under the overall direction of Professor Mike Parker-Pearson) has uncovered secure palynological evidence from a number of palaeochannels which chronologically extends through the entire Holocene period (*c.* 8,000 cal BC until recent). According to this study and probably at the time when Stonehenge was in use, the surrounding landscape was open, comprising an herbaceous and grassland habitat with little or no trees. The evidence for a dry, open environment is also supported by molluscan evidence. How much of the surrounding landscape seasonally obscured the Stonehenge monument is not clear. However, based on the archaeological evidence the remains of cattle, sheep and goat from sites such as Woodhenge and Overton Hill, the surrounding grasslands would have been intensely farmed. Following Stonehenge's abandonment, at around 1,500 cal BC, it is possible that certain parts of the grassland landscape became over-grown and untended, restricting in places the visual draw and thus the importance of the monument complex.

Place as a long-term archaeology

According to Richard Bradley, Stonehenge is unique; constructed using a unique set of architectural rules that are not repeated anywhere else (2007, 137). The uniqueness of the construction methodology - its roundness, its materials, its megalithic ambiance, its symmetry and above all, its scale would have made this building and its associated monuments very conspicuous and a major talking-point within the ancient world. The prehistoric importance of the monument is further enhanced by the quarrying, transportation and erection of enormous stones, many originally sourced from the Preseli Mountains in south-west Wales as well as the wealth of exotic items that have been uncovered in and around the complex by archaeologists. The nearby discovery, for example, of the 'Amesbury Archer' burial by a team from Wessex Archaeology in May 2002 uncovered body adornment made from gold (Fitzpatrick 2005). The burial of a warrior-class male possibly originating from Alpine central Europe and dating to around 2,300 cal BC, came at a time when the influence of Stonehenge was at its zenith and is further evidence of the influential draw of the place by people from outside the sphere of Neolithic Wessex.

Scientific interest in Stonehenge and its landscape dates fundamentally to the 17^{th}–19^{th} centuries and the *Age of Enlightenment*. The monument, by then in a ruinous state was of keen interest to John Aubrey, William Stukeley and later Colt Hoare to name but a few. Since this period the landscape has been the subject of intense field study with many of the main players of the late 19^{th} and 20^{th} century making their mark; e.g. W. Gowland (1902), W. Hawley (1921–26 and 1928) and G. Smith (1973). One of the largest *marks* to be made was by R.J.C. Atkinson who excavated Stonehenge between the years 1950 and 1964 (Atkinson 1952; Atkinson – Evans 1978). From his results, four major phases of construction and use were devised, the earliest dating to the late third millennium BC (c. 2,800 cal BC). This phasing was later radically revised by Richards (1990) and Cleal *et al.* (1995) who each postulate a starting date of c. 3,300 cal BC. Associated with the main building phases were significant ritual changes to the surrounding landscape, witnessed through the construction, use and demise of Neolithic earthen long barrows, the construction of the *Avenue*, the Great [Stonehenge] Cursus and a large number of round barrows that date from the Early Bronze Age (c. 2,500 cal BC), as well as sporadic settlement (Bender 1992; Thomas 2007). In terms of homogeneity it is only recently that Stonehenge and its landscape has become one (Cleal *et al.* 1995; Exon *et al.* 2000; Tilley *et. al.* 2007). Cleal *et al.* has taken a somewhat formal approach using tried and tested landscape discourse whilst Tilley *et al.* has applied a phenomenological approach, walking through the landscape with, controversially a 21st century mindset. Exon *et al.* on the other hand has incorporated Stonehenge into a virtual landscape and in many respects became a fundamental tool for furthering landscape research including that of Tilley *et al.*

Place in a wider landscape

Based on the pollen evidence, in particular, it appears that Stonehenge was in full view, sited on a low plateau surrounded by a series of low hillocks (*Figure 4*). Prior to the erection of the sarsen and bluestone rings, the landscape would have comprised a series of enclosures (dating from c. 4,000 cal BC), the Great Cursus and Lesser Cursus (both probably dating from c. 3,800 cal. BC), the causewayed enclosures of Durrington Walls and Robin Hood's Ball (each dating from c. 3,000 cal. BC), Woodhenge (dating from c. 2,800 cal. BC) and the ditch of Stonehenge (dating to c. 3,400 cal. BC) (Bender 1992, 742; [revised by] Parker Pearson *et al.* 2007).[2]

Figure 4. What the ancients could not have seen: Stonehenge (© Adam Stanford of Aerial-Cam - www.aerial-cam.co.uk).

Occupying the raised areas especially to the north and south of Stonehenge a considerable number of Neolithic earthen long barrows (c. 20 monuments) and numerous Bronze Age circular barrows were constructed (c. 75 monuments).[3] However, very few of these monuments appear to occupy the eastern side of the downland, between Stonehenge and the River Avon. However, several groups though are located either side of the Avenue; a low causewayed earthwork that extends northwards from Stonehenge and arcs eastwards before terminating at West Amesbury and the northern bend of a meander in the Avon. Based on their distribution it is clear that the later barrows, whilst respecting the earlier geography

[2] Since the publication of this volume, the results from the *Stonehenge Riverside Project* may have altered of these dates.

[3] See Exon *et al.* (2000), Appendix G. Barrows are referred to as Wessex Graves.

of the Stonehenge landscape, represent something very different. A similar agenda is witnessed at the Great Cursus group, north of Stonehenge.

North of the Stonehenge complex is the east-west orientation of the Great Cursus, its eastern terminus pointing towards Woodhenge and the causewayed enclosure of Durrington Walls, whilst its western terminus separates the Fargo Plantation to the west (*Figure 5*). Each set of monuments would have been constructed and in use whilst Stonehenge underwent various modifications, from the initial timber construction phase (*c.* 3,300 cal BC) through to abandonment as a late prehistoric ritual monument (*c.* 1,500 cal BC). The barrow cemeteries of the Bronze Age, many organised along ridges, are subordinate to the ritual draw of the Stonehenge complex. Many of these barrow cemeteries are arranged in a linear fashion such as those at Winterbourne Stoke and the various groups on Normanton Down. Dispersed within these groups are the twenty or so Neolithic earthen long barrows, many of which may have played a pivotal role for the siting and influencing the linearity of the later barrow cemeteries.

Figure 5. The slight east-west earthwork of the Great Cursus, terminating west and cutting through the Fargo Plantation (located on the skyline) (Photograph: G.H. Nash).

The mindset of various architects and builders of the prehistoric landscape would have had clear reasons and rationale to build what and where. One can discount the idea that monuments were merely constructed in a haphazard way. Within this very busy landscape, each of the period builders would have been concerned with observing certain landscape rules of earlier builders and making the effort not to disturb or influence their monuments over earlier ones. However, from wherever one stands within the Stonehenge landscape the visual (and ritual) draw is Stonehenge. Although the Avenue and the Great Cursus are today represented by a series of low-lying earthworks it is probable that these too would have stood out within this contrived landscape and in order to gain access to certain monuments one would have to walk through this landscape in a particular way, possibly from one monument (or marker) to another.

Place in the contemporary eye

There are, to the contemporary eye, clear differences between the space inside and the space outside the monument and Tilley *et al.* (2007) has made an attempt to discuss this, albeit to a Stonehenge *incomplete*. Outside, the viewer can see the wider vantage points and the markers, natural or otherwise, that occupy the ridges and foreground. Looking towards the monument the viewer is faced with a wall of grey stone. Although there are spaces (or access points) between each of the trilithons, the centre of Stonehenge is obscured by a further ring of stone – the outer ring of bluestones (*Figure 6*).[4] From a distance both sets of stone visually merge as one. However, as one moves closer to the monument distinct shadows from the

Figure 6. The inner and outer walls of stone, confused yet contrived and obscuring the centre of the monument (Photograph: G. H. Nash).

inner alignment of stones cast sharp vertical and diagonal shadows (*Figure 7*). In one respect both stone alignments appear to interact with each other and would have restricted the visual access to the centre of the monument (*Figure 8*). It is probable that access to the centre of the monument was conducted in a formal processional way (by way of the Avenue and the Heel Stone), and that one could not just walk to Stonehenge and enter at will. Based on the archaeological evidence the *wall* of stone appears to have replaced a *forest* of wood at around the latter part of the third millennium BC and it is probable that the meaning and protocol for entering both monument phases were similar. Prior to this and before the stones were erected the visitor would have encountered, what Alex Gibson believes was a wooden

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4 Contrary to Tilley *et al.* (2007, 192) many of the bluestones of the outer ring can be seen from outside the sarsen ring, including sections of the internal arrangement such as the Altar Stone and the horseshoe arrangement is visible (see *Figure 7*). One should stress that Stonehenge is a partially reconstructed monument and therefore incomplete.

Figure 7. Stonehenge as a confusing and forbidden place (Photograph: G. H. Nash).

Figure 8. The intimacy of Stonehenge: experiencing a sense of awe (Photograph: G. H. Nash).

palisade located inside the outer earthen henge circle [Stonehenge Phase I] (which is referred to as the *Aubrey Holes*) (Gibson 1998). Based on these changes, it is clear that over its history as a ritual site, Stonehenge changed both its physical form and possibly its meaning, similar to many other buildings, both ancient and modern. One contemporary example and worth mentioning at this juncture is the non-conformist chapel, a recognised site within many towns and villages of Britain. The building vernacular, standard in plan and varying slightly in architectural design and size was originally constructed as a place of worship. However, with falling congregation numbers over the past hundred or so years, chapel buildings became redundant and were eventually transformed into dwellings, community halls, meeting rooms and even in some cases becoming restaurants. In this case it is clear that the structure has remained intact but the original meaning has changed. The prehistoric meaning attributed to Stonehenge and its multi-period landscape has in many respects also changed; from a hunter-gatherer landscape in the Mesolithic, through to a ritual and sacred landscape in the Neolithic and Bronze Ages, an agricultural landscape from later prehistory until the late 19th century and finally, to a carefully managed heritage landscape in the 21st century.

Place not quite decoded or complete

The full story of Stonehenge and its enigmatic landscape can never be fully told; the narrative of place is incomplete. Nevertheless, the *Stonehenge Riverside Project* has made many important discoveries that will provide the next chapter; re-writing the landscape narrative of the ritual areas that surround Stonehenge such as Durrington Walls, Woodhenge and land west of the River Avon. The recent excavation inside Stonehenge, the first since 1964 and directed by Tim Darvill and Geoffrey Wainwright has attempted to a date to the erection of the bluestones. They also consider the site to be a centre for healing, suggesting that the stones were used for their special healing properties. This rather tenuous interpretation changes significantly the previous idea that the site was purely a ritual monument; the site now becoming a place of calm, hope and tranquillity (e.g. Parker Pearson – Ramilisonina 1998[5]). Interestingly the date of the inner stone circle coincides with the burial date of the Amesbury Archer and other local and continental burials close by. The Amesbury Archer was thought to have suffered a serious knee injury and near fatal dental disease. Was his visit to Stonehenge the final attempt to cure his ailments? This interpretation, valid as any other, will certainly not be the last!

Although Stonehenge and the surrounding monumentality constitute a vast open landscape covering an area of around 200 square kilometres, this entity is constructed from a series of places each with their own design concept, development, chronology and narrative. Such a powerful visual statement would have created a lasting image in the minds of the people who constructed and used this monument over a 5,000 year period. Even from the stance of the contemporary mindset where most natural phenomena can be explained, the sense of occasion created by such a landscape and the monuments that stand within evokes personal unease, sometimes foreboding and a sense of wonder.

Placing chapter and verse

Using *place* as a focus for further discussion, the chapters within this volume explore a world governed by ritual and symbolic grammar, for example, the rock-art in Australia, settlement and field systems in Chile, astronomical observations in the mid-west of America and the circulation of portable art in Ertebølle and TRB areas of north-western Europe.

The first chapter, written by Matthew Kelleher deals with the way sacred space is organised and how people behave within this space. Kelleher, using the rock-art from the Blue Mountains of New South Wales in Australia discusses the underlying structures that use, control and manipulate the art.

[5] Parker Pearson – Ramilisonina considered Stonehenge as a cenotaph, commemorating the ancestors whilst the nearby timber circles within Durrington Walls and Woodhenge were constructed for the living (1998).

His results show affinities between formulaic organisation and religion. Central to this is the way space is perceived. Barry Lewis in Chapter 2 looks at a similar material culture, discussing the experiential virtues of the rock-art site Devil's Rock Maroota in New South Wales, Australia. Using phenomenology and ethno-historical interpretation Lewis's approach provides an insight into the nature of male initiation ceremonies and of Aboriginal cultural practices associated with such rituals and ceremonial initiation. Lewis tentatively suggests that rock-art, displaying *Culture Heroes* and dating to the contact period of the 18th and 19th centuries is perhaps an indigenous response to European colonisation and the life-threatening diseases that were introduced, in particular smallpox.

In chapter 3, Heinrich Dosedla and Alf Krauliz explore the ritual significance of fire among *Mbowamb* of the Central Highlands of Papua New Guinea. Using this contemporary example and the distribution patterns of intertribal settlement and communication, Dosedla and Krauliz draw parallels with the possible ritual use of fire in Chalcolithic south-eastern Europe. The so-called amber route, following the course of the Morava River between Austria, Slovakia and Bohemia leads to a prehistoric trading area covering the surrounding of Motten village area at the border of Lower Austria. The local graphite was used in the manufacture of black ceramics and was traded far and wide. Within the archaeological record are a significant number of fireplaces located on elevated terraces. Dosedla and Krauliz consider these sites as significant landmarks, the illumination from each fireplace used as a way of visual communication between neighbouring groups.

Embarking on a sometimes personal journey indicative of her training in anthropology as well as archaeology, Roberta Robin Dods explores the semiotics of place and space suggesting that human agency and interpersonal relationships are manipulated, displayed communicated essentially through material cultural in a living landscape. Material culture is important for the archaeologist in establishing concepts of time and space but Dods moves beyond artefact chronology and distribution to consider interactional built environments and cultural landscapes. Here, both material culture and landscape create a type of syntax or in terms of archaeology, a *chaîne opératoire*, establishing a unique relationship between meaning, object and place situating people in realms of interactional meaning.

Timothy Malim's chapter considers the design, functionality, and demise of a complex relict system of small fields and irrigation channels which operated along the valley of the *Paniri quebrada* within the foothills of the Chilean Andes. The results of this research, based on two seasons of fieldwork and environmental sampling, not only mapped the system and established a possible cause of abandonment, but also identified carefully constructed stone-mounds as a previously unrecognized form of rainwater capture and dew-harvesting through diurnal temperature fluctuations leading to condensation. According to Malim, this extensive and well planned Pre-Columbian hydraulic-engineered irrigation system provided, in metaphorical terms, the life-blood for the community who lived and worked in the valley of the *Paniri quebrada*. The concept of the stone-mounds may have derived from a desire to replicate in miniature the surrounding mountains, a region where the rain-gods resided and from which life-giving waters flowed.

In Chapter 6, Herman Bender discusses mythology and meaning for the tribal peoples who utilised the ritualise space of Strawberry Island in Wisconsin, North America. According to Bender, the Lac du Flambeau band of Chippewa, known the *Anishinaabe*, "the original people", considered Strawberry Island as an important sacred place. Until recently, this space had been respected. However, when threatened with private development, the tribal group took action. The ensuing legal battle included a detailed study of the *Anishinaabe* and their ancestral heritage and belief system. The study revealed that at certain times of the year, celestial events interacted with the topography of Strawberry Island and the surrounding landscape, produced what Bender describes as a *hierophany*. These recorded cosmological events assisted in re-establishing a tribal ethos and reinforced the belief systems connected to tribal ancestry.

Extending much further back in time is Robert Bednarik's essay on spatial construct of Pleistocene cave art of the Franco-Cantabrian region. Bednarik, focusing on the construct of place provides a critical review of the various interpretations and suggests that this construct is probably false, that previous interpretations are misguided and that to build on such a foundation forms an inadequate paradigm that is fraught with problems of a history of research, fundamentally built on false premises.

In Chapter 8 Paul Devereux provides a cross-cultural world overview of the sometimes misunderstood and understated role of topographic *simulacra*. Based on a series of case studies used within Devereux's essay, this unique landscape phenomenon, constructing mainly chance anthropomorphic and zoomorphic forms would have evoked a special sacredness within prehistoric societies. Using ethnographic examples where *simulacra* is clearly represented Devereux suggests that such landscape forms would have enhanced the tribal memory system and established ritually-potent and recognised permanent features within a prescribed landscape.

In Chapter 9 George Nash discusses the movement of Late Mesolithic (Ertebølle) symbols that were scratched on amber, antler and bone pieces and suggest that these symbols were transferred and replicated via contact and exchange networks onto the Neolithic Linearbandkeramik (LBK) and later Trichterrandbecher (TRB) ceramics (also referred to as the Funnel-Beaker Culture). Nash suggests that this process of enculturation is initiated by the Ertebølle communities in southern Scandinavia rather than Neolithic communities from the Danubian areas to the south; who incidentally dominate the archaeological record in southern Scandinavia after 3,200 cal. BC. Nash also considers that this act of replication can be seen as an attempt to hold onto ancestral symbols, whilst adopting new forms of materiality (i.e. pottery); thus binding together different economic-based groups (i.e. farming groups with hunter/fisher/gatherers).

In contrast to the majority of papers within this book, Jeremy Harte explores something far more recent: the establishment of holy wells of medieval England. Harte considers that the selection of such sites was based on secular mechanisms prior to them becoming Christianised. However, it is not the site that changes but a commemoration of ancestors. We, as moderns, are not always comfortable with this – holy men have an embarrassing habit of making moral demands, which sacred landscapes do not – but if we want to understand what holy wells meant in the centuries when they were created, we could do worse than begin with the saints whose names they bear.

Phil Mason's chapter examines the extensive lowland settlements of Late Bronze Age and Early Iron Age central and eastern Slovenia. Mason is particularly concerned with the landscape changes and the political mechanisms, i.e. the reorganisation of space that led to the rise of the hillfort phenomenon of the Early Iron Age. These changes arose from and incorporated the late Bronze Age concepts of place and space.

In Chapter 12 Dragos Gheorghiu discusses the performance and experience that defines the south-eastern Europe Chalcolithic tradition. In order to understand the way material culture, architecture and space interact, Gheorghiu applies a number of place/space concepts in particular the phenomenological concepts of philosophers Martin Heidegger and Maurice Merleau-Ponty and the Post-processualists Colin Renfrew and Christopher Tilley.

Terence Meaden in chapter 13 discusses the pre-Stonehenge era landscape focusing, in particular, on how and why cursus sites were chosen. Using monument data such as axial orientations, intervisibility, inter-monument alignment and cursus alignments he considers the new idea that significant meteorological events may have influenced the way cursus sites were chosen and orientated.

In Chapter 14, Craig Alexander looks at the exercise of power in place in the context of the superimposition of rock-art images. Alexander's data are drawn from the predominantly Iron Age site of Pià d'Ort in Valcamonica in the Italian Alps. Employing a data-driven, quantitative approach he shows that many images which overlie existing images were created while the first image was almost certainly still visible to the later carver. According to Alexander, superimposition thus seems to be making a deliberate claim to power over a place and, perhaps, over another image.

In the penultimate chapter, Michael Eastham is concerned with the functionality and meaning of cupmarks and cup-and-rings. This phenomenon is found in nearly all the core rock-art areas around the world. Based on the labour intensity, Eastham considers that these enigmatic gouged symbols represent some form of communication system rather than something that is trivial and meaningless. Using a number of cases studies from, in particular, later prehistoric Atlantic Europe, Eastham explores their significance in relation to *place*.

The final and most intriguing chapter, divided into five parts is authored by Stephanie Koener and Lorna Singleton who combine anthropological and archaeological data with landscape and place. In this chapter the authors, using contemporary agency, politicise these ambiguous and sometimes misused terms. They draw into their chapter bi-products of the industrial age and how these have influenced geopolitics whilst at the same time addressing the risk and ethics of decision. Of issue is the philosophy of landscape and how this term is appropriated within the literature. They argue that terms such as landscape and place are rhetorical and strategic instruments for the major globalised economies. At the same time environmental constructivism is using the same terms but in different ways; both landscape and place therefore mean different things to different people and different worlds (i.e. contrasting ideologies between the 1st and 3rd Worlds). Pertinent to this volume there are conflicts and contradictions both within the physical and metaphysical worlds and Koener and Singleton assist in placing terminology in context; something that is problematic when addressing the landscapes of the past.

Acknowledgments

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References

ATKINSON, R. J. C. – PIGGOTT, S. – STONE, J. F. S. 1952
The excavation of two additional holes at Stonehenge. *Antiquaries Journal* 32, 14–20.
ATKINSON, R. J. C. – EVANS, J. G. 1978
Recent excavations at Stonehenge. *Antiquity* 52, 235–6.
ATKINSON, R. J. C. 1979
Stonehenge: Archaeology and Interpretation. London: Penguin
BAAL, A. D. B. – GODFRAY, A. D. B. – NICOLLE, E. T. – RYBOT, N. V. L. 1925
La Hougue Bie. *Société Jersiaise AnnualBulletin* 178–236.
BENDER, B. 1992
Theorising landscapes, and the prehistoric landscapes of Stonehenge. *Man*, 27/4, 735–55.
BRADLEY, R. 2007
The Prehistory of Britain and Ireland. Cambridge University Press.

CHIPPINDALE, C. 2004
Stonehenge Complete. London: Thames & Hudson.

CHIPPINDALE, C. – DEVEREUX, P. – FOWLER, P. 1990
Who owns Stonehenge? London: Batsford.

CLEAL, R. M. J. – WALKER, K. E. – MONTAGUE, R. 1995
Stonehenge in its landscape: Twentieth Century Excavations. English Heritage Archaeological Report 10. London.

DEVEREUX, P. 2001
Stone Age Soundtracks. The Acoustic Archaeology of Ancient Sites. Vega.

EXON, S. – GAFFNEY, V. – WOODWARD, A. – YORSTON, R. 2000
Stonehenge Landscapes: Journeys through real-and-imagined worlds. Oxford: Archaeopress.

FITZPATRICK, A. 2003
The Amesbury Archer. *Current Archaeology* 184, 146–52.

GHEORGHIU, D. – NASH, G. H. 2007
Fire maker. In: Gheorghiu, D. – Nash, G. H. (eds.), *The Archaeology of Fire: Understanding Fire as Material Culture*. 13–26. Budapest: Archaeolingua.

GIBSON, A. 1998
Hindwell and the Neolithic palisaded sites of Britain and Ireland. In:Gibson, A. – Simpson, D. (eds.), *Prehistoric Ritual and Religion*. 68–79. Stroud: Tempus.

GOWLAND, W. 1902
Recent excavations at Stonehenge. *Archaeologia* 58, 38–119.

HAWKES, J. 1939
The Archaeology of the Channel Islands 2: The Bailiwick of Jersey. La Société Jersiaise, Jersey.

HAWLEY, W. 1921
Excavations at Stonehenge. *Antiquaries Journal* I, 19–41.

HAWLEY, W. 1922
Excavations at Stonehenge., *Antiquaries Journal* II, 36–52.

HAWLEY, W. 1923
Excavations at Stonehenge. *Antiquaries Journal* III, 13–20.

HAWLEY, W. 1924
Excavations at Stonehenge. *Antiquaries Journal* IV, 30–39.

HAWLEY, W. 1925
Excavations at Stonehenge. *Antiquaries Journal* V, 39–50.

HAWLEY, W. 1926
Excavations at Stonehenge. *Antiquaries Journal* VI, 1–16.

HAWLEY, W. 1928
Excavations at Stonehenge. *Antiquaries Journal* VIII, 149–76.

KEESING, R. M. 1981
Cultural Anthropology: A Contemporary Perspective. New York: Holt, Rinehart & Winston.

LÉVI-STRAUSS, C. 1963
Structural Anthropology. London: Nicholson.

LÉVI-STRAUSS, C. 1964
Mythologiques. Paris.

NASH, G.H. 1997
Experiencing Space and Symmetry: The use, destruction and abandonment of La Hougue Bie Neolithic Passage Grave, Jersey. In: Nash, G. H. (ed.), *Semiotics of Landscape: Archaeology of Mind.* 105–18. BAR International Series 661.

NASH, G. H. 1998
Fourth interim report on the facade area of La Hougue Bie Passage Grave, Jersey. *Société Jersiaise Journal* 27/2, 317–30.

NASH, G. H. 1999
Fifth interim report on the facade and entrance areas of La Hougue Bie Passage Grave, Jersey. *Société Jersiaise Journal* 28/3, 491–509.

NASH, G. H. 2002
Evaluation trenching at Ringwood Avenue, Boscombe Down, Wiltshire. *Border Archaeology.* Report No. 2002–1.4

PARKER PEARSON, M. 2007
The Stonehenge Riverside Project: excavations at the east entrance of Durrington Walls. In: Larsson, M. – Parker Pearson, M. (eds.), *From Stonehenge to the Baltic: Living with cultural diversity in the third millennium BC.* 125–44. BAR International Series 1692.

PARKER PEARSON, M. – CLEAL, R. – MARSHALL, P. – NEEDHAM, S. – POLLARD, J. – RICHARDS, C. – RUGGLES, C. – SHERIDAN, A. – THOMAS, J. – TILLEY, C. – WELHAM, K. – CHAMBERLAIN, A. – CHENERY, C. – EVANS, J. – KNÜEL, C. – LINFORD, N. – MARTIN, L. – MONTGOMERY, J. – PAYNE, A. – RICHARDS, M. 2007
The age of Stonehenge. *Antiquity* 81/313, 617–39.

PARKER PEARSON, M. – RAMILISONINA 1998
Stonehenge for the ancestors: the stones pass on the message. *Antiquity* 72, 308–26.

PATTON, M. A. – FINCH, O. 1992
Excavations at La Hougue Bie, Jersey: First Interim Report. *Société Jersiaise Journal* 25, 632–40.

PATTON, M. A. – FINCH, O. 1992
Excavations at La Hougue Bie, Jersey: Second Interim Report. *Société Jersiaise Journal* 25, 116–32.

RICHARDS, J. C. 1990
The Stonehenge Environs Project. English Heritage Archaeological Report, 16. London.

SMITH, G. 1973
Excavations of the Stonehenge Avenue at West Amesbury, Wiltshire. *Wiltshire Archaeological Magazine* 68, 42–56.

THOMAS, J. 2007
The internal features at Durrington Walls: investigations in the Southern Circle and Western enclosures 2005–6. In: Larsson, M. – Parker Pearson, M. (eds.), *From Stonehenge to the Baltic: Living with cultural diversity in the third millennium BC.* 145–58. BAR International Series 1692.

TILLEY, C. 2005
The Materiality of Stone: Explorations in Landscape Phenomenology. London: Berg.

TILLEY, C. – RICHARDS, C. – BENNETT, W. – FIELD, D. 2007
Stonehenge – its landscape and its architecture: a reanalysis. In: Larsson, M. – Parker Pearson, M. (eds.), *From Stonehenge to the Baltic: Living with cultural diversity in the third millennium BC.* 183–204. BAR International Series 1692.

1

Religious Spatial Behaviour: Why Space is Important to Religion

MATTHEW KELLEHER

Introduction

Religion is a universal influence on human spatial behaviour. People organise their world according to how they understand the world. The ability to understand the influence religion has on spatial behaviour is therefore important to landscape archaeologists and starts with the ability to identify the indicators of religious activity.

In archaeology there have been several direct and indirect attempts to address the systematic examination of recurrent religious behaviour (e.g. de Polignac 1995; Insoll 2004; Levy 1982; Marcus – Flannery 1994; Renfrew 1994, Richards – Thomas 1984). Indicator models have also been developed, which show specific associations between material culture and recurrent religious phenomenon (Kelleher 2003). In this chapter, I explore one key aspect of religious spatial behaviour, the importance of place and space in the separation between sacred and mundane. Place matters most to those people who are aware of its significance. Place itself therefore, is not as important as the relationship between concept and place. Sacred places are logically distinct, in some way, from their surroundings in order to generate the requisite inspirational experience within participants (Cole 1994, 216; e.g., Brady – Ashmore 1999, 126–128). In this regard, I argue that sacred space is archaeologically identifiable through a combination of attributes which demonstrate a transition either physical or conceptual from the mundane to the sacred.

In this chapter I will show that the inherent liminality of religious perceptions is actuated through a graduated use of space. Religious behaviour is seen in material culture through increases in formality and separation of assemblages, rather than artefact typologies. The crux of identifying sacred space, therefore relates to the identification of formulaic organisational trends. The first part of the chapter looks at what constitutes these trends. The second part of the chapter looks at how theory and practice come together. An indicator model for religious spatial behaviour, based on recurrent religious phenomenon, is applied to a regional data matrix from research in the Australian Blue Mountains. Two case studies are addressed in detail.

Part I
Religion and Ritual

What are archaeologists studying when studying religion?

The concept of religion is complex. The definition of the term religion is difficult. Archaeologists often sidestep these difficulties by using the term to encompass a grab bag of objects and information, which do not nicely fit into other theories. However, in practice, all we need is a basic idea of what we are talking about in order to begin. I think Rappaport's general description is a useful starting point (1999, 23). He describes religion as encompassing many concepts and features including: the Holy, the sacred, the numinous, the occult, the divine, and ritual action.

> Such a sketchy representation – a verbal equivalent of pointing – is sufficient to indicate the region to be explored, its very vagueness suggesting the indefiniteness of the shape and extent of the territory religion occupies and the haziness of its boundaries. The concept of religion is irreducibly vague, but vagueness is not vacuity, and we know well enough what people mean by the term to get on with things. (*ibid*)

With this understanding, I propose that we all have enough of an idea of what the term religion implies to allow us to move towards useful models. Most importantly we know that the physical action of religion always involves ritual action. Religion is manifested as ritual action used in connecting with the Holy, the sacred, the numinous, the occult, the divine.

The archaeological study of religion is the study of religious behaviour, a repeated action or patterned action, by studying ritual and vice-versa. Rituals are the ostensive performance of formal acts. If performed sufficiently often the standardisation of the act will usually result in a material pattern (Flannery 1976, 332–333; Mithen 1998, 99; Wait 1985, 79–82). This is the key.

It is noted that sometimes in archaeology the study of ritual is thought of as separate from the study of religion (e.g., Richards – Thomas 1984). This is the result of the not erroneous but misleading assumption that religious phenomena are inextricably tied to belief systems, which are not available to formal archaeology. Conversely, I argue in this chapter that by identifying a specific type of ritual act archaeologists are studying at least the ostensive physical elements of religion. Archaeologists should not, can not, separate ritual from religion as ritual is 'the ground from which religion grows' (Rappaport 1999, 26). Ritual is the most essential part of religion, as Rappaport (1999) states (p. 3) then argues (pp. 23–405), all the elements of religion are related to ritual. In studying the material features of ritual, archaeologists study the link between religious concepts and the material world. This chapter specifically examines how religious perceptions of a place influence spatial organisation. These perceptions are reconstructed archaeologically from evidence of spatially repetitious ritual actions.

The necessary caveat to add is that not all ritual acts are religious, and not all religious acts are ritual. This is perhaps a limitation of the research. However religious rituals are the most stylised and formal rituals. To put this another way following Abrahams (1973), if ritual activity exhibits a continuum, religious ritual will represent the most stylised, formalised, sequential, and repetitive end of the continuum (with secular rituals occupying the opposite end). The ritual acts that archaeologists are likely to discern within material culture at the regional level are religious rituals, as the formality of the activity makes the rituals more distinct through time.

Liminality

Sacred vs. Profane concepts of space

The sacred is a separate element of culture. In the classic Eliadian model (1959, 20–22) of sacred and profane space, for something to be special it must exist in contrast to an opposite, or in the very least another entity of lesser value. So sacredness must have an opposite, from which it can be defined. These conceptual dichotomies are useful for archaeologists because they result in physical changes in the way people organise their material behaviour. All religious rituals involve *liminal* spatial behaviour, where participants cross a threshold which separates the sacred from the mundane (Leach 1977, 82–84).

Organised spatial qualities are intrinsic to effective ritual and religion could not exist without them (Parkin 1992, 16–18; cf. Lawson – McCauley 1990, 120–122; Wallace 1966, 52). In identifying religious behaviour, archaeologists seek the material residues, discard or deposit, associated with movement along this graduated spatial distribution (Bradley 2000, 147; Buikstra – Charles 1999, 203; Wait 1985, 266; Witter 1989, 2–5).

Sacred continuum

In archaeology when we try to identify the sacred we look for evidence of a separation from the norm. In this regard I find it useful to think of the sacred and profane as polar opposites within a continuum (*Figure 1.1*; cf. Boyer 1995, 631). This is not to say that absolute polar opposites have to exist in the reality of cultural space (cf. van Dommelen 1999, 280–281). The sacred is a continuum where less sacred (mundane?) things exist on one side and the more sacred on the other side with the precise level of sacredness being determined in relation to a liminal zone (see figure below). Unlike Durkheim's (1965 [1912]) notion of the sacred and profane, nothing is either completely sacred or completely profane. Perfect *hierophanies* (after Eliade 1954) are unlikely or impossible in archaeological terms. In many cultures it is the amount of sacredness that varies and not the level of profanity.

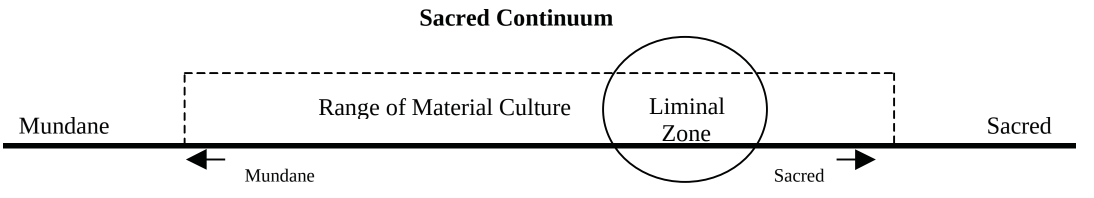

Figure 1.1. Basic structural model of sacred continuum.

An example of this idea is found in the work of the eminent social anthropologist David Parkin's (1991, 37–57) detailed account of the Kaya ritual, where secret sacred space is distinctly separate from everyday existence, being located well outside domestic communities. The spatial separation and directionality of Giriama rituals, according to Parkin (1992, 21–22), makes them distinct within the Giriama cultural matrix. The location of the ritual places was characterised by distinctive spatial voids, which separated ritual grounds from the more mundane areas (e.g. towns). Not all ritual behaviours of the Giriama people are remote in space, but the most powerful examples of ritual are spatially isolated.

Another example comes from Australian Aboriginal culture where spatial divisions are used to differentiate the various degree of the sacred realm (Berndt 1974; Berndt – Berndt 1965, 1970, 1988). On the one hand all places have a certain level of sacredness, Ancestral Beings are indeed everywhere, in everything, but rituals or offerings performed at specific places are more apposite than performances held just anywhere (Creamer 1979; Strehlow 1970; Taçon 1990, 20). The more connected a place is with the Dreaming, the sacred realm, the more sacred it is and the more segregated and secret it is. Such places have such a strong sacred connection that their very being is both, secret and sacred; representative of the extreme end of the sacred continuum. Charlesworth (1984, 11) notes that, 'Some places may be permanently both secret and sacred because they contain sacred objects or drawings that may not be seen by those who are not initiated.' And he continues to emphasise their exclusiveness with, 'Transgressors of the secret-sacred realm violate the mysteries and can be visited with severe punishments.' The main feature of Aboriginal religious ritual is that it reinforces the cosmological link between the people and the land (Swain – Trompf 1995, 25). As Morphy (1995, 201) states; 'All sacred law is associated with events that are manifest in the form and characteristics of particular areas of land.' In Australian Aboriginal culture therefore variations in physical place directly relate to the perceived level of sacredness.

Derks (1998, 200–203; cf. de Polignac 1995, 24) demonstrates this archaeologically, where in an extensive analysis of the transformation of religious ideas in Roman Gaul, he describes the graduated divisions (thresholds) in the use of architecture and the deposition of artefacts acting to heighten the sacred focus along a defined path. The sacred may be theoretically omnipresent but by definition it exhibits value based differences. His empirical analysis of votive offerings and the distribution of sanctuaries show patterns of increasing formalisation for sacred places nearer to the most sacred points in the landscape (such as the inner sanctum of a temple).

It is these formal patterns manifest as graduated divisions and marked by liminal spaces on the ground (often voids) that are of most useful to archaeologists. Religious activities mixed into the everyday can be difficult to distinguish. But the sacred (especially the more polar aspects) will gradually segregate itself physically from the mundane world. This follows the idea of principled geometrics, that one of the easiest ways to create conceptual or real separation in space is to separate features along a thematic axis (Zubrow – Daly 1998, 162). Where one is in space determines how one behaves.

Graduated spatial behaviour and the idea of sacred proximity

One of the most basic concepts in spatial organisation is the concept of geometric proximity where opposing elements are grouped by the spatial distance between them (Zubrow – Daly 1998, 161). In terms of sacred spatial behaviour (select rituals) and material culture, people physically respond differently as they get closer to what they perceive as sacred (Lawson – McCauley 1990, 124). Parkin (1992, 16–18) and Rappaport (1999, 26) are in agreement that the most salient principle of religious behaviour is its organisation of spatial relationships.

> [Religious rituals] … presuppose phasal movement, directionality, and positioning. Since it is through such movements and positions that participants make statements both about the world [the cognised reality] and about the ritual itself…. (Parkin 1992, 12)

Religious behaviour is graduated, so actions become more formal and incremental the closer one moves towards the sacred focus point (the most sacred physical place, see *Figure 1.2*) (cf. archaeology: Derks 1998, 200–201). The essence of the idea is central to archaeology, that is, variations in the distribution of material culture reflect variations in activity, which in turn reflect variations in behaviour. Graduated spatial behaviour in sacred space dictates that after passing through a liminal zone there is a steady increase in the formal separation of activities as participants get closer to the ritual focus point (*Figure 1.2*). According to Parkin (1992, 16):

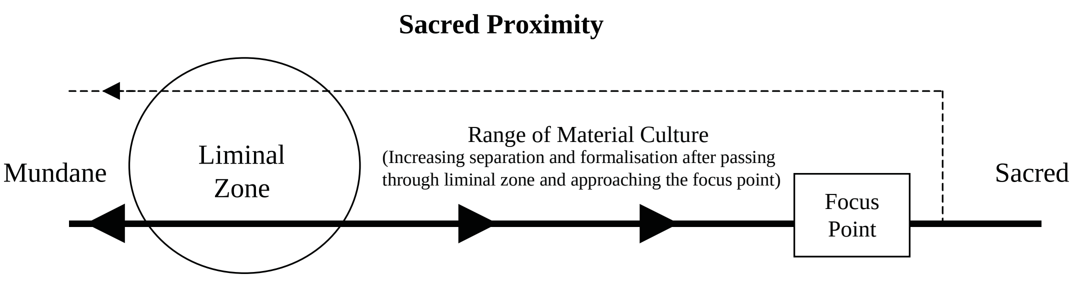

Figure 1.2. Model of sacred proximity (extract from sacred continuum Figure 1.1*).*

> The approach to [religious] ritual as always concerned with movement, directionality, and spatial orientation is, I think, distinctive…. They all… involve a liminal phase, a betwixt-and-between element, and so presuppose an initial phase of separation and one of reaggregation.

The degree of sacredness increases the closer one moves towards the sacred focus point (Edlund 1987, 44; Lawson – McCauley 1990, 176; Leach 1977, 82; Wallace 1966, 56). And the actions leading up to the focus point follow a formulaic trend, which evokes opposition, separation, movement and directionality (Parkin 1992, 19).

In these instances, the organisation of archaeological material, will conform to the liminality of the place so that the range of material and the controlled distribution of activities will generate a select assemblage (Levy 1982, 19–20; Megaw – Simpson 1981, 465; Wait 1985, 7). As Bradley (2000, 127) commented in relation to movement within Neolithic monuments, it seems that people moved around the buildings in a prescribed order, viewing their surroundings (upright posts) sequentially, placing deposits in a set order. Different kinds of deposits were spatially structured in very specific ways (*ibid*.).

In most cases although the subject of religious focus is not artefactual material (e.g., God is the mountain; God lives in heaven above a mountain) actions related to the objectification of that subject are associated with material culture. While it may never be possible to know what the subject (the god) was, it may be possible to identify its probable influence on spatial behaviour. Peoples' actions on the ground indicate how they perceived their surroundings (David – Wilson 1999, 163; Knapp – Ashmore 1999, 15; Wright 1994, 77).

Sacred zone

An example of sacred proximity and graduated spatial behaviour in Australian ethnoarchaeology is what Witter (1989, 5) has identified as a 'zone of sacred influence' (cf. Bradley's 2000, 64–80, distributional analysis of rock art). This zone indicates an area, such as a sacred focus point, which must be respected in activity and through behaviour. For example, Witter (1989, 4–5) describes a rock well on the prominent Boat Rock Hill (southwest New South Wales) acting as a sacred focus point and that camps were selectively established in proximity to the ceremonial area. The main camp was set up on the other side of the hill, away from the ceremonial area, but with good access to the morning sun and water. The rest of the hill was forbidden area. The neophyte camp was located off the hill and a buffer zone ringed the hill indicating where women were allowed to forage for plant foods.

In Witter's scenario there is a marked difference in behaviours as participants move towards and away from the rock well, the sacred focus point. The distribution of activities is graduated, locations where certain groups were allowed to congregate; where certain activities were allowed (e.g. ochre grinding and blade manufacture) or not allowed (foraging). Witter notes that the formality of the assemblages also follows this same graduated distribution; the most restrictive rules are associated with the most intensely sacred areas, while the outer areas will have less, but still noticeable, variations in the depositional formality of archaeological assemblages (cf. Barnatt 1998, 95). Outlying camps likely form the support structure for the more restricted ritual camps further up the hill (cf. Berndt 1969, 42, 1974, 11).

Ritual support deposits and camps

Ritual support deposits are most easily identified by what they do not contain, rather than by what they do contain. Ritual support deposits are indicated by a significant segregation of activities which would normally occur together (or at least with noticeable overlap). The result is a complementary-avoidance type assemblage distribution. Whereas in a normal a-temporal occupational setting one can expect a certain collapse of occupational debris (see Kvamme 1998), various activity assemblages piling on top of each other, in ritual support camps the assemblage's internal structure should be more rigid due to the increased formality imposed by sacred proximity (e.g., Cooney 1998, 110–118). In such instances, normal interactions between members of a group become spatially more defined resulting in a relatively more spatially structured artefactual record (e.g., Berndt 1974, 11; Creamer 1976, 7–8; Doolan 1979, 161–168; Renfrew 1985, 16–17). In other words, things, which are normally done in relatively close proximity, are deliberately (formally) separated when associated with ceremonial activity (e.g., Richards' and Thomas' 1984 assessment of ceramic distributions at Durrington Walls).

In terms of camp structure the result is an increase in the formal segregation of activities for ceremonial support camps. For example there is likely to be a more marked spatial separation of the various stages of stone tool manufacture and maintenance (Jones – White 1988; Witter 2000, 57–60). In the norm the activities associated with special-task camps (e.g., axe grinding grooves, primary lithic reduction workshops and special tool maintenance) are often in the main domestic camp and in satellite camps. In a ceremonial spatial structure the main domestic camp, the support camp, is missing some or all of the special-task activities. Tasks such as the production of geometric microliths and axe grinding may occur only at the discrete intersite level, rather than in the discrete intrasite spatial level. In ceremonial spatial structure, activities are discretely spread and not mixed, which is a result of a perceived formalisation of space. Associated with this it should be apparent that the separation in artefact variation graduates towards (targeting) a focus point and not simply indicating a fall off in occupation or simply a very strong, but undirected, division in labour (which would have no evidence of an increase in liminality).

A corollary is that ritual deposits (in an open context) are only evident through a long time, and it is unlikely that the artefacts segregated into spatial groups actually relate to each other (see Binford 1982, 17–18; Walker 1995, 75–78). The spatial relationship *between* artefacts is therefore more diagnostic than the actual attributes of the artefacts themselves (cf. Bradley 2000, 118; Thomas 1996, 164–168). Elements of religious behaviour are not unique. It is the way elements are organised which characterises religion. Like a pile of building materials is not a house, but a specific arrangement of bricks and timber can create a house. Certain artefacts (whether temporally related or not) tend to group in certain places where other, generally more utilitarian, objects are not found (Bradley 2000, 118–119). These groupings of objects are likely related to the perception of the place where they are found (Goode 1951, 256; Lawson – McCauley 1990, 125). The crux is that the spatial relationship between objects is a more significant indicator to a religious association than the object themselves. It's not what you find so much as where you find it.

Part II

Perceptions of sacred space affect behaviour. Religious behaviour results in a distinct separation of activities and aggregate religious activities are phasal in direction as they lead to a specific highly sacred place. The closer someone is to a sacred place the more restrictions are applied to their behaviour. This distinctive formulaic organisation of rituals is diagnostic of religious behaviour.

In theory this sounds interesting, but as archaeologists we need to be able to apply it to the material world. Can we actually see phasal organisation of place? Moreover, humans invariably see patterns everywhere (some are more 'real' than others) so when applying our theories we must be mindful to examine the validity of the results. The question as I see it is, How do we identify these conceptual trends in the empirical world?

Research in the Blue Mountains the search for limen

Archaeological research I have undertaken in the Australian Blue Mountains National Park of New South Wales has addressed this very question (Kelleher 2003). This research has identified specific correlates of religious behaviour and shown that such correlates form a distinctive formulaic organisation characteristic of graduated spatial activity at several locations within the mountains. In other words, specific types of objects can be seen to associate with specific types of places which are characteristic of a religious use of space.

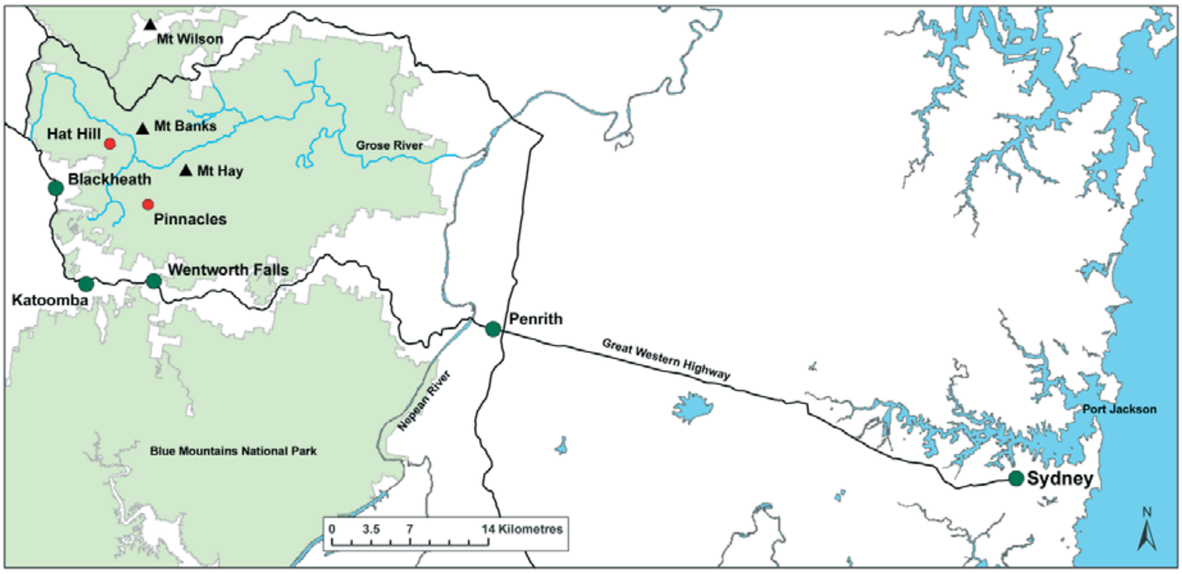

Figure 1.3. Map of the Blue Mountains.

Stage 1 model

The first stage of research involved the creation of an indicator model for religious spatial behaviour. This model was based on a detailed study of recurrent religious phenomenon as it pertains to the archaeological record (Kelleher 2003, 51–90; cf. Renfrew 1994). Four primary indicators resulted from the extensive modelling process:

Indicator model of religious spatial behaviour

Spatial indicators

- Distinct separation and phasal organisation, which is graduated in focus. For example, topography which generates a perception of segregation is most easily associated with religious concepts. These topographic features include: 1) places of transition, 2) distinctive places, and 3) places which focus attention.

Material indicators

- Formal and selective array of materials with a trend for increasingly formal graduations between support and ceremonial camps. For example, support camps in hunter-gatherer societies tend to contain a wide range of lithic materials at various stages of reduction, while ceremonial camps contain relatively higher quality materials at late stages of production or maintenance.

Attention-Focusing indicators

– Clearly quantifiable (presence or absence) aesthetic values (e.g. topographic, architectural) function to attract or direct participants' attention. The organisation of space, places and objects needs to show a clear focus. For example, religious activities located along a ridge (a natural corridor) will increase in intensity near the perceived sacred place like pilgrims moving within a temple towards the altar.

Iconographic indicators

– Religious iconography is abstract and ambiguous in form, homogeneous in association, and clinal in distribution. For example, homogeneous and clinally distributed rock art (or similar iconographic forms) can be seen to relate to the restricted integration of social groups. Initiates will distribute the iconographic cues according to how they perceive their surroundings with the greatest intensities of display reserved for the most sacred places.

The underlying theme within every indicator is a trend for a liminal separation and an increasing graduation in the formal organisation of space.

Stage 2 univariate and multivariate analysis

The second stage of research involved analysing a Blue Mountains regional data set with the aim of identifying liminal variable associations. The data used for the research came from a large data matrix with around 35,000 entries representing 418 identified archaeological sites and 84 variables assessed per site. A detailed univariate and multivariate analysis of this data resulted in the identification of a series of variables shown to relate to increased liminality (separation) within the archaeology of the mountains. Liminal places in the Blue Mountains exhibited the following characteristics:

Low relative level of subsistence resources and relatively high elevation

– One of the ways this is reflected in the mountains is when sites are located on the ends of ridgelines or at the top of a precipice distant from permanent water sources.

Select topography and proximity

– Topography in the Blue Mountains can be very dramatic such as illustrated by the basalt capped mountains. Elsewhere, naturally demarcated places such as saddles and creek junctions are not uncommon. The key attribute was linked to the combination of features such as when a place was both naturally demarcated and associated with an awe inspiring landmark. Places in these circumstances combine a useful occupation/meeting space with a dramatic visual impact.

Select combination of raw materials and artefact types

– In the Blue Mountains quartz is a ubiquitous raw material, but high quality material (e.g. silicified tuff and various cherts) can be sourced from most of the creeks. The analysis identified a trend for low quality quartz to be used for making geometric microliths and other backed artefacts in higher proportions at certain places. Perhaps indicating that some places (which contained quartz) and exhibited certain activities (production of geometrics) displayed a greater significance of place (i.e. using local raw material) as opposed to stressing a preference for a higher quality raw material sourced from elsewhere.

Homogeneous engraved rock art and other rock markings

– Engraved rock art which displays a high level of similarity within the assemblage is distinctly clinal in it distribution in relation to pigment rock art and hand stencils. The result is a far more

> formal arrangement of art at certain places. Likewise, other types of rock markings, such as the grooves resulting from the sharpening of axes were found to be laid out in rows rather than haphazard clusters, which may indicate an increased formality of the perception of place.

The analysis undertaken in stage 2 was able to show a statistically strong association between certain archaeological and geographic features and selective, liminal, places and actions as outlined in the indicator model (stage 1). Statistical analysis, however, should only be used as a tool and not an interpretation. There is no guarantee that the identified indicators are actually related in the real world (e.g. Do they describe the same place?) and are not simply a product of the testing procedure, and that the trends identified represent extended patterns (continuums) relating to the organisation of material culture. In other words, all these *associations* may exist statistically, but we need another method to *see* the trends. In short, we know these associations exist, but are they spatially organised, repeatedly over a region, in a manner characteristic of religious activity.

Stage 3 distance matrix

As discussed in the preceding text and outlined in stage 1 (model), recurrent religious spatial phenomenon are characterised by the liminal and phasal organisation of human perceptual space. Within the study region, as outlined in stage 2, liminal variables exist, which suggest a selective separation of activity within the Blue Mountains. Bringing together the model with the regional variables is the aim of stage 3. In stage 3, I utilise a distance matrix in order to bring the organisational assumptions about religious spatial phenomenon together with the location and array of liminal variables. I have selected a distance matrix (DM) as my investigative tool because it is designed to look for very specific (and often complex) spatial patterns (Kelleher 2003, 217–226). The underlying assumption is that fluctuations in the distribution of archaeological features are likely to relate to different functions for the different places.

A distance matrix operates by doing two things: 1) setting up a distance array by assigning a location to each variable and 2) interrogating the array though a highly specific algorithm based on a combination of liminal indicators and geometric proximity. Imagine the artefacts distributed across an area as a more or less continuous distribution of highly variable densities, the spatial associations between the artefacts (not sites) then represent a source of archaeological data about the way people use space. No single indicator is strong evidence of a specific activity, that is, just because artefacts are located in an unusual topographic setting does not mean the place is sacred. However, if certain places within the region exhibit the same graduated spatial relationship characterised by several liminal indicators it is probable that such places are reflecting patterned behaviour.

Distance array

The distance array contains all the possible distance relationships between rows (and extrapolated to the columns) in the matrix. The array matrix for Blue Mountains data is a 418 x 418 table. Each variable assigned to a row utilises the row locations as its own location.

In the algorithm a predefined distance array is essential for stability. Without this index of distances, the program would have to continually recalculate the relationship between all the variables.

Example Distance Array (m)		Cases					
		Site 1	Site 2	Site 3	Site 4	Site 5	…
Cases	Site 1	0	400	500	350	800	
	Site 2	400	0	100	200	720	
	Site 3	500	100	0	175	35	
	Site 4	350	200	175	0	1200	
	Site 5	800	720	35	1200	0	
	…						

Table 1.1. Example distance array.

Distance algorithm

The purpose of the code is to place the liminal indicators identified in stage 2 into a formulaic spatial format of probable ceremonial behaviour outlined in the model. For example, the liminality associated with homogeneous rock art, geometric microliths, dramatic landscape and low levels of subsistence (amongst others) are combined into a spatial formula designed to find a graduated spatial pattern. The approach is asking two questions: 'Are the various indicators actually spatially related?' and 'Does linking the different indicators favour one pattern and deny others?'

The DM uses an algorithmic code that highlights a series of overlapping spatial relationships. Basically, the code seeks out a series of specific spatial relationships between variables by looking at where variables occur and the proximity between variables. The various spatial relationships are then given a description, some being liminal and other mundane. In terms of spatial structure the DM looks

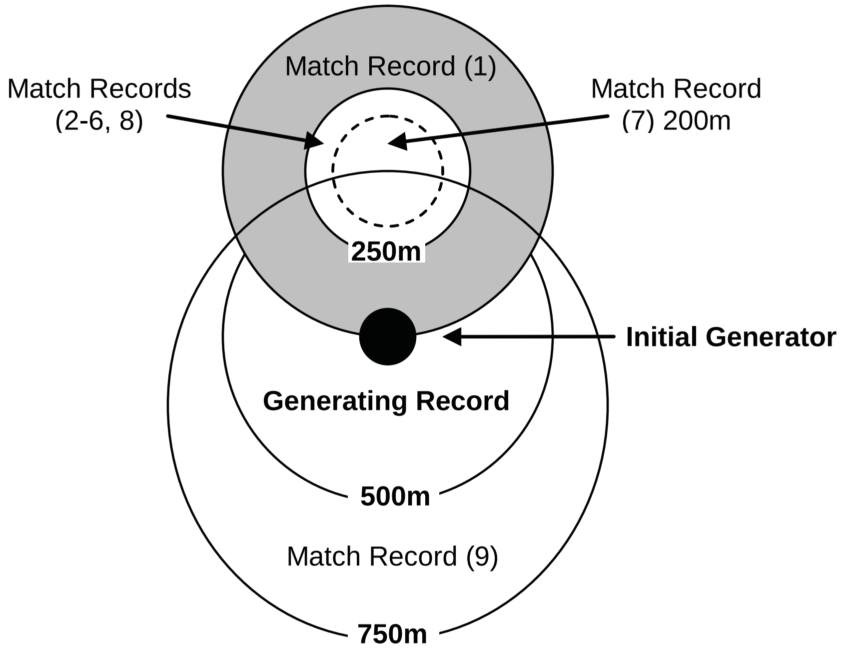

Figure 1.4. Graphic depiction of the distance matrix algorithm.

for select variables organised in a graduated crescendo covering a two dimensional linear distance of 750m from the generating record.

Initial Generator

One of the difficulties with using a DM is ascribing the correct scale to the test. If the linear distance is too great, say 2000m between variables, it is difficult to be confident in the spatial association and the process will likely be plagued by duplicate matches (an almost continuous looping of matches). Likewise, if the scale is too small, we might be missing significant matches. I overcame this problem

```
Libname mylib 'c: \archaeology';
%include 'c: \archaeology\sites.fmt';

data dists;
set mylib.archdist;
siteid=_n_;
matchrec=_n_;
genrec=_n_;

proc sort;
by siteid;

data tmp;
set dists;

if (px20agg=0 and pxegv=1 and pxptg=0 and
pxtrtpun=1)or
(natdemar=1 and natdemft=1 and scndft=1);
title 'Special Features 500m Model';

array dist(418) dist1-dist418;
array sites(418) site1-site418;
*array areause(418) use1-use418;

do i=1 to 418;
 if 0<dist(i)<500 then do;
  sites(I)=i;
  if sites(i) ne . then do;
  matchrec=i;
  *format matchrec sitefmt.;
  siteid=matchrec;
  output;
 end;
 end;
end;

keep siteid genrec;
*drop site1-site418;

proc sort;
by siteid;

data toget;
merge dists(in=inone) tmp(in=intwo);
if (inone and intwo);
by siteid;

*if sum (of site1-site418)=. Then delete;

array dist(418) dist1-dist418;
array sites(418) site1-site418;
array areause(418) use1-use418;
use1cnt=0–use9cnt=0;

do i=1 to 418;
 if (((vis=1 or (natdemar=1 and natdemft=1 and
scndft=1) and
 (aggle5 ne 0 or aggl5g20 ne 0) and agline ne 0 and
agdple15 ne 0) or geomic=1)
 and dist(i)<500) then areause(i)=1;*select;
 else if ((aggge20=1 or agclustr=1 or agdpg15=1)
and dist(I)<=200) then do;
 areause(i)=7;
 use7cnt+1;
 end;
 else if ((lgfkg5=1 or lgfkle5=1) and dist(i)<=250)
then do;
 areause(i)=8;
 use8cnt+1;
 end;
 else areause(i)=9;

if areause(i) in(1,9) then do;
 if ((egvg2=1 or egvle2=1) and dist(i)<=250) then
do;
 areause(I)=2;
 use2cnt+1;
 end;
 if (rckshltr=1 and dist(i)<=250) then do;
 areause(I)=3;
 use3cnt+1;
 end;
 if ((ptgg2=1 or ptgle2=1) and ^(stencils=1) and
dist(I)<=250) then do;
 areause(I)=4; *painting only;
 use4cnt+1;
 end;
 if (stencils=1 and ^(ptgg2=1 or ptgle2=1) and
dist(i)<=250) then do;
 areause(I)=5; *stencils only;
 use5cnt+1;
 end;
 if (stencils=1 and (ptgg2=1 or ptgle2=1) and
dist(i)<=250) then do;
 areause(I)=6; *both;
 use6cnt+1;
 end;
 if areause(i)=1 then use1cnt+1;
 if areause(i)=9 then use9cnt+1;
 end;
end;

if sum (of use1cnt-use9cnt) ne 418
then misscnt=1;
else misscnt=0;

keep siteid genrec matchrec use1cnt-use9cnt use1-
use418 misscnt;

proc sort;
by genrec matchrec;

proc freq;
title ' ';
tables (use1-use418)/ noprint nocol norow nopercent
nocum out=usefr;
by genrec matchrec;

proc print;
run;
```

Table 1.2. Distance matrix algorithm code.

n.	Variable	DM Code	n.	Variable	DM Code	n.	Variable	DM Code	n.	Variable	DM Code
8	Large flakes <=5 (>20 mm in length)	LgFkle5	29	AGG linear complex	Agline	38	Paintings/ Drawings >2	Ptgg2	73	Visible from sites elv. <600 m	Vis600
9	Large flakes >5	LgFkg5	30	AGG clustered complex	Agclustr	52	Secondary feature	ScndFt	75	Access to subsistence <1hr	AccSub
10	Large modified flakes	LgMdFks	31	AGG depth <=15mm	Agdple15	56	Naturally demarcated area	NatDemAr	80	Proximity of uni-dimensional or transit site	PxTrTpUn
11	Small flakes <=5 (<20>10 mm in length)	SmFkle5	33	Engravings <=2	Egvle2	57	Natural demarcated feature	NatDemFt	81	Proximity of engravings	PxEgv
15	Geometric microliths	GeoMic	34	Engravings >2	Egvg2	61	Rock shelter	RckShltr	82	Proximity to paintings	PxPtg
26	AGG <=5	AGGle5	36	Hand stencils	Stencils	71	Visible from >1000 m	Vis1000	83	Proximity of >20 AGG	Px20AGG
27	AGG >5 <20	AGGl5g20	37	Paintings/ Drawings <=2	Ptgle2	72	Visible from sites elv. >600 m	Vis6_1k	84	Proximity to stone arrangement	PxStnArg

Table 1.3. Variable codes used for the distance algorithm (subset of the 84 variable codes used in the statistical analysis).

by using an *initial generator* which selected a range of matches based on a proximity to one of the four primary indicators. For example, sites were selected if they were within 1000m of homogeneous engravings, select artefact types, highly selective topography, or a site which displayed a low subsistence rating. Newly selected matches then became the generating records, which form the basis for further analysis. The initial generators are then eliminated. The generating records are therefore not defined by what variable they exhibit rather they are defined by what variables are nearby.

Generating and match records

Detailed matches are then sought for the generating records according to specific distance and variable criteria (which may or may not include a re-match with the initial generator). What variable associations are spatially near (but not at) the generator record? Any hits are recorded as match records with variations between criteria assigned a use factor ranging between '1–9'. Uses are mutually exclusive in ascending order running between '1–8' if any criteria are met, and '9' if the generating record has no match records, which meet the criteria assigned in the code. Match records remain use factor (UF) '1' only if they are not associated with the next seven uses, which indicate a likely trend beyond the first use. This approach tests the veracity of the first use (as it is the most liminal UF). Is the first use indicative of the match, or are there other associations which appear to refine or contradict the liminal relationship?

Use Factor	Description	t-Test
1	Indicates spatial relationship (<500m) of variables: high visibility, select topography (naturally demarcated area or feature, linear grinding groove structure, high percentage of geometric microliths.	$t = -3.14$, $p = .002$
2	Engravings are within 250 of the match record (plus UF 1 criteria).	$t = -2.73$, $p = .006$
3	Rock shelter with archaeological deposit is within 250m (plus UF 1 criteria).	$t = -2.60$, $p = .009$
4	Paintings or drawing are with 250m.	$t = -1.75$, $p = .081$
5	Hand stencils are within 250m.	NA
6	Paintings, drawing and stencils are within 250m.	NA
7	Use factors 7 and 8 are used to temper the distance result. If either is selected the trend is away from liminal separation. UF 7 indicates the presence of large grinding groove assemblages. UF 8 indicates the presence of primary lithic production (e.g. quarry).	$t = -3.29$, $p = .001$
8		$t = \infty$, $p = 0$
9	No defined spatial association.	$t = -1.92$, $p = .054$

Table 1.4. Description and t-Test for match records.

UF 1–3 were identified as the most liminal because the spatial combinations of UF are most similar to the model of religious activity. UF 4–8 were shown to be related to transitionary activities. UF 9 showed no significant match and was considered neutral.

Statistical significance of use factors was determined with a Student's t-Test (two-tailed, heteroscedastic) to determine the likelihood that the model was a random variation of the region. The t-Test was run against a test DM without the initial generator for the entire matrix. This had the affect of selecting all places (liminal and non-liminal not just the initial generator places) which exhibited the same generator-match (use factor 1–9) relationships. The t-Test results indicate the model is not the result of random forces and is selecting a trend not likely to be found by chance.

The importance of space

One of the most intriguing results from the significance testing is the identification of the unique use of *space.* Apart from adding veracity to the results of the distance analysis, the t-Test also suggests that the formulaic and graduated organisation of archaeological material (seen in the model and replicated by the DM) is very specific at certain places within the study region. The spatial graduations used by the model only showed up in relation to the initial generator (i.e. engravings, artefacts and topographic settings). In other words, although the specific variables used by the DM are distributed across the region, for instance engravings and proximity to select topography is widely dispersed, the specifically formulaic organisation is limited to specific places and was not repeated anywhere else across the 1,200km^2. The spatial voids, the distance between artefacts and places, was showing up as a significant factor (cf. de Polignac 1995, 32–88; Parkin 1992, 21–22).

Results

The results of the distance matrix analysis identified seven places consisting of 58 sites (c.14% of the 418 sites) which displayed a statistically significant spatial/variable relationship characteristic of liminal and graduated spatial behaviour (UF 1–3). Moreover significance tests show that results are not the result of chance and likely represent a real trend in the data.

Two of the identified places are most representative of Blue Mountains powerful character and offer a good description of the kinds of places and relationships identified by the DM.

Hat Hill

Hat Hill is located on the western side of the Blue Mountains on a spur northeast of the town of Blackheath. The hill is the highest point in the immediate area and offers views towards the basalt capped Mount Banks to the northeast and a set of elevated sandstone platforms known as the Pinnacles and Flat Top to the east (*Figure 1.1* and *Figure 1.5*). The Hat Hill area is ringed to the north and east by the spectacular sheer cliffs of Blackheath Walls and their 400m drop into the Grose Valley (Blue Gum Forest) below. The area is further isolated by deeply incised creeks to the west and south, so movement into and out of the area must come through a narrow corridor off the plateau to the south. The overall impression of the area is highly selective and very dramatic.

Plate 1.1. View of Blackheath Walls and the Grose River valley from Mount Banks.

The Hat Hill area exhibits a range of archaeological sites which are characteristic of the region. Most of the sites are lithic scatters and isolated artefacts and are distributed around the area in association with a particular resource such as outcrops of quality stone materials or good camping locations. Axe grinding grooves and rock engravings, which are also a distinguishing feature of the region, are found at Hat Hill in combination with suitable sandstone, water and vistas. Concentrations of occupation material and pigment art are located in rock shelters associated with the relatively accessible Hat Hill Creek. Stone arrangements, throughout the mountains and at Hat Hill, are found at junction points in the topography.

The DM identified liminal relationship (UF1, 2) between the artefact scatters ringing Orang Utan Pass (HH21–24) and the stone arrangements and engravings marking the access points (HH10, 11, 16, 16A). The open scatters are made up of a range of quartz and chert flakes and geometric microliths and the stone arrangements are cairns. Located in between all these sites is the largest engraving site in the area (HH12) consisting of 15 emu bird tracks and some tally marks. The rock markings are located on a rare raised sandstone platform (flat boulder) rising roughly 1–2m above ground level. Very limited quantities of axe grinding grooves are directly associated with these sites, while most of the linear collections of grinding grooves (HH14, 15, 15A) are located on periphery landforms. The distribution of the archaeological sites underscores a spatial separation of activities different from the regional norm.

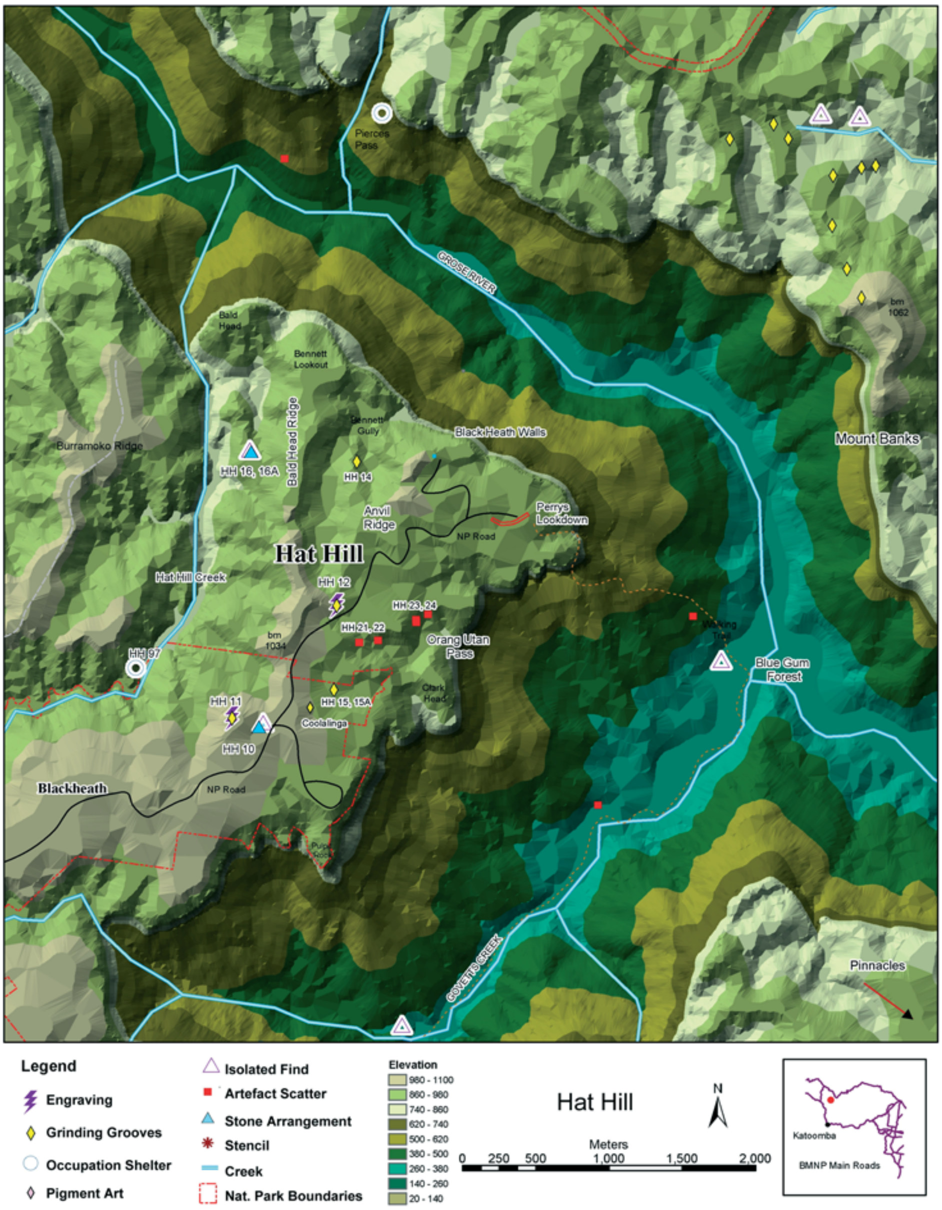

Figure 1.5. Map of Hat Hill showing archaeological sites.

Discussion

The Hat Hill area is a location selected for its vantage point and it is likely that, similar to today, people went to the area for its dramatic view rather than any obvious special resource procurement. The engraving site north of the hill (HH12) is central to the archaeological interpretation. The site is located in a distinctive topographic position surrounded by rapidly rising hills on the southern and western sides; views to the northeast of Mount Banks; views to the east of Mount Hay (Pinnacles area). The engraved tracks are aligned towards Mount Banks. The hill behind the rock platform acts like a visual amphitheatre to focus the attention to the north and east and the raised rock platform is a natural stage, effectively raising people on the platform in a commanding way above ground level. The result is a

Plate 1.2. Hat Hill engraving platform with Mount Banks in the distance looking down from Hat Hill.

Plate 1.3. Hat Hill rock platform with engraved bird tracks with Mount Banks in the distant right.

Plate 1.4. Series of engraved emu tracks from Hat Hill.

definitive corridor focusing attention. To see the engraved motifs the viewer must also view the awe inspiring scenery, and they must view it in a structured manner. Interestingly the tally marks (ground 20–30mm long lines, 5–10mm wide) found in association with the engravings have been interpreted elsewhere as ceremonial attendance markings (cf. McCarthy 1955, 318).

The DM identified the sites in proximity to the track engravings as exhibiting a selective range of artefacts and a graduated spatial organisation. Artefact scatters in proximity to the engraving platform contain a higher proportion of specialised tools like geometric microliths than is the norm for the region. The clinal relationship between artefact scatters (HH21–24) is also significant because of their spatial relationship to axe grinding grooves, stone arrangements and the engravings.

The occupation material (quartz and chert flakes, backed artefacts and grinding grooves) is found to the east out of direct line of sight with the engraved rock platform (HH21–24). Artefacts associated with sites (HH21 and 22) closer to the engraved platforms display a more limited range, while no select artefacts (e.g. geometric microliths or other backed artefacts) were found at sites beyond 1000m from the main engraving site. For these reasons, the DM flagged, as significant in regional terms, the relationship between the open sites, engravings and stone arrangements (HH10). The open sites are unlikely to relate to travel or resource gathering (as per the regional norm) but are a series of some sort of special task-related sites linked to the engravings/place.

In short, Hat Hill was most likely a sacred place. The isolated area, selective topography, limited variation in lithic assemblages, presence of abstract homogeneous engravings, and obvious visual focusing of attention shows that the Hat Hill area correlates strongly with the model of sacred spatial behaviour. The area was indeed limited in use as the archaeological features can attest, but its liminal qualities indicate the area was not simply used infrequently, but that when it was used it was used in a specific manner.

Pinnacles

The Pinnacles and Flat Top are a pair of hills in the central portion of the Blue Mountains located on a low ridge running north from Wentworth Falls (*Figure 1.1* and *Figure 1.6*). The hills are prominent landforms, but like Hat Hill are not in themselves a dominate part of the landscape (such as Mount Banks). The Pinnacles are defined by two rock towers separated by a saddle with a northern spur. Flat Top, as the name implies, is butte-like and flat across the top. The two hills are separated by a low gully. Access to the hills and around the general area would have been restricted to the main ridge as the incised gullies effectively channel most movement. The concentrated exposures of Hawkesbury Sandstone found on the platforms would have been a draw for Aboriginal people, as the fine grain matrix of the stone is good for grinding tools and relatively rare in the upper portion of the mountains.

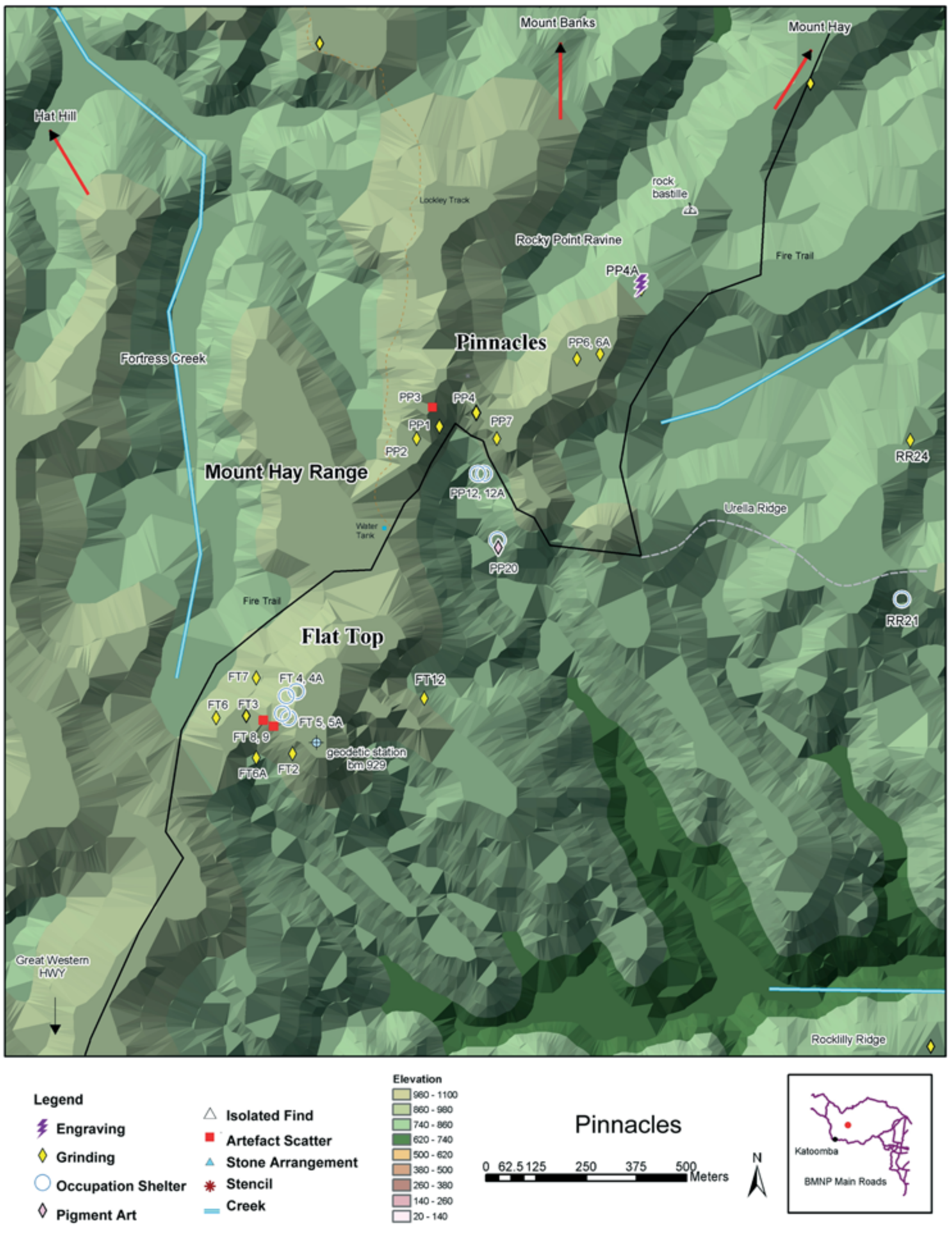

Figure 1.6. Map of the Pinnacles and Flat Top showing archaeological sites.

Plate 1.5. Pinnacles north rock platform with rock wall at the distant end of the platform, Mount Banks is in the distance on the left, Mount Wilson in the middle and Mount Hay on the right. Cairns are the result of recent bushwalker activity.

The Pinnacles and Flat Top exhibit a complementary array of archaeological sites. Flat Top contains a high percentage of identified utilitarian (domestic) sites and the Pinnacles contain a high proportion of specialised activity sites. Flat Top is characterised by several shelter sites and a couple of artefacts scatters, which display a full range of lithics, but only limited numbers of backed quartz artefacts. Small clusters of unusually short, narrow and shallow grinding grooves are also found in proximity to the occupation sites (the grooves for example are half the length, 15–20cm, of the grooves located on the Pinnacles, 35–80cm). Most of the occupation areas on Flat Top are found on the south western side of the hill and are physically restricted from viewing the Pinnacles' archaeological sites, which are located north of the rock towers.

Plate 1.6. Location of axe grinding grooves (PP6) with the rock platfeen in the mid ground and Mount Hay in the background.

Pinnacles archaeology, in contrast, is characterised by limited lithic material with a relatively high proportion of quartz backed artefacts (PP3), large collections of deep axe grinding grooves (50 or more), and five sets of macropod track engravings located on a distinctive northern spur which culminate in a sandstone platform (PP4A). Shelter sites (PP12, 12A) near the Pinnacles are small and low down in the gully and contain very little archaeological deposit. The Pinnacles' northern spur and platform are surrounded by steep ravines (Rocky Point Ravine) which accentuate the prominence of the spur. The only access to the engravings is via the spur and over 500m from the nearest concentration of grinding grooves (at the main Pinnacles camp, PP4). As with Hat Hill very limited grinding actually occurs in direct proximity to the engravings (only two small clusters are known: PP6, 6A). The engraved track formation is in direct alignment with the basalt capped Mount Hay but the unobstructed vantage point also takes in Mount Wilson and Mount Banks (again similar to Hat Hill). A rock wall (roughly 6m x 1.5m x 2m) made of eroded sandstone and then heightened by the placement of slabs marks the end of the spur which truncates the extruding effect of the spur.

The DM identified two sets of liminal relationship for Flat Top and the Pinnacles. At Flat Top the occupation shelters, artefact scatters and grinding grooves are combined in an unusual arrangement. Generally, across the mountains, the mixed array of artefacts and sites display a mundane or utilitarian nature because the directionless (intrasite) collection of artefacts suggests that many types of activities were taking place at one location. At Flat Top the range of artefacts was more limited, until you include the sites/artefacts on the Pinnacles. The common artefacts missing from Flat Top, such as specialised quartz backed artefacts and clustered grinding grooves, are found in relatively high proportions only at the Pinnacles. Taking a step back it appears as if the two, spatially separated places, acted together by housing separate activity areas. Not all that uncommon, but the topography of the area allows for a very distinct physical (intersite) separation and the nature of the artefact separation, as gleamed from a consistent trend, suggests certain selective formality underlying the distribution (especial in comparison to the regional norm). In other words, it appears as if the two platforms were being used for separate, but complementary activities on at least several occasions.

Discussion

The Pinnacles formation was most likely a sacred place. The distribution of artefacts between Flat Top and the Pinnacles shows a clear trend for selectivity moving north. In terms of a graduated process: Flat Top offers the most likely support camp, the Pinnacles, being 500m away visually (but more like 1500m by foot) seems to be a special task oriented centre for grinding and the even further distant engravings illustrate the gradual increase in selectivity (from south to north). Each step intensifies the focusing and liminality of the area. This is seen both through variation in activities between Flat Top and the engravings and the natural effect of the topography. Furthermore, the northern spur and rock platform containing engravings are not simply satellite points; instead, they exhibit a gradual build up in visual intensity. The platform is physically and visually offering a separation from the surrounding landscape yet at the same time offering a vista which connects to dramatic mountains.

Conclusion

The influence of religion on human spatial behaviour is central to a holistic understanding of an archaeological landscape. Artefacts, places and space are linked in a way which is reflective of the concept of the sacred. Only through a combination of the three are past perceptions of the sacred revealed. Moreover, recurrent religious phenomenon show that the sacred is not made from a list of correlates, unfortunately there is no sacred checklist, rather it is the result of how the correlates are organised. Within this organisation, the perception of space is central to the actualisation of a sacred place, as place is created by how humans envision, then interact with their world. By studying the spatial structure of artefacts and the landscape, therefore, we can begin to gleam past perceptions of the sacred.

Ritual, formal repetitious action, is the basis of religious activity. And all religious ritual utilises a betwixt and between a liminal zone where on one side rests the profane (or at least mundane) and on the other side the sacred. In material culture this continuum relates to the increasing formulaic distribution of artefacts, specifically a graduated segregation of artefacts/activities. Archaeologically, ceremonial assemblages show a relatively strong organisation of activities. In the utilitarian norm, activities are likely to overlap; in ceremonial places they maintain a more respectful division. Think of the way someone behaves at home verses a holy place.

Religion is complex, but detailed theoretical and empirical analysis has shown insights into how religious activity is manifest in the artefact-place relationship. The basic model proposed here is a useful starting point and I think the general position is clear. The identification of sacred behaviour starts with identifying liminal variables (objects, places or even landscape features) and then we look at how the variables are spatially organised. In order to progress the theoretical position, I have used a statistical and spatial analysis to test the model's liminal trends within the archaeology of the Blue Mountains. I do not envision that every application of the model (or similar) would require these extensive confidence procedures. I think that enough now is understood about religious behaviour that it is practical to start looking for trends in the archaeological data in the same manner that we investigate economic trends.

How does it work?

Archaeological models designed to identify religious activity have been honed over many years (*cf.* Renfrew 1985; Kelleher 2003). This chapter adds further weight to the modelling process by demonstrating through empirical research that models of religious activity relate to verifiable trends in the archaeological record. A generic model will include:

- Spatial indicators – show a sequential separation or transition.
- Material indicators – exhibit a relative selectivity and formality of the artefactual deposit.
- Attention-focusing – is seen through a quantifiable directionality in the organisation of space, places and objects towards a specific point.
- Iconographic indicators – are abstract and ambiguous in form, homogeneous in association, and gradually diminishing in distribution.

Environmental variation requires generic indicators for behaviour-activity models. The application of the model, however, relies on the identification of material/topographic correlates specific to the study region. The key is finding the pertinent regional indicators, which satisfy the model. What artefacts and environmental features are representative of a region, but also have the ability to show a change in spatial organisation. Specifically, indicators will need to show the presence or absence of liminal trends. The last step is to compare identified liminal trends to the model. The interpretation of specific trends, therefore, is undertaken in a transparent and replicable manner.

In this specific study, the archaeology of Hat Hill and the Pinnacles represents the physical interactions of people at a sacred place. Both places exhibit liminal trends in the selection and organisation of artefacts and places, which are consistent with the model. They are likely part of the polar end of the sacred continuum (within the realm of material culture). Certainly many places will have some level of sacredness, but the connections between artefact and place are not always visible today. Only the most powerful, the most formal, the most isolated and the most repetitive are quantifiably visible.

Hat Hill and the Pinnacles display a graduated series of increasingly liminal associations. The natural environment is used to full effect. First the general location of both places represents a physical separation from their environment. Natural ridgelines, deep gullies, wrapping hills, raised rock platforms and vistas are used as a series of transitions from the mundane to the special. Material culture emulates these transitions and marks the thresholds through an increasing selective distribution of artefacts. Places exhibiting a complementary-avoidance type of artefact assemblage show a trend for formal artefact types, such as geometric microliths and homogeneous engravings, to be closely connected to attention focusing topography. Both the natural and human environments, therefore, are working to create an incremental separation, which is not tapering off but targeting something inspirational. At the end of these transitional stages human physical interactions cease, as the limit of the human sacred world has been reached and now perceptions are dominated by specific powerful mountains. This does not mean that the mountains were worshipped per se, rather I think they formed an important part of the sacred landscape, inspiring awe and a sense of power within the viewer. Hat Hill and the Pinnacles offer an identification and work towards an understanding of sacred space. The archaeology at both locations identifies a place which is part of a much larger understanding of the world because the places are organised in part by the wider cultural landscape.

The foundation of recurrent religious behaviour is linked to perceptions of space. How humans perceive space dictates how they behave. Religious activity is therefore both intimate and separate. It is reflected in material culture by the selective use of objects and in this way it is very personal. At the same time, religious phenomenons are *defined* by a unique pressure on socio-spatial organisation. Sacred places are not repositories where cultic objects are cached, rather sacred places are actualised perceptions of space. Ultimately, space is important to religion because humans use perceived spatial variations to create their sacred world. By studying the way people organise places, by looking for specific formulaic trends, I think we begin to see the way past people perceived a sacred landscape.

References

ABRAHAMS, R. 1973
Ritual for fun and profit. Conference proceedings from the Burg-Wartenstein Conference. Ritual and reconciliation, July 21–29, 1973. No 59. M. C. Bateson & M. Mead (organisers). WG Foundation, New York.

BARNATT, J. 1998
Monuments in the landscape: thoughts from the Peak. In: A. Gibson – D. Simpson (eds.), *Prehistoric ritual and religion*. 92–105. Sutton, Stroud.

BERNDT, R. M. 1969
The sacred site: the Western Arnhem Land example. Australian Aboriginal Studies No. 29. AIAS, Canberra.

BERNDT, R. M. 1974
Australian Aboriginal religion. Brill, Lieden.

BERNDT, R. M. – BERNDT, C. H. 1965 (eds.)
Aboriginal man in Australia. Angus Robertson, Sydney.

BERNDT, R. M. – BERNDT, C. H. 1970
Man, land, and myth. Ure Smith, Sydney.

BERNDT, R. M. – BERNDT, C. H. 1988
Speaking land. Penguin Books, Marlborough.

BINFORD, L. 1982
Archaeology of place. *Journal of Anthropological Archaeology* 1, 5–31.

BOYER, P. 1995
Causal understandings in cultural representations: cognitive constraints on inferences from cultural input. In: Sperber, D. – Premack, D. – Premack, A. (eds.), *Causal cognition: multidisciplinary debate*. 615–649. Clarendon Press, Oxford.

BRADLEY, R. 2000
An archaeology of natural places. Routledge, London.

BRADY, J. – ASHMORE, W. 1999
Mountains, caves, water: ideational landscapes of the Ancient Maya. In: Ashmore, W. – Knapp, A. (eds.), *Archaeologies of landscape*. 124–145. Blackwell, Oxford.

BUIKSTRA, J. – CHARLES, D. 1999
Centering the ancestors. In: Ashmore, W. – Knapp, A. (eds.), *Archaeologies of landscape*. 201–228. Blackwell, Oxford.
CHARLESWORTH, M. 1984
Introduction. In: Charlesworth, M. – Morphy, H. – Bell, D. – Maddock, K (eds.), *Religion in Aboriginal Australia: an anthology*. 1–20. University of Queensland Press, St. Lucia.
COLE, S. 1994
Demeter in the Ancient Greek city and its countryside. In: Alcock, S. – Osborne, R. (eds.), *Placing the gods: sanctuaries and sacred space in Ancient Greece.* 199–216. Oxford University Press, Oxford.
COONEY, G. 1998.
Breaking stones, making places: the social landscape of axe production sites. In: Gibson, A. – Simpson, A. (eds.), *Prehistoric ritual and religion*. 108–118. Sutton, Stroud.
CREAMER, H. 1976
Aboriginal heritage in New South Wales and the role of the Sacred Sites Survey. Unpublished Report for National Parks and Wildlife Service.
CREAMER, H. 1979
Mythical and religious sites in New South Wales. In: Haig, C. (ed.), *Aborigines of New South Wales*. Parks and Wildlife, Sydney 2: 5.
DAVID, B. – WILSON, M. 1999.
Re-reading the landscape: place and identity in NE Australia during the late Holocene. *Cambridge Archaeological Journal* 9/2, 163–188.
de POLIGNAC, F. 1995
Cults, territory, and the origins of the Greek city-state. Translated by J. Lloyd. University of Chicago Press, Chicago.
DERKS, T. 1998
Gods, temples and ritual practices: transformation of religious ideas in Roman Gaul. Amsterdam University Press, Amsterdam.
DOOLAN, J. 1979
Aboriginal concept of boundary – How do Aboriginals conceive 'easements' – How do they grant them? *Oceania* 49/3, 161–168.
DURKHEIM, E. 1965 [1912]
The elementary forms of religious life. Translated by J. Swain. Free Press, New York.
EDLUND, I. 1987
Gods and the place: location and function of sanctuaries in the countryside of Eturia and Magna Grecia 700–400 BC. Astrom, Stockholm.
ELIADE, M. 1954
Cosmos and history, or The myth of the eternal return. Translated by W. Trask. Harper, New York.
ELIADE, M. 1959
The sacred and the profane: nature of religion. Translated by W. Trask. Harcourt Brace Jovanovich, New York.
FLANNERY, K. 1976
Interregional religious networks. In: Flannery, K. (ed.), *Early Mesoamerican village*. 329–333. Academic Press, New York.
GOODE, W. 1951
Religion among the primitives. Harper, New York.

INSOLL, T. 2004
Archaeology, Ritual, Religion. Routledge, London.
JONES, R. – WHITE, N. 1988
Point blank: stone tool manufacture at the Ngilipitji Quarry, Arnhem Land, 1981. In: Meeham, B. – Jones, R. (eds.), *Archaeology with ethnography: an Australian perspective*. 51–87. Highland Press, Canberra.
KELLEHER, M. 2003
Archaeology of sacred space: the spatial nature of religious behaviour in the Blue Mountains National Park Australia. Two volumes. Unpublished PhD thesis. University of Sydney. 2003.
KNAPP, A. – ASHMORE, W. 1999
Archaeological landscapes: constructed, conceptualized, ideational. In: Ashmore, W. – Knapp, A. (eds.), *Archaeologies of landscape*. 1–30. Blackwell, Oxford.
KVAMME, K. 1998
Spatial structure in mass debitage scatters. In: Sullivan, A. (ed.), *Surface archaeology*. 127–142. University of New Mexico Press, Albuquerque.
LAWSON, E. – MCCAULEY, R. 1990
Rethinking religion: connecting cognition and culture. Cambridge University Press, New York.
LEACH, E. 1977
Culture and communication. The logic by which symbols are connected. An introduction to the use of structuralist analysis in social anthropology. Cambridge Univeristy Press, Cambridge.
LEVY, J. 1982
Social and religious organisation in Bronze Age Denmark: an analysis of ritual hoard finds. BARIS 124. BAR, Oxford.
MCCARTHY, F. 1955
Grooves in the rocks. *Australian Museum Magazine* 11/10, 315–319.
MARCUS, J. – FLANNERY, K. 1994
Ancient Zapotec ritual and religion: an application of the direct historical approach. In: Renfrew C. – Zubrow E. (eds.), *Ancient mind: elements of cognitive archaeology*. 55–74. Cambridge University Press, Cambridge.
MEGAW, J. – SIMPSON, D. 1981
Introduction to British Prehistory. UP, Leicester.
MITHEN, S. 1998
Supernatural beings of prehistory and the external storage of religious ideas. In: Renfrew, C. – Scarre C. (eds.), *Cognition and material culture: the archaeology of symbolic storage*. 97–106. McDonald Institute for Archaeological Research, Cambridge.
MORPHY, H. 1995
Landscape and the reproduction of the ancestral past. In: Hirsch, E. – O'Hanlon, M. (eds.), *Anthropology of landscape: perspectives on place and space*. 184–209. Clarendon Press, Oxford.
PARKIN, D. 1992.
Ritual as spatial direction and bodily division. In: D. de Coppet (ed.), *Understanding rituals*. 11–25. Routledge, London.
RAPPAPORT, R. 1999
Ritual and religion in the making of humanity. Cambridge studies of social and cultural anthropology. Vol. 110. Cambridge University Press, Cambridge.

RENFREW, C. 1985
The archaeology of cult: the sanctuary of Phylakopi. British School of Archaeology Volume 18 Supplement. BSA, Oxford.
RENFREW, C. 1994
The archaeology of religion. In: Renfrew, C. – Zubrow, E. (eds.), *Ancient mind: elements of cognitive archaeology*. 47–54. Cambridge University Press, Cambridge.
RICHARDS, C. – THOMAS, J. 1984
Ritual activity and structured deposition in later Neolithic Wessex. In: Bradley, R. – Gardiner, J. (eds.), *Neolithic studies: review of some current research*. 189–218. BAR 133. BAR, Oxford.
STREHLOW, T. G. H. 1970
'Geography and the totemic landscape in Central Australia: a functional study.' In: Berndt, R. (ed.), *Australian Aboriginal anthropology*. 92–140. UWAP, Perth.
SWAIN, T. – TROMPF, G. 1995
Religions of Oceania. Routledge, London.
TAÇON, P. 1990
The power of place: cross cultural responses to natural and cultural landscapes of stone and earth. In: Vastokas, J. (ed.), *Perspectives of Canadian landscape: native traditions*. 11–43. York University, New York.
THOMAS, J. 1996
Time, culture and identity. Routledge, London.
van DOMMELEN, P. 1999
Exploring everyday places and cosmologies. In: Ashmore, W. – Knapp, A. (eds.), *Archaeologies of landscape.* 277–285. Blackwell, Oxford.
WAIT, G. 1985
Ritual and religion in Iron Age Britain. BAR British Series Monograph 149(i). BAR, Oxford.
WALKER, W. 1995
Ceremonial trash. In: Skibo, J. – Walker, W. – Nielsen, A. (eds.), *Expanding archaeology*. Univeristy of Utah Press, Salt Lake City.
WALLACE, A. 1966
Religion: an anthropological view. Random House, New York.
WITTER, D. 1989
Ceremonial significance of the Boat Rock Hill site: preliminary results of literature search. Unpublished Report for National Parks and Wildlife Service.
WITTER, D. 2000
Mount Drysdale: Aboriginal Place archaeological study. Unpublished Report for National Parks and Wildlife Service.
WRIGHT, J. C. 1994
The spatial configuration of belief: the archaeology of Mycenaean Religion.' In: Alcock S. – Osborne R. (eds.), *Placing the gods: sanctuaries and sacred space in Ancient Greece*. 37–78. Oxford University Press, Oxford.
ZUBROW, B. – DALY, P. 1998
Symbolic behaviour: the origin of a spatial perspective.' In: Renfrew, C. – Scarre, C. (eds.), *Cognition and material culture: the archaeology of symbolic storage*. 175–180. McDonald Institute for Archaeological Research, Cambridge.

2

Rock-Art, Landscape and Transformative Vistas of Devil's Rock Maroota: New Interpretative Perspectives for a Sydney Region Rock-Art Site

BARRY LEWIS

Introduction

This chapter attempts an interpretative perspective of the rock-art of Devil's Rock Maroota, in the Sydney region of Australia (see *Figure 2.1*), by examining it within a contemporary perspective, a 'framework of experience' if you will, of place, landscape, human agency and Aboriginal culture. Attempting a narrative of the rock-art and its place and function within the initiation ceremony – known as the 'bora'. Devil's Rock presents an ideal opportunity for pursuing a phenomenological approach as its importance has been known since the early post contact period. In addition, it has a regional ethnohistorical context (Attenbrow 2002, 132, i.e. Farm Cove initiation was witnessed by David Collins in 1795). Other researchers, such as Stanbury – Clegg (1990, 129), also provide some context by which sites such as Devils Rock, might be understood. Whilst Walton (1932), described this as a significant ceremonial place of considerable importance to local Aboriginals in the first part of the 20th century, as it still is today (Hinkson – Harris 2001, 72). Mathews (1896b, 1898, 1900a, 1900b, 1900c and 1901) and Howitt (1884), in their studies in other parts of southeast Australia, provide a backdrop that can help validate the ethnohistorical context of this site. A description of the phenomenology of rock-art, which has its origins in Europe, is offered by Nash and Chippendale:

> 'Phenomenology, or 'being-in-the-world', sets people apart from objects and establishes a 'gap' or 'space', created through using one's senses – seeing, hearing, touching. The phenomenology of visiting a place – say a building, landscape vista or, in this case, a rock-art site – involves setting oneself apart from the objectivity – creating experience.'
> (Nash – Chippendale 2002, 5).

Background

Figure 2.1 shows the location of Devil's Rock Maroota, located *c*.52km north of Sydney city centre, New South Wales (NSW), just off the Great North Road and *c*.5km south-southwest of Wisemans Ferry (see *Figure 2.2*). It is within the Marramarra National Park, in heavily dissected Sydney-Hawkesbury sandstone lowland plateau, dominated by open eucalypt forest (McDonald *et al.* 1990). It is sited on the eastern side of a flat-topped ridgeline that slopes into a gorge draining into Laybury's Creek, a tributary of the Hawkesbury River. Currently human settlement is sparse with several dispersed houses and only a few roads in the area, the nearest of these is the Laughtondale Gully Road. Maroota, a small hamlet, is *c*.4km to the south of Devil's Rock (*Figure 2.2*). Access to the site is restricted under its current management by Metropolitan Local Aboriginal Land Council (Val Attenbrow Pers. Comm.).

The NSW National Parks and Wildlife Service (NPWS) acquired the site in 1983, prior to this it had been a Reserve for the preservation of Aboriginal drawings and engravings. Locally there are a number of significant Aboriginal cultural sites including a stone arrangement, rock-shelters with archaeological deposits and several scarred trees. Approximately 10km to the south-south east is an important rock

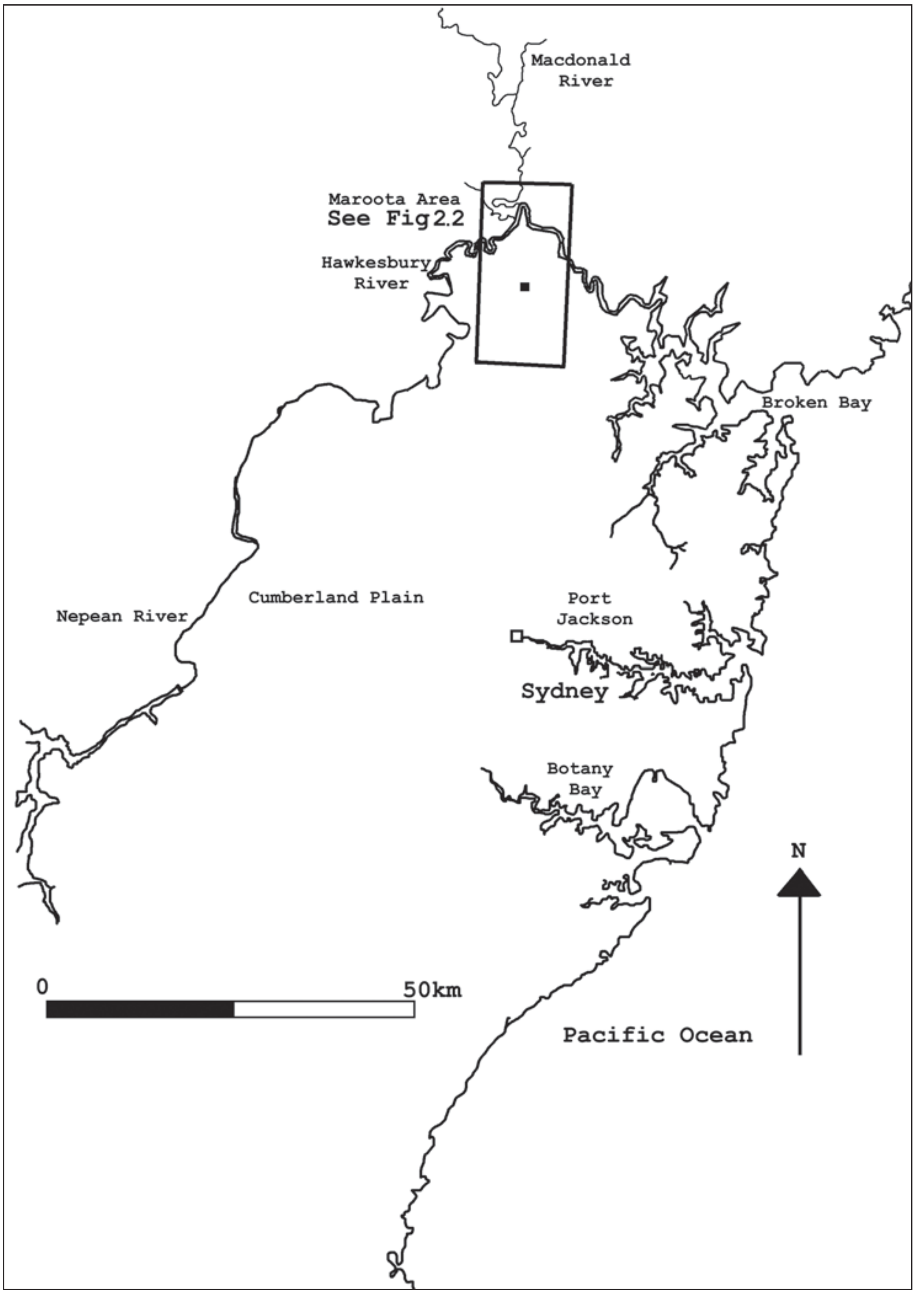

Figure 2.1. Sydney region, showing Maroota area inset (see Figure 2.2*).*

shelter site with charcoal and pigment art, Canoelands, which like Devil's Rock, contains a Culture Hero figure as does another nearby engraving site 6.5km to the south on a rock outcrop adjacent to the Old North Road (see *Figure 2.2*). Devil's Rock is recognised as being part of a localised complex of related rock-art sites (see McCarthy – Higginbotham 1983; Stanbury – Clegg 1990). Devil's Rock also contains one of 13 known Daramulan figures (of a large size considered a 'Remarkable Figure' by earlier researchers) within the region (Higgs – Clegg 2004).

Devil's Rock is an unusual engraved open site because it has discrete groupings of Simple Figurative motifs (see *Figure 2.3*) that fit what is known of Aboriginal initiation ceremonies in southeastern Australia

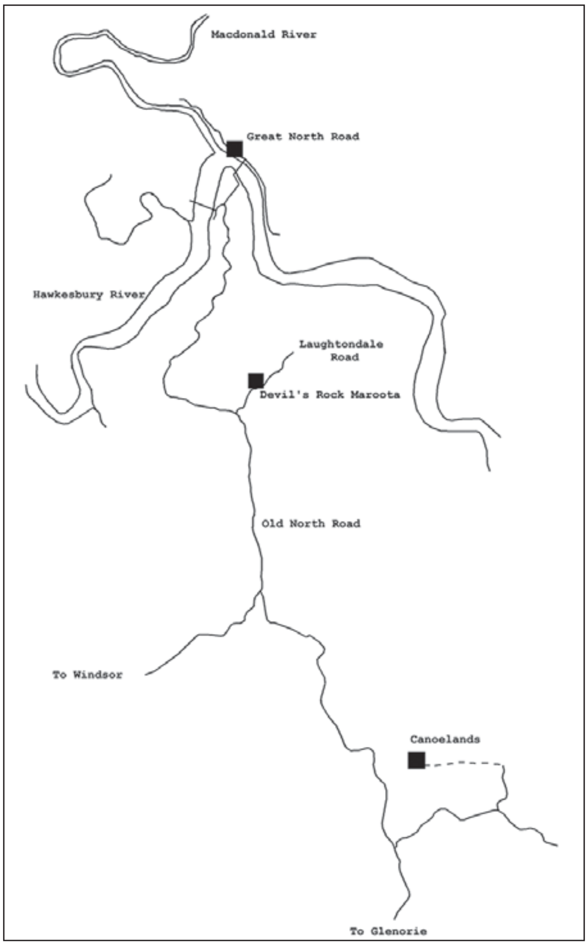

Figure 2.2. Maroota area, showing principal sites mentioned in text.

(Stanbury – Clegg 1990, 96, 129). Other rock-art sites in the Sydney region show a limited number of motif elements that may be characteristic of such ceremonies (*ibid*.) but Devil's Rock (along with Flat Rocks Ridge another site that is considered to have strong bora associations) is exceptional both in the range and quality of the motifs (see also next section). Nearby Canoelands, a shelter pigment site seems to show many of the elements of a bora ceremony almost as a tableau. Arguably, Canoelands may have a relationship with Devil's Rock, perhaps depicting events that may have taken place there.

In clan boundary terms the site of Devil's Rock Maroota is within an area of debate about rock-art stylistic groupings (McMah 1965). It closely correlates with the historically known boundary between the coastal Darug and the Darginung of the hinterland (*ibid.*). The location of Devil's Rock and the nature of its rock-art asserts its potential to have been a aggregation site that was accessible to more than one clan. Local clans had kin and totemic links with people in other groups, providing a ready means for negotiation of access to resources – even across language boundaries (McDonald 1998, 324). Relationships between groups were along complex inherited patrilineal kinship ties or moiety groups, in which participation in ceremonies was shared, i.e. one group would have the responsibility of performing ceremonies on another groups ritual ground (Jones 1990, 26). Initiation ceremonies then, were a mechanism allowing mixed language groups to aggregate with the permission and participation of the host group at certain chosen locales. Therefore, these ceremonies were key events for creating and maintaining linkages and reinforcing inter-group cohesion.

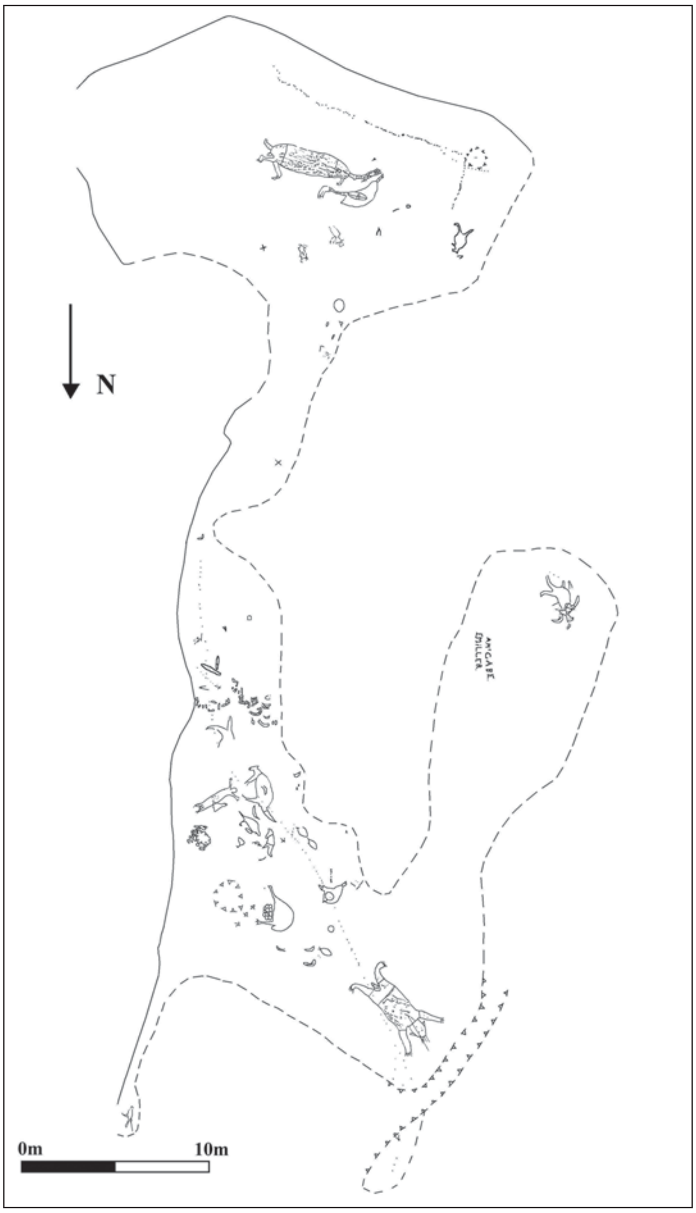

Figure 2.3. Devil's Rock engravings. Shows motifs arranged across the platform, with Daramulan at the southern end and Biaime at the northern end. The kangaroo with boomerangs is upon the apex (higher ground) of the site. The hard line at the eastern edge denotes the cliff-line whist the broken line is indicative of soil, leaf litter and vegetation margins around the site. After McDonald (1986 Part 2 Volume 1, Figure 1).

Phenomenology of 'place' and rock-art

Phenomenology was applied to archaeological landscapes by Tilley, expanding upon an earlier shorter work (1993), in *A Phenomenology of Landscape: places, paths and monuments* (1994), which drew convincingly on material from Australia (*ibid.*; Fleming 1999, 119), and consequently used by many other researchers since (e.g. Nash – Chippendale 2002). An expansion of the phenomenological perspective, although largely from a contemporary western perspective, can with the application of what is known of late 18th/early 19th century Aboriginal customs, rituals and way of life, bolstered by archaeological understanding and intra-regional, ethnohistorical studies, allow Devil's Rock and its engravings, to be understood as part of a little known rock-art phenomena which was incorporated into the bora.

This chapter views Devil's Rock Maroota as an entity composed of objective interpretable components, such as local (micro) and wider (macro) landscape elements and topography that can also have their subjective aspects (Nash – Chippendale 2002). Visiting a site with this in mind, interpretation, coloured by experience and knowledge can begin. This process is described by Nash – Chippendale (2002, 5): 'By creating experience when visiting a site the construction of landscape becomes a critique…we as individuals add these chapters [sic] creating this sense of space, belonging and ancestry when visiting a single monument over time.' They go further, 'Beyond description, our own experiences allow us to make a valid attempt to discuss why sites were chosen, why certain motifs and figures were used and how rock-art may have been witnessed.' This thinking, with reference to the ethnohistory (e.g. Attenbrow 2002, 132; and further a-field within southeastern Australia: Mathews 1898, 1900b, 1900c; Howitt 1884) of Sydney region Aboriginal peoples, their traditions and ceremonies as recorded by early settlers has enabled a phenomenological 'narrative' to be constructed for this site.

A phenomenological perspective helps to explain the nature, operation and uses of this site and rock-art and its relationship to the landscape and people who used it. It describes how this site may have operated as a ritual location; how the topography was as significant as ritual and stories in orchestrating the experience of the ceremonial participants there. By using contemporary knowledge and experience, reinforced by ethnographic analogy to build a narrative from the perspective of (at least in a broad and subjective way) a participant at such a ceremony at Devil's Rock, we can in some sense engage with the rock-art and its setting within a framework of knowledge and experience of Aboriginal culture garnered as archaeologists. However, it must be stressed here that in no way can an archaeologist or any non-Aboriginal claim to be able to perceive the world as an Aboriginal

There are two key aspects to this site: firstly, the exclusivity of the site, which concealed amongst other similar geological features, requires special knowledge to find it. Secondly, the process of embellishment of a selected location presumably of preexisting significance was carried out. Exclusivity and location are at the core of Devil's Rock importance within a landscape of ancestral routes. Engravings in the landscape may parallel or recreate the movements of ancestral beings with sites possibly being significant for events associated with ancestral journeys. In European prehistory it has been argued that specific places or natural features were chosen for embellishment because of their association with powers or deities (Bradley 2000, 65). Given what is already known of mythology relating to place or the 'Dreamtime' in Aboriginal tradition (Bender 1993; Flood 1997), it is possible to argue that there was a direct correlation/relationship between Culture Hero motifs and specific places, especially geological formations in the landscape.

In the Sydney region it has been noted that 'there is no direct evidence the [rock] art played a primary role in ceremonial behaviour' (McDonald 1998,324). What is argued here is that phenomenology infers that Devil's Rocks' primary function was as a ceremonial aggregation site where people (ritualistically) engaged with the rock-art.

Sydney region rock-art motifs and the bora

Several researchers have already made a case for their being at least a link between rock-art motifs and the bora, for example McDonald (1994, 1999) and Higgs – Clegg (2004), and that certain sites are probably linked to the initiation ceremony (McCarthy – Higginbotham 1983; Stanbury – Clegg

1990; Popp *et al.* 1997). The production of rock-art using the mechanism of ceremony and ritual reaffirms the link between people and sacred places (Taçon 1990). This allows individuals to draw on the power of these places (*ibid.*). Rock-art sites with Culture Heroes, mundoes (human footprints), animals and other objects that may have been totems occurring as motifs, stand out in the Sydney region rock-art assemblage as places likely to have had ceremonial connections (Attenbrow 2002, 148). Culture Hero motifs and mundoes have the strongest association with the bora and are recorded at 29 and 157 sites respectively within the Sydney region (McDonald 1999, 150).

At Devil's Rock McCarthy (1959, in McCarthy – Higginbotham 1983, 334), described a 'Curved Line of 85 circular and oval basin pits, 1-11/2" (2.5–4cm) diameter or long, ¼" (0.07mm) deep, which begins 80' (24.5m) north of the great ancestral being and runs in a sweeping curve northwards through the group for just over 100' (30m) to another great ancestral being , a unique type of sacred track unrecorded elsewhere (*Figure 2.3*). It crosses some of the figures and the others are arranged on either side of it, and the series is a well planned and laid out one.' Others since have described the strong associations of this specific site with the bora, for example Stanbury – Clegg (1990) and Popp *et al.* (1997). More generally on the subject of Sydney region rock-art McDonald (1999, 145) concluded that 'engravings operated in a distinctive social context, fulfilling a regional bonding function and providing the opportunity for large scale group cohesion.' McDonald's summary of the regions rock-art and of specific elements of Devil's Rock motifs discussed by others, makes a strong case for classifying this as an initiation site.

There is also persuasive historical evidence for some engraving sites in the Sydney region being linked to the bora. Attenbrow (2002,135) recounts the historical commentary by George French Angas in 1844 writing of an encounter with Old Queen Gooseberry an Aboriginal, who at the time was camped by a freshwater lake at Camp Cove, and related to him that certain engraved sites (that she was reluctant to show them due to them being 'priests ground', and because she was female, as women were not allowed to visit these men's sites) were strongly linked to the Koradjee or bora. Walton (1932) relates similar second hand stories directly linked to Devil's Rock. During the 19th century local Aboriginals avoided the area, calling them Debbil Debbil Rock. Queen Gooseberry used the term 'dibble dibble' for the Koradjee sites she took Angas to visit.

The Significance of Daramulan and Baiame: one and the same or different?

Making the argument that Devil's Rock Maroota is a bora site not only relies upon articulating the range of motifs relevant to the male initiation it is also critical to understand 'Culture Hero' representations and their significance in the Sydney Region (see McDonald 1994 & 1999 for a fuller explanation of Culture Heroes). It has been suggested that the appearance of Baiame and Daramulan in Aboriginal ontology coincided with European contact (Stockton 1993, 53). This cult was believed to have spread westwards from the Sydney region, probably as a indigenous response to colonisation (*ibid.*). Rock-art depictions of Culture Heroes and ethnohistory shed much light on their importance in the bora. Much of the ethnohistory focuses upon the wider southeast Australian region (for example Howitt 1904 and Mathews 1895a and b), whilst the strength of argument for their significance and role in Sydney comes from archaeology and rock-art research (McDonald 1999).

Some caution needs to be exercised in applying ethnohistorical perspectives to Culture Hero representations in rock-art in this region. No documentation exists due to the denudation of Sydney tribes during contact and its aftermath (Higgs – Clegg 2004). Both Culture Heroes are assumed to be depicted at Devil's Rock, represented by different remarkable engraved figures. In this chapter each will be referred to as separate entities, despite the distinctions or similarities they may be possessed of in local Aboriginal lore. *Figure 2.3* shows their proximity in relation to each other, joined by a line of engraved pits that McCarthy (1959 in McCarthy – Higginbotham 1983, 334) termed a sacred track.

Here, it is tentatively suggested that the emergence of Baiame and Daramulan in rock-art and Aboriginal ontology is an indigenous response not only to colonisation but also to the disease smallpox. Swain (1990 in Stockton 1993, 53) relates that the first appearance of the cult of Baiame was in the Wellington Valley 1831 and was brought there by 'strange natives,' presumed to be from the Sydney region and that over the next 50 years or so this cult had spread throughout much of Southeast Australia. This appearance coincided with the second smallpox epidemic in the region between 1829–31 (Carey – Roberts 2002). This is believed to have instigated a time of 'intense cultural disorientation for the native people of NSW…compounded by the effects of European colonisation' (*ibid.* 822). Comparable phenomena can be cited in parts of western Africa and in India and China where smallpox epidemics resulted in the emergence of deities specifically linked to the disease (Campbell 2002). The precise mechanism by which the smallpox disease itself made its way into the Sydney region is uncertain. An overland route for the disease starting in the north of Australia, prior to a likely introduction by the British has also been postulated (Campbell 2002). This theory has the disease being brought to the north by Maccasan traders from Sulawesi trading with Aborigines for trepang (sea-slugs) and making its way to the region from the hinterland. There is even some doubt that this was smallpox but another viral infection such as chickenpox displaying signs of vesicular skin lesions and peculiar infection levels within an entirely non-immune population (Jones 1990, 39-40).

In the Wellington Valley Carey – Roberts (2002) argue that the Baiame Waganna dance ritual recorded there in the 19th century was an indigenous response to Smallpox and that its emergence was designed to ward off the disease. Swain had previously been criticised for his interpretations on the emergence of Baiame and proposing quick change in Aboriginal ontology (*ibid.*). However, the work by Carey and Roberts seems to go some way towards redressing and building upon Swain's hypothesis. It includes historical research suggesting that the emergence of the Baiame Waganna at Wellington Valley may form the first recorded indigenous movement in Australia. Baiame, as he is represented in ritual and rock-art is likely to have been borrowed from European religion, a protective figure, a new 'god' probably, in some ways, not unlike the Christian God, incorporated into Aboriginal ontology (*ibid.*). If accepted, the hypothesis provides an additional perspective on the emergence of rock-art depictions of Culture Heroes. It also adds another ontological function to the ceremony. The idea that the figures of Daramulan and Baiame are responses to the disease of smallpox arguably deserves support from their representation at important bora sites. Their presence at Devil's Rock and likely incorporation into the initiation ceremony may be designed to afford magical protection from smallpox, in addition to other ritual roles. It articulates a dialogue between ontology, rock-art, belief, superstition and Aboriginal identity and the trauma of European colonisation and disease upon indigenous social networks and culture.

This idea is not entirely new and rock-art as a ritual response in Australia was discussed by McNiven – Russel (2002, 27-41). Rock-art, and in particular the emergence of a range of ritual behaviours including the cessation of increase ceremonies to bring about or exacerbate drought to drive out Europeans and their livestock, the growth of cults such as the Mulanga, which used sorcery to inflict harm upon Europeans, were not uncommon (*ibid.*). Indeed, in 1840 in Port Phillip Bay, Victoria, smallpox was thought to be the result of a malevolent spirit called Mindia and ceremonies were performed to put this disease upon Europeans to destroy them (*ibid.*). Similar beliefs were known in Arnhem Land, giving rise to the phenomena of post-contact sorcery to control European influences. Interestingly, in Wardaman Country, north west Australia, there is a phenomena of large painted 'Dreaming entities', the Lightening

Brothers at Yiwarlarlay dating to the contact period of the mid-nineteenth century and interpreted as an expression of territoriality in the face of European colonisation (*ibid.*; Flood 1997, 300-310; David *et al.* 1990; David 2002; David 2006).

There is an ethnohistorical reference to smallpox and the creation of earthen ground sculpture in Victoria, which is worth quoting here as it highlights that rock-art associated with smallpox, is a distinct possibility. The quote is from Mathews (1896a: 35): 'Mr E. M. Curr thus refers to a raised earthen figure formed by the aborigines in the county of Karkarooc, Victoria: "The work was described to me as a mound about 100 feet or yards long, I forget which, made to resemble a huge snake. Its locality was close to the Murray River, some twenty miles [c. 32 km] below Euston, but on the other side. It was said by the blacks to have been made to charm away the smallpox which raged in those parts probably about 1820 or 1830."

In the Murray area and south coast NSW (Mathews 1896b) Daramulan is depicted as a 'Great God' figure that has great significance in an initiation ceremony. Daramulan had the power to kill initiates literally and metaphorically (Howitt 1884). In some regions Baiame and Daramulan are perceived as one and the same. In others Baiame is the father or brother of Daramulan, whose totem is the emu (Stanbury – Clegg 1990, 117; see plate 2.1). This might reflect a temporal element to Daramulan and Baiame with ideas about their relationship varying through time (Stanbury – Clegg 1990, 104). Ethnohistorical references to Daramulan ground sculptures are frequently made, for example: 'Inside the smaller ring was a horizontal representation of Dharamoolun, about 8 feet long [c. 2.4m], formed by heaping up the loose earth, the height of the earth at the man's breast being about a foot. During the ceremonies a quartz crystal is laid on the head of this figure' (Mathews 1896b: 330). *Figure 2.3*; and *Plate 2.1*, shows the rock-art at Devil's Rock and *figure 2.4* the proximity of an emu motif and shield to the Daramulan figure.

Plate 2.1. (see also figure 2.4*) Daramulan (left) with his totem the emu, sometimes described as his wife or mother (right) with a shield tattooed upon her.*

In the descriptions by Howitt (1884) and Mathews (1896b, 1898, 1900a), Daramulan was the key mythological figure within the initiation ceremony. Often he was portrayed in a quasi-malevolent way as the consumer (literally eating) or as the killer of the initiate. He then caused the initiates rebirth. Daramulan's price for this was the initiates tooth (Eliade 1967, 61–90; 1973, 89–91). Tooth avulsion was recorded at Farm Cove Sydney, as well as wider area (Attenbrow 2002). Higgs – Clegg (2004), as well as confirming the Daramulan figure at Devils Rock as having the correct attributes of size and being shown in profile, also highlight that ethno-historically, Daramulan is often associated with men's initiation ceremonies, usually represented as an earthen sculpture. At Farm Cove, descriptions of earthen mounds and earth-embanked circles are noticeably absent but on this occasion it is possible that the shortened version of the bora was practiced (Attenbrow 2002, 134; Howitt 1904 and Mathews 1900c).

McDonald (1994 and 1999) analysed the distribution of culture hero figures in the Sydney region and noted that half of the sites show evidence of re-engraving and alteration to the engraved outline and added features, perhaps highlighting their prolonged cultural importance (McDonald 1999, 156). McDonald argued that the rarity of culture heroes combined with the evidence of re-engraving and modification, suggests contact between language groups, with shared styles and similar mythologies. In the region there are two major engraving sites with Culture Heroes considered aggregation locales: Flat Rocks Ridge, in nearby Darug National Park, and Devil's Rock (McDonald 1999, 156).

Devil's Rock ethnohistory: a note

The ethnohistorical material although not specific to either Devil's Rock nor to the immediate region, is useful in highlighting that Devil's Rock (and its rock-art elements) was a place where initiations were held. Howitt (1884, 432-459), talks of large gatherings of people, some with specific totemic affiliations, travelling great distances, including from the Sydney region, to meet at aggregation locales in the Murray region of western NSW for initiation ceremonies. Mathews (1896b) recorded the movements of the Yuin, a group of people who displayed cultural similarities the coastal Darug travelling bora aggregation sites in the Shoalhaven River district of NSW. Often these gatherings took place over several weeks within areas that were able to sustain large numbers of people taking part in social activities and the bora ceremonies (Mathews 1896b, 1898, 1900a, 1900b, 1900c and 1901). Critically, in support of this method, Jones (1990, 41), cogently argues that the ethnohistorical information supplied by the likes of Tench and Collins in Sydney at the end of the 18th century is considered to be 'a detailed picture of a society which is totally understandable in terms of an Arnhem Land model…' referring to his descriptions of society, population and nature and use of ceremonial activity there, and continues '… that despite the interpretive problems due to the historical circumstances of the colonial advance, our knowledge about Aboriginal society has not been fatally corrupted'. As a methodology for this chapter, this would suggest that it is reasonable to critically use ethnohistorical data from further afield to build a picture of Sydney region bora ceremonies.

Phenomenology of Devil's Rock Maroota

In the narrative that follows Devil's Rock Maroota is described as a site visit and as a sequence of observations linked to what is understood of an initiation ritual. On my first visit, to the site, despite having my 'experience' of the visit influenced by guidebooks and other literature, there was an inescapably evident coherence to the way that the rock-art was laid out. It was clear that the intended aim of the rock-art and use of topography was to create an orchestrated experience. Interestingly, McCarthy (1959, in McCarthy – Higginbotham 1983) also notes that this site was well thought out and designed for the bora. He also noted that there were restricted views to the west and that the cliff-line to the east likewise restricted views onto the platform for people standing below it.

During a visit to this site one mid-December evening the sun, it was noted, set behind Daramulan. The view to the south west is fairly clear from the platform as the ridge-edge rock outcrop continues along the hillside. The sun can be seen setting behind the hills to the south west. Throughout the day the site receives full sun and its near complete traverse through the sky is observable from the platform. The restricted views to the west could be interpreted as blocking out darkness. One can imagine that ceremonies taking place here might make some reference to the transition from darkness to light, from Daramulan to Baiame, from boy to man and spiritual individual. The possible use of firelight during ceremonies here will be discussed later.

Another observation was that the secluded, quiet bush setting probably was as much a feature of this site in early post-contact times as it is today (also noted by others, e.g. Stanbury – Clegg 1990). Evidence of earlier seclusion comes from the recorded middens and occupation evidence near to the river and away from this ridge-edge (Val Attenbrow Pers. Comm.) as well as the well documented taboos associated with such a site (Attenbrow 2002; Mathews 1900b; Walton 1932). The rock outcrop, is the dominant landscape feature in the area forming a broad, low ridgeline that is oriented roughly north-north-east by south-south-west. There is a high, up to *c*.4m in places, cliff line along the east edge of the site above which the majority of the engravings are located (see *Figure 2.3*). If standing to the east of this ridgeline the observer finds their views to the west restricted. It is not possible here to see onto the rock platform and its engravings. Further to the south of the ridge, access upon the rock platform is easier via a fairly steep escarpment which brings you upon the dramatic 6.6m engraved figure interpreted as Daramulan (see *Figure 2.4*, *Plate 2.1*). Nearby is his totem or wife, the emu (Stanbury – Clegg 1990, 117), and a shield, which may represent the clan affiliations of the hosting group, interestingly in this instance the shield design possibly belongs to the Darginung (McDonald 1999, 154). As one approaches the figure of Daramulan from the east it is not immediately visible due to the fairly steep topography of the rock platform, but once a certain point is reached the viewer finds that the remarkable figure almost suddenly appears on the surface. *Figure 2.3* shows the engravings and their locations relative to each other on the platform. At this point the access to the site is easy and spacious, and could allow large numbers of people onto the platform. At no other point near the engravings is access this easy – unless one was to access the platform from the west but local topography and other factors suggests that traditionally, access to this place would have been along the same route as the present road (Laughtondale Gully Road).

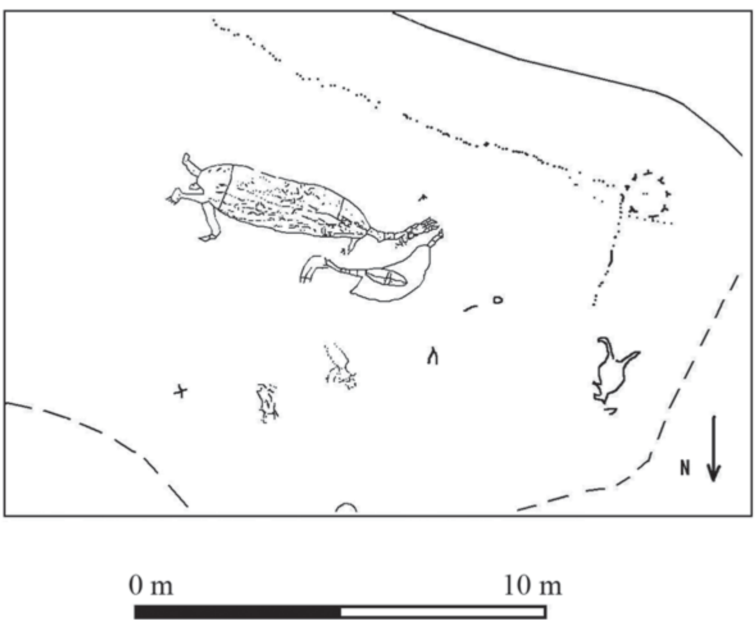

Figure 2.4. Daramulan and nearby motifs including emu (his wife/mother?) and the pipe smoking man. Motif Location 1.

This low cliff-line and the platform form a natural bora ring. Defined by topography this platform is loosely oval in shape *c.*55m long by *c.*25m wide and in the past is unlikely to have had the island of vegetation, soil and leaf-litter that now covers the central area, possibly masking other engravings.

Controlling access into the bora ring has always been a key feature of the initiation ceremony and Mathews (1900c), in the Lower Macquarie River area, describes an oval ring *c.*92 feet (28.04m) at its widest point that was not to be crossed during ceremonies except via a four foot (1.21m) opening that allowed access and egress. Mathews also noted an aspect of exclusivity afforded by screening off areas where 'mystic drawings' were made by using fences constructed of saplings and bushes, which served a dual purpose of keeping out straying livestock (*Ibid.* 36). The choice of Devil's Rock was arguably a conscious one, as much influenced by topography as by mythology; naturally ensuring exclusivity by restricting views from certain directions, enabling control of access onto the platform, whilst the positioning of the engravings allowed the orchestration of participants at ceremonies. Devil's Rock becomes a place where its immediate topography and its landscape setting acted as the canvass for transformative rituals that were performed there.

Here as in Europe (Nash – Chippendale 2002; Bradley 1993, 2000 for example) rock-art can be seen as anchoring communal identity and integrating beliefs and traditional subsistence practices. The symbolic value of landscape features that have historically identified key food resources important to survival are also critical in focusing communal identities. Devil's Rock is an anchor point defined by a landscape based cosmology and an aggregation locale that has long been an important space for negotiating access to resources and facilitating inter-group cohesion across language boundaries (McDonald 1994, 1999).

At Devil's Rock the engraved figures on the rock platform are created around a journey following a specific route around the site, with each stage marking steps on a transition from boyhood to manhood. Each of these stages is a discrete group of rock-art motif features (herein called Motif Locations, see *Figure 2.5*), laid out across the platform as a stage-managed experience. These discrete groupings are organised topographically, utilising the undulations and dips of the rock surface to isolate them. Some of these motif locations are intervisible, whilst others are not, and some are linked by a line of dots or mundoes (footprints), especially along the eastern edge of the platform. Approximately 430kms north of Sydney, Mathews (1898), described an initiation ceremony that had, alongside a path cut to the bora site, the tracks of a running emu at the end of which was an earthen representation of a prone emu in high relief with an area cleared around it for dancing. This demonstrates a similar scripting of events envisaged for a ceremony at Devil's Rock.

The dots or sacred track show thought and planning in the scripting of events, determined by the engraving locations (see *Figure 2.5*). Motif locations could be a story or stories and performance pieces that in experiential terms, recreate the cycles of daily life and relationships between participants and initiates and the spiritual and real worlds. Each motif and motif location, as well as being associated with a song, a story (see Stanbury – Clegg [1990, 117] regarding possible stories associated with the rock-art at Devil's Rock) or dance or a performance piece, was encoded with information. This knowledge was transformed and acquired by the initiate. Knowledge related to totemic linkages, clans, men, and men and women: in other words preparing them for a new world in which they, as spiritual individuals, will now take part. Other key elements encoded into the rock-art, posed as stories, are more basic lessons in game species, hunting and food restrictions based upon totemic affiliations. Inter-clan relationships were forged and consolidated through the mechanism of the bora and the extended gatherings that it entailed. These included corroborees during and prior to the bora (Eliade 1973; Attenbrow 2002).

The idea of ceremonies being metaphorical journeys is far from new. In Europe Bradley (1993), identifies paths that were important to hunter-gatherers who mapped their territories by these linear

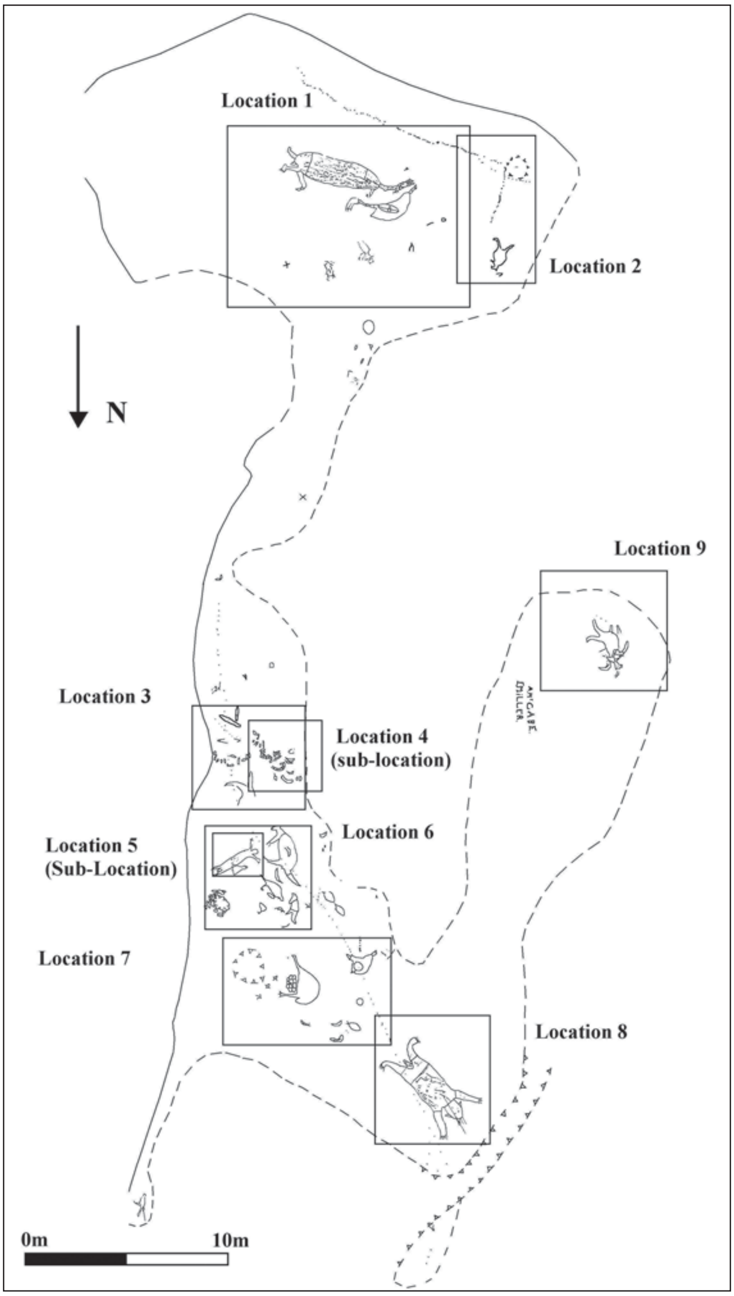

Figure 2.5. The nine broad motif locations are marked out here. These are spatially and rather subjectively marked out and assumed groupings. However, they illustrate quite comfortably, how 'panels' can be made and useful motif locations discerned.

features. Landscape features were linked by paths and were later 'ritually and symbolically utilized to site the earliest rock-art' (Nash – Chippendale 2002, 9).

This interpretation sees Devil's Rock, as a place where the initiation was scripted and knowledge was passed on, becoming a place of transition. In other words, the place becomes important as a defining locale, a special place imbued with magical meaning, which by the mechanism of ritual and ceremony gains a heightened power in the minds of initiates. In the minds of the previous generations of participants who were initiated there, its significance will have gained power over time and will be conveyed to each succeeding generation. Sub-initiates would absorb that importance long before their initiation time at Devil's Rock. In this sense Devil's Rock is a liminal place, both spatially and temporally, a place where resources and space (territory) are negotiated through time and in a changing social nexus in any given moment in time. In a post-contact context this becomes an increasingly important function of Devil's Rock as the incorporation of European rock-art elements makes statements about territoriality in a changing Aboriginal social and spiritual world view. These changing relationships are reflected in the rock-art at Devil's Rock and in the bora are defined, transformed and made real by the individuals' new spiritualized existence in the adult world. Changes such as the arrival of the Europeans were incorporated and transformed in the rock-art at Devil's Rock. Incorporating these elements into the art and ceremonies and stories related there, made them part of the transformation, connected to the nexus of social webs and ancestral beings defined during the bora.

Evidence for the use and re-engraving at Devil's Rock to within historical times comes from the engraving of a ship, a man in a hat smoking a pipe and a woman in a dress (see *Figures 2.4* and *2.7*). Stanbury – Clegg (1990), note that these modifications were probably new elements incorporated into the bora ceremony. This makes it likely that the site was in use and being embellished when Europeans were in the region. In the late 19th century, ground carvings (earthen mounds), were recorded in the Lower Macquarie River region of NSW as being representations of bullocks and pigs (Mathews 1900c; Clegg – Ghantous 2003, 7). Interestingly, the positioning of these 'British' engraved elements at Devil's Rock is telling, the man in the hat and smoking a pipe (but not ruling out the possibility that this image maybe European graffiti such as the A. McCabe E. Miller engraving; see *Figures 2.4* and *2.6*) is close to Daramulan, the women in the dress is partially superimposed upon a male figure and the ship is almost tattooed upon the image of the hunted kangaroo (see *Figure 2.6*). The female figure has been assumed to be similar to some of the 19th century European graffito possibly made using metal tools in the likeness of a doll (Clegg – Ghantous 2003, 8) but the possibility cannot be ruled out that this is Aboriginal. The positioning of the motif, the context of the rock-art, the significance of the site and the existence of other European elements in the art here may point to a later Aboriginal addition utilizing metal tools and a newer style. Clegg – Ghantous (2003) argue that this 'juxtapositioning seems to constitute evidence that representations of European objects were incorporated into aboriginal ritual and rock-art.' And that 'Devil's Rock can be used to illustrate the history of culture contact in the Sydney area.' Whilst the second point is beyond dispute the first one at least in this instance, is perhaps an oversimplification to talk of juxtapositioning where it alludes to European objects. Arguably it could also represent a simple acceptance (and perhaps rejection) of the existence of these things in the Aboriginal world view of the late 18th and early 19th centuries and a desire, through ritual, to transform and control their meaning in some way. These motifs might be viewed as an indication of the unwelcome encroachment of the British, incorporated as an element within the pantheon of stories told at Devil's Rock during an initiation. By doing this the invaders were perhaps made impotent at this powerful site, their images transformed and killed by powerful ancestral and totemic spirits. Smallpox, prevalent in the region at the end of the eighteenth century and again around 1830 and which had been particularly devastating to the Aboriginal population and viewed as the disease of the White Man (Carey – Roberts 2002), was, it is tentatively suggested, also subjugated here by the presence of Culture Heroes. Mythical beings that had perhaps arisen in Aboriginal ontology were as a direct response to colonisation and smallpox. Or it may be that smallpox was re-transformed into a force or agent under Aboriginal control, to put the disease upon the Europeans, as was done in Victoria in 1840 (McNiven – Russell 2002).

Moving from Daramulan and following McCarthy's sacred track or mundoes the initiate would eventually find himself at Baiame – almost at journeys end. Between these two key figures are a number of motif locations. These form approximately nine broad groupings of motifs (see *Figure 2.5*, showing these broad groupings of 9 locations, two of which are arguably sub-locations). Each of these groups is a performance locale. Baiame marks a place that, if one considers the likely mythology of these stories, the transition and rebirth of the initiate is almost completed when he stands here (*Figure 2.8*). Daramulan is the start of the process, where the initiates are ritually killed or devoured and are reborn, with a tooth missing or with scars upon the body. Daramulan's exacted price for this transformation (Mathews 1900; Eliade 1967). At the climactic finale, when the transition is complete, the initiate would be led to the apex of the site to the 'Kangaroo Hunt' motif location 9 (*Figure 2.6*) where participants might pretend to spear (kill) the motif. This would mark the completion of the transition from boy to man and hunter. Stanbury – Clegg 1990, figure 75 (a photograph) page 130, shows a group of Aboriginal men about to spear a ground carving, taken perhaps in the early 20th century it shows part of an initiation ceremony showing a scene much like the final hunting performance as it might have looked at Devil's Rock.

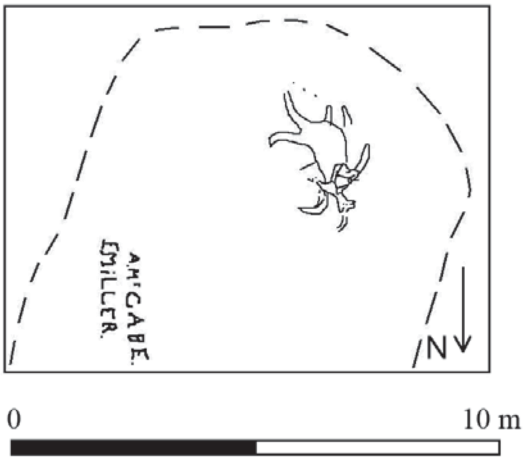

Figure 2.6. The Kangaroo and Boomerangs or Kangaroo Hunt. There is also a European ship superimposed upon the kangaroos' body. Nearby is assumed European graffiti. Motif Location 9.

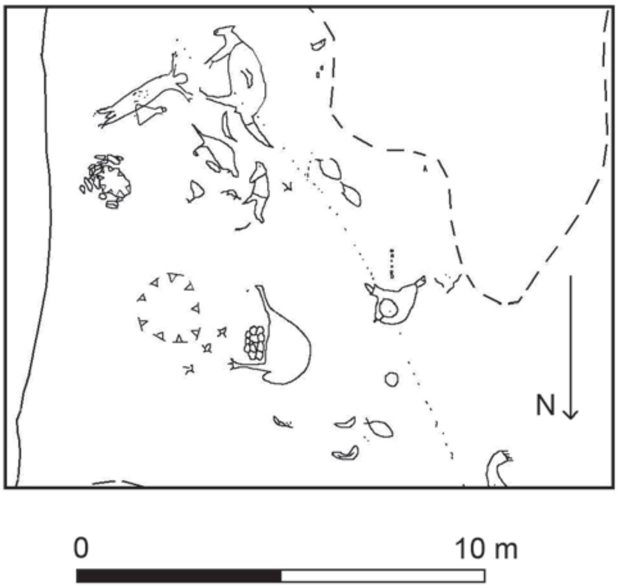

Figure 2.7. Naked male figure with European motif superimposed partially upon him. The female in a dress was possibly done by Europeans but equally likely to have been created by Aboriginal people with metal tools and mimicking new styles. Emu and eggs bush turkey with egg and other motifs. Motif Locations 6, 7 and Sub-Location 5.

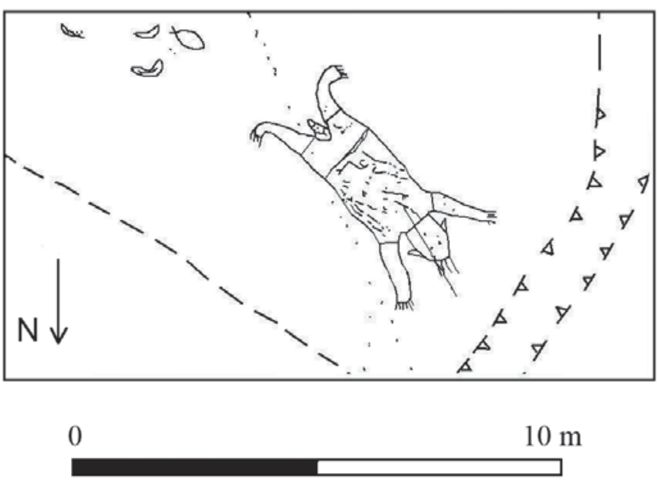

Figure 2.8. Baiame at Motif Location 8, the end of the line of mundoes or sacred track – as described by McCarthy (1959).

These Motif Locations are loosely and subjectively grouped for the purpose of illustrating that they are broadly definable as discrete panels but linked spatially. There is also a temporal relationship within some of these groups. For example, *figures 2.4* and *2.5* show that within location 1, the Daramulan figure has been re-engraved and added to (McCarthy – Higginbotham 1983 and see also McDonald 1999 on the subject of Ancestral Beings and re-engraving), whilst the pipe smoking European figure was clearly added later. Likewise within sub-location 5 the lady in the dress was added much later onto the fading outline of the male figure (*Figures 2.5* and *2.7*). This suggests that the mythologies and stories shown at Devil's Rock were neither conservative nor unchanging but were reinterpreted and given new meaning over time, that they were dynamic and fluctuating. Conservatism in rock-art in this region is usually symptomatic of prehistoric environmental and social stability or of a post-colonial era of Aboriginal culture that was dispersed and forcibly disconnected from its past. Devil's Rock shows that sites like this, aggregation locales in negotiable areas straddling language boundaries (McDonald 1999) and at the edge of European settlement in the region, were arguably still dynamic places.

Descriptions by Howitt (1884, and 1885), and Mathews (1896b, 1898, 1900a and 1900c), make it clear that significant parts of the ceremony took place at night and a fire would be constructed upon a raised mound. It is at night when horizontal engravings are arguably at their most visible – by fire light. Mathews (1896b), in particular describes dances and performances that take place nightly by firelight during the bora. Positioning of raised fires at specific places during the ceremony would have enhanced the rock-art motifs at Devil's Rock. The discrete groupings or motif locations were part of a story telling performance requiring restricted visual access, perhaps for specific individuals participating in the ceremony (Nash 2003, 51). Use of firelight in this way would also isolate each motif location visually in the dark, heightening the impact and drama of the stories (acted out almost as pantomime) or dances. The movement of shadows across the groove would serve to animate each of the motifs thus giving the motif locations an added layer or dimension not visible in daylight (*ibid.*). Parts of the ceremony that took place at night may have been reflective of a journey from dark to light and marking the transition from boy to man played against the topographical aspect of the site discussed earlier. Firelight would probably have played its role in 'driving out' darkness.

There are a number of Sydney region rock-art sites where firelight during night rituals would have had a dramatic effect. Two very striking examples, both of which contain motif elements that point to their use as

Plate 2.2. West Head, Mount Ku-Ring-Gai Chase National Park the Basin Track Site. The tessellated pavement during a night-time ceremony would have been particularly striking at this site.

Plate 2.3. The tessellate fissures in the sandstone would give the effect of a moving web against which the engraved figures, such as the pair known as 'the lovers' would appear to dance.

possible initiation sites are the Elvina Track and Basin Track sites in West Head, in Mount Ku-Ring-Gai Chase National Park (see *Plates 2.2* and *2.3*). Both of these sites contain engravings on naturally tessellated pavements that would be particularly striking in a firelight ceremony, giving the effect of an animated flickering web of black lines and moving figures against them. Such places, highly exclusive, gender encoded and rarely visited, except for the purpose of initiation would make an indelible impression on the initiate and other participants.

Discussion and Conclusion

Figures 2.3 and *2.5* show, by using phenomenology how the journey would have been made around the site, moving from one art locale to the next, part of a transformative journey. At each stage of the journey a song or dance or pantomime would be performed, telling stories of local lore, creation myths (Howitt 1884, Mathews 1898, 1900), imparting knowledge relating to totemic affiliations, food restrictions and finally, some of the males taking part would ritually spear the kangaroo (and ship) on the highest ground of the platform. The women, probably not in attendance at all, except at crucial predetermined and proscribed points of the ceremony (Attenbrow 2002), might be positioned below the cliff line to the west with sub-initiates. The view of the platform, the engraved figures and the ceremonies would have been invisible to them. From here only strange sounds such as the bull-roarer, chanting and fragments of song might be audible. At night these sounds coupled with firelight, moving and dancing shadows would add to the mystery of the ceremony and to this place especially, particularly to the sub-initiates.

The selection of the site of Devil's Rock Maroota was a conscious choice predetermined by landscape mythology and topographical factors. The site was then embellished with engravings for the purpose of initiation ceremonies. The veneration of this natural location as represented by the journeys of ancestral beings was part of a larger cognitive map of the landscape that formed meaning for this location. Human journeys requiring transformation were played out with reference to a mythical and ancestral past creating a place of transition. Using a phenomenological perspective, backed by the limited ethnohistory of the wider southeastern Australian region, allows this narrative to be constructed for Devil's Rock. Given its context and the strong associations of the rock-art with the bora it favours an interpretation of the engravings here as having a ceremonial function.

I have suggested that the emergence of the Culture Heroes Baiame and Daramulan within the region were not only the result of culture contact and changing ontology but were perhaps a more specific reaction, or more correctly, a symbolic reaction to the disease smallpox. Along with the European motif elements these figures were incorporated into the bora, pointing to a cultural dynamism, of utilizing new concepts and ritualistic behaviours adaptively. In this instance to symbolically drive away, to defeat the smallpox disease and the Europeans that were perhaps perceived to have brought it amongst them. At the end of the 18th or early 19th centuries, Devil's Rock and the Maroota area, at the edge of European settlement in the region in a liminal landscape zone, imbued with meaning between territories and language groups, was an aggregation site of considerable importance.

Some comparisons can be made with Writing-On-Stone, in Southern Alberta, Canada, an important ceremonial site within a sacred landscape that has a deep chronology of rock-art and a history of post-contact continuity of that art-making tradition, it is also a 'vision-quest locality and a place to record human experience visually (both visionary and historical)' (Klassen 1998, 69). Devil's Rock can be viewed as being similar to Writing-On-Stone as 'rock-art is found here primarily because of a sacred landscape supercharged with spiritual forces – it graphically represents the dynamic relationship between a people, a sacred landscape and the spirit world. In the end, it is the enduring role of Writing-On-Stone as a sacred place which gives the rock-art such a high degree of underlying continuity in form, function and spiritual meaning' (*ibid.* 69). Devil's Rock can likewise be viewed as a place whose meaning led to a degree of continuity and incorporation of European motif elements into its rock-art and into initiation ceremonies.

This is pitched against the backdrop of a post-contact world in which Aboriginal identity was of increasing importance. The creation of a record in the rock-art that Devil's Rock and other sites with bora associations may demonstrate is artefact of the need to ritualise, create and engage with the art in certain places that are evocative of creational stories and ancestral spirits – in other words to anchor communal identities. Indeed the act of creating engravings created group identity and promoted cohesion (McDonald 1994). Interestingly, work by Taçon *et al.* (2003) on wooden artefacts traded between Aboriginal people and Europeans in south-east Australia over the last 150 years documented a much more dynamic process of culture change during this period than is described by ethnographers at the time. Themes such as connection to landscape, documenting ritual and ceremony were all found in the artefactual record represented by the pieces, which included wooden tourist artworks such as boomerangs. Indeed this research highlighted that 'culture contact results in new forms of imagery' (*ibid.* 99). The objects also show that Aboriginals were not adverse to incorporating aspects of their changing cultural lives, or recoding new experiences onto these items (*ibid*. 99), demonstrating that it is entirely possible that similar expressions are likely to be found at culturally important rock art sites in the early post-contact period. In 20th century Arnhem Land the Kunapipi ceremony, a secret male cult, emerged supposedly from the southeast and was strongly aligned with the themes of death and rebirth, ancestral forces, exclusion of women and concepts of male ritual knowledge. The ritual ground that these ceremonies took place allowed the participants to feel that they were in the 'presence of primal creative forces' (Jones 1990, 27). This cult replaced earlier, local ceremonies (*ibid*. 27) showing, once again, that new ceremonies, cults and even deities emerged in response to cultural stress. Williamson (2004, 198) highlighted that social change was an important feature of Aboriginal culture, it never remained static, it always responded to outside influences in some subtle way. The reinterpretation and incorporation of new meanings and symbols into these ceremonies can be viewed as such a response.

What Devil's Rock has done through its rock-art is allow an insight not only into the initiation ceremony but highlights the importance of the relationship between creation myths and landscape features. The rock-art, the bora and the process of reinterpretation within the mechanism of the initiation ceremony were subject to the politics of the then present. Creation myths superimposed upon landscape features create a web-like structure or map over the landscape wherein the individual can situate him/herself and their clan into this mythological world and mechanisms such as the bora and places like Devil's Rock, reproduce and renew obligations to the ancestors (Bender 1993, 2). Bender (1993, 2) goes further: 'The associated understanding and the necessary rituals and ceremonies are therefore part of the way in which people create and maintain status and identity. Moreover, the restricted knowledge is also open to adjustment: 'the ancestral past is subject to the political map of the present' (Morphy 1993). Landscapes are thus polysemic and not so much artifact as in process of construction and reconstruction.'

Phenomenology, being derived from philosophy and existentialism can consider the human ability to make conscious and unconscious decisions about the choice and significance of place and the orientation of space. Rock-art and in particular representations of Culture Heroes and mundoes, in conjunction with European elements such as those at Devil's Rock, creates dialogue between landscape cosmology and human agency. These factors focus on a landscape cosmology that maps the physical world and articulates ontological views to create linkages between supernatural beings, landscape and the Aboriginal social and cultural nexus against a backdrop of European colonization and politics of the time. Devil's Rock, Maroota, unique amongst Sydney region rock-art sites contributes to our understanding of the complex relationships not only of landscape, human agency, cosmology and ontology of Aboriginal people at the time of contact but also of their complicated and often challenging relationships with European colonists.

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Bibliography

ATTENBROW, V. 2002
Sydney's Aboriginal Past: investigating the archaeological and historical records. University of New South Wales Press Ltd. Sydney.

BENDER, B. 1993 (ed.)
Landscape: Politics and Perspectives. Oxford: Berg.

BRADLEY, R. 2000
An Archaeology of Natural Places. London: Routledge.

BRADLEY, R. 1993
Altering the Earth: the origins of monuments in Britain and continental Europe. Edinburgh: Society of Antiquaries of Scotland. Monograph Series 8.

CAMPBELL, J. 2002
Invisible Invaders: Smallpox and other diseases in Aboriginal Australia 1780-1880. Melbourne: Melbourne University Press.

CAREY, H. M. – ROBERTS, D. 2002
Smallpox and the Baiame Waganna of Welligton Valley, New South Wales, 1829-1840: The Earliest Nativist Movement in Aboriginal Australia. *Ethnohistory* 49/4.

CLEGG, J. – GHANTOUS, S. 2003
Rock Paintings of Exotic Animals in the Sydney Basin, New South Wales, Australia. *Before Farming* 1/7, 1–9.

DAVID, B. – MCNIVEN, I. – FLOOD, J. – FROST, R. 1990
Yirwarlarlay I: archaeological excavations at the Lightening Brothers site, Delamere Station, Northern Territory. *Archaeology in Oceania* 25 (2), 79–84.

DAVID, B. 2006
Archaeology and the Dreaming: Toward an Archaeology of Ontology. In: Lilley, I. (ed.), *Archaeology of Oceania: Australia and the Pacific Islands.* Oxford: Blackwell.

DAVID, B. 2002
Landscapes, Rock-Art and the Dreaming: An archaeology of Preunderstanding. Leicester: Leicester University Press.

ELIADE, M. 1967
Australian Religions Part III: Initiation Rites and Secret Cults. *History of Religions* 7/1, 61–90.

ELIADE, M. 1973
Australian Religions: An Introduction. Cornell University Press: New York.

FLEMMING, A. 1999
Phenomenology and the Megaliths of Wales: A Dreaming Too Far? *Oxford Journal of Archaeology* 18/2.

FLOOD, J. 1997
Rock Art of the Dreamtime: *Images of Ancient Australia.* Sydney: Angus & Robertson.

HINKSON, M. – HARRIS, A. 2001
Aboriginal Sydney: A guide to important places of the past and present. Canberra: Aboriginal Studies Press.

HIGGS, S. – CLEGG, J. 2004
Sydney Daramulan Engravings. www.mc2.vicnet.net.au/home/interpret/shared_files/Higgs1.pdf

HOWITT, A. W. 1884.
On Some Australian Ceremonies of Initiation*. The Journal of the Anthropological Institute of Great Britain and Ireland* 13, 432–459.

HOWITT, A. W. 1885
The Jerail, or Initiation Ceremonies of the Kurnai Tribe. *The Journal of the Anthropological Institute of Great Britain and Ireland* 14, 301–325.

HOWITT, A. W. 1904
The Native Tribes of South-East Australia. London: Macmillan & Co. Ltd.

JONES, R. 1990
Hunters of the Dreaming: Some Ideational, Economic and Ecological Parameters of the Australian Productive System*.* In: Yen, D. E. – Mummery, J. M. J. (eds.), *Pacific Production Systems: Approaches to Economic Prehistory.* Canberra: RSPCS, ANU.

KLASSEN, M. A. 1998
Icon and narrative in transition: contact-period rock-art at Writing-On-Stone, southern Alberta, Canada. In: Chippendale, C. – Taçon, P. S. C. (eds.), *The Archaeology of Rock-Art.* 42–72. Cambridge: Cambridge University Press.

MCCARTHY, F. D. – HIGGINBOTHAM, E. A. K. 1983 (ed.)
Catalogue of Rock Engravings in the Sydney – Hawkesbury District N.S.W. Volumes 1 and 2 (part I). Sydney: National Parks and Wildlife Service.

MCDONALD, J. J. 1986
Maroota Historic Site: Archaeological Survey. Unpublished Report to NSW NPWS.

MCDONALD, J. – OFFICER, K. – JULL, T. – DONAHUE, D. – HEAD, J. – FORD, B. 1990
Investigating 14C AMS: Dating Prehistoric Rock Art in the Sydney Sandstone Basin, Australia. *Journal of Rock Art Research* 7/2, 83–92.

MCDONALD, J. J. 1994
Dreamtime Superhighway: an Analysis of Sydney Basin Rock-Art and Prehistoric Information Exchange. Unpublished PhD Thesis, ANU Canberra.

MCDONALD, J. J. 1998
Shelter Art in the Sydney Basin – a Space-Time Continuum: Exploring Different Stylistic Influences on Stylistic Change. In: Chippendale, C. – Taçon, P. (eds.), *The Archaeology of Rock-Art.* 319-335. Cambridge University Press.
MCDONALD, J. J. 1999
Bedrock Notions and Isochrestic Choice: Evidence for Localised Stylsitic Patterning in the Engravings of the Sydney Region. *Archaeology in Oceania,* 34, 145–160.
MCMAH, L. A. 1965
A Quantitative Analysis of the Aboriginal Rock Carvings of the District of Sydney and the Hawkesbury River. Unpublished BA(Hons) Thesis. Dept of Anthropology, University of Sydney.
MCNIVEN, I. J. – RUSSELL, L. 2002
Ritual Response, Place Making and the Colonial Frontier in Australia. In: David, B. – Wilson, M. (eds.), *Inscribed Landscapes: Marking and Making Place*. 27–41. Honolulu: University of Hawa'i Press.
MATHEWS, R. H. 1896a
Australian Ground and Tree Drawings. *The American Anthropologist* 9, 33–49.
MATHEWS, R. H. 1896b
The Bunan Ceremony of New South Wales. *The American Anthropologist* 9, 327–344.
MATHEWS, R. H. 1898
Initiation Ceremonies of Australian Tribes. *Proceedings of the American Philosophical Society* 37/157 (Jan 1898), 54–73.
MATHEWS, R. H. 1900a
The Origin, Organisation and Ceremonies of the Australian Aborigines. *Proceedings of the American Philosophical Society* 39/164 (Oct–Dec 1900), 556–578.
MATHEWS, R. H. 1900b
Phallic Rites and Initiation Ceremonies of the South Australian Aborigines. *Proceedings of the American Philosophical Society* 39/164 (Oct–Dec 1900), 622–-638.
MATHEWS, R. H. 1900c
The Burbung of the Wiradthuri Tribes. *Proceedings of the Royal Society of Queensland* 16, 35–38.
MATHEWS, R. H. 1901
Initiation Ceremonies of the Wiradjuri Tribes. *The American Anthropologist* 3, 337–341.
MORPHY, H. 1993
Colonialism, History and the Construction of Place: The Politics of Landscape in Northern Australia. In: Bender, B. (ed.), *Landscape: Politics and Persepectives.* Oxford: Berg.
NASH, G. – CHIPPENDALE, C. 2002
Images of Enculturing Landscapes: a European Perspective. In: Nash, G. – Chippendale, C. (eds.), *European Landscapes of Rock-art*. 1–19. London: Routledge.
NASH, G. 2003
Conceptualising a Landscape: Discovering and Viewing on Bronze Age Rock-Art of the Campo Lamero Valley, Southern Galicia, Spain. In: Sognnes, K. (ed.), *Rock Art in Landscapes – Landscapes in Rock Art*. 51–70. The Royal Norwegian Society of Sciences and Letters: Trondheim.
POPP, T., POPP, N. – WALKER, B. 1997
Footprints on Rock: Aboriginal Art of the Sydney Region. Sydney: Metropolitan Local Aboriginal Land Council.
STANBURY, P. – CLEGG, J. 1990
A Field Guide to the Rock Engravings of Sydney. Oxford University.

STOCKTON, E. 1993
Blue Mountains Dreaming: The Aboriginal Heritage. Winmalee: Three Sisters Productions.

TAÇON, P. S. C. 1990
The Power of Place: cross-cultural responses to natural and cultural landscapes of stone and earth. In: Vastokas, J. (ed.), *Perspectives of Canadian landscape: Native traditions.* 11–43. North York (Ont.) York University, Robarts Centre for Canadian Studies.

TAÇON, P. S. C. – SOUTH, B. – HOOPER, S. B. 2003
Depicting Cross-Cultural Interaction: Figurative Designs in Wood, Earth and Stone from South-East Australia. *Archaeology in Oceania* 38, 89–101.

TILLEY, C. 1994
A Phenomenology of Landscape: places, paths and monuments. Oxford: Berg.

TILLEY, C. 1995
Art Architecture, Landscape [Neolithic Sweden]. In: Bender, B. (ed.), *Landscape: Politics and Perspectives.* Oxford: Berg.

WALTON, W. J. 1932
An Aboriginal Devil Rock. In: *Mankind*, 140–141.

WILLIAMSON, C. 2004
Contact Archaeology and the Writing of Aboriginal History. In: Murray, T. (ed.), *The Archaeology of Contact in Settler Societies.* 176–199. Cambridge: University Press.

3

The Significance of Fire within Space Concepts Among *Mbowamb* and Around *Motten*: Parallels between Prehistoric Central Europe and Contemporary Archaic Societies in New Guinea

HENRY C. DOSEDLA – ALF KRAULIZ

Introduction

As it has been pointed out in a previous publication entitled "Space concepts and the Significance of Fire in New Guinean Highlands Traditions" (Dosedla 2008) there are many considerable incidents showing parallels between European prehistoric evidence concerning distinct operations with fire and anthropological observations among remote tribal societies in parts of contemporary Melanesia. One aspect of these parallels is closely related to the settlement patterns.

In the case of the Mbowamb living in the Western Highlands Province of Papua-New Guinea they are linked with their neighbouring tribes by various ancient trade routes crossing their territory from the east towards the west until quite recently dealing with the trade of stone axe blades and salt but also by another important route from the north to the south dealing with a number of other traditional products of similar importance (Dosedla 1987) (*Figure 3.1*). Significant parallels with these trading systems can be found in the case of Motten situated in a distinct part of prehistoric central Europe which is closely connected with the well-known amber trade route linking the Baltic Sea with the Mediterranean (*Figure 3.2*).

Since the "amber route" following the course of the Morava River between Austria and Slovakia is also passing near the vast granite plateau of southern Bohemia with its abundance of minerals the area around Motten may be considered as a prehistoric trading post especially dealing with the nearby graphite deposits important for the manufacture of black ceramics. As a striking fact all along the traditional traffic routes in this area which can be traced back to early prehistoric periods there are particularly elevated places referred to as so-called fireplaces having been used as significant landmarks as well as for signalling purposes still throughout medieval times

The same also applies to the territory of the Mbowamb in the New Guinean highlands where traditional trade routes marked by such signalling fire places as landmarks were in actual use as late as in the seventies of the last century. Due to archaeological evidence the trade routes in the case of Motten were also protected by a number of strongholds at convenient distance to each other which also applies to the Mbowamb territory where fortified villages were used for the same purpose until very recently.

Archaeological Traces

Concerning the signal fires in the region of Motten there are dozens of such posts apparently contributing to a former communication system (Resch-Rauter 1998, 114) within an area of roughly hundred square miles. While most part of the Southern Bohemian Granite Plateau consists of forested plain-land today interrupted by considerable patches of farmland at an average altitude of about 500 m above sea level the signal fire places as a rule are laying on elevations above 600 m which can clearly be seen over a

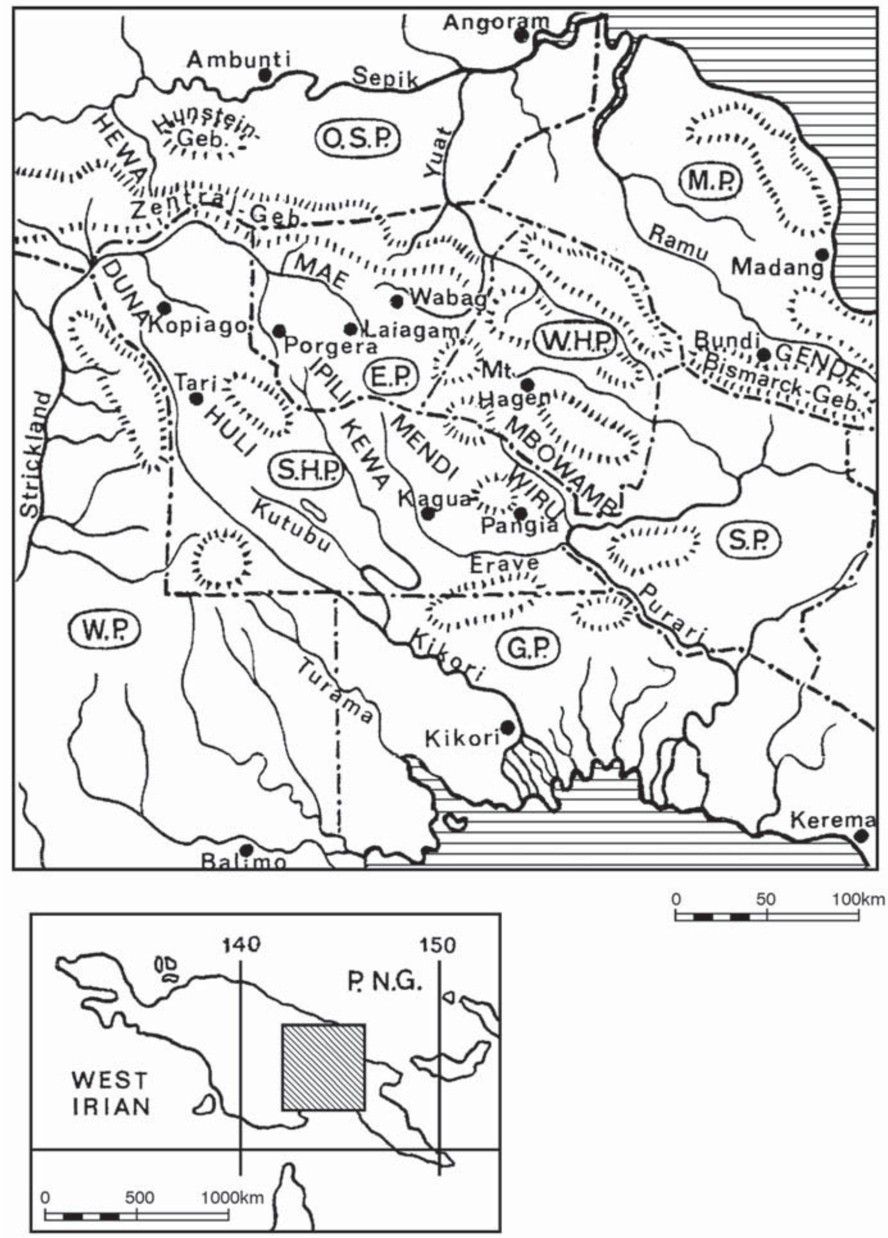

Figure 3.1. The tribal territories of the central highlands of Papua New Guinea.

large distance. In order to prevent bush fires these fire places were always situated on a marked clearance within the surrounding forest which had to be kept free from all combustible materials (Resch-Rauter 1998, 135). For the sake of further security many of these fire places are consisting of more or less circular platforms with some sort of irregular stone pavement built of the local rock material. In some cases these places show the character of enclosures with narrow walls built of earth or stone which according to local myths were interpreted either as the ruins of ancient fortifications or as meeting places for obscure ritual purposes.

Though only a few of such locations have been subject to meticulous excavation some of them were combined with prehistoric burial places and in one case a spectacular hoard deposit of bronze artefacts (Lochner 1991, 71) gave evidence of the considerable age of such signal fire places (*Figure 3.3*).

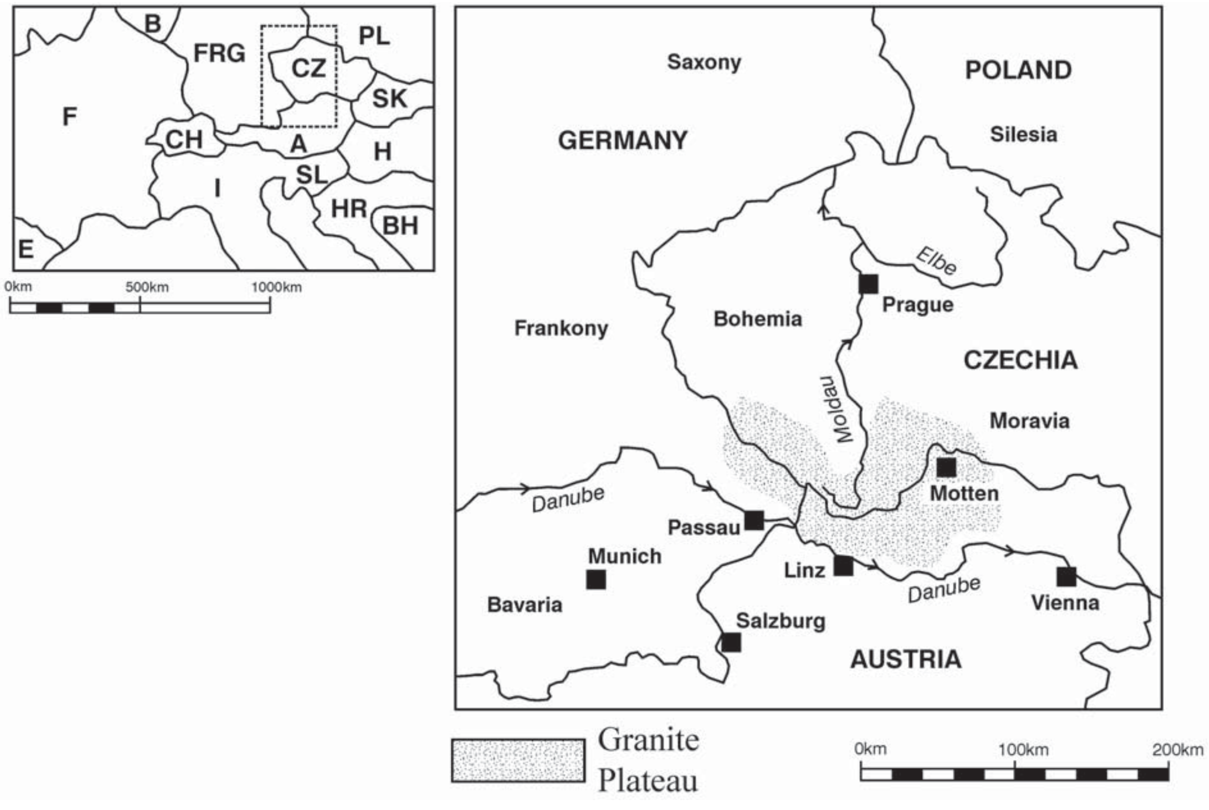

Figure 3.2. The amber route of central eastern Europe.

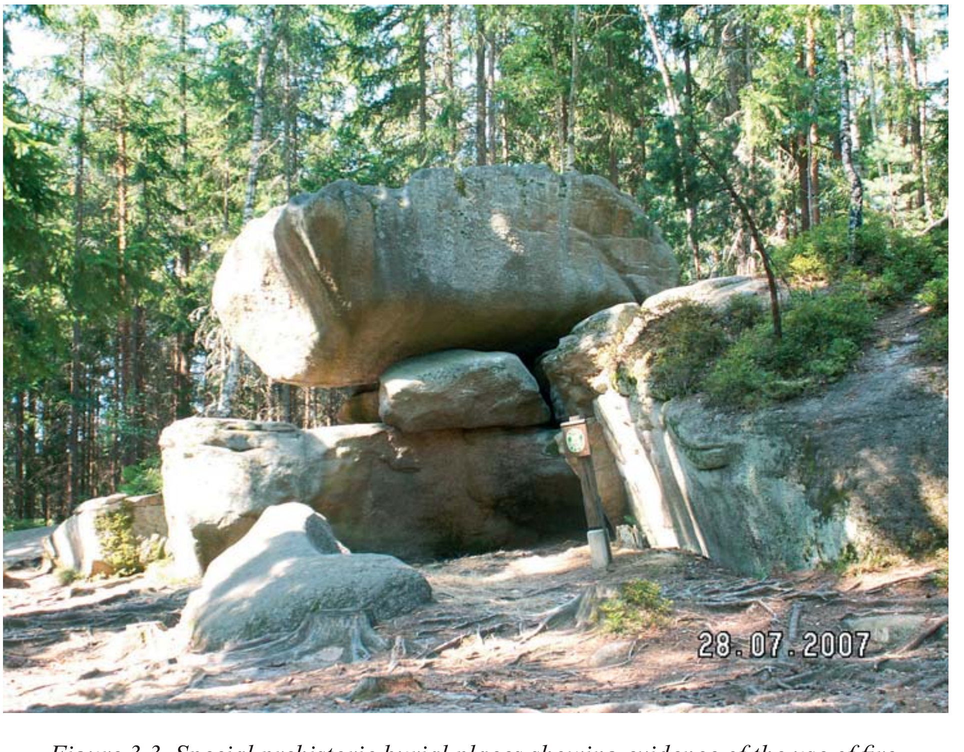

Figure 3.3. Special prehistoric burial places showing evidence of the use of fire.

Mbowamb Traditions concerning Space and Fire

The tribal group known as the Mbowamb inhabiting the Western Highlands Province (WHP) of Papua-New Guinea were first discovered by Europeans in the middle of the last century when their technical standards were described as literally presenting a “stone age” level. Their settlement area was investigated by the author in the 1970s with particular regard to traditional economics, ecology and all practical aspects of technologies which have been systematically documented together with phonographical records of adequate comments by the informants involved in collecting the intricate oral folklore and its spiritual backgrounds (Dosedla 1972; 1974).

According to archaeobotanical evidence the vegetation patterns around Motten, between the Neolithic period and the Early Bronze Age was dominated by light beech and oak forest sometimes interrupted by clearings consisting of grassland and bush which is very similar to the conditions of the Wahgi Plain in the interior New Guinean highlands.

Regarding their natural environment the Mbowamb have the concept of a division between “nde pona” (forest area), “ema pona” (grasslands) and “kona” (human settlement). Previous to the arrival of the first Europeans their traditional villages were made up of a rather dense cluster of houses being surrounded by ditches and palisades in order to defend during times of conflict. These village defences are morphologically similar to the prehistoric settlement patterns of the Lower Danube region with its typical tell-like settlements, such as Vadastra.

In the course of a decrease of the frequent tribal inter-fighting in the New Guinean highlands smaller dikes and fences surround most contemporary villages and smaller hamlets in order to prevent pigs from roaming. Each “kona” usually belonging to one family or a distinct clan division consists of a ceremonial ground surrounded by several houses and nearby gardening areas (Vicedom – Tischner 1943, 44). At the front of the ceremonial ground there is the circular man’s house called “wuâ manga” with its central

Figure 3.4. The “wuâ manga” or men’s house.

fireplace (*Figure 3.4*). This building is regarded as the village meeting hall. About 1.5 – 1.8 m above the fireplace there is a wooden platform called a “pagla” which is supported by the four central house posts on which ceremonial items and distinct valuables of the men are stored and which is supposed to serve as the seat of ancestral spirits (Strauss – Tischner 1961, 348).

At the time of my first field studies among the Mbowamb starting in March 1970 most villages have already lost their former fortification character since ditches and palisades had become obsolete with the decline of tribal warfare after the establishment of Australian governmental control. For the same reason it was not necessary any more to keep up a warning system based on fire signals as it was in use in remote parts of Central Europe as in the case of the Motten region as late as during the Napoleonic wars at the beginning of the 19th century.

Besides of these minor features settlement patterns in the interior highlands of Papua-New Guinea and all the building traditions had not changed at all. Depending on the size and general wealth of a Mbowamb community there are a number of rectangular structures known as women houses usually located to the rear of the ceremonial ground. This area is inhabited by all the village women and children as well as the majority of the pigs, especially during the night. Only a poor man who can afford to have just one wife and so-called “rubbishmen” who have no wives would either live in a women house or a designated house known as “wamb wangen manga” (rubbish people house). As a common practice at least one fire is kept burning all night which is regarded the best prevention against evil spirits who are supposed to be roaming around in dark hours. Previous to the introduction of candles or kerosene lamps only torches were known which were only used within the outside areas of the settlement. There would be no lights inside the houses except for the light emitted from the fireplace. These multiple purpose houses “ambâ manga” contain between one and fireplaces which depending on their size are also used for day-to-day cooking.

Figure 3.5. Ceremonial huts or “kôr manga”.

Figure 3.6. Construction of a women's house.

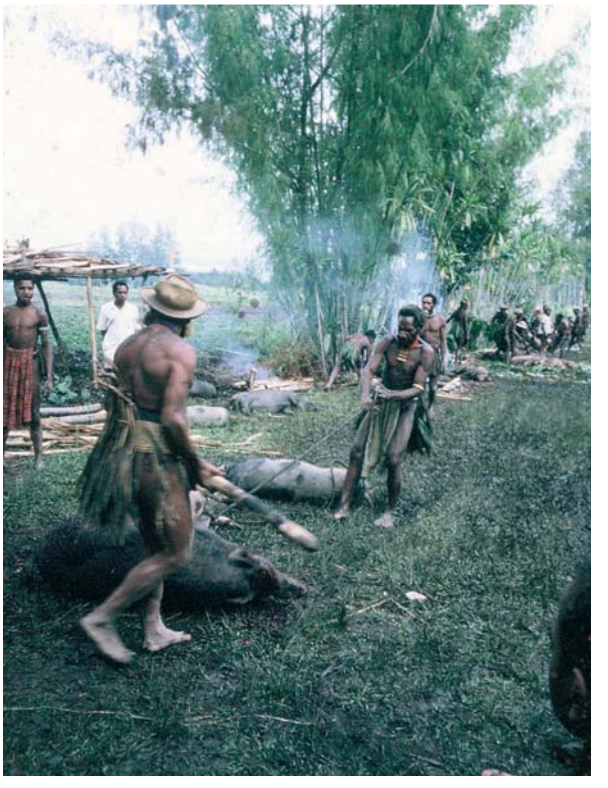

Figure 3.7. Sacrificing the pig.

Besides these indoor fireplaces there are several types of outdoor fireplaces mostly used in a ritual context, but there are also small ceremonial huts "kôr manga" exclusively used for the cooking of a sacrificed animal.

The ritual significance of fire obviously plays an essential role whenever the cultivation area or garden shifts to a new section of cleared forest. On such an occasion at least a small pig is sacrificed, providing an obligation to the spirit world. In this instance the fire is lit in a ceremonial way (Strathern – Strathern 1971, 14). The same applies in the case of the construction of a new woman's house when the first fire is lit (*Figure 3.6*).

However, following the construction of a new man's house larger pigs are killed for sacrifice (*Figure 3.7*). In addition the lighting of the first fire requires the assistance of at least one special ritual expert (Strathern – Strathern 1971, 89–92). Some of the rituals used within the Hagen Mountains were also demonstrated during an international meeting on experimental archaeology conducted in 2006 by Prof. Dragos Gheorghiu in Vadastra, Romania, starting with an encircling of the building by a girdle of "powerful" leaves and the painting of the walls with "magical" symbols in order to protect the house and its occupants against evil spirits. This was followed by a symbolical purification by means of wetting the walls with water from a sacred spring, and by the smoke from the burning of "magical" leaves which was accompanied by adequate gestures and the incantation of traditional charms (Dosedla 2008).

The ceremonial grounds, rectangular in shape are delineated by rows of distinct trees and bushes bearing colourful leaves or blossoms. Each of these elements possesses particular magical meanings. Thus the sites of former settlements having been deserted for generations ago can still be recognised by these typical artificial vegetation patterns amidst the surrounding bushland. On both ends of the settlement there are so-called spirit platforms bearing the same name "pagla", similar to the platform above the fireplace in the men house. They are built of soil in cylindrical shape which is held together by a low circular palisade of wooden sticks, up to 50–60 cm high and are topped by a bunch of red cordyline plants significant also for growing on burial grounds. As a matter of fact these mounds contain skulls and bone of prominent ancestors (Dosedla 1978, 97).

Traditional Technologies and Personal Experiences Concerning Fire in the PNG Highlands

The main purpose of the ceremonial grounds among all highland tribes is to provide a stage for various ritual activities occurring during intervals of time, always accompanied by sacrifices, dancing and singing, which is also illustrated by the equivalent Pidgin term "place singsing" in the meaning of "dance floor". When at such occasions pigs are killed they are buried together with heated stones in an earth oven known by the pidgin term of "mumu". In cases of minor importance one such cooking pit in one corner and a fireplace for heating the stones in another corner of the ceremonial ground are sufficient. On other occasions as in the case of the so-called big pig-killing festivals (Strathern – Strathern 1971, 148) when many pigs are slaughtered at the same time for several hundreds of participants the whole ceremonial ground is occupied by parallel rows of cooking pits and fireplaces with only a small section left in order to serve as a dancing floor.

Since fire plays such a significant role in traditional life of the Mbowamb it must be pointed out that they have many different types of fireplaces and ways of handling fire. This handling depends on different occasions and linguistic differentiation. In this context it is most important to use the correct firewood. As a matter of fact wood is of paramount importance in the whole technology of the highland tribes and each tribal group is fully aware of the individual characteristics concerning the proper utilization of each kind of tree or bush. Of similar significance are the quality of the traditional stone axes and the efficiency of handling them. Depending on the availability of suitable stone material for the axes there are many diverse types throughout New Guinea with only a few distinct quarries and manufacturing centres existing which have assisted in the development of an intricate intertribal exchange system (Dosedla 1987). As a consequence there were tribal communities rich in very efficient axes and accordingly with superior standards in all technological fields. However, in the case of the Mbowamb, they apparently lack these standards as do some of their neighbouring tribes. However, in abundance are heavily forested areas and within these areas are a number highly prized trees that do not occur elsewhere. This prize commodity enables the Mbowamb to make a clear distinction between common firewood and wood for more important functions. As a significant feature of the highlander's attitude towards their natural environment I noticed an extraordinary complexity of ethnobotanical folklore covering the entire vegetation patterns of the mountainous interior. According to this system of folklore nearly every plant is in some way connected to the spiritual world and is treated accordingly in a specific manner, which also applies to its practical use in all technological aspects including the proper use of firewood.

These are fundamental features that generally are not taken into account by most researchers who are engaged in experimental archaeology. According to personal experience most axe heads of European prehistoric origin kept in museums or used in experimental archaeology are either fixed to a rather unsuitable shaft or fixed to it in such an awkward manner that it is nearly impossible to use them in a practical way. Compared to that as well as to contemporary stone axes from other parts of New Guinea those elegant axes manufactured and used in the central highlands of PNG showing a distinct rectangular cross section are of such an outstanding quality, they are nearly as efficient as modern steel axes (Dosedla 1975). Since these highlanders are in the possession not only of a large number but also of the best quality axes and accordingly their whole economy is considerably superior to that of neighbouring tribes; these are nicknamed by them as so-called "rubbish axe people".

Due to the efficiency of their outstanding axes the highlanders could always afford to select the best and most suitable trees for every purpose which is the most apparent in their traditional architecture. Significantly for their men's houses they use solid timber posts and planks cut from big trunks of the best available hardwood trees. House posts of naturally grown trunks of just a few centimetres in diameter as they are normally used in most house reconstruction types are considered typical for structures that are present within the European prehistoric record. However, the New Guinea highlanders would regard this type of structure as "rubbish people houses". A similar distinction is also kept regarding firewood, since for ritual purposes, especially on occasions of sacrifice fires only thick slabs of the most prominent hardwood trees such as *Casuarinas, Castanopsis sp.* or New Guinean Mountain Beech reputed to be magically powerful are used whereas the remaining pieces are left to the women for everyday use. The typical method for producing fire within only a short space of time is the use of an elastic strip of a special kind of bamboo which is quickly moved across a split piece of a dry branch filled with dried grass.

Fire Rituals from other Parts of New Guinea

As far as the spiritual backgrounds of most local groups throughout New Guinea are recorded and anthropologically documented nearly all groups possess at least some traditional beliefs concerning fire. There are particular groups in which fire even plays an extraordinarily significant role and extends beyond the mundane. According to reports by the first missionaries the Asmat living in the regions of the Digoel and Merauke rivers of south eastern Irian Barat shared the belief that fire first came into being via sexual intercourse of two ancestral beings and according to which myth they practised a great fire ritual combined with much cruelty and the sacrifice of a virgin in its process occurred annually (Konrad – Konrad 1996).

In a remote area of the interior of the Huon Peninsula a tribe called the Baining, sometimes referred to as semi-pygmies, is known for its intricate rituals including participants walking barefooted across a path of glowing embers. The same element of a ritual was practised by the Mekeo of the Papuan Gulf region as well as by the Huli of the Southern Highlands Province (SHP) of PNG (Strathern – Strathern 1971, 148).

Among the Kuma or Kuman Chimbu of the Simbu Province in the central highlands of PNG a ritual sauna house is part of the wedding ceremony in which the bride must undergo a purifying bath before getting married (Reay 1959, 25–57). Among some tribal groups of the mountainous interior of PNG as well as from Irian Barat the corpses of the deceased were smoked in a burial ritual and afterwards mummified parts of them were carried around by their relatives on ceremonial occasions (Bulmer 1960, 1–13). Getting smoked alive was supposed to be a suitable remedy against leprosy among the Kewa in the Southern Highlands Province of PNG for which purpose the affected person was kept on top of a platform of a special two-storey leprosy house with a permanently smoking fire inside. When the last stage of the evil was reached the whole house together with the sick person was finally burnt (Phonographical Archive, Record IX/21).

Another traditional feature concerning fire is the habit of watching the glowing pieces of firewood during night that is practised among the Mbowamb of the Western Highlands Province of PNG. This practice helps tribal members to see the shapes of animals or any supernatural creatures thought to be capable of carrying some hidden message from the ancestors which could be deciphered by some ritual expert or shaman (Phonographical Archive, Record IX/24).

Mythological Lore Concerning Space and Fire

On the Origin of Fire

According to one of the basic myths of the Mbowamb the first man on earth was carried down by a giant bird called "Kea Ndoa" who dropped him at a particular rock amidst of the Wahgi Plain. This man being in need of a shelter by watching the birds came to the idea of building some kind of nest ("manga") and so the first house was created. Later this man found a female companion originating from the upper world of the giant "Father Bird" and afterwards they had children. But still at this very ancient time they all had not the slightest knowledge of fire and thus were living close to the state of animals.

The high regard that fire has among the highlanders as the most important means of creating human civilization is best illustrated by this myth about its origin and the role it played in ancestral times as one informant explained it:

> *"Na long women paia em i bin kamap? Em i gat tumbuna stori long dispela. Wampela papi bilong ples antap em i pilim sori tumas long ol manmeri em i nogat paia yet na em i bin kisim wampela stik diwai na kisim paia wantaim na na karim em i kam long ol manmeri bilong graun. Na nau ol i gat paia pinis na ol i save hamamas nogut tru. Em i stori mipela save long em. Na sapos long taim bilong singsing na kilim pig ol i laik wokim mumu na laitim paia, olsem wonem! Bai em i no inap long kisim masis na laitim paia long masis, nogat! Em I samting bilong tumbuna na olsem ol i mas wokim paia long rabim rop bilong mambu olsem tumbuna pesin tasol!"*

Translating to:

> "Why then did fire turn up? There is an ancestor story about that. One dog from the sky felt very sorry for all people who still were without fire and he took a burning piece of wood and brought it to the people on earth. Now everyone had fire and they were full of joy indeed. That's the story we know. And in case of ceremonies when we kill pigs for sacrifice and want to light a fire, what is on! Then it is not proper to use matches, not at all! That has to do with the ancestors and therefore everyone has to produce fire only by using a bamboo string for rubbing in the way of the ancestors!" *(Phonographical Archive, Record IX/32).*

This dog known by the name of "Pâi" as a cultural hero did not only bring fire to earth but he also instructed mankind about the proper use of fire and about how to clear the forest and prepare the ground for gardening. The same dog also brought down to earth all sorts of crops and seedlings. But there is also a tragic end to this story: After that when the family of man lived happily it appeared one day that the father was out on a hunting trip while his wife was at home with the children. While the children were sleeping their mother felt hungry and she went out with a [fire] torch in order to catch frogs at the nearby creek, but when the torch dropped from her hand into the water she lost her way in the dark. When she finally came back she found the whole house in flames because nobody had taken care of the fire. Fortunately the dog "Pâi" smelt the smoke and heard the crying and immediately hurried to their help. Fearlessly he sprang into the burning house and rescued one child after the other until he had brought out the last one. But at the very same moment he finally collapsed from his deadly injuries. Everyone was extremely sorry for the brave dog and he received a most glorious burial. Since that time dogs are treated among the Mbowamb respectfully and are almost considered as family members.

Though dogs are never named "Pâi" the most common dogs name is "Ndip" which means "fire". In sculptural art of the highland tribes birds and dogs are the most prominent beings (Höltker 1940).

On the Origin of Ceremonial Grounds

At the time when the ancestors of the Mbowamb had settled down in the Wahgi Valley with their first villages and gardens, the men going into the bush for hunting found a very strange bird with a most unusual behaviour. The male birds, similar in size to a common crow would carefully prepare the ground and then decorate this area with a quantity of colourful and shining objects such as blossom flowers, berries, fruits and leaves or with the shells of snails, pebbles and even butterflies or beetles. At the same time the male birds would attempt to impress the female by dancing.

This performance would hopefully attract a female for copulation. Zoologically the birds showing this particular behaviour are known as bower birds. According to Mbowamb oral tradition the traditional way of preparing a ceremonial ground within a settlement place is to prepare a dancing floor, especially on the occasion when great gift exchange festivals are taking place. This type of preparation is derived from the mannerism of the birds (Gilliard 1953, 421).

The Myth of Chief Ponwe

The significance of fire as the most important instrument of creating human civilisation is clearly expressed in another highland myth. This myth concerns the origins of the Ialibu tribe in the south-western neighbourhood of the Mbowamb. According to this myth the ancestral clan of this tribe once arrived in the Ialibu territory at a time when the whole area was heavily forested. They started to clear the ground by cutting all the trees around and in the evening went to sleep. But during night the spirits of the bush came and restored all the cut trees which next day stood upright again as if nothing at all had happened. So the men tried once more and continued cutting all the trees. Next night the spirits showed up again and restored the whole forest as the night before. The same procedure also happened during the third day and night. But this time the clan chief named "Ponwe" had a most striking dream telling him that all the wood which they were going to chop down had to be burnt immediately on the spot. So this was done during the next day and when the spirits returned the following night they found only layers of ash around and thus were not able any more to restore the forest. Now the whole clan performed a great celebration with a lot of sacrifices and since that time whenever they cleared the bush for a new garden they always did exactly that. It is said that chief Ponwe lived long enough to see the establishment of many villages and gardens full of pigs and the growth of his tribe. But in the course of so many years when they all had become most wealthy and powerful they neglected the offerings and even forgot about the protocol of sacrifice. At this time the two biggest mountains in the area named Mt. Ialibu and Mt.Giluwe started to combat with each other, and the fighting went on for several days when it was completely dark and stones, fire and ashes were thrown around, covering the whole area. Everyone was frightened to death but only wise old chief Ponwe was brave enough to face the fierce mountains. He called out for peace and a stop in the fighting. It was then when the giant bird "Kea Ndoa" showed up and carried Ponwe up to the top of the two angry mountains, where he stopped their quarrelling.

Finally the fighting came to an end but also chief Ponwe was found dead during his brave mission. On the spot where his body was found a big lake came into being, today it is known as Lake Boona. The burial mound of chief Ponwe and his ancestral bird in the shape of a huge hill of clay at the foot of Mt. Ialibu is still shown today and considered as a most sacred place to all tribes around the region (Phonographical Archive, Record IX/18).

Oral Traditions and Archaeological Evidence

As a striking result of archaeological excavations in the PNG highlands, which have been carried out during the 1970s, it could be proved that oral traditions of the local population contained quite a surprising degree of historical consciousness. Certain events as e.g. eruptions of volcanoes, extraordinary periods of frosts resulting in famines and marked changes in the landscape such as huge floods or damages caused by big earthquakes which had occurred in the course of centuries ago were not only remembered by stories over generations but also could be dated back rather exactly by means of accurate clan genealogies (Allen 1970). In the case of the stone sculpture of a dogs head having found together with a stone mortar in the shape of a birds nest and stone pestles in the shape of birds these artefacts are obviously dating back to a period previous to the occupation of the area by the ancestors of the recent population. These objects as well as other stone sculptures of that kind are commonly regarded as being of a supernatural origin having fallen down from the sky. In fact they have been unearthed incidentally during gardening activities all over the Wahgi Plain. As a matter of fact this plain consisting of fertile ground over thick layers of peat originating from a former extensively large swamp area has changed its appearance in the course of millenniums several times.

In the earliest period the whole Wahgi valley was the bottom of a lake which due to geological changes had disappeared and later turned into a peat swamp. By archaeological evidence we know that first human activity there occurred about 9,000 years ago, whereas primary steps of plant cultivation there started as early as 6,000 years ago. At this period the swamp was already drained by a first stage of a barret system appearing to have been used for some centuries after which the whole area fell back to bushland again. A second phase of swamp cultivation by a comparatively advanced drainage system occurred 3,000 years ago with an intricate checkerboard network of barrets and channels thus supporting boat traffic over a distance of many miles around. Settlements in this period were placed on top of artificial mounds within this channel system supposedly having been constructed by a quite dense and well organised population. It was in this period when pottery, stone sculptures and canoe transport were common which disappeared again together with all other traces of cultivation in this region during a further interval of nearly 2,000 years when the swamps regained their place again. For a third time a drainage system was established there around the 12th century AD supposedly connected with the introduction of sweet potato which period lasted until the 16th–17th century. When the ancestors of the recent Mbowamb population arrived in the Wahgi Basin only about 10–12 generations or 300 years ago the whole area had fallen back to swampland (Allen 1970).

Though Mbowamb oral lore has no realistic explanation to the origin of the ancient potsherds and the various stone artefacts found in many places there are yet traditional stories about the sudden creation or disappearance of lakes as well as about water transport of past times which today is completely absent or even unknown throughout the highlands. Still in one of these stories the origin and later distribution of the twelve main tribes of the Mbowamb is explained in such a way that twelve brothers once were locked up in the house of a giant. From the house they escaped by a canoe.

According to another oral tradition of the Mbowamb there was an event several generations ago when the villagers experienced a darkness of many days with houses and gardens covered by thick layers of ash. This is matched by the myth about a great fight between the two former active volcanoes Mt.Giluwe and Mt. Ialibu, approximately 60 km distant from the Wahgi Plain. It is said to have taken place in the days of the legendary clan leader “Ponwe” whose burial mound is shown near Lake Boona (Phonographical Archive, Record No. 20).

Deriving from genealogical estimations as well as by archaeological evidence, the ash horizon of the last major eruption can be dated to the end of the 18th century. The use of science is controversial with local informants and great superstition is being shown towards archaeological excavations that are ongoing within the vicinity of their homesteads. They are expressing fear of disturbing ancestral spirits by such activities. However, there are also many of them who demonstrate a strong interest in discovering more details concerning their ancestry and local history. Among the latter there is even a growing conviction that the old myths and oral traditions may turn out to be essential indications towards supporting the archaeological and historical evidence.

Conclusion

Since there is also a close relationship between fire and sacrifice, all ceremonies in this context are significantly designed for some ritual connection between the earthly realms and the supernatural spheres. It is possible that a similar ideology lay behind in the ritual firing of houses in the prehistoric Lower Danube region (Gheorghiu 2007). Even in European folklore of recent times there is also a wide range of features concerning fire, which are often combined with the significance of space. As a prominent idea fire is regarded as the most important technological invention of mankind enabling human beings to create an artificial surrounding as a distinct zone within space dominated by natural environment. The significance which space and fire generally still has in the traditional societies of contemporary New Guinea is apparently matched by numerous parallels within the mythical realms of ancient Central Europe as in the case of the Motten region mentioned above, but likewise of other parts around the world.

References

ALLEN, J. 1970
Prehistoric agricultural systems in the Wahgi Valley. *Mankind* 7/3.
BULMER, R. N. H. 1960
Political Aspects of the Moka Ceremonial Exchange System among the Kyaka People. *Oceania*, 31.
DOSEDLA, H. C. 1972
Use of Plants among the Mbowamb – Notes on a collection of plants from the Mt. Hagen region 1970/71. Dept. of Biology, University of PNG, Boroko.
DOSEDLA, H. C. 1974
Ethnobotanische Grundlagen der materiellen Kultur der Mt.Hagen-Stämme. *Tribus 23*. Stuttgart.
DOSEDLA, H. C. 1975
Steinbeile aus dem Gebiet von Kagua im Südlichen Hochland-Distrikt. *Tribus* 24. Stuttgart.
DOSEDLA, H. C. 1978
Kunst und Künstler im zentralen Hochland von Papua-Neuguinea. *Tribus* 27. Stuttgart.
DOSEDLA, H. C. 1987
Traditional Trade-Routes and Intertribal Communication in Interior Papua New Guinea. *MAGW* 117. Vienna.
DOSEDLA, H.C. 2008
Space Concepts and the Significance of Fire in New Guinean Highlands Traditions. *Journal of Experimental Pyrotechnology* 1, 24–32.
GHEORGHIU, D. 2007
A fire cult in South Eurpean Chalcolithic traditions? On the relationship between ritual contexts and the instrumentality of fire. In: Barrowclough, D.A. – Malone, C. (eds.), *Cult in context. Reconsidering ritual in Archaeology*. Oxbow Books, Oxford.

GILLIARD, E. T. 1953
New Guinea's Rare Birds and Stone-Age Men. *National Geographic* 103/4, p. 421f.
HÖLTKER, G. 1940
Die Steinvögel in Melanesien. *Südseestudien*. Gedenkschrift für Felix Speiser, Basel.
LOCHNER, M., 1991
Studien zur Urnenfelderkultur im Waldviertel. *Mitteilungen der Prähistorischen Kommission* 25. Vienna.
KONRAD G. – KONRAD, U. 1996
Asmat: Myth and Ritual, the Inspiration of Art. Venice.
PHONOGRAPHICAL ARCHIVE
Tonband-Archiv H. C. Dosedla – Neuguinea.
RESCH-RAUTER, I. 1998
Unser Keltisches Erbe. Vienna.
REAY, M. 1959
The Kuma – Freedom and Conformity in the New Guinea highlands. Melbourne.
STRATHERN, A. – STRATHERN, M. 1971
Self-Decoration in Mount Hagen. London.
STRAUSS, H. – TISCHNER, H. 1961
Die Mi-Kultur der Hagenberg-Stämme. *Monographien zur Völkerkunde* 3. Hamburg.
VICEDOM, G. – TISCHNER, H. 1943
Die Mbowamb – Die Kultur der Hagenberg-Stämme im östlichen Zentral-Neuguinea. *Mittlgn. d. Mus. f. Völkerkunde* 21. Hamburg.

4

The Syntax of Place and Space

ROBERTA ROBIN DODS

Introduction

In archaeology human action/interaction speaks to us through the artifact. The artifact is, essentially, Popper's third world of knowing, the world of statements or the products of the human mind. These things are the hardware remains of ancient technologies representing systems of communication of complicated ideas. In archaeology the situation of the artifact in space and time is important to interpretation of meaning. The 'structure' of the place/space in which such things are situated also communicates. Place/space through the actualization of human thought becomes cultural landscapes. Through the reprise of the work of Edward T. Hall this chapter examines place/space as symbolic. And like language, as a symbolic system, it too has syntax, called by archaeologists *chaîne opératoire* for the artifact, unique to its specific cultural utterance. Perhaps it is *chaîne de histoire des idées d'espace dans temps et époque* , to make an analogous term for the situation of ideas on place/space as artifact of thought. It is both a literal and a metaphorical construction. The shape and form of place/space in its specific syntax introduces us to a whole realm of meaning in which we have not been privileged to participate. We cannot approach this directly through the inter-subjective and the dialectic of fieldwork as the anthropologist participant – observer. Nonetheless, the inter-subjective is there in the situation and shape of place/space, representing another time, and its use. The caveat is that the cultural reality (ethnocentrism for the anthropologist) of the observer may mutate its interpretation. The role of the researcher is to un-cover, discover, to 'listen in/look in' on the discourse of the past that created this record of its syntax and through reflexivity interpret its meaning.

Situating the Observer

> *The landscape at first seemed to be devoid of people... Their settlements were embedded in the landscape, like jewels in a giant's shield, and it took a while to find them and still longer to know them. The towns blended into the barren landscape so successfully that the average white man would drive right by with no inkling that on the mesa top were three entire Hopi villages* (Hall 1992, 77–78).

Serendipity is situated in place and time. Thus the juxtaposition of ideas when they occur in serendipitous ways is challenging but more, it moves us to reflexivity and thus insight. I was re-reading Wynn's book *The Evolution of Spatial Competence* (1989) and his discussion of projective geometry (p. 24) and Euclidean space (p. 39) and to mind came how many times I have been awakened new and anew to the nature of my world by the kindness of others explaining their worlds to me. This is the character of fieldwork in the social and cultural 'now', the gifts others bestow knowingly and unknowingly. Consider Chandler, a Tswana village man, in south eastern Botswana in the late 1970s teaching me to see herd animals as social groups. Consider the village people and people of the Bedouin camps of Jordan – some training me in private versus public space in vernacular dwellings, houses

Plate 4.1. Wokoki Pueblo (1120–1210 CE),
Arizona first excavated in 1896 by Jesse Walter Fewkes (Photo R.R.Dods, 1991).

and tents, and Abu Mustafa showing me the meaning of living between two worlds – the world of the nomadic herder and the world of the settled villager. In different ways what I called the ‘natural’ world became a cultural composition, a landscape of categories and relationships in space and time that are given structure through symbolic linkages. In the meantime I read on in Wynn as he noted four major stages of intellectual development through the Palaeolithic:

1. Sensorimotor – founded in ontogeny;
2. Pre-operational – lacks “planned separation and recongregations” (p. 97) (Oldowan hominids);
3. Concrete operational – organized real objects and events (*Homo erectus*); and
4. Formal operational (p. 73) (*Homo sapiens*).

Wynn continues that “We construct the space we live in. Our concepts of space are neither perceived passively nor innate. Rather, we constructed our concepts of space from our own actions....” (pp. 81, 94). But counter to Wynn’s view some of what we do *is* innate – based in our biology and some of this is not noticed on a conscious level. Of course we construct our landscapes. However, Wynn had missed something.

Landscapes, for me, had become metaphor or rather sets of metaphors for various cultural specific concepts of cultural being-ness. Indeed, we are recognised or recognise others as members of a group by the living out of these metaphors. The use of space itself becomes metaphor manifest and variations on the theme of space, and time, are found in the discussion of the ‘known’ and the ‘learned’, the different landscapes of knowledge, found in all cultures.

Traditional knowledge informs us of the cultural / natural world(s) (Dods 2004). It is situated in what Lyotard terms the (1987, 78) realm of *savoir* – the world of “narrative knowledge” (1897, 80). We can liken *savoir* to *bricolage* as detailed by Lévi-Strauss (1966, 21) (cited in Dods 2004, 547). Indeed, *bricolage* effectively describes the process of patching together an experiential (cognitive) map of “human experience as a life-sustaining network of relationships between all components of a sentient world…as a mosaic of passages and interactions … against the backdrop of a terrain … continually in process…” (Riddington 1982, 473). It is in the pondering of the nature of this oral tradition world that I was challenged to look at what we know of the past ways of being-ness where *savoir* informed on all matters in all realms of activity for survival in the cultural / natural world(s). I started to think again about what Ingold terms the “act of remembrance” and the course “of engaging perceptually” with a world "pregnant with the past" (Ingold 1993, 152–153). So my training and work in the context of a slight disagreement on Wynn's view brought me back again to Edward T. Hall, the man I echo when I say I have been trained "to look for patterns rather than content" (Hall 1966, 83).

Landscape perceived

The concept of 'landscape' as a perceived, constructed space is at once cultural and natural, real and mythical, art and artifice. It is comprised of what we of Western intellectual tradition would consider dialectical or binary oppositions. We see these oppositions as illustrative of the difficulty humans have in composing their place in both the physical and metaphysical worlds. However, there are those who see no such oppositional constructs but rather they see these 'worlds' as one place of being. One of these was an anthropologist who began to publish on the use of space and the concepts of time in the 1950s. The American scholar Edward T. Hall by this time had conducted fieldwork in the Southwest of the United States, Japan, and the Middle East. As well, he had observed both Europeans and Euroamericans in specific interactional situations. Although Hall's work subsequently came to influence the anthropology of space and the study of built environments (Lawrence – Low 1990) as well as areas of communication theory as seen in the work of Niemeir, Campbell and Dirven (1998), his actual intellectual development and application of his theories on space are seldom directly studied today although he has written in the relatively recent past, with his wife Mildred Reed Hall, for example, on non-verbal communication for educators (1987) and in 1992 on play and improvisation with respect to coded and memory stored sensory information, specifically commenting on music. This last point intersected with an area of interest to me because of the Glasgow TAG 2004 session **Audioscapes, Sound in/of antiquity** co-organized with Astrid Lindenlauf. Here I want to reprise some of Hall's work for consideration. Then I propose to look at some specific archaeological and living landscapes through Hall's theoretical approach. These landscapes represent, for people such as the Hopi and Zuñi, a shared past. They are the place of the ancient mothers and fathers who made the world of today (Colwell-Chanthaphonh *et al*. 2003, 3). Indeed, the Hopi call such places *ang kuktota,* the 'footprints' of the ancestors – the *Hisat.sinom*. (p. 4) For the Hopi and Zuñi archaeological sites do not represent memory but rather *are* memory (p. 2), a rather telling distinction in the realm of *savoir.*

The Silent Language

In 1959 Hall published ***The Silent Language*** a book that is much out of date today and difficult to read because of the tone of its language. However, it does show the beginning of the coalescence of a number of ideas that are still noteworthy today not only for those of us who are interested in the past but those of us concerned about the world of today. Hall believed that miscommunication was and is central to intercultural tensions. This miscommunication is of a fundamental kind and is founded in misunderstandings on interaction at the most elemental levels based in our phylogenetic past and our sensory responses mediated by culture to the world(s) around us. Although this first book looked at a number of aspects of 'culture' he eventually comes to a point, which will be the central theme of his subsequent work, that "space speaks" (1959, 146) and "depending upon the culture in question, the formal patterning of space can take on varying degrees of importance and complexity" (p. 158). For example, Hall makes the point that North Americans conceptualize space as edgy and if the edges are not evident, artificial lines are created so we speak in co-ordinates such as "five miles west and two miles north' and in many instances such instructions are quite precise and on compass because our space has been mapped on survey grids. So the GPS map in the North American car is no surprise. He contrasts this approach to that of the Japanese, among others, who find meaning within areas – naming individual spaces one from another. So "...to us a space is empty – one gets into it by intersecting it with lines" (p. 159) and this is a telling point when we consider how Euroamericans and here I include Eurocanadians, made North America 'empty', a 'wilderness' (Dods 2002), until they mapped and named it. *Terra nullius* was political and remains a political designation of space that by applying the dominant society's concept of landscape nullifies the existence of the suppressed 'other'.

We also think of time as fixed in nature (Hall 1959, 19). These two factors mean that North Americans have "canonized the idea of positional value in almost every aspect of our lives..." and standardized segments for measuring space and time are emphasized. (p. 159) Further, giving the example of vocal shifts tied to specific ranges of distances in specific cultures, Hall observed that "In Latin America the interaction distance is much less (than found in North America) ...Indeed, people cannot talk comfortably with one another unless they are very close to the distance that evokes either sexual or hostile feelings in the North American" (pp. 163–164).

- *Very close* (6 to 12cm) – soft whisper; top secret;
- *Close* (14 to 30cm) – audible whisper; very confidential;
- *Near* (30 to 45cm) – indoors, soft voice; outdoors, full voice; confidential;
- *Neutral* (a)(45 to 1m) – soft voice, low volume; personal subject matter;
- *Neutral* (b)(1.5 to 2.7m) – full voice; information of non-personal matter;
- *Public distance* (1.6 to 2.7m) – full voice with slight loudness; public information for others to hear;
- *Across the room* (2.7 to 7m) – loud voice; talking to a group; and
- *Stretching the limits of distance* – 7m to 8.5m indoors; up to 32m outdoors; hailing distance, departure.

Table 4.1. Shifts in voice for specific ranges of distances (Hall 1959, 163–164)

Within the context of his emerging concepts of interactional space Hall's work came to focus on two aspects,

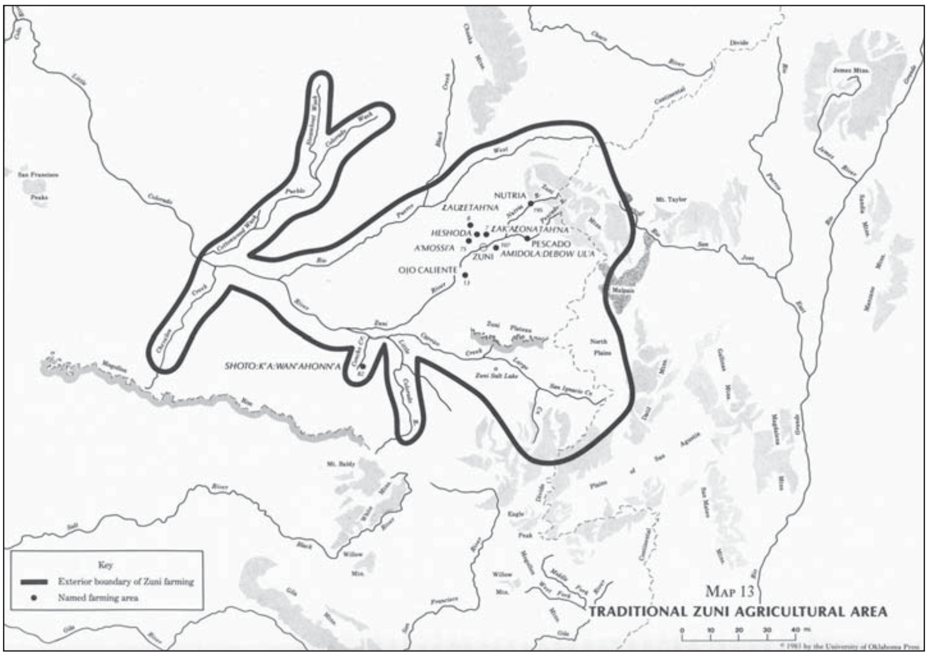

Figure 4.1. Territoriality, Map 13, Agricultural Area from Ferguson – Hart's A Zuñi Atlas (1985).

1. Space or **territoriality** defined in various constructs from catchment, to room size. The example provided here is that of land use by the Zuñi Pueblo people of the Southwest United States. These maps, selected from many more illustrating diverse land usages, show that catchment is nebulous and territory does not fit within one standard "line" for economic or metaphysical events or activities even within one society.

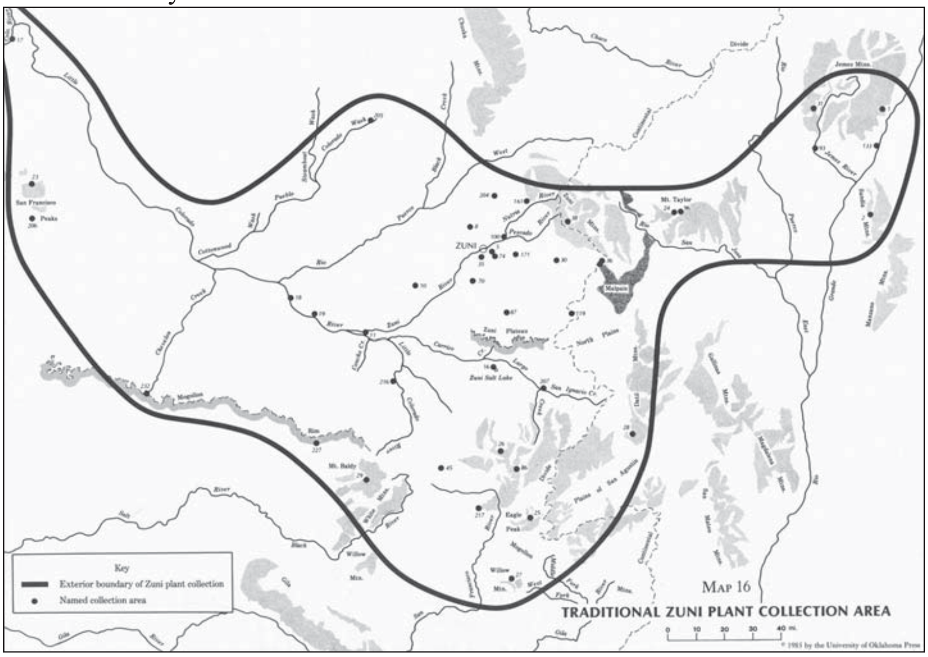

Figure 4.2. Territoriality, Map 16, Plant Collection Area from Ferguson – Hart's A Zuñi Atlas (1985).

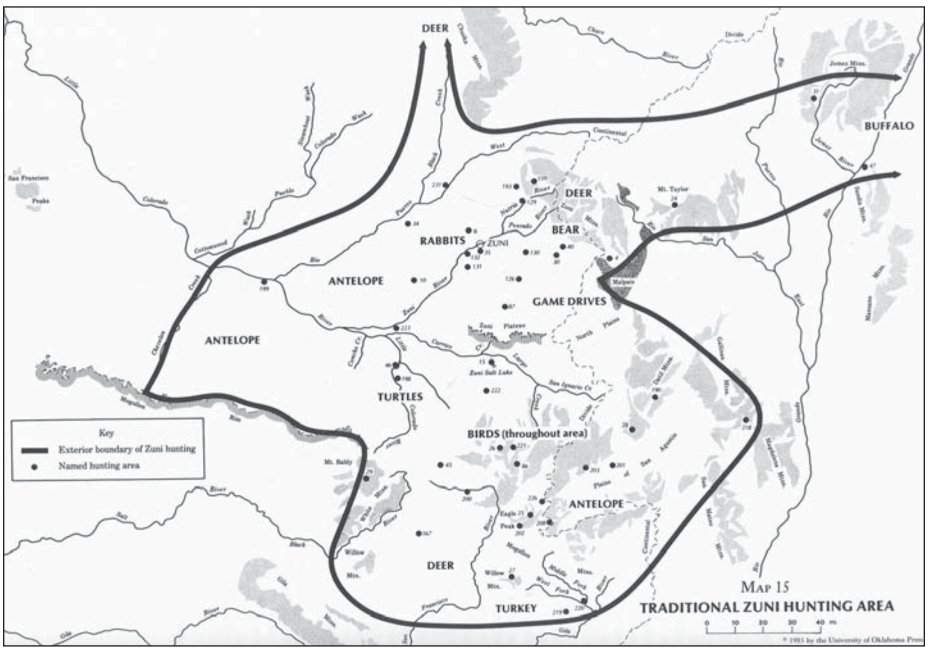

Figure 4.3. Territoriality, Map 15, Hunting Area from Ferguson – Hart's A Zuñi Atlas (1985).

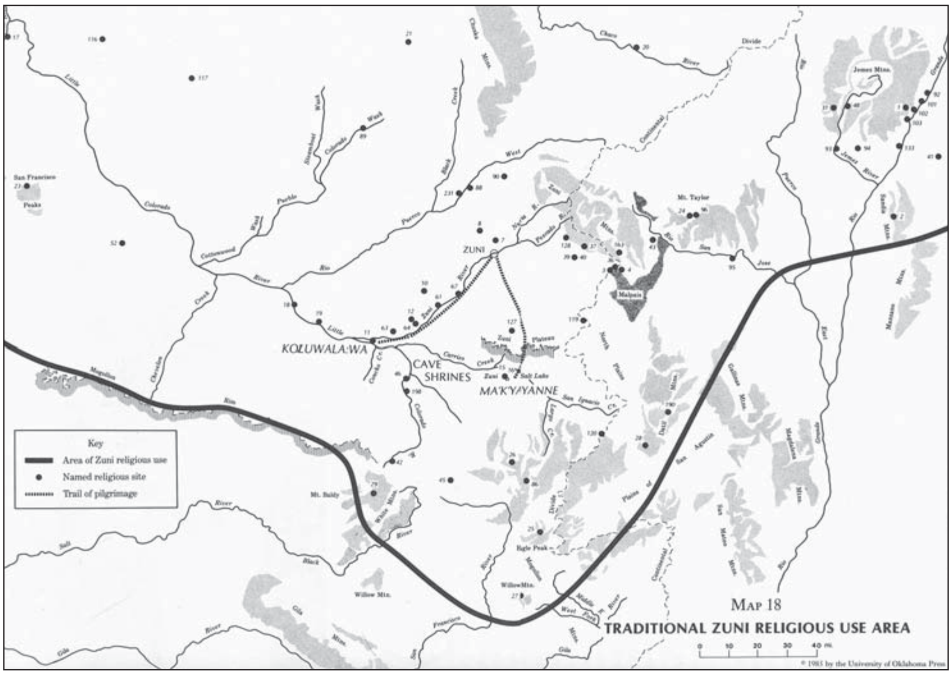

Figure 4.4. Territoriality, Map 18, Religious Use Area from Ferguson – Hart's A Zuñi Atlas (1985).

2. Time or **temporality**. In this we can seek to understand the cultural ethos for stability or change. The example, also from the Zuñi is provided by four village plans from a time of great cultural challenge as more and more Euroamericans intruded into Zuñi territory.

We can continue this examination of temporality by considering Ferguson observations on the difference between a long settled town site, Zuñi, and a town site composed quickly out of necessity in a time of strife. Zuñi historical documentation of apartments within larger room blocks in the vernacular

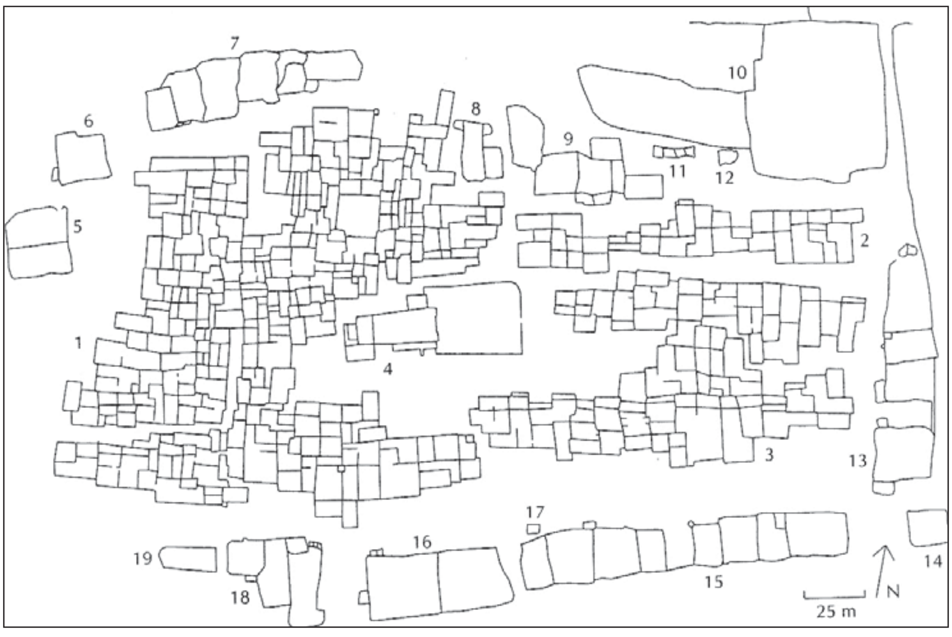

Figure 4.5. Temporality 1. Mendeleff's Plate 76 of Zuñi Pueblo in 1891.

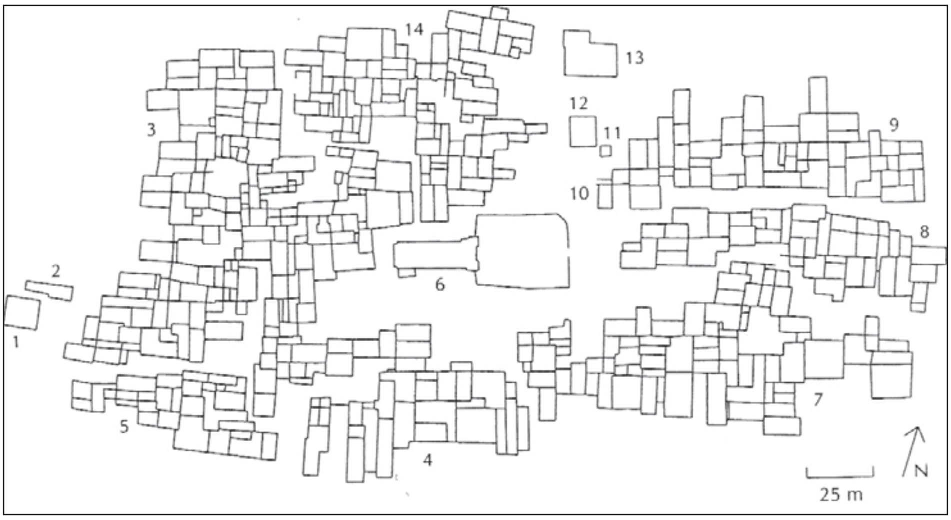

Figure 4.6. Temporality 2. Core area of Zuñi Pueblo, 1915, after Kroeber's map 7 (1917).

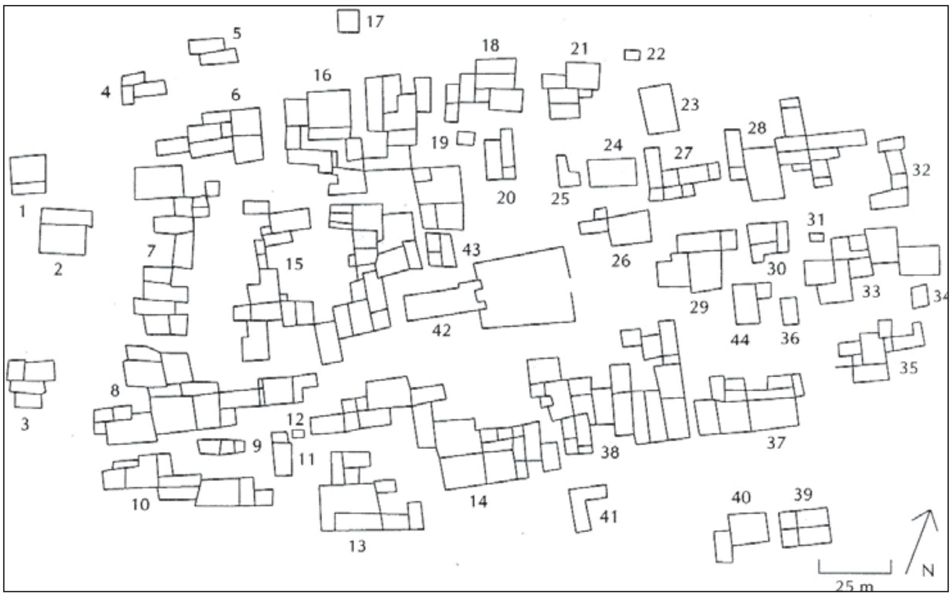

Figure 4.7. Temporality 3. Core area of Zuñi Pueblo, 1948 (Stubbs 1950, 93).

housing illustrate domiciles for individual households. Where these are interconnected by doors "especially when adjacent apartments are occupied by closely related families ... the different households are socially demarcated by the presence of their own kitchens ..." (1996, 125). *Plate 4.2* shows us the archaeological site of Pueblo Bonito and the interconnection of rooms using doors. Ferguson speaks of the Zuñi village as "...the antithesis of Bandelier Dowa Yalanne that came about after the Pueblo revolt of 1680." Dowa Yalanne "was composed of remnant populations of 6 to 7 semiautonomous villages attempting to create a new social integration." (1996, 145) This fact is illustrated in the discontinuous room blocks and lack of specific organization around the internal, very enclosed, space that could be called a Plaza. The Bandelier example can be seen in *Plate 4.3*.

"Plazas in all the settlements provide a strong global organization to the space system. The role that the spatial structure of Zuñi Pueblo plays in the social integration ..." (Ferguson 1996, 144) is

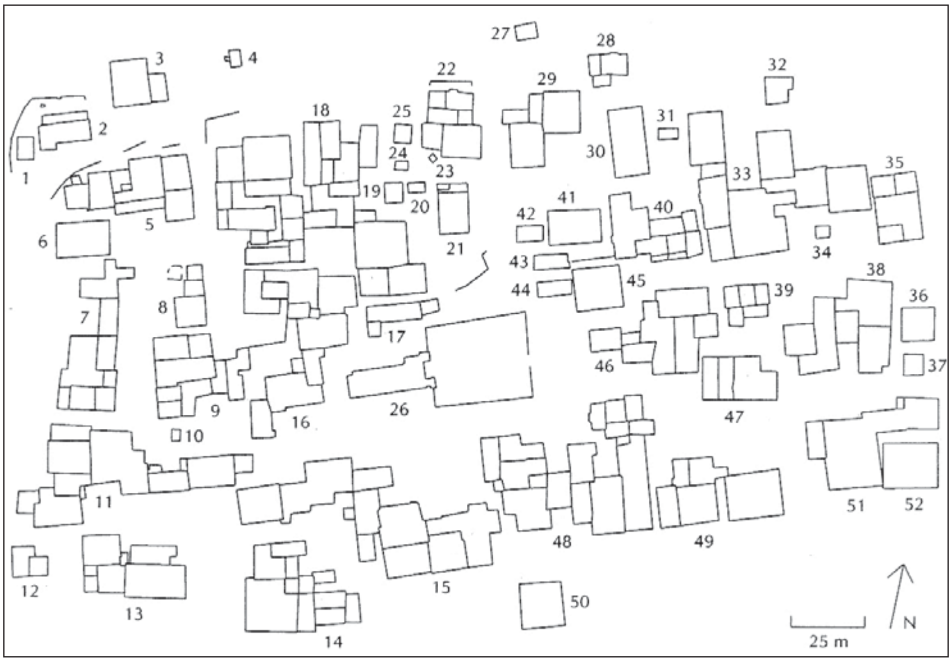

Figure 4.8. Temporality 4. Core area of Zuñi Pueblo, 1972 (Borchers 1972).

Plate 4.2. Interconnected rooms at a. Pueblo Bonito and b. Aztec Pueblo.
New Mexico, United States (Photographs: R.R. Dods 1991).

made manifest in the architecture. Since the core of the Zuñi village, as seen in the early drawings by Europeans is the same as it was in the early 17th century, can we then use direct historical approach to extend the function of Pueblo spaces back into the archaeological record?

Plate 4.3. Bandelier National Monument, New Mexico, United States, with discontinuous rooms dating from the post-Pueblo revolt era, after 1680 AD (Photographs: R.R. Dods 1991)..

A System for Notation of Proxemic Behavior

Within a few years Hall had broadened and formalized his analysis of space with two articles in *American Anthropologist.* Here the focus is on the 1963 ***A System for Notation of Proxemic Behavior*.** In this paper Hall formally defined **proxemics** as "the study of how man unconsciously structures microspace – the distance between men in the conduct of daily transactions, the organization of space in his houses and buildings, and ultimately the layout of his towns" (Hall 1963, 1003). Of course in the Pueblo examples we need to transcend the use of 'man' as the designator of all and note that these are matrilineal, matrilocal societies for the most part, with women as a central force in apparent decisions on site formation. It is assumed, on the basis of site similarity from the historic to the prehistoric periods that this was the case from early times.

This was followed by ***The Hidden Dimension*** in 1966. Proxemics at this time became an 'umbrella' term for the study of a number of "interrelated observations and theories of man's use of space" (p. 101). Thus, essentially, it was the study of humans' attempt to make sense from non-sense through devised schemas. These are the categories of relationships between 'things' that bring structure and meaning out of seemingly chaotic meaninglessness and humans do this with how they knowingly and unknowingly compose their interactions in space.

In simple terms, and most important of his proxemic constructs was his typology of ***informal space***, space whose patterns "have distinct bounds, and such deep, if unvoiced, significance that they form an essential part of the culture" (1966, 112). He came to this by refining some of the concepts found in his earlier work and then proceeded to move to a simplification from eight (Table 4.1) to four essential space categories he considered as an informal space typology that he termed "Proxemic Zones". The zones are from near too far,

Intimate distance, (1966, 116–119). This is so very *infra*cultural to *pre*cultural as you will see, subsequently. It is when the presence of the 'other' can be overwhelming and unmistakable because of the sensory input such contact affords. Hall notes that sight is often distorted at this distance and what comes to mind is how blind we can be in the first blush of passionate love. Then again it also speaks to the intimacy of hand-to-hand combat – so different from dropping bombs and creating

collateral damage ... plastic words in a modular language *à la* Uwe Pörksen (1995). In the far phase sensory input lessens but frequently not enough for many North Americans to be comfortable with interactions with 'strangers' since olfactory and thermal signals can still be evident.

Personal distance, (1966, 119–120). Here too objects have form and textures not see at deeper distances. This is the texture of life. In the close phase this is possible touching distance – thus it can be within the fright/flight zone for us as a species. We try to maintain a very clear visual image and this is perhaps due to the 'danger' this space may be with people we consider 'iffy' so we are able to pick up the subtle nuances of changes in affect/effect to interpret, perhaps dangerous, feelings in the interacting 'other'. The personal is really interpersonal in a close way. Also we can notice the interpersonal relationship by noting the signals given by how people stand in relation to each other. The far phase of personal distance can be termed 'keeping someone at arm's length'. This is the limit of physical domination. Subjects of personal interest and involvement can be discussed at this distance, voice level is moderate and now olfactory and thermal are not usually noticeable although we may note, on the basis of visual code, when someone is 'hot under the collar'.

Social – consultative distance, (1966, 121–123). Interpersonal business and use of the close phase over the far phase makes the interaction more 'involved'. Hall comments that this distance is FULLY cultural. We are now in our *micro*cultural space. Avoiding eye contact or making eye contact (this can be important with respect to age/sex/gender constructs; concepts of 'hiding' things, etc...) are very important and here we can note how mirrored sun glasses affect so many of us when we seek to communicate with the wearer – we have ourselves mirrored back to us. Now mirroring behaviour in body language, stance, and interaction distances can be a useful tool for the cultural anthropologist in participant-observation but it can be disconcerting in the sunglass instance since we focus so much on eye-contact and we have only 'us-contact'. The far phase can be used to "insulate or screen people from each other.... (or) to work in the presence of another person without appearing to be rude" (1966, 123).

Public distance, (1966, 123–125). Fright/flight may be engaged depending on the sensory input – like the outline of a know enemy on the hill outside of town. Much detail of the other is lost at increasing distances – eye colour, height, weight.... for leaders distance can give gravitas and here I think of the Aztec and Mayan religious leaders conducting ceremony from the top of pyramids of Mesoamerica and the steps so very narrow that the descent must be done on the diagonal with a back and forth over the face of the pyramid stairs.... indeed each step down is an act of faith since the next step is not in the visual area for the person descending. Distance means that the nuances of voice become increasing lost with increasing distance. So it is not surprising that narration styles have specific qualities to them in specific cultures. Hall terms this a "frozen style" (p. 125) and here I think of the very early movie images Boas made of Kwakiutal Orators of the West Coast of Canada. They have a specific stance, holding a Copper in one arm and using formalized speech patterns with the body in a slight sway. So culture BIG TIME!!

His selection of these four, he tells us, was deliberate and founded in 19th and early 20th century analyses of animal ethology and territorial behaviour. Subsequently Hall "was influenced by Hediger's (1930 [1964])work with animals indicating continuity between *infra*culture[1] and culture but also a

[1] "*Infraculture* is the term I have applied to behavior on lower organizational levels that underlie culture. It is part of the proxemics classification system and implies a specific set of relationships with other parts of the

desire to provide a clue as to the types of activities and relationships associated with each distance, thereby linking them in people's minds with specific inventories of relationships and activities (p. 114) and built environments. This work culminated in the 1974 ***Handbook for Proxemic Research*** where Hall discussed the human sense of space and spaces as,

> ...a synthesis of many sensory inputs, **visual, auditory, kinaesthetic, olfactory, and thermal....**" where each "...is molded and patterned by culture. Hence people reared in different cultures live in different sensory worlds. What is more, they are generally unaware of the degree to which the worlds may differ (1974, 2).

His list of sensory inputs provides interesting contemplation (*Table 4.2*).

- **Posture**
- **Body orientation**
- **Lateral displacement of bodies**
- **Change of orientation**
- **Change of distance**
- **Gestures**
- **Kinesis isomorphism**
- **Affect, kind**
- **Affect, intensity**
- **Eye behaviour**
- **Auditory code, number of talks**
- **Auditory code, linguistic style**
- **Auditory code, voice loudness**
- **Auditory code, listening behaviour**
- **Olfaction**
- **Thermal code**
- **Bodily involvement**
- **Seeking or avoiding touch**

Table 4.2. Personal Proxemic Dimensions (Hall 1974).

Of course some, indeed many, of these Personal Proxemic Dimensions we cannot observe directly about the peoples of the past. Some can be inferred from architectural features and documents such as artistic representations of interactions. However, we may be able to hypothesise on their role in specific cultures. Developing models of interaction on such speculations may be productive and provide some insights. But some of it may be founded in pure ethnocentrism.

Proxemic zones were essentially based on how we behaved, how we responded to our sensory input and what and how we observed this behaviour. Hall had termed these three "manifestations":

- ***Infra*cultural** – behaviour rooted in our phylogenetic past. It is spatial behaviour. Examples here are the human fright / fright response and concepts of territoriality as well as ideas about what constitutes overcrowding for us as a species. It underlies culture.
- ***Pre*cultural** – sensory, physiological responses providing our perception of space, which includes everything from our sensing of distance to our awareness of a thermal code.

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system..." (Hall 1966, 101).

– ***Micro*cultural** – the observational level for behaviour. Here we find the structuring of space mediated and modified by culture. Thus the actual shape of things in the built environment is the central concern. (Hall 1966,101) To this could be added conceptual space – how humans construct and shape the metaphysical world.

So Hall did not stop with the *infra*cultural as behaviour rooted in our phylogenetic past but added the *pre*cultural as pertinent in our sensory, physiological present, and the *micro*cultural – where most of our observations on behaviour are made. The Microcultural Level was divided into two aspects of space:

The first aspect is **fixed-feature space**, "…those features of space which are materially fixed in the environment of a particular culture…" (Hall 1974, 39). Fixed-feature space is manifest in two phases,

(a) the internal, culturally specific phase as found in the perceptual classification system of the culture. Here are descriptions of concepts of a space as found in the vocabulary of the language;

(b) the external environmentally fixed phase exhibited by the plan of houses, villages, towns, cities. This type of organization is not hap-hazard but follows a plan that changes with time and culture and the intervening countryside (Rapoport 1990, 41). (Hall 1966, 97) For example, commented earlier, the Japanese interval system and North American grid system. Questions that arise here are how do we discern the paths, edges, districts, landmarks of a culture? Indeed, what constitutes a landmark?

For example we could ask did humans live in round structures until they became specialized and sedentary when they then lived in squared houses as Marshall McLuhan (1964) claimed? Are square dwellings enclosures of visual space made possible through specialization while round dwellings are not enclosed in the visual sense but remain a tactile space? Returning to the Southwest for examples here we can think of Zuñi gardens, Pueblo house form and the religious structures called Kivas. According to Ferguson (1996) vernacular housing elements and Kivas are non-interchangeable in their architectural elements and their functions. He notes "Plazas when found are also used in the same way as the non-interchangeableness of the Kiva – they cross-cut the essential units of the society – here we can note the matrilineal clan... can become interclan interaction and access to ... specific religious organizations and sodalities" that provide community 'netting' of various types (1996, 124).

The second aspect is **semi-fixed-feature space**, the analysis is contingent on first defining fixed feature space and is comprised of those features that are subject to easy arrangement or rearrangement, such as furniture in our culture (Hall 1966, 101–105) (Watson 1968,42). Movable walls in traditional Japanese architecture, screens, etc., are semi-fixed. Semi-fixed space can be arranged in two patterns:

(a) sociofugal, patterns that tend to space people 'relationally' apart and

(b) sociopetal, patterns that tend to space people 'relationally' together (Osmond 1959, 7–9).

As Hall points out, neither of these space patters is intrinsically good or bad but rather what "… is desirable is flexibility and congruence between design and function so that a variety of spaces and people can be involved or not…" (1966, 103–104). Hall observed that fixed and semi-fixed features are culturally variable. Further, he states that space perceived as 'relationally' sociofugal or sociopetal by us may not be so perceived by those of a different culture (1966, 104,103). Interpretation of these aspects in the archaeological record is thus extremely difficult.

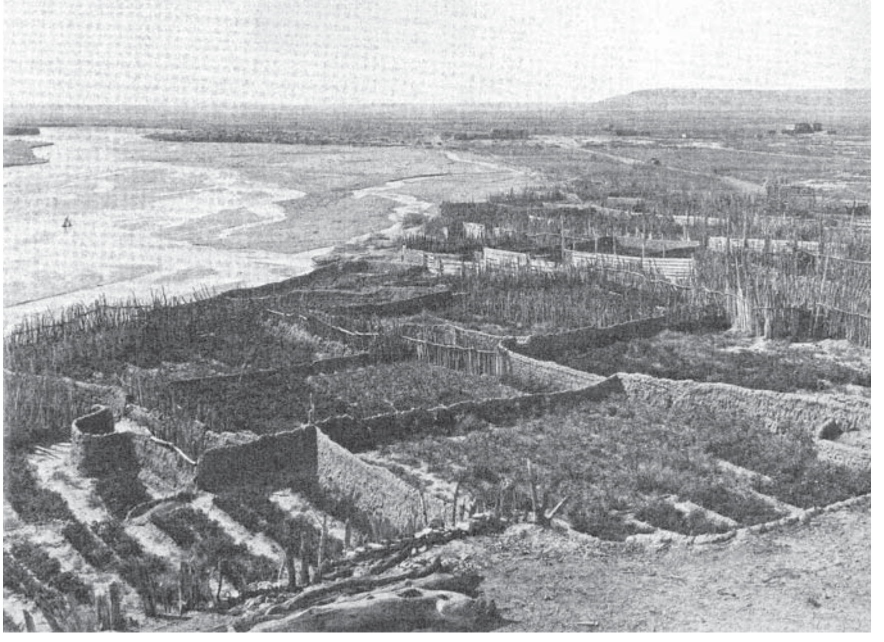


Plate 4.4. Zuñi 'waffle' gardens 1919. Museum of the American Indian negative number 5598.

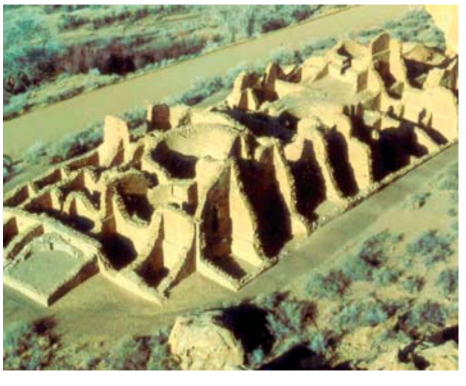


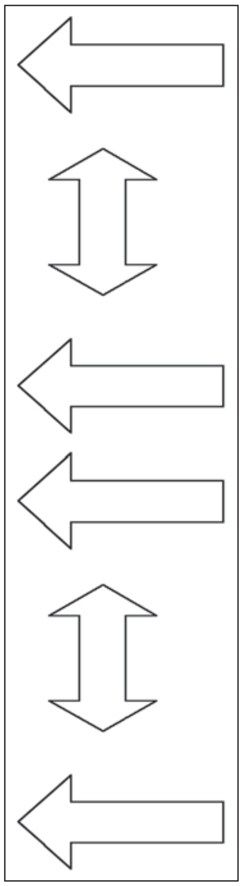
Plate 4.5a. Kin Kletso the 'foreign' pueblo, squared with no Plaza and all Kivas as internal constructions.

Plate 4.5b. Pueblo Bonito with open Plaza, curved external wall and large free-standing Kivas in the Plaza although some internal Kivas in room blocks. Chaco Canyon, New Mexico. Room blocks with internal Kiva (round) structures (Photographs: R.R. Dods 1991).

Plate 4.6. In foreground an 'open' Kiva at Wupatki, Arizon in Kayenta Hopi Territory described by a visiting school child as "Look, it's where the Kachinas danced" (Photograph: R.R. Dods 1991).

Valid / invalid observation

In work with extant study groups Hall was worried about authenticity, or the conscious distortion of the data (1974, 3) noting that “...there is no way of knowing, no set rules, for determining what is kept hidden and what is not discussed with outsiders.” (p. 4) Authenticity is not the problem facing the archaeologist attempting to work through Hall’s analysis on archaeological materials but what is hidden can be. Then too, authenticity may be our problem rather than any purposeful distortion from the “informant’ from the past. Although we may not be able to understand many of Hall’s proxemic dimensions, he does give us hope for our analysis since we do see territoriality through “boundary markers, fences, and specially designated spaces like father’s chair, the nursery, and the like” (1974, 5). It is with Hall’s analysis of what he terms non-contact Americans, in this case based on his work with the Hopi in the Southwest USA from the 1930s, that we can see discrete sets of distances, intimate, personal, social-consultative, and public. However, we do not have great detail on this part of his professional life until the publication nearly a decade later of The Dance of Life, The Other Dimension of Time (1983). An in-depth review of his concepts on time will be the subject of a subsequent article but included here are a few of his observations on temporality as, indeed, it does impinge on the use of space. This is interestingly evident in the Hopi data illustrated by Hall in a mandala so that it is represented in non-linear fashion, the construction of the built environment and the physical manifestation of sacred and profane time as well as the rhythms of life that tie the Hopi together (1983, 14). Note that:



- setting is defined through its material, spatial, and temporal components;
- activity defined by whether it is work, play, defensive activities, language; and
- social system by relative status, age, and sex to which we would add now gender (Hall 1974, 16).

Each of these can be a major area of proxemic research by the classification of space into fixed feature,

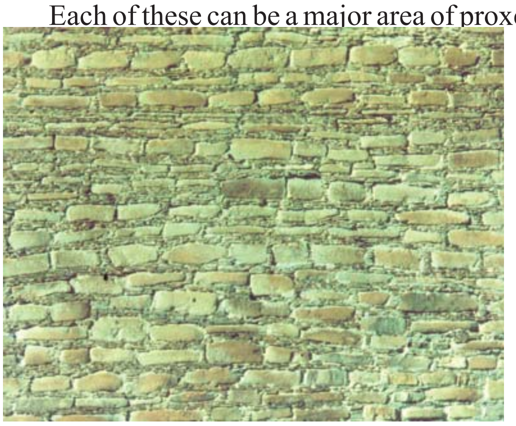


Plate 4.7. Time and space in one document. A wall from Chaco Canyon with two construction styles evident, New Mexico, USA (Photograph: R.R. Dods 1991).

semi-fixed feature and/or informal space (p. 16) delineated by an understanding that these represent **structured events** that can be seen through action chains familiar to us from the *chaîne opératoire* of lithic analysis and situational frames (p. 17). Consider here the Pueblo wall from Chaco Canyon seen in *Plate 4.5*, directly below. Here is a wall composed over time, and interpreted to be the work of perhaps one individual. Seen is the developing skill of the mason and shifts in 'style' both direct evidence of time on a personal (maturation) level and on a cultural (ascetic) level. It is spoken of in archaeology as indicative of building phases.

The changing of buildings can also indicate structured events – the Kiva enlarged or altered to meet present needs or the room block with a 'closed door' (*Plate 4.8*). Does the closed door indicate the personal (a family in conflict) or the changing needs of a population over time?

Where are the boundaries between private and public space? Are walls demarking safety or privilege? Do doors and doorways divide space or are they opening space for a functional oneness?

Plate 4.8a. South Wash, Chaco Canyon free standing small Kiva altered over time (Photograph: R.R. Dods 1991).

Plate 4.8b. The closed door, Chaco Canyon, New Mexico, United States (Photograph: R.R. Dods 1991).

Application challenges from the ethnographic present

The ethnographic literature outlines for us, in great detail, the integrated nature of Pueblo society (Kroeber 1917; Parsons 1925; Eggan 1950; Dozier 1970). The Kiva groups and societies/sodalities (fraternities) crosscut the kinship organization of the community. It is interesting to note that this type of crosscutting pertains whether the group considered is of the 'Western' or 'Eastern' Pueblo region although there are differences in their kinship organization. These social features are overlaid on an abstract, ideational (cognitive) map of the community.

The area at the very centre of the community is the CORE and as such represents the *genre de vie* (Rapoport 1969, 47). In Pueblo society much of this core is determined by the organizational nature and features of the religious sector of society. So much so that Rapoport claims

> The whole landscape is sacred, as is the house…Corn growing is for them a religious act and an essential part of the total spiritual life. It is this attitude which affects the house its form, setting, and relation to the land, and helps explain why such buildings enhance rather than damage the landscape (1969, 76).

Housing as fixed feature space, Kroeber (1917, 189) tells us, is private space and considered personal property (Smith *et al.*1954, 82). Nonetheless, in any discussion of kinship it becomes evident that homes are open to a wide range of kin and specifically, among the Western group, to use by daughters and sisters. There does not seem to be localization of clan groupings within the house blocks. This lack of clan clustering was found by Mindeleff as early as 1886. Although we may attempt to consider "households" as separate units, Harrington's analysis of Tewa ethnogeography tells us that "The **houserow** is regarded as the unit of pueblo architecture" (1906–7, 88) and the term for house *teqwawibo'o* actually refers to a house apart, separate from the houserow (p. 91). When the houserow is of more than one story the numbers are counted from the top down. (Kroeber 1917, 190) This indicates the orientation of the people to the living and storage room divisions of the housing units. Within households, areas are usually open in some way to each other. These rooms were linked by connecting doors and a feature often to be seen in Zuni houses, by interior windows, which frequently permitted visual contact between rooms (Roberts – Gregor 1971, 217).

Rooms in houses are regularly used for ceremonial purposes by societies and sodalities. However, rooms in houses used for Kivas are usually converted to this purpose and do not seem to serve a dual function as secular and ceremonial rooms. Within dwellings some areas are more private than others. These are usually areas where religious items are stored. "In all the houses the most private of all settings were to be found in the storage areas within the bedrooms or in the main storeroom, for it was here that objects of religious importance were kept" (p. 218). These areas along with the Kivas could be considered the "safeholds" of the society (p. 219) both in a literal and metaphorical sense.

As noted, Kivas serve a religious function within the community. They are private sectors of the community in that they are used by male members of the associated groups. Women enter Kivas only when the interior is refurbished. The privacy of both the Kivas and certain areas of the home are based on "… religion… [defined by] a set of rules for establishing hidden regions and maintaining secret knowledge within the society…" (p. 200). Neither of these areas operate with a Public component.

Nonetheless, public space abounds in Pueblo society. Indeed, "The communal ownership and use privileges of streets, plazas, burial grounds, and wells are so well established that we have no record of controversies thereon" (Smith – Roberts 1954, 82). In addition to these areas, the roof tops are described as "public highways" (Kroeber 1917, 189). Parsons' study of the ceremonial life at Pueblo Jemez illustrates the use of public space for ritual purposes (1925, 88, 82). Public space (the plaza) was also used for the punishment of witches (Smith – Roberts 1954, 38). "Witching around" was considered one of the two most serious offences that could be committed (*ibid.*). It is interesting to note that of the eighteen cases reported by Smith and Roberts, ten involved intrusion into an Intimate / Personal area. Two cases involve intrusion into Home and Interactional Territories, and two further cases deal with intrusion into the Intimate area by the robbing of the dead. (1954, 38–49) Punishment of witches is a Public based activity. There are firm distinctions between private and public areas emphasised by the considerable punishment for offences against these areas. And when we consider the abstract considerations of actual fixed feature space, it is obvious that the Pueblo people have set ideas about the nature of space and how it is used. This extends to the symbolic use of spaces as well. In the story of the 1540 visit of Tobar to Awatobi the following lines are interesting:

> The warriors descended to the plain, and their chief drew a line of sacred meal across the trail to symbolize that the way to their pueblo was closed; whoever crossed it was an enemy, and punishment should be meted out to him. This custom is still preserved in several ceremonies at the present day…priests say that in former times whoever crossed a line of meal drawn on the trail at that festival was killed, and even now they insist that no one is allowed to pass a closed trail (Fewkes 1898, 597–598).

The sacred line is the cognitive outer boundary of the village. Beyond this area of the village is an area "thickly strewed with place names well known to its inhabitants…" (Harrington 1907–8, 94). These names may represent actual places or be symbolic for some feature of the environment – thus *landmarked*". Knowledge of geographical details fades rapidly when one passes beyond the sphere of place names of his village (p. 94). Certainly the placement of shrines in this area, fixed feature ritual space in nature, holds symbolic meaning. When we consider all the maps in the Zuñi Atlas it is evident that the Religious Use Area map effectively is this boundary for Zuñi.

Other features of conceptualization of space may contain concepts of the sacred. For example Map Two from Harrington illustrates the 'Sunny' and 'Shady Side', 'Morning Sun Side', and the 'Morning Shade Side' of Pueblo San Ildefonso (1907–8). The question to ask is "Does this have a meaning?", if so what is this meaning? One observation is that the SUN SIDE seems to be the position for the Kiva. Additionally, Mindeleff speculated about the possible application of a myth to the spatial arrangement found within the Kiva. One of the major myths of the Pueblo peoples concerns the creation and the subsequent destruction of the three worlds inhabited by The People (we all live in the fourth world now and it too awaits destruction). He observed that the ladder from the Kiva is always constructed of pine, as in the myth where access was by climbing a pine tree to the fourth world and the light, and that this ladder always rests on the elevated portion of the Kiva floor not unlike an insect hill (1891,135).

Within modern houses the hearth has been replaced by a fixed feature fireplace. This then offers little data for understanding past behaviour although hearths did seem, somewhat, to have fixed feature configurations being used/reused, built/rebuilt in the same physical space through time. In the recent past grinding bins were used. These usually appear in a group of three and are found in a room of their own. Mindeleff stated that three women used these bins at one time (1891, 212). However, careful measurement of various people of diverse sizes indicates that this type of placement was impossible… there simply is not enough space for working if three women are seated. These bins face in such a way that the person using them would be facing to the center of the room, thus allowing continual surveillance of the room as work proceeded. Such attention is expected in childcare situations. The placement of the hearth in the prehistoric dwellings, the orientation of the grinding bins, and the intra-household windows all suggest close interaction levels of Intimate, Personal, and Social. Photographs of people from this time all show the expected close groupings. There is also a high instance of touching between individuals. Therefore, shoulder-to-shoulder work stations for grinding maize and close seating arrangements in Kivas were the norm.

Further, hearths in Kivas are always situated in the same physical relationship to other fixed feature aspects of interior space. Here the hearth, the deflector and the *sipapu* (opening to the underworld where humans had found refuge during the third destruction), are all in a centerline placement for the structure. The elevated sections, sometimes at one end (sociofugal), sometimes around the walls (sociopetal), control the placement of the participants within the chamber during ceremonies. Ceremonies could be moved out into the community plaza. Such ceremonies 'outside' and on the, seemingly from our perspective, Public level would entail the use of greater physical spaces. However, this does not mean that intrusion of inappropriate people at this time would necessarily be tolerated – consider the witch accusation and punishment discussed above. Thus open to the sky does not have to indicate open to all – and this means we may see Wupatki Kiva (*Plate 4.6*) in a different spatial configuration.

The Kivas also function as retreats and workrooms for the men who are members. Looms are aligned along the walls and men, facing to the wall, sit and weave. There is a definite sociofugal arrangement in this work pattern at distinct odds with the communal work pattern of women as outlined above.

Anasazi *or* rather *ang kuktota Hisat.sinom*, some observations on the 'archaeological past

Internal coherence is an appropriate term to describe the association of the Anasazi peoples with their housing and environment. The intrasite conformity of room size and shape, and the intersite patterns over wide areas cannot be ignored. Bandelier termed this conformity "honeycomb" or "beehive" as indicating "…prevailing principles of communism in living…" (1881, 54). An example of this can be made from Site 499, a Pueblo II to Pueblo III occupation of Chapin Mesa (Lister – Lister 1964). Of the twenty-one north / south wall components examined all fell within two Standard Deviations from Mean. Almost identical results were obtained on the east-west walls. Such internal conformity cannot be accident. Rather, a certain idea of a plan and its results must have been considered. Hudson's work on possible measurement systems at Pueblo Bonito supports the idea that systems were probably used. However, they were not standardized and did not proceed from one building period to another (1972, 39–40). The conclusion that can be reached here is that ideas about the general sizes and shapes were defined within the culture as a whole but only achieved a set pattern for a specific unit and a specific time. Nevertheless, there were certain cultural limits that were seldom surpassed. This was the case sustained by the research of Fletcher (1977). By comparing the Hopi and Franciscan occupation of Awatovi he illustrated a sharp contrast in the use of dimensions between the two cultural groups. He concluded that there was some internally coherent criteria by which it (the community) orders its options (1977, 141). The development of the type of architecture achieved by the Pueblo peoples is the result of exercising these options.

There is one area that seems to be late in development and that is the Public space sector of the community. Earlier villages do not seem to offer the distinct 'plaza' areas. This suggests that the Public level was late in the development of spatial ideas. This would result in an intensification of the three other levels of space –Intimate, Personal and Social and their accompanying fields. This is to be expected if the society grew not only in population numbers but from nuclear family to extended family to lineages to clans or moieties. Other institutions would have had to increase as well, such as the economic sphere and these may have required more space.

It is suggested that the culturally inward looking, tightly knit community can be found as early as Basketmaker III times. An examination of site plans from various areas and time levels illustrates the widespread uniform use of space ideas. For example, Earth Lodge B Settlement, Chapin Mesa-Mesa Verde National Park, can easily be compared to the Shabik'Eshchee Village, Chaco Canyon, and to the groupings of pit houses 'H', 'I', and 'K' at Site Thirteen, Alkali Ridge for the same type of orientation on the North/South axis. The semi-circular distribution of houses is common through subsequent periods. We must ask if this use of the circular has a symbolic meaning to this culture and if this is the case we must then consider its use on a scale smaller than the village pattern – that being in the construction of the Kiva (ah! Marshall McLahan and the start of sedentary living). The so called "front orientation" discussed by Reed (1956, 16) may represent the placement of dwellings and Kivas in direct relationship to the 'sun-side' or 'morning sun-side' discussed earlier in this chapter. If this type of placement is seen as symbolic or mythic, an explanation is found for the rim side placement of Kivas in the cliff face sites found in excellent example at Mesa Verde. Placing the Kivas to the front of the ledge will put the ritual area in the "light" portion of the occupied space. Thus, within the constrictions placed on the building by the nature of the natural cliff site, the builders have been able to solve the problem of symbolic placement of the ritual area. A review of the published site layouts of Canyon de Chelly in Mindeleff (1897) illustrates that Mesa Verde is not an example alone. The work of Dean (1969) at Tsegi Phase Sites and Rohn (1977) at Chapin Mesa reinforces this idea of symbolic placement. Irrespective of the cardinal direction of the cliff face, the Kiva or Kivas are found at the outer edge – the rim between the space of here and now and wherever and whenever found in the realm of the metaphysical.

The placement of the dwellings facing towards the Kivas symbolizes the central and unifying force of the religious sector of this society. In this sector much of what has been termed 'conservative' in the Pueblo character can be found. The adaptation of the Basketmaker pit house, with both its ritual and secular components, to a basically ritual function can be documented by extensive site data – both Alkali Ridge and Chapin Mesa have good sequences from this period through to Pueblo II where the Kiva has acquired its characteristic pattern. One could speculate that this orientation stems from the period when the sub-floor pits were built in conjunction with the pit houses. A good example of this pattern is found in the Jeddito (Rohn 1977, 246) Basketmaker II area. If this is the case, we are seeing here the initial steps in the process that would redefine what was considered 'living space'. This would involve all the levels of scale change, perspective rotation, and abstraction/symbolization of relative space from the Intimate to the Public. That this shift should occur at this point in time – the shift into sedentary settlements and the intensification of agriculture- is interesting if we continue with McLuhan's concepts about space. He states:

> A tent or a wigwam is not an enclosed or visual space. Neither is a cave nor a hole in the ground. These kinds of space… are not "enclosed" in the visual sense because they follow dynamic lines of force, like a triangle. When enclosed, or translated into visual space, architecture tends to lose its tactile kinetic pressure. A square is the enclosure of a visual space; that is, it consists of space properties abstracted from manifest tensions. A triangle follows lines of force, this being the most economical way of anchoring a vertical object. A square moves beyond such kinetic pressures to enclose visual space relations, while depending upon diagonal anchors. This separation of the visual from direct tactile and kinetic pressure, and its translation into new dwelling spaces, occurs only when men have learned to practice specialization of their senses, and fragmentation of their work skills. The square room or house speaks the language of the sedentary specialist, while the round hut or igloo, like the conical wigwam, tells of the integral nomadic ways of food-gathering communities ... (1964, 125).

This then could be the point for the genesis of new ideas about the meaning of community, the meaning of relationships of extended groups of people – the shift of primary economic focus in the emerging reliance on domesticated crops.

Indeed, food production itself is a new and different social relationship between humans and other species. Plants and animals become linked to humans in different ways than the wild of their ancestry. Intimate and Personal to Social-consultative distances are the norm in this new relationship to food. With respect to humans, the wild live in the Public and come into the Intimate/Personal through predation. The domesticated live in Intimate, Personal, and Social-consultative space relationships with humans where their continuance as a group is dependent on the husbanding of their lives by these humans. Here predation is only part of the on-going relationship.

The unification of distinct family or lineage groups can be extrapolated from the very good record of building in the Tsegi Phase Sites of Arizona. Although dating to later Pueblo III times, the sites offer a unique example of the development of village increments that can be interpreted as families or lineages. Dean's work is based on absolute dates from dendrochronological sequences developed for the area. Examples of such integration can be found at Batwoman House, Twin Caves Pueblo, with the best data coming from Kiet Siel (Dean 1969). The Tsegi Phase of Kiet Siel has been divided into five periods, from which the second period offers the indications of population increment (1969, 148). This example of fixed feature space has been interpreted in terms of unity of the group through space and time. On this Dean notes at the Swallow's Nest Cliff Dwelling the tightly packed cluster of rooms associated with a Kiva may represent a localized lineage. But he concludes that this may be "nothing more than the necessity to adapt the village layout to the available floor area of the cave" (1969, 158–159). However, if Kiva groups cut across kinship divisions within the society, a lineage explanation would be inadequate.

The early pit houses could be considered as "two roomed" with the symbolically situated *sipapu* found in the inner area. McFeat suggests that the movement of the ritual area to its own building expresses the "wholeness of the community…" articulated by its having grown a 'head' or 'heads' and that the eventual development of the Great Kiva signifies a claim to authority, "… a bid for leadership and the exercise of power" (1974, 89). Further, McFeat claims that this trend culminated in the distinct town patterns found in Chaco Canyon.

The growth of the religious sector was coeval with the integration and expansion of the domestic units. That two systems grew at the same time with a dynamic tension between the centralization through the Kivas (male focused) and an internal network system (interconnecting doorways and windows) within dwelling units (female focused). McFeat thinks that this conflict eventually resolved itself with a process of synthesis whereby the centralized Kiva disappeared (1974, 93–96) and Kiva proliferation can be seen. In his final analysis he defines the center (Kiva) as male in its "complement and control" and the "periphery" (housing) as female (p. 97). If this is a case we have the definition of space and sectors by sex and perhaps gender roles.

The examples have come from the Pueblo area of the Southwest of North America. Inward-looking, well oriented to their environment, the Pueblo people exhibit long term patterns in their use of space. These patterns indicate a 'tighter' use of space than our culture teaches us. The Intimate, Personal, and Social space components of this society allow for greater contact between members while the Public space sector does not involve the great public distances we are used to in Western European and North American culture areas. This close living suggests that there are mechanisms to control the behaviour of the members so this close nature can be maintained. Ethnographic data suggests one of these mechanisms of control is the fear of punishment for witchcraft.

And so I return to the wall with the building 'phases' seen in *Plate 4.7.* Hall would frown on what is essentially a 'phase' interpretation. He (1992, 111) would note that in the Southwest things are done collectively (clan and sodalities) and by factions. This differs considerably from the individualistic Navaho where individualism is highly valued and family farmsteads with separated vernacular housing were and are found. For Pueblo culture internal integrity of this culture is its main long term feature.

Also Hall would emphasize the improvisational way things get done. The finished 'thing' is considered one thing but it has a timeline of construction that varies considerably from what we would be comfortable with. (I note here the 'unfinished' look of many Jordan villages with their re-bars sticking up into the air – a fact of the taxation system on completed dwellings). But "A fact that is frequently overlooked by those reared in North European cultures (or their derivatives) is the pervasiveness of rhythms, not only in nature but in the transactions between people in daily life. All of life, as well as what preceded life (if that distinction is valid), involves rhythms" (Hall 1983). In fact, life begins with rhythms (Hall 1992, 227). The wall has a rhythm representative of someone's spatial and temporal context and is not necessarily representative of 'building phases' in the sense we use the term.

Final comments

For all species spatial organization is a fundamental principle. The qualitative difference between humans and other animals is found in our ability to perceive of ourselves as actors and to perceive space as dynamic. (Hall 1966, 108) Thus we can use space not only as a signal system but as a symbol system – a metaphor. The symbolic spacing on the Intimate – Public continuum, therefore, becomes almost as culturally specific as the signal system of other animals is species specific.

Humans live in three distinct, but simultaneous and interacting, environments, physical, social, psychological. As Lewin pointed out more than seventy years ago, it is not always easy to determine those things that exist psychologically for any given person (1936, 18), or even for the collective as represented by the society. "What is ***real*** is what has ***effects***" (p. 19) and Hall has signalled us to see the effects. In any attempt to understand relative space we must see it as the 'cognitive signature' (Downs – Stea 1973, 12) of the people who devised it. The development of relative space involves general principles not dissimilar to the process whereby myths are created. But then myths are also symbolic cultural statements. It then is not surprising to find Hart and Moore describing space as "mythical conceptions" of content composed of meaning and values that are culturally specific (1973, 249). Perception is learned, (Stea – Blaut 1973, 54) and this learning process is not only directed by our physical location but also by our social location (Orleans 1973, 115). And in this learning process we learn to place differential evaluations upon various portions of space (Gould 1973, 183). What has been outlined briefly in this essay are hints at the constructs of cognitive and proxemic behaviour as it can be seen in the archaeological record.

There are areas where we may reach a better understanding of the past if we view the data in humanistic terms. One of the approaches that can be used to achieve this goal is by the use of Hall's concepts of proxemics (and extending this to cognitive behaviour research). This paper is not to be viewed as the complete analysis of this topic but rather, through its discussion of Hall and the offer of some very specific examples, a challenge to further discussion of space as having meaning.

References

BANDELIER, A. F. 1881
Historical Introduction to Studies Among The Sedentary Indians of New Mexico. Boston, A. Williams and Company.

BORCHERS, P. 1972
Zuñi Pueblo Town Site Map, 1972. In: Ferguson, T. J. (ed.), *Historic Zuni Architecture and Society, An Archaeological Application of Space Syntax*. Tucson, The University of Arizona Press. 1996.

COLWELL-CHANTHAPHONH, C., FERGUSON, T. J. – ANYON, R. 2003
Conceptualizing Landscapes in the San Pedro Valley of Arizona, American Indian Interpretations of Reeve Ruin and Davis Ruin. *Indigeneous Archaeologies, Monuments, Landscape, and Cultural Memory. Fifth World Archaeology Congress.* Washington.

DEAN, J. S. 1969
Chronological Analysis of Tsegi Phase Sites in Northeastern Arizona. *Papers of the Laboratory of Tree-Ring Research Number 3.* Tucson, The University of Arizona Press.

DODS, R. R. 1991
Professional Development Tour and Photography Project to Fifty Archaeological Sites (Anasazi, Hohokam, Mogollon) of the Four Corners Area of the SW, USA. Kelowna, British Columbia, UBCO Anthropology Archives.

DODS, R.R. 2002
The Death of Smokey Bear, the ecodisaster myth and forest management practices in prehistoric North America. *World Archaeology* 33/3 (Feb.2002), 475–487.

DODS, R. R. 2004
Knowing Ways/Ways of Knowing, Reconciling Science and Tradition. *World Archaeology* 36/4 (Dec.2004), 547–557.

DOWNS, R.M. & STEA, D. 1973
Cognitive Maps and Spatial behaviour, Process and Products. In: Downs, R. M. – Stea, D. (eds.), *Image and Environment, cognitive mapping and spatial behavior*. 8–26. Chicago, Aldine Publishing Company.

DOZIER, E. P. 1970
The Pueblo Indians of North America. New York: Holt, Rinehart, and Winston.

EGGAN, F. R. 1950
Social Organization of the Western Pueblos. Chicago, University of Chicago Press.

FERGUSON, T. J. 1996
Historic Zuni Architecture and Society, An Archaeological Application of Space Syntax. Tucson, The University of Arizona Press.

FERGUSON, T. J. – HART, E. R. 1985
A Zuni Atlas. Norman, University of Oklahoma Press.

FEWKES, J. W. 1898
Expedition to Arizona in 1895. *Seventeenth Annual Report Bureau American Ethnology* 2, 527–742. Washington,

FLETCHER, R. J. 1977
Settlement Studies (micro and semi-micro. In: Clarke, D. L. (ed.), *Spatial Archaeology.* 47–162. New York, Academic Press.

GOULD, P. 1973
On mental Maps. In: Downs, R.M. – Stea, D. (eds), *Image and Environment, cognitive mapping and spatial behavior*. 182–220. Chicago, Aldine Publishing Company.

HALL, E. T. 1959
The Silent Language. Greenwich, Conn., Fawcett Publication.

HALL, E. T. 1963
A System for the Notation of Proxemic Behavior. *American Anthropologist* New Series, 65/5, 1003–1026.

HALL, E. T. 1964
Adumbration as a Feature of Intellectual Communication. *American Anthropologist* New Series, 66/6, Part 2, *The Ethnography of Communication*, 154–163.

HALL, E. T. 1966
The Hidden Dimension. Garden City, New York, Doubleday.

HALL, E. T. 1974
Handbook for Proxemic Research. *Studies in the Anthropology of Visual Communication* (June 1974). Washington, American Anthropological Association.

HALL, E. T. 1983
The Dance of Life, The Other Dimension of Time. Garden City, NY, Anchor Press/Doubleday.
HALL, E. T. 1992
Improvisation as an Acquired, Multilevel Process. *Ethnomusicology* 36/2, 223–235
HALL, E. T. 1992
An Anthropology of Everyday Life. New York, Doubleday.
HALL, E. T. – HALL, M. R. 1987
Nonverbal Communication for educators. *Theory and Practice* 26, Educational Perspectives, Then and Now. 364–367.
HARRINGTON, J. P. 1907–8
Tewa. In: Hodge, F. W. (ed.), *Handbook of American Indians North of Mexico, Two Volumes.* Washington, Smithsonian Institution. Bureau of American Ethnology.
HART, R. A.– MOORE, G.T. 1973
The Development of Spatial Recognition, A Review. In: Downs, R. M. – Stea, D. (eds), *Image and Environment, cognitive mapping and spatial behavior*. 246–288. Chicago, Aldine Publishing Company.
HEDIGER, H. 1930[1964]
Wild Animals in Captivity. New York, Dover Publications.
HUDSON, D.T. 1972
The Chaco Foot. *Kiva* 28/1, 27–40.
INGOLD, T. 1993
The temporality of landscapes. *World Archaeology* 25(2), 152–174.
KROEBER, A. 1917
Zuni Kin and Clan. *Anthropological Papers of the American Museum of Natural History,* 18, pt. II.
LAWRENCE, D. – LOW, S. 1990
The Built Environment and Spatial Form. *Annual Review of Anthropology* 19, 453–505.
LÉVI-STRAUSS, C. 1966
The Savage Mind. Chicago, University of Chicago Press.
LEWIN, K. 1936
Principles of topological psychology. New York, McGraw-Hill,
LISTER, R – LISTER, F. C. 1964
Contributions to Mesa Verde Archaeology, I, Site 499, Mesa Verde National Park, Colorado. Series in Anthropology No. 9, University of Colorado.
LYOTARD, J.-F. 1987
The postmodern condition. In: Baynes, K., Bohman, J. – McCarthy, T. (eds.), *After Philosophy, End or Transformation?* 73–94. Cambridge, MA, MIT Press.
MCFEAT, T. 1974
Small-group Cultures. New York, Pergamon Press.
MCLUHAN, M. 1964
Understanding Media, The extensions of man. London, Routledge.
MINDELEFF, V. 1897
A study of pueblo architecture. *Eighth Report. Bureau of American Ethnography.* 13–228.
NIEMEIR, S., CAMPBELL, C.P. – DIRVEN, R. 1998 (eds.)
The Cultural Context in Business Communication. Philadelphia, John Benjamin Publishing.

ORLEANS, R. 1973
Differential Cognition of urban Residences, Effects of Social Scale on Mapping. In: Downs, R. M. – Stea, D. (eds.), *Image and Environment, cognitive mapping and spatial behavior*. 115–130. Chicago, Aldine Publishing Company.

OSMOND, H. 1959
The relationship between architect and psychiatrist. In: Goshen, C. (ed.), *Psychiatric architecture*. Washington, D. C., American Psychiatric Association.

PARSONS, E. C. 1925
The Pueblo of Jemez. New Haven, Yale University Press.

POPPER, K. R. 1979
The Logic of Scientific Discovery. London, Unwin Hyman.

PÖRKSEN, U. 1995
Plastic Words, The Tyranny of a Modular Language. Translated by Jutta Mason and David Cayley. Philadelphia, Pennsylvania University Press.

RAPOPORT, A. 1990
The Meaning of the Built Environment, A Nonverbal Communication Approach. Tucson, University of Arizona Press.

RAPOPORT, A. 1969
House Form and Culture. Milwaukee, University of Wisconsin.

REED, E.K. 1956
Types of village-plan layouts in the Southwest. In: Willey, G. R. (ed.), *Prehistoric Settlement Patterns in the New World.* 11–17. New York, Wenner-Gren Foundation.

RIDDINGTON, R. 1982
Technology, World View, and Adaptive Strategy in a Northern Hunting Society. *Canadian Review of Sociology and Anthropology* 19/4, 469–481.

ROBERTS, J. M. – GREGOR, T. 1971
Privacy, a cultural view. In: Pennock, J. R. – Chapman, J. W. (eds.), *Privacy.* 199–125. New York, Atherton.

ROHN, A. H. 1977
Cultural Changes and Continuity on Chapin Mesa. Lawrence, The Reagents Press of Kansas.

SMITH, W., ROBERTS, J. M. – NEWMAN, S. S. 1954
Zuni law, a field of values. Cambridge, The Peabody Museum.

SMITH, W. – ROBERTS, J. M. 1954
Zuñi Law, A Field of Values. *Papers of the Peabody Museum* 43/1. Cambridge, Harvard University.

STEA, D. – BLAUT, J. M. 1973
Notes Towards a Developmental Theory on Spatial Learning. In: Downs, R. M. – Stea, D. (eds.), *Image and Environment, cognitive mapping and spatial behavior*. 51–62. Chicago, Aldine Publishing Company.

STUBBS, S. A. 1950
Bird's Eye View of The Pueblos. Norman, University of Oklahoma Press.

WATSON, O. M. 1968
Proxemic Behavior. A cross-cultural study. The Hague, Mouton.

WYNN, T. 1989
The Evolution of Spatial Competence. Chicago, Illinois Studies in Anthropology 17.

5

Tears of the Sun: Condensation and Irrigation in the Andes

TIM MALIM

Introduction

In 1985 and 1986 two seasons of fieldwork were conducted in the Chilean Andes to investigate the morphology, function and demise of a relict system of small fields and irrigation channels which ran down the sides of the Paniri quebrada (*valley or the gorge*). In particular the soils and pollen were subjected to detailed analysis to establish the cause for the abandonment of such an extensive tract of once fertile land, and the results of testing for the soil chemistry have been reported on elsewhere (Keeley 1988). This paper will focus on the irrigation system which provided the life-blood for the valley community's crop husbandry, a community that was tied in to the vertical economy of the Andes with seasonal herding of camelids passing through the valley on the way to and from the Altiplano and the vegas (wet meadowland) at the foot of the valley in the Rio Salado basin on the edge of the Atacama desert. The climate and relief of the Andes were fundamental in determining how humans conceptulised their world, placing it in a spiritual cosmology, and establishing parameters in which they designed strategies to adapt and exploit a harsh environment. The irrigation system at Paniri was carefully planned and engineered, displaying an intimate knowledge of ground survey and optimum flow rates so that channels neither silted nor scoured their beds. In this regard it is a fine example of Pre-Colombian hydraulic engineering and one which is worthy of record, but such systems are a common tradition across the Andean region. By harnessing the natural seasonal water flow into a managed year-round resource, the Paniri system allowed the development of a thriving community, typical of many other valleys in the Andes, but in one aspect the Paniri system is unusual, and perhaps even unique: a series of large stone mounds that are located at the uphill origin for some of the irrigation channels, mounds which appear in some cases to have acted as a source of water independent of springs for the irrigated fields. It is the functional and conceptual interpretation of this phenomenon that forms the particular emphasis of this paper.

Background to field study

The investigations in 1985 and 1986 were undertaken during two short seasons under the direction of Dr. Helen Keeley, who had been asked by Chilean colleagues to collaborate on a research project into settlement patterns in northern Chile[1] to assist them with soil studies. A small team was assembled by Dr Keeley with funding from a variety of sources[2] to assist her as a discrete entity under the auspices of the main project, and the author took responsibility for surveying and excavating the fields and irrigation system so as to give context for the soil study. Although large-scale irrigation canals have been recorded from Inca times, and the ruinous state of the terraces they supplied due to colonial Spanish indifference

1 "Sistemas de Asientamiento en la Region del Loa Superior: Patrones Arqueologicos y Etnograficos" Dra. Victoria Castro of the Department of Archaeology and Anthropology, University of Chile, and Dr. Carlos Aldunate, Director of the Museum of Precolombian Art, Santiago.

2 Royal Society, British Academy, Wenner-Gren Foundation, University of London Central Research Fund, Royal Geographical Society.

lamented by Garcilaeo de la Vega (Livermore 1966), the terracing within this area is believed to date to the Late Intermediate Period (locally manifested by the Toconce phase 850–1100 AD), through identification of pottery recovered from the soil test-pits (Aldunate and Castro *pers comm.*).

Geographical, geological, cultural and environmental setting

The study area, Quebrada Paniri (22° 08.5' S latitude, 68° 16' W longitude), is a tributary of the Rio Loa which flows through the marginal high desert of the Rio Salado Basin in Chile's Segundo Region, from the Andes to the Pacific (*Figure 5.1*). On the edge of the Atacama Desert, regarded as the most arid desert in the world (Weischet 1975), Paniri lies within a dramatic landscape composed of three volcanoes (Paniri at 5,960m (*Figure 5.2*), Cerro Leon and Toconce) with the largest lava flow in the world called the Cordillera de Chao lying between Paniri and Cerro Leon. The area of the valley that formed the focus of the survey lay at 3,200m a.s.l., around which lay largely abandoned settlement and fields in spite of springs which gave "sweet" water (in contrast to more saline water found at the neighbouring settlement of Cupo for example). One inhabitant (Sra. Julia Cruz) still lived at Paniri and cultivated some plots,

Figure 5.1. Location Map.

Figure 5.2. Mount Paniri with valley bottom terracing at Quebrada Paniri.

whilst a number of other plots were cultivated by people from adjacent settlements who had rights to the land. The main crops probably reflect those grown during the original period of occupation: maize, alfalfa, broad beans, potatoes and a form of fruit-bearing cactus. The main part of the irrigated field system extended over an area of 3km at its widest by 1km down the valley.

As part of the study Rob Scaife undertook pollen sampling of the peat deposits within the *vegas*, springs and valley floors. His assessment demonstrated that the local ecosystems were based upon the springline, lava flows having resulted in horizontal rock strata. A series of benches have been left through down-cutting caused by rivers, leaving the higher peat deposits dry and covered in calcrete (a hard mineral deposit caused through high temperature evaporation of calcium carbonate and salts), whereas the lower ones remain wet. The peat has spread outwards over time, rather than grown vertically, and the sparse survival of pollen demonstrated that the ancient environment would have been similar to the present one, arid without many trees and with localised cultivation such as maize. Soil studies of anthrosols (terrace soils) and natural profiles, in addition to the study of these calcrete and peat deposits, demonstrated that the present groundwater level is several metres lower than in the past. The drying out of the higher peats (and springs) has been tentatively attributed to causes related to possible tectonic uplift, although the extraction of water via pipeline to the centres of industry and population at Calama and Antofagasta, must have had a significant detrimental effect on the local water-table for marginal highland areas such as Paniri.

Prior to the research no detailed maps of Paniri existed and to study the system it was necessary to undertake various surveys so that the general extent could be mapped, followed by plotting of selected parts at greater detail.

The aims of the archaeological survey and methodology

The survey was needed to answer two main questions: where was the water source for the Paniri terraces, and how were the fields supplied with this water? To investigate these questions a survey strategy of cross valley transects was designed, with transects at intervals of 100m perpendicular to the alignment of the valley (*Figure 5.3*). By use of this technique it was a relatively simple matter to intercept linear

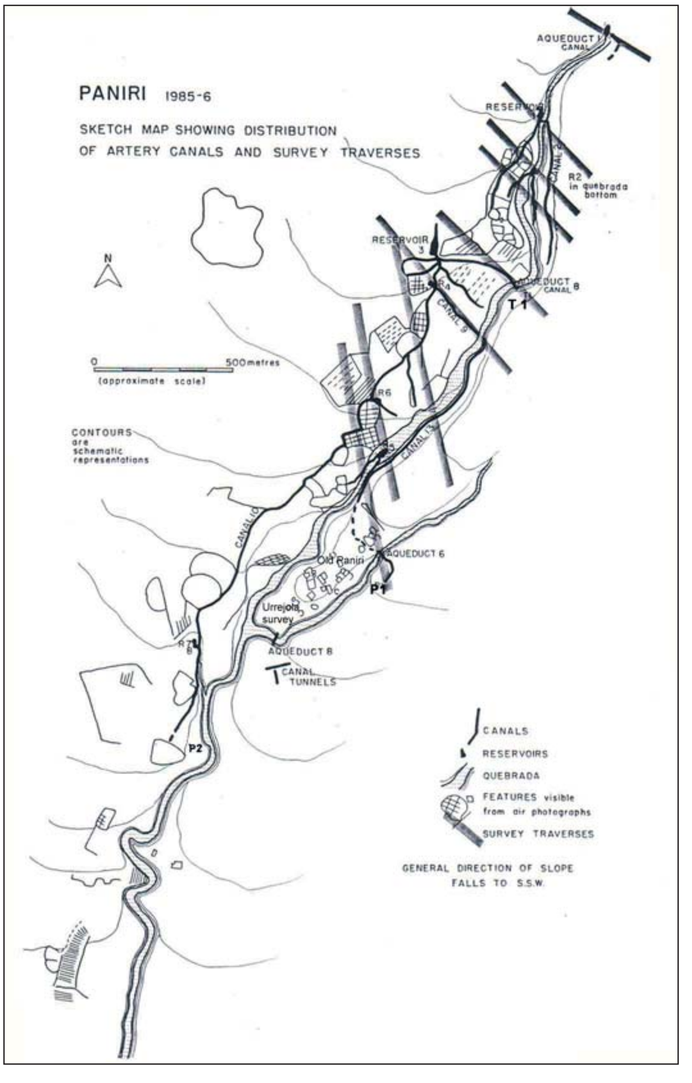
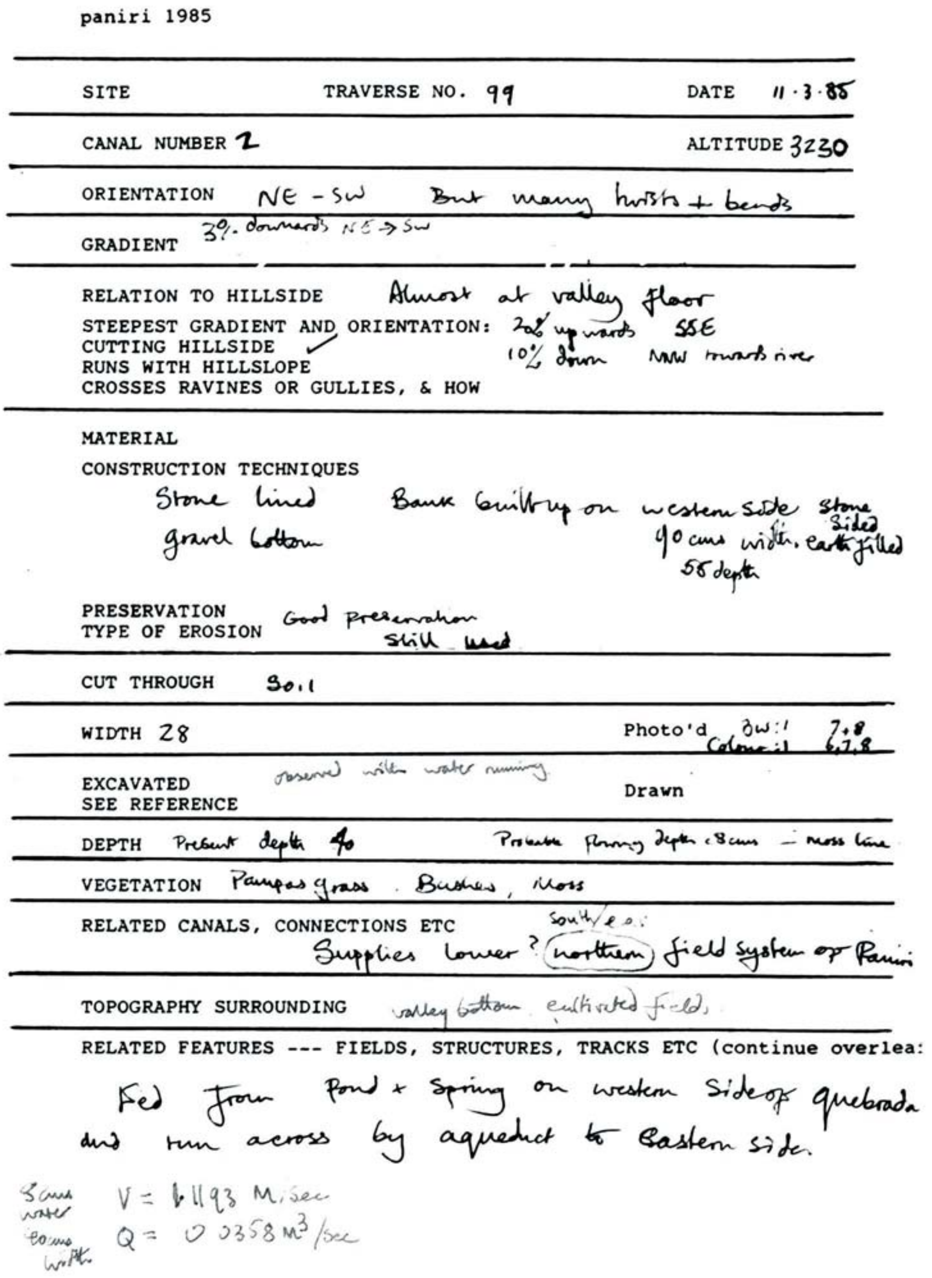


Figure 5.3. Detailed map of Quebrada Paniri with survey transects shown and field areas surveyed (P1, P2, T1).

Figure 5.4. Stone mounds, cultivation plots and irrigation channel.



paniri 1985

SITE TRAVERSE NO. 99 DATE 11·3·85

CANAL NUMBER 2 ALTITUDE 3230

ORIENTATION NE – SW But many twists + bends

GRADIENT 3% downwards NE → SW

RELATION TO HILLSIDE Almost at valley floor
STEEPEST GRADIENT AND ORIENTATION: 20% upwards SSE
CUTTING HILLSIDE ✓ 10% down NW towards river
RUNS WITH HILLSLOPE
CROSSES RAVINES OR GULLIES, & HOW

MATERIAL
CONSTRUCTION TECHNIQUES
Stone lined Bank built up on western side stone sided
gravel bottom 40 cms width, earth filled
58 depth

PRESERVATION Good preservation
TYPE OF EROSION Still used

CUT THROUGH Soil

WIDTH 28 Photo'd BW: 1 7,8 Colour: 1 6,7,8

EXCAVATED observed with water running
SEE REFERENCE Drawn

DEPTH Present depth 40 Probable flowing depth c.8cms – moss line

VEGETATION Pampas grass. Bushes, Moss

RELATED CANALS, CONNECTIONS ETC
Supplies lower? (northern) south/east field system of Paniri

TOPOGRAPHY SURROUNDING valley bottom cultivated fields

RELATED FEATURES --- FIELDS, STRUCTURES, TRACKS ETC (continue overlea:
Fed from Pond + Spring on western Side of quebrada and run across by aqueduct to Eastern side.

8cms water 40cms width
V = 0.1193 M/sec
Q = 0.0358 M^3/sec

Figure 5.5. Example of canal recording sheet.

features such as canals, to plot them (manually, as this was prior to GPS!), and then to pick up their course again in the next transect down the valley. This approach enabled the source and destination of all canals to be plotted, as by following the canals up stream their sources were revealed.

The survey also mapped other archaeological features so that a record of stone- mound constructions (*Figure 5.4*), buildings, tombs and flint scatters found during the survey were kept. The paucity of large-scale maps (1:50,000 was the largest available) made plotting direct onto any map impossible, so the beginnings and ends of transect lines were tied in by compass to prominent points in the landscape. By use of magnified vertical air photographs of the general area, it has been possible to construct an approximate map of Paniri, placing the survey transects into their landscape, and thus gives context to the canals, field systems, and main geological features (*Figure 5.3*).

Each canal was recorded on a sheet with details of its fabric, width, depth, degree of slope, condition, and direction (*Figure 5.5*). By following the methodology employed by the Cusichaca Project, Peru (Farrington 1980 Appendix; see also undated, pp. 9–11 and Appendix 1), which in turn is based on the Manning equation, it has been possible to calculate velocity and maximum discharge capacities for each canal.

Areas of cultivation plots and terracing were surveyed by plane table using off-set measurements where the land was flat enough to allow this approach (areas P1 and P2), and by theodolite where the terracing was too steep for the simpler method of survey (area T1 and 1984 survey[3]. These surveys provided sufficient detail for the various types of field organization to be studied, together with the method of irrigation employed for each.

The organization of the fields and the irrigation system

Three types of terracing (*andenes*) have been identified along Quebrada Paniri, the earliest and largest of which are cross-channel terraces in the valley bottom (*Figure 5.6*), whilst the other two types were shallow terraces on gentle slopes (*Figure 5.7*), and deeper bench terraces on the valley sides (*Figure 5.8*). Although the cross-channel terraces now contain larger cultivation plots (10 x 2m and up to 1m in depth) than the valley-side terraces, this is probably the result of amalgamation to adapt them for modern cultivation purposes (e.g. wheat), as it was these terraces that were found to be most commonly still in use during the survey. The shallow valley side terraces, in contrast, were generally divided into plots 3 x 1.5 – 4 x 2m with erosion and soil loss of between 300–600mm. The bench terracing was of similar

Figure 5.6. Cross valley terraces.

Figure 5.7. Shallow slope terraces.

Figure 5.8. Bench terracing and stone mound boundary to terracing.

3 Carlos Urrejola's theodolite survey of fields around Old Paniri; see *Figure 5.11*.

dimensions but retained depths of 1m. They had been engineered to form deep beds of soil and to facilitate drainage by excavation of calcite layers above the rock. Previous studies of bench terracing in this region had shown that the deep soils became compacted at c.400–500mm below the surface (Wright 1963, 71), which Wright interpreted as possibly deliberate design to reduce loss of irrigation water percolating downwards too deep in the soil profile. He noted that this layer also sloped, with a shallower end where the water enters and deeper soil where it exits each terrace "ideal to achieve the maximum efficient irrigation with the minimum amount of water". The 1984–6 soil studies recorded a similar phenomenon, as well as characterising the soil as predominantly sandy and extremely stony, slightly alkaline (mean 8.3 pH) with low conductivity (mean 1.7), and no indication of salinity (Keeley 1988, 202).

The design of the field system for all three terrace types can be seen to have been governed by two principles, firstly a uniformity in layout of cultivation plots, and secondly a physically hierarchical system of irrigation (*Figure 5.9*). The cultivation plots are of consistent size where terrain permits, 3 x 1.5m, and these form the basic agricultural unit. Every individual cultivation plot within the complex was linked to the irrigation system so that water could be supplied directly as required. The cultivation plots were found commonly in strips of paired plots orientated downslope. A piece of land containing these strips was termed a field when distinct boundaries, either man-made or natural, were used to define a particular area, and when the irrigation channels in this area were supplied by a single canal. The primary elements of the irrigation system were the 15 "arteries", canals that transported water from springs and triangular reservoirs (tanks (*Figure 5.10*)), constructed with earth bunds to block the natural

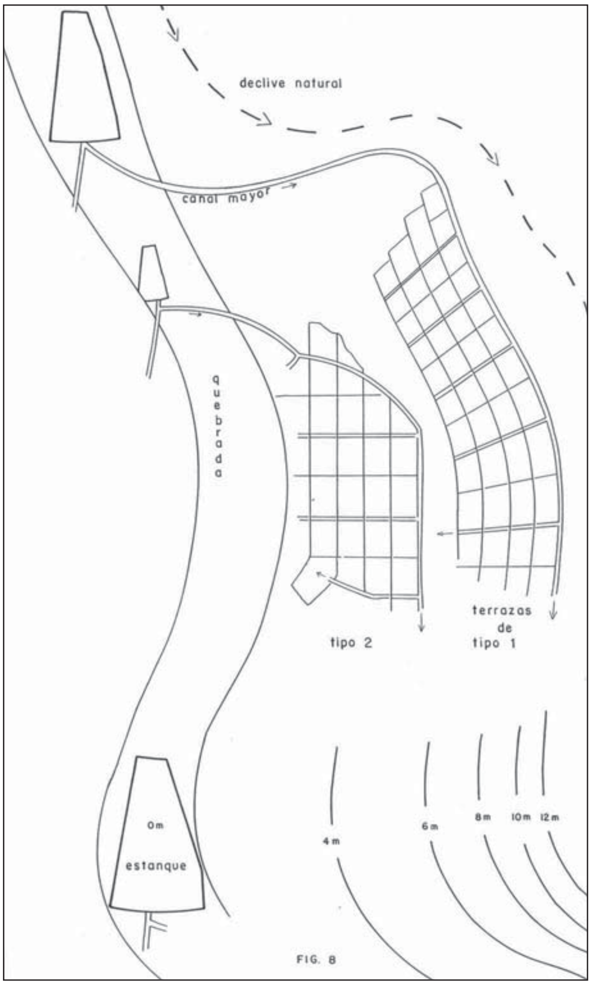


Figure 5.9. Schematic drawing of irrigation system at Paniri with primary and tertiary canals shown.

Figure 5.10. Reservoir (tank) and canal outlet.

flow except where irrigation canals led off to the various areas of cultivation on both sides of the quebrada. The secondary elements were the "veins", or the canals that led off from the arteries, each to supply a different field. The tertiary elements were the "capillary" channels, which ran parallel to one another through strips of single or paired cultivation plots (*Figure 5.11*). In one area of detailed survey (P2 *Figure 5.12*) the field was defined by stone-mounds to the north, west and south, while the quebrada forms the eastern edge. The strips of paired cultivation plots were in turn separated from one another by channels as they progressed down slope, which captured any run-off from the plots and so maximised performance of the irrigation system.

The uniformity of design and purpose would suggest a single episode of planning and construction. Throughout the 1.5km^2 area of cultivation at Paniri the dimensions of normal plots varies little, whether they occur on steep valley sides as at T1 (not illustrated), or in more gently sloping fields such as P1 and P2. The higher the elevation of fields the further up the valley irrigation canals were needed so that water could be brought at a shallow gradient down to these fields. In theory therefore there would be no sense in laying out fields of plots that were too high for water to reach from the springs in the quebrada, which suggests that the planning of the irrigation system, finding a source and method to transport it, would have had to have been a simultaneous project with the creation of terraces and cultivation plots.

Figure 5.11. Plan of field with stone mounds, cultivation plots and tertiary level irrigation channels adjacent to Old Paniri (Carlos Urrejola 1984) – see Figure 5.3 *for location.*

Figure 5.12. Plan of area P2 showing stone mounds, cultivation plots and tertiary level irrigation channels – see Figure 5.3 *for location.*

In spite of the apparently obvious observation that field systems could not lie at an altitude higher than the springs that fed the canals to irrigate them, in one area on the north-western plateau of Paniri groups of cultivation plots and irrigation canals were found at an altitude higher than the springline. No obvious source of water or artery canal to supply the area was found during survey, and other theories must be attempted to explain how these fields and channels would have functioned. It is possible that they were constructed at a time when it was hoped a quick growing crop could be utilised in the wetter months of the summer. Long low stone mounds that resemble wide boundary walls (*Figure 5.8*) occur here, and in this situation it is perhaps feasible to suggest they interrupted the flow of groundwater during a thunderstorm and directed the water into a more profitable use via the field channels in this area, as suggested for stone mounds in Israel for example (Evanari *et al.* 1982). They would also have helped to prevent soil erosion from surface run-off.

Evanari *et al. (ibid.)* have undertaken experiments with irrigation fed by surface run-off at Avdat and Shivta in the Negev, an environment both arid and with a surface cover of stones and coarse-grained soils which is similar to Paniri. Their experiments show that ground that had been cleared of stones could absorb water for the first half-hour of rainfall only, but thereafter this "rate of infiltration" was severely retarded by a largely impermeable crust that formed on the soil surface as it became saturated. This phenomenon resulted in most rainfall after this point running over the surface of the soil and being wasted, rather than penetrating it for the benefit of later crop growth (Evanari *et al.* 134). In contrast, areas of mixed soil and stone initially allowed more penetration of rain water, but eventually led to concretion of the stones into the soil matrix, so that this ground surface became even less able to absorb any water than the saturated soil of the stoneless areas (rocks are impervious whilst a saturated soil will still allow a minimal amount of rainwater to pass). In their experiments Evanari et al were examining the use of water being collected in catchment areas to irrigate valley bottom terraces.

At Paniri earlier cross-valley terraces, supplied directly by the springline and water flowing along the quebrada floor, were supplemented by terraces along the hillslopes which required irrigation at this higher level. Stone clearance of the cultivation plots was very thorough, and the stones were carefully piled to form distinctive broad and high-sided mounds (*Figure 5.13*). If water from rainfall saturated the soil surface of the cultivation plots then water would have run off into the quebrada, and at Paniri this would have led to a large amount of wasted water. It is therefore possible that the loose rubble fills of the mounds, small stones and rock fragments in a sandy matrix, could have been designed to reduce the amount of wastage during prolonged rainstorms by permitting far more water to penetrate its structure than would have been possible on the cleared stone soils of the terraces. The rainwater would then have filtered down through the mounds and flowed out at a less permeable level, i.e. bedrock.

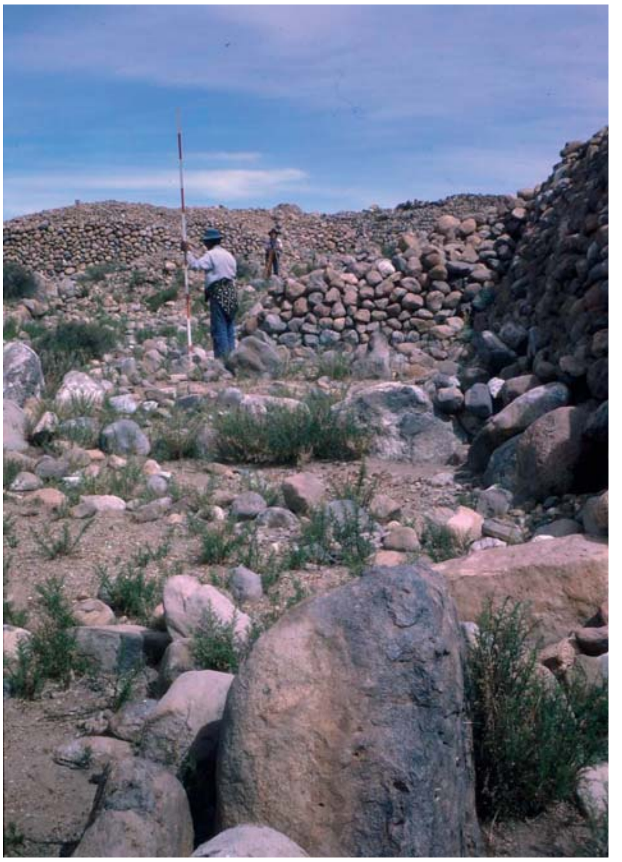


Figure 5.13. Stone mounds, carefully constructed, high-sided.

Figure 5.14. Canals (secondary level) running along base of stone mounds.

At the point where the base of these mounds lay, it was observed that channels had been positioned, and some of these were recorded as following the entire length of the mound wall to act as a point of continuous collection (*Figure 5.14*). Such a system would thus have provided a more optimum balance to the amount of field area cultivable, i.e. stone cleared areas used for cultivation as opposed to water catchment areas provided by the mounds which increased the amount of area available for rainwater to soak into. The clearance of the fields was necessary for cultivation, the stones needed to be collected tidily at various locations, and they were built into large mounds to take up minimum land space, whilst these large high mounds also provided a large volume for rainwater to penetrate and collect.

Analysis of field layouts and canals

Once the framework of the field and irrigation system had been established during the first survey season in 1985, during the second season a priority was given to mapping as large an area of a complete part of the field system as possible within the limited time available during the period of field study. The fossilised state of the field system had preserved intact not only the lay-out of the cultivation plots within their larger field areas, but also the canals, off-chute channels and complexes of stone mounds. An area was selected that included all these elements as interconnected parts of a discrete entity. This area, labelled P2 had been partly planned the previous season(see *Figure 5.11*), and had also had the benefit of eight soil test-pits excavated for pedological analysis, as part of which some stratified pot sherds of Late Intermediate date had been uncovered. One side of the field system stopped abruptly at a 9m drop into the quebrada, a definite edge that forms a termination to the irrigation system for this area (*Figure 5.15*).

Figure 5.15. Field system in relation to western side of quebrada (9m depth).

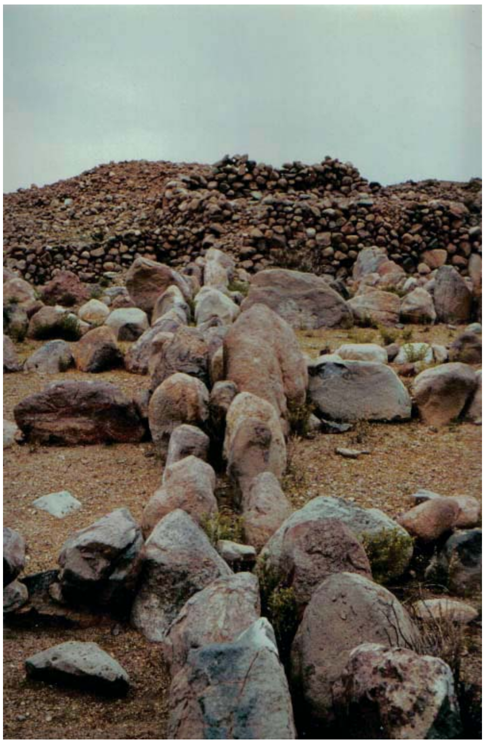


Figure 5.16. Irrigation channel and cultivation plots: erosion has resulted in vertical stones standing proud of present ground surface.

The results of this detailed survey showed that the stone "wall" divisions between individual cultivation plots were only one course high. The canal sides were formed of vertical slabs, or stones that gave height in spite of their bulk (*Figure 5.16*). Many examples of stones resting on these vertical slabs were seen, demonstrating that the canals were generally covered (*Figure 5.17*). Although most canals are visible today as two lines of stones, uncapped, this is a consequence of decay with both human and animal activity being responsible for dislodging or removing the capping blocks. Enough still remain to make it even more unlikely that these were installed as isolated patches of roofing rather than as part of a design to reduce evaporation during daylight hours. Many of the canals today appear with gaps between the higher parts of the stones, but in antiquity the land level would have been perhaps as much as 300–600mm higher than today, and so would have filled the gaps between these stones.

The artery canals followed sinuous courses which would have been a response to the changing degree of slope in the local landscape they traversed. They were 300–500mm wide and 400–700mm deep from the tops of their stone sides to the base of the present canal beds (*Figure 5.18*). Calculations based on measurements taken from six of these primary canals show, with allowance for freeboard in the canal depth and friction materials at base and sides, that they were engineered carefully to avoid erosion and scour effects, whilst delivering a minimum of water in the range of 1.43–0.47m/sec velocity, and 0.155–0.019m^3/sec discharge. There were at least two aqueducts, the largest of which supplied fields east of the old settlement at Paniri, and this was 2.6m high and 12.6m long as it crossed the eroded bed of a stream channel (*Figure 5.19*).

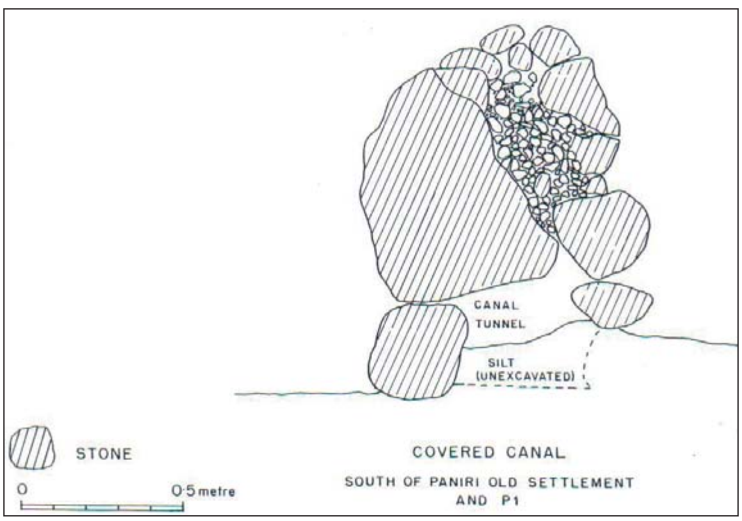


Figure 5.17. Section through covered canal.

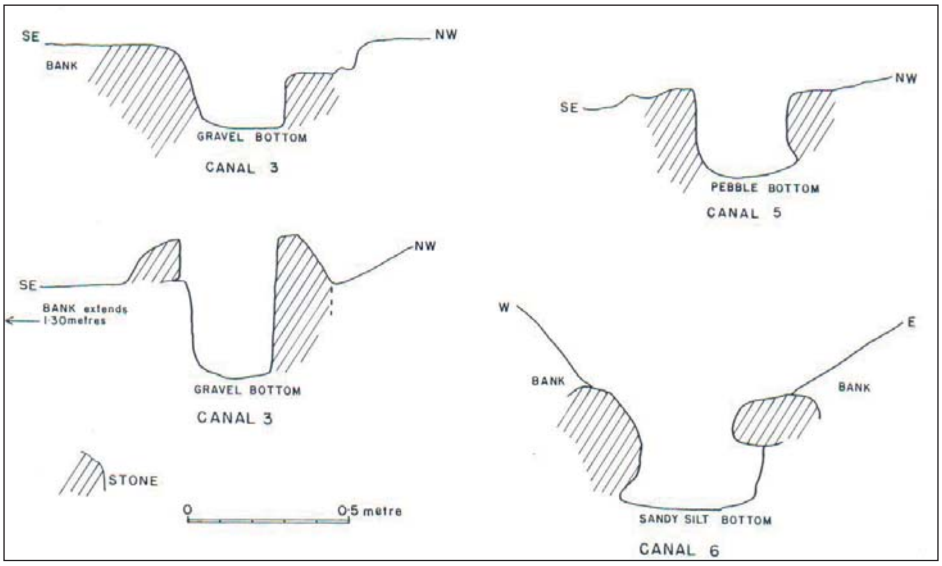


Figure 5.18. Sections through selection of primary canals.

Figure 5.19. Aquaeduct (No. 6) crossing a quebrada near Old Paniri; note white deposit indicating water level.

Due to erosion of the surrounding ground surface it is impossible to know in some cases what the original full depth of the canals might have been. In the area of P2 the canals did not have stone bases. Their relationship to the cultivation plots was easy to observe as all plots were able to receive water either directly from master canals or from the off-chute channels. Their relationship to the ubiquitous mounds, however, was not so obvious. As can be seen in *Figure 5.14* the mounds generally have canals hugging their bases, and at one point one canal briefly passes beneath a mound. The original water source for this canal system can be traced back to a spring and two reservoirs (see 7 & 8 on *Figure 5.3*) from which Canal 10 acted as the artery canal.

It is questionable, however, whether this could have been the only water source for the whole of area P2 and surrounding fields and a potential secondary source is postulated here. An excavation was conducted into one of the mounds where a canal emerged from it. A small hollow was found to have been scooped out of the bedrock beneath the mound which met with the start of the canal. A white deposit was detected on the stones of the mound above the level of the hollow and canal, which formed a continuous layer along the stone rubble infill of this small mound *(Figure 5.20*). To the west the ground was higher than on the side that the canal emerged by c.1.5m (*Figure 5.21*), and it is reasonable to suggest that this white concretion represents a carbonate scale from a previous water level within the

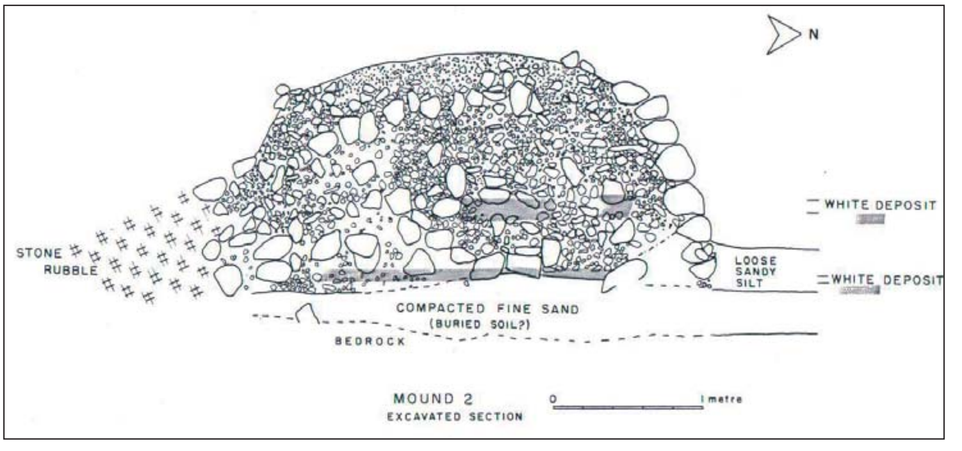


Figure 5.20. Section through stone mound in area P1; note white deposit indicating water level at two levels (grey tone).

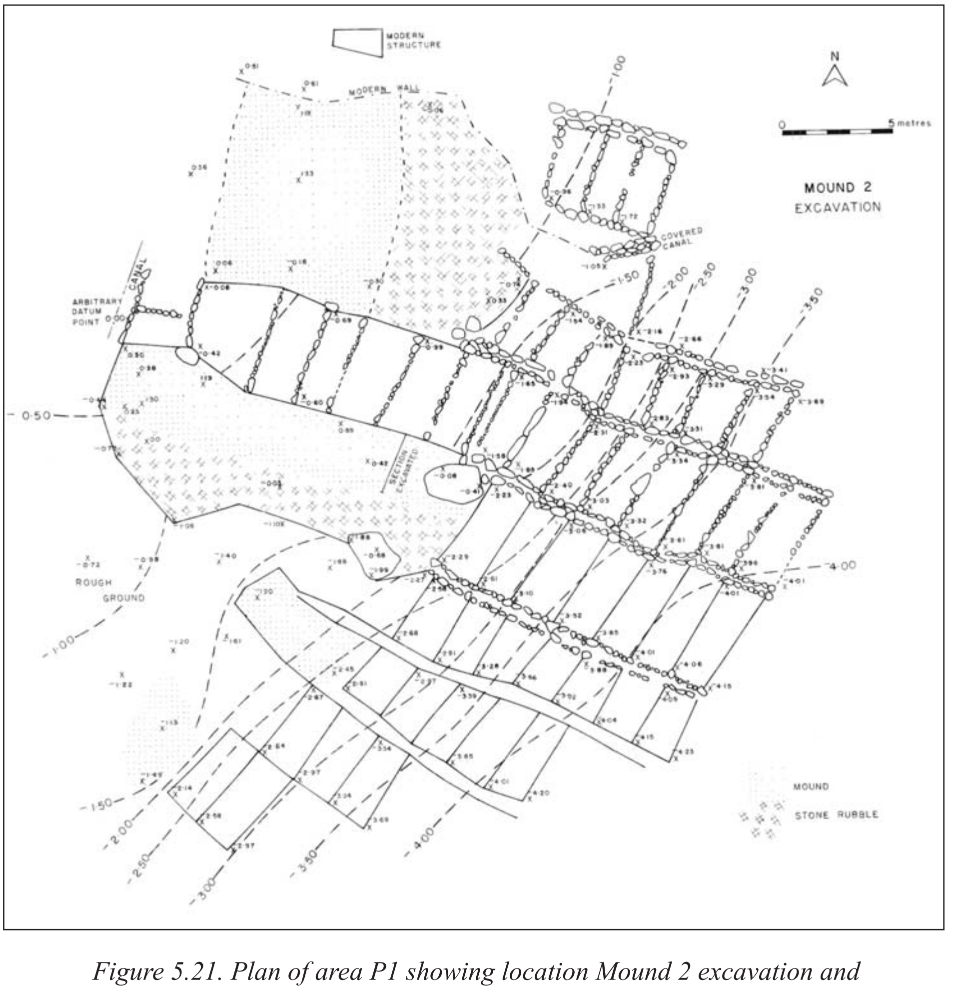


Figure 5.21. Plan of area P1 showing location Mound 2 excavation and canals originating from stone mounds – see Figure 5.3 *for location.*

mound. Excavation into a second mound 150m south-west of the first, revealed a similar white line. The same type of concretion had also been noted staining the sides of canals and covering areas that had been frequently flooded in the past.

The conclusion drawn from these excavations and observations is that the mounds either retained water, or tapped it from underground sources. It is feasible to argue that as the water table was probably higher in the past, by digging into the bed rock water would have seeped into and filled the hollow. The stone mound above acted as capping to prevent evaporation, and the channel directed the reservoir of water once it had accumulated, to the desired location. The white layers appeared to coincide with the present-day ground levels, and so in the past were presumably deeper than the contemporary ground surface.

The Stone Mound Constructions

One of the most unique and intriguing features of the manmade landscape at Paniri were the phenomenon of well-constructed stone mounds. These were included as an integral part of the field pattern and seem to be of direct importance to the irrigation channels. It would be simple to dismiss them as field clearance mounds, but the careful method of construction employed, their abundance and symbiotic relationship with canals, and the fact that several contained pits or small rooms within them (*Figure 5.22*), all tend to suggest that these mounds might have had other functions.

The basic design of these mounds comprised an outer skin of large boulders declining in size the higher up the mound they were set, with sides that tapered in towards the top. The inside contained a mass of smaller stones and fragmented bedrock. This generalised description takes no account of the varied plans they followed, with some appearing as though they were towered or buttressed forts, and others built with a series of zigzag faces (*Figure 5.23*), and many appeared to replicate the undulating pattern of the distant mountains that were visible on the horizon. Many were rectangular although some were square, and others were low, wide continuous walls. Small niches were identified in the corners of one of the mounds located in field P2, and in several other mounds pits or rooms were found. A semi-circular room lined with very small stones was found facing south-east (*Figure 5.22*), and on the collapsed north-eastern flank two depressions were observed that could have indicated further such rooms. A pit in another mound 280m south-west of P2 was also investigated.

Figure 5.22. Example of niche or small room built into stone mound P2.

Some of these design features and locations help in giving interpretations to the possible functions of the mounds. The wide continuous walls were most commonly located at the edge of a group of field plots, thus forming a distinct boundary between human activity and the wild, and designed also to prevent the ingress of stock animals into cultivated areas. On the steeper eastern slopes of the quebrada mounds were often found to form the edges to terracing, and acted as retaining walls, preventing scree and slippage from above falling on to the cultivated andenes (terraces) downslope of the

Figure 5.23. Stone mound zigzag design and replicating the background Aykina Hills.

mounds. Where these mounds had deteriorated the detail of surrounding field plots were found to have been obliterated. Major artery canals were found to run along the base of these “retaining” mound-walls, with intermittent surviving evidence to show they would originally have been capped with stones.

The vast majority of stone mounds, however, were found as free-standing structures amidst areas of field plots. For the function that these performed within the agricultural fields various interpretations can be given, the most obvious being the need to stockpile stones and boulders from the field clearance when the plots were first laid out, and the need to minimise the space they took up within productive areas would have necessitated the care with which the stones were arranged to give height and stability without the waste from stones spreading over excessive amounts of valuable cultivable land. Similar sinuous mounds have been researched for example in the Cachi valley, Argentina, and Tiahuanaco valley, Bolivia. These are known as *espingas* or *rompe pendientes*, and appear to run down steep slopes originating from springs, with walls branching off every 20m (Christine Hastorf *pers comm.*). An additional function can be suggested, however, which is far more sophisticated than the need for storing rock.

After clearance of the ground the fields were divided into regular plots 3.5–4m x 1.5–2m separated by lines of stones, with irrigation channels distributed between each line of plots, or every second line of plots. This resulted in a pattern of strips of single or paired plots separated from the next pair by a channel, enabling every plot to have one edge adjacent to a water source. The canals that supplied these irrigation channels were seen to run along the base of the long stone mounds, but there were also examples of channels issuing directly from mounds themselves. If water had been funnelled through the mounds any problem with evaporation from high daytime temperatures would have been avoided, but it also seems likely that the mounds acted in a more proactive manner than this as they lay at the origin of some canals, and thus replicated the way that springs and reservoirs were the source for others. Although such an interpretation seems improbable it is possible that condensation was used to generate small but significant volumes of water, through the heating and cooling of the stones on the exterior of the mounds as the temperature fluctuated between hot noonday levels and freezing nights (ranging from 28 to -20 degrees C). This kind of alternative technology is similar to more recent success of fog-harvesting, initiated by remote Chilean communities at, for example, Chungungo and supported by

UNESCO (Olivier 2003); in this article Professor Olivier refers to "*Historically, in the Atacama, both dew and fog were collected by means of a pile of stones, arranged so that the condensation would drip to the inside of the base of the pile, where it was shielded from the day's sunshine*" (Linacre – Hobbs 1977, 60). Dew collecting is a widespread technique from the ancient world, known in Britain, for example, from at least medieval times (and probably the Bronze Age) in the form of dew-ponds. This "dew-mound" or "air well" theory, however, has been proposed also for stone mounds in the Negev desert in Israel, but the feasibility for irrigation discounted (Evanari *et al.* 1982, 132–4).

The pits or rooms in the mounds might have been used for grain storage, with drying and threshing on the hard, dry and level tops of the mounds; a complete bowl was found placed in amongst the stones on top of one of the mounds in P2 (a rare find as pottery elsewhere was scarce), as well as various stone objects connected with cultivation and food processing in the surrounding cultivation plots (*Figure 5.24*).

In summary the mounds may have performed more than one function, one at least of which might

Figure 5.24. Agricultural artefacts found in field next to stone mounds.

have been to generate quantities of water for irrigation, as evidenced by the relationship with canals and the white concretion from water deposition found within the mounds at ground level. The implication is that the construction of the canals allowed sufficient water to accumulate here, which could then be distributed by the canals and guided to the associated fields when required. The way in which the mounds acted as "reservoirs" are several:

- firstly this would have been achieved through the surface area of their bulk maximising the amount of heavy rainfall that could be absorbed by the soil through letting it run down the exterior stones and into the centre of the mound with its matrix of soil and small stones which would have taken longer to become saturated than flat soil. The mound would then have released the water as a trickle, perhaps into purpose built ponds beneath, or directly into channels for distribution once the storm had passed;

- secondly the mounds could have stopped erosion and trapped surface run off during storms, diverting heavy rainfall from higher areas into the canals at their bases; and
- thirdly the effects of diurnal oscillation between extremes of heat and cold could have generated water through condensation on the cold stones as the sun rose and led to increased temperatures each morning. The water droplets that would have formed on the stones would then have dripped to the base of the mounds where they accumulated and water was stored for later distribution.

Mountains, gods and rainfall

The mounds displayed another characteristic which could indicate their wider significance to the community at Paniri as sources for generating water. Viewed from downslope the mounds could be seen against the backdrop of the mountains and volcanoes in the altiplano. Mountains in the Andean world were and are seen as the places where water originated, both in the form of rain as well as river water; similarly they were and are conceptualised as principal deities anchoring local communities to the landscape they inhabited. The shapes of the mounds emulated the distant mountains, and were built as though reaching towards the heavens. It is probably no coincidence that they were designed to replicate the mountains as observation would have shown that rainclouds collected around the high peaks and could be relied upon to produce precipitation on a consistent basis. In creating a microcosm of stone mounds amidst the field systems, formed to reflect the shapes and presence of the real mountains that could be seen to generate water in the wider cosmos, perhaps the planners of the irrigation system at Paniri were using their study of natural phenomenon to imbue the mounds with the same rain-making values; i.e. an artificial situation in order to promote the circumstances that produced rain in the altiplano, to now produce rain also on the slopes surrounding the *quebrada* at a considerably lower altitude.

Soil studies have divided northern Chile into three broad vertical zones (Diaz Vial – Wright 1965): predominantly saline soils on lower land such as the coastal strip and plains east of this; red desert soils of alkaline pH located on the lower slopes of the Andean piedmont from 500–2,300m; and soils with more varied chemical characteristic and five distinct sub-divisions extending over the higher slopes and into the altiplano at over 3,600m a.s.l. These broad classifications are of interest in comparing some Andean communities' perception of their own environment. For example the *Qollahuayas* equate their mountain landscape with their own bodies, believing both mountain and person to be a vertical axis with three levels (Bastien 1985). These relate to high, central and low ecological zones from which discrete communities exist, bonded by reliance on the products from each as part of a vertical economy. From 3,200–3,500m Quechua-speaking *Ninokorin* cultivate maize, cereals, peas and beans, whereas the *Kaata* cultivate *oca* and potatoes on the central zone from 3,500–4,250m, whilst the Aymara-speaking *Apacheta* who occupy the altiplano (4,300–5,000m a.s.l.) herd camelids and sheep. The interchange between these groups gives each a balanced diet of carbohydrates, minerals and proteins, and their interdependence is cemented by intermarriage and ritual kinship. This communal relationship is referred to as an *ayllu*, and the *ayllu* is physically identified with the mountainside they inhabit, which is minutely described in terms of the human body, with a head, stomach, limbs etc. They relate the physical environment in which they live to the hydraulic systems of the body, with blood, fat, water, and other bodily fluids related to natural phenomena. The three ecological zones that the Qollahuayas identify with would seem to correspond to the three broad vertical zones defined by modern soil studies, and this concept has been supported by the results of archaeological and ethnographic studies in the region around Paniri (Castro – Aldunate 2003).

The relationship between *huacas* (sacred stones) and irrigation has been discussed in connection with the Chicha Valley, in Apurimac, Peru (Meddens 2006). In this article cup-marked stones particularly are identified as locational indicators for guiding sowing and irrigation during the Late Intermediate period. The article discusses the wider distribution of such *huacas* associated with irrigation from many different parts of the Inca empire, and discusses also the wider symbolic relevance of sacred stones in defining sacred space, and in connection with agricultural rituals linked to astronomical and calendrical events. Such concepts could underlie the stone mounds at Paniri and their function in cognitive and communal management. One of the three principal deities of the Inca and Andean communities in the south-central highlands was the thunder-lightening god *Illapa* (*Thunupa* to the Aymara) because thunder and lightening brought rain from the Milky Way (Steele 2004, 198–9). Conflation between mountain and lightening deities is a tradition in the Andes, and the relationship with these, creator gods, and ancestors (*mallquis*) (who became lithified and known as *huancas* (Steele 2004, 202)) show a strong symbolic connection between sacred stones and mountain gods. These ancestors needed protection from the sun's rays and were believed to take refuge in trees, caves or roofed structures before dawn. Propitiation rituals were offered to the ancestors and the three-in-one principal deity (i.e. *Viracocha* (creator and sun) and *Illapa* (thunder) Demarest 1981, 35), a not surprising situation considering the interrelationship between life-giving sun and water for agricultural purposes. Although no cup-marked stones were recorded at Paniri, in addition to the mounds some rock art was found. This consisted of a spiral motif (*Figure 5.25*), a symbol which has been identified with water cults (Reinhard undated), and one that is particularly widespread being present in all the countries along the Andean mountain chain as well as in Brazil and Argentina. Reinhard's article refers especially to the connection between a mountain/weather deity (Illa-kata, the highest visible mountain on the eastern horizon) and the supply of surface water to the Nazca River. In addition a mountain of sand, Cerro Blanco, that dominates Nazca, was believed to have a lake at its core that supplied the underground canal system. Previous studies had explored the intricate relationship between mountain veneration (because of their control of weather and water sources) and Andean communities, with shared symbols and rites of great antiquity forming fundamental concepts of Andean culture (Reinhard 1983 and 1985[4]).

Observation of the way in which rain clouds gathered repeatedly around the mountains and altiplano in the rainy season, would provide a simple metaphor for the stone mound structures at Paniri. They were emulating the mountains that were seen to create rain, and they could therefore act as replicas with acts of propitiation to entice the gods to provide water. They would also conform with the common Andean practice of conferring sacred status to rock *huacas*, especially in relation to ceremonies associated with, and regulating of, the agricultural cycle. In addition they could have acted as refuges from the sun for the *mallquis*, and so ensure the safety of communal ancestors. Such a hypothetical concept is impossible to prove, but it would be consistent with the body metaphor of the vertical landscape zones discussed above, through physical linkage between the highland zone and its water generation capacity (the head), with the dry area (the body) that needed to consume the moisture to feed itself. In this context the fact that the snow-capped volcano that dominates the local landscape, the quebrada and the settlement are all known by the same name, Paniri, must suggest that in the minds of the people who named them, all of these features were intricately linked; Mount Paniri would have been seen as a manifestation of the rain deity, providing water for cultivation and thus human life in this inhospitable region, and yet the fundamental duality of Andean gods would have been evident also in Volcan Paniri, which had the terrifying power to destroy all life through eruption.

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[4] See also Castro – Aldunate 2003 for regional sites of relevance to Paniri.

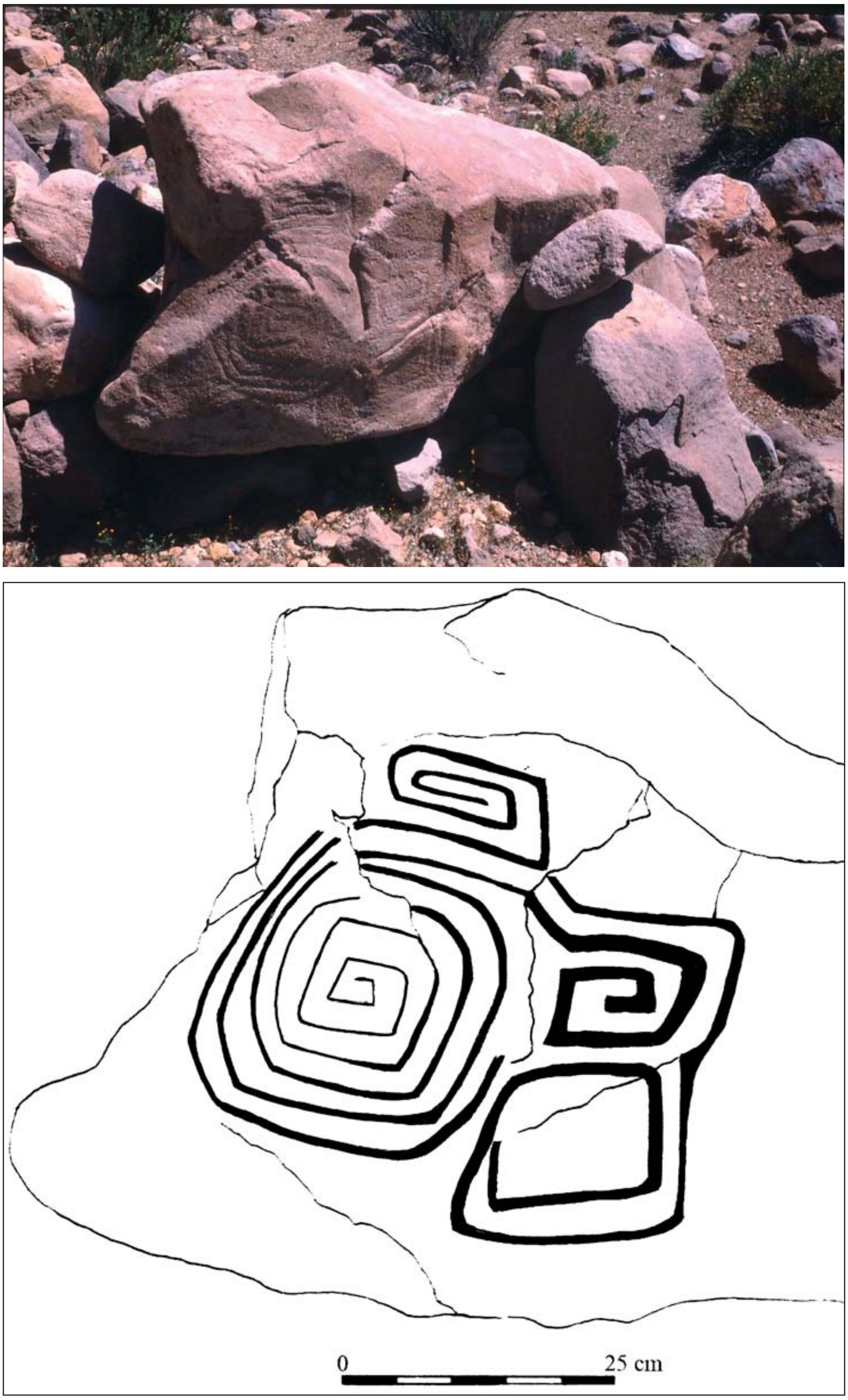

Figure 5.25. Petroglyph spiral design (one of only two rock-art sites within the study area).

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Bibliography

BASTIEN, J. W. 1985
Qollahuaya – Andean Body Concepts: A Topographical-Hydraulic Model of Physiology *American Anthropologist* 87/3, 595–611.

CASTRO, V. – ALDUNATE, C. 2003
Sacred mountains in the highlands of the south-central Andes *Mountain Research and Development* 23/1, 73–79.

DEMAREST A. A. 1981
Viracocha. The nature and antiquity of the Andean High God. Harvard University Press.

DIAZ VIAL, C. – WRIGHT, C. 1965
Soils of the arid zone of Chile. Soils Bulletin 1, Rome: FAO.

EVANARI, M. – SHANAN, L. – TADMOR, N. 1982
The Negev: the challenge of a desert. Chapter IX: Stone Mounds and the Mechanics of Runoff, Harvard University Press, 127–147.

FARRINGTON, I. 1980
The Archaeology of irrigation canals, with special reference to Peru. *World Archaeology* 11/3 Water Management, 287–305.

FARRINGTON, I. undated c.1982. ms.
Land Use and Irrigation Research Project, Report No. 1: Prehistoric Agricultural Facilities in the Cusichaca Valley; a preliminary survey. Australian National University, Dept. of Prehistory and Anthropology.

KEELEY, H. C. M. 1988
Soils of Pre-Hispanic Field Systems in the Rio Salado Basin, Northern Chile – a preliminary report. *British Archaeological Reports International Series 410 Symposia of the Association for Environmental Archaeology* 6, 183–206.

LINACRE, E – HOBBS, J. 1977
The Australian climatic environment. John Wiley + Sons, Brisbane.

LIVERMORE, H. V. 1966
Royal Commentaries of the Incas by Garcilaeo de la Vega, El Inca Part 1, Book Five. 294–297. University of Texas Press.

MEDDENS, F. 2006
Rocks in the Landscape: Managing the Inka Agricultural Cycle. *The Antiquaries Journal* 86, 36–65.

OLIVIER, J. 2003
Fog-harvesting for water: clouds on tap http://www.scienceinafrica.co.za/2003/march/fog.htm

REINHARD, J. 1983
High-altitude archaeology and Andean mountain gods *American Alpine Journal* 25, 54–67.
REINHARD, J. 1985
Sacred Mountains: An ethno-archaeological study of high Andean ruins. *Mountain Research and Development* 5/4, 299–317.
REINHARD, J. undated
Nazca Lines 4.
STEELE P. R. 2004
Handbook of Inca Mythology. ABC CLIO, Santa Barbara.
WEISCHET, W. 1975
Las Condiciones Climaticas del Desierto de Atacama como Desierto Extremo de la Tierra. *Norte Grande* 1/3–4, 363–373. Inst.Geogr. Univ. Catolica de Chile.
WRIGHT, A. C. S. 1963
The Soil Process and the Evolution of Agriculture in Northern Chile. *Pacific Viewpoint* 4/1.

6

Caring for Creation – A Hierophany at Strawberry Island

HERMAN E. BENDER

Introduction

In the very heart of the Lac du Flambeau Band of the Lake Superior Chippewa Indian Reservation is Strawberry Island. It is a nearly pristine, undeveloped island approximately 26.5 acres in size, located in the center of Flambeau Lake (named *Waswagoning*, meaning "place where you fish by torch-light") in the Town of Flambeau (from the French "flaming torch"), Vilas County, Wisconsin, U.S.A. (*Figures 6.1*, *6.2* and *6.3*). Covered by mature forests dominated by red pine, red oak and big tooth aspen, the island, unlike most of the surrounding area, has never been logged. In addition, the Island contains a number of endangered and threatened plant species together with bald eagle and osprey nesting sites. When viewed from the northwest shore of Flambeau Lake in the vicinity of the original village/knoll area and old cemetery, both established ca. 1745 (Pfaff 1993, 13), Strawberry Island has a high point or ridge on its northwest side which presents a rounded hill-like profile (*Figure 6.4*).

Ownership of the island is steeped in controversy dating back to 1910 when the title to the Island was acquired by an alleged secret warranty deed by a non-Indian. Since then, it has remained in private ownership by a family trust. Knowledge that the title in fee had passed to a non-Indian, private family was first discovered by the members of the Lac du Flambeau Chippewa in the early 1960's. Because the Lac du Flambeau band of Chippewa revere Strawberry Island as a sacred place, they have been pursuing court action for its return since that time. Negotiations for purchase have continued through the ensuing decades, but whenever the tribe showed an interest and was willing (i.e. financially able) to pay the asking price, the owner's price escalated, sometimes by a factor of three times or more. After the tribe announced its plans to build and operate a casino, the price skyrocketed. In 1995 the owner applied for building permits which forced the Tribe to seek an injunction against any development. This injunction was meant to give the Tribe the time needed to once again try and raise the money for outright purchase, even at a price now ten times higher than what it was when first agreed upon in 1988. Court actions and negotiation are, apparently, still ongoing with no clear resolution in sight. Resolute, the Tribe continues to persevere (at the date of printing).

Two years before a temporary restraining order and injunction were ordered in 1996, and to prepare for the eventual hearings, (then) Tribal President, Tom Maulson contacted me regarding research to help establish and "prove" that Strawberry Island was, indeed, a sacred place. With this request it was, therefore, necessary to research and examine the Chippewa cultural heritage, native belief system and concepts of the 'sacred' in order to fully understand the reasons why the Native people held such reverence and attachment to Strawberry Island and, in a broader view or sense, *Waswagoning*. Furthermore, because the claim of a sacred tradition had carried little weight in the legal arena, it was apparent that a "scientific" approach regarding the sanctity of Strawberry Island was necessary as the 'proof' needed for a favorable ruling.

Beginning in early 1994, a number of public information sessions were held on the reservation with the intention of recording oral traditions. Despite the fact that the sessions were well attended, little traditional information and history were forthcoming. Even more disappointing, the key question on

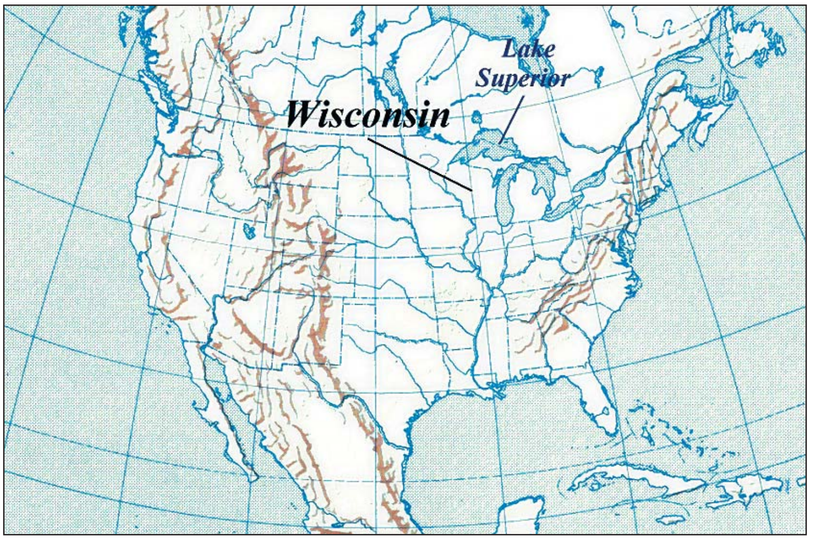

Figure 6.1. Partial map of North America showing the location of the state of Wisconsin in the U.S.A. and Lake Superior in the Great Lakes.

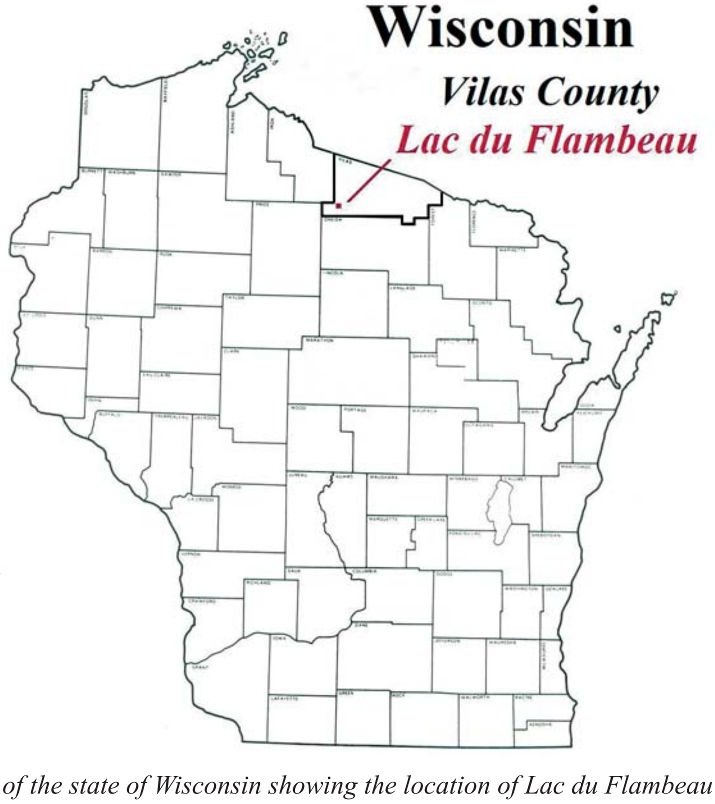

Figure 6.2. Map of the state of Wisconsin showing the location of Lac du Flambeau in Vilas County.

how or why the name Strawberry Island originated could not be answered. The scant oral tradition about Strawberry Island that did survive was mainly that it was (conjecturally) the historic scene of a battle between the Sioux and Ojibway. Some said they had been told "little people" lived there, others that it was a place of ghosts and that the island was sacred, their parents or grandparents telling them never to go there. Although there was documentation on gardening activities and Chippewa summer residences on the island during historic times (Bokern 1987), this was never mentioned. After the public information

Figure 6.3. Map of the Lac du Flambeau area showing the location of Strawberry Island in the center of Flambeau Lake.

Figure 6.4. Strawberry Island looking southeast from the northwest shore of Flambeau Lake near the Bear River inlet (see Figure 6.5*).*

sessions, it became apparent that, for future court appearances, an exhaustive check of historical records and texts would, indeed, be necessary. Within days, research began with the intention of creating a "scientific" argument, one based on integration of the broader Anishinaabe cultural landscape and cosmology traditions blended with local, oral tradition. A two year process, it eventually yielded the information needed for the "proof" required by the court system.

Anishinaabe Cultural Landscape

The Native people of North American, including the Annishaabe, have a profound view of and reverence for the natural world. Their world was (and is) a spirit-filled realm based on an animistic and phenomenological 'sense' of the natural world, and (control) of forces such as the sun, thunder and wind (Bowden 1981, 118; Kinietz 1965, 284, 326). This 'sense' of a spirit-filled world where spirits who dwell in it, upon it, above and below it influenced everyday life and was noted by many (western) observers over the centuries. In Native beliefs, everything has a soul: lakes, rocks, plants, animals and even certain manmade objects; all looked upon as living beings and sometimes as persons in what was a homogenous universe (Bowden 1981, 74, 80, 109). Unlike our modern, Euro-centric society, there was no separation between the physical and spirit worlds (Leeming – Page 1998, 14, 76–77). The embodiment of this belief was manifested in the existence of Manitou or 'spirit' (Bender 2003a, b; Taylor – Sturtevant 1996, 381). On the cultural landscape, Manitou was omnipresent; recognized everywhere and in anything endowed with supernatural power (Parkman 1983, 393). The Sun, moon, sky, stars, wind, rain, thunder, lightning, hail, rocks, lakes, rivers, streams, waterfalls, caverns, mountains, forest, plants, animals, birds, fish, life itself and even human breath all possessed or were identified as living Manitou (Bender 2003a, 26; Bowden 1981, 74, 80, 109, 118; Grim 1983, 6; Heming 1896, 137; Parkman 1983, 281, 385–387; Schlesier 1987, 4–15).

The Annishaabe, who originally came from the east (Densmore 1929, 5–6; Tanner 1987, 29), carried these traditions, and like other Native people, reestablished or recapitulated them where they eventually settled (Bender 2003b, 50–52; Mayor 2005, 118; Nabokov 1982; 101; Powell 1969, 26). As Conway (1990, 3) said, "… the Lake Superior Indians accumulated a wealth of personal experiences with the surrounding landscape. Their lives were guided by careful rituals which recognized the many subtle interactions between the forces of nature, living off the land, and renewal of resources. [Their] native religion included ancient ... practices oriented to a series of sacred sites. Small shrines, isolated vision questing locations, and unusual landscape features associated with mythic heroes covered the country." This association is best described as an "integrated sacred landscape" (Ewing 1995, 39), or a "cultural landscape" (Bender 2007, 119) where there was or is no complete separation of the real or natural world and the realm of spirits (Taylor – Sturtevant 1996, 384). It also may explain why the Anishinaabe, when they first settled in this part of Wisconsin, chose the Lac du Flambeau area as a site for a permanent settlement. They probably recognized Strawberry Island in the midst of Waswagoning as a place of power, the terrestrial dwelling place of Nanabozho (a likely corruption or mistranslation of the Creator's name, Michabo) which was said to be on an island (Kinietz 1965, 298–299).

Phenomenal attributes and the symbolic dimensions of place

High places, i.e. prominence, have long been identified as a phenomenal attribute (Steinbring 1992, 102), recognized and venerated as such by Native people for thousands of years (Ritchie 1969, 176). Prominence has been described as "the dramatic character of the formation ... [a] dominating location" (Steinbring 1992, 102). William A. Ritchie (1969, 178) further identified "high places, the east, the sun and red ochre … as elements of a vigorous religious movement" which existed during the late Archaic. This eastern North American religious movement has been described by Buchner (1980, 102) as the 'core of religiosity'. Not only was the 'core of religiosity' ancient, it was apparently ubiquitous and transcended language divisions as did many ancient traditions and beliefs, e.g. the thunderbird (Bender 2004, 13–15). In their migrations west, it is very likely that the Anishinaabe carried this "core of religiosity", reestablishing and adapting their holy places and landscape traditions where they either settled or, had an epiphany acting in accord with the spiritual recognition of a key landscape feature (Bender 2003b, 50–52; Powell 1969, 26). Fundamentally, Strawberry Island, a prominence in the midst of Lac du Flambeau, would have been viewed as a worldly representation of this ancient native religious tradition and tribal ethos.

There are "abundant references to the sacred quality of high places" (Hedges – Hamann 1992, 48) or prominence, and both hills and water are looked upon as natural shrines, features often considered sacred by early American cultures (Kinietz 1965, 298–299; Stuart 1993, 92). Strawberry Island dominates Lac du Flambeau, a profound reason why the Island was apparently envisioned as a powerful place: it is the ultimate shrine; a hill surrounded by water. It appears, however, that a much deeper spiritual meaning together with other phenomenal attributes was recognized by the [original] people many generations ago.

When an Ojibwa elder named *Kagagengs* or Little Raven, born at Lac du Flambeau or "Torch Lake" sometime in the mid-18th century, was interviewed about 150 years ago (Kohl 1860, 190–199), he related that "on Torch Lake, it is said that Kitchi-Manitou (the Good Spirit) first made the coast of our lake." Kitchi-Manitou was and is also known as Michabo, the Creator (Bray 1970, 164). Kagagengs went on to also say that, during the creation when Kitchi-Manitou "set to work providing the man the company of a squaw (woman)" that he, Kitchi-Manitou or Michabo "stepped into his canoe, and paddled across to the island which still lies in the centre of our Lac du Flambeau …".

Michabo "was the spirit of light and as the dawn, the bringer of winds" and "in the tales of old travellers and missionaries ... Lord of Day and bringer of light and civilization" (Spence 1986, 120). His name contains the Algonquian root word *wab* meaning "white". From *wab* the Algonquin words for dawn, east, light and day are derived (Spence 1986, 120). Michabo's home is said to be on "an island in the east" (Spence 1986, 120); his physical representation in the heavens is the sun, on the Earth it is fire (Utley – Washburn 1977, 91). The Cheyenne, who share Algonquian oral tradition, say that "fire represents the heat of the Sun" (Hoebel 1960, 11). Furthermore, the Ho-Chunk (formerly known as the Winnebago), Siouan-speaking neighbors of the Anishnaabe, also venerated fire as the deity "our grandfather", offering tobacco sacrifices to him by throwing them into a fire and using the word for fire interchangeably with the deity, the day, the sun and even life (Radin 1963, 68).

From these descriptions, one can link Strawberry Island and the surrounding landscape of Lac du Flambeau with all four symbolic elements of the eastern North American "core of religiosity", i.e. the high places, the east, the sun, and the color red. Not surprisingly, there is an Anishinaabe tradition that shares many the elements of the 'core of religiosity'. For generations, the Anishinaabe had a society known as the *Wabeno*. *Wabeno* translates as "men of the dawn sky" or "red dawn sky" (Grim 1983, 67, 113). The Wabeno were said to manipulate fire, were capable of transformation, specialized in the regulation of the natural order on earth, fertility, reincarnation of souls, studied the stars and moon, gained spiritual power from the sun, and danced until dawn in their ceremonies (Conway 1990, 70; Grim 1983, 67, 113). Like the 'core of religiosity, it was an ancient movement. The Wabeno are thought to descend from a northern Archaic culture and predate the Mide (Kinietz 1965, 291; Miller 1982, 282; Schlesier 1987, 71–72). Carried west, Wabeno traditions embodied the elements seen in the profound drama of the recognition of Strawberry Island as a sacred place.

According to the elder Kagegang, Strawberry Island, in the center of Lac du Flambeau, was, indeed, looked upon as the home of the Creator (Kohl 1860, 190–191). As Kagegang further explained "He [Michabo] immediately came over in his canoe, and invited the couple to his island" where there was a splendid garden on the island in which "grew... strawberries". Later, Kitchi-Manitou or Michabo, the Creator, "banished (people) from the happy isle, which immediately grew wild, and bore them ... to the shores of the Lac du Flambeau". The island still remains "wild" to this day. Despite what may be Biblical or Christian influences creeping into Kagegang's story (Kinietz 1965, 80–81, 397; Leeming – Page 1998, 13; Parkman 1983, 393–394; Taylor – Sturtevant 1996, 380), these historical references are very clear on why Strawberry Island, in the midst of Lac du Flambeau, was a powerful place: it was considered to be the home of Michabo, the "great and excellent genius … who made Heaven and Earth, and who dwells, they say, in the east" (Kinietz 1965, 211).

Henceforth, the Anishinaabe, with regard or in reverence to a dawn (eastern) directional attribute together with the phenomenal attributes of prominence and 'presence' (Steinbring 1992, 102, 107), may well have both symbolically and intentionally first located the old village on the west side of the lake so that Strawberry Island, the Creator's home, was literally seen as "an island in the east"; the direction of first light, the color red when the sun first rises, the color of fire and as Kagegang said, Michabo's home, i.e. the created earth.

In addition to the cultural and phenomenal attributes of prominence and presence, the place names themselves may hold further clues as to the spirituality of Strawberry Island and Lac du Flambeau. When the Anishinaabe (Ojibwa) first encountered the "fireballs moving along the shoreline" (Pfaff 1993, 13–15), they probably thought that they were in the presence of Kitchi-Manitou or Michabo, the Creator whose earthly manifestation is fire, and being witness to, as it says in the Bible, Genesis, 1:2, "the Spirit of God [moving] upon the face of the water". The lake was named Waswagoning or 'the Lake of Flaming Torches' because of this experience (Pfaff 1993, 15).

Although the origin of the name Strawberry Island has been shrouded by the mist of time, the spiritual aspects of the strawberry may evoke an answer and help to resolve the mystery. The strawberry was considered to be the "first fruit" (Densmore 1929, 18). As the first fruit or 'first berries', strawberries were offered as food for the spirits after death (Densmore 1929, 75) and during the ceremony (held in the summer) when young girls reached maturity (Densmore 1929, 71–72). In this role, as food, the strawberry is symbolic of birth, rebirth and life (Densmore 1929, 71–72). The strawberry was said to possess, along with the sun, moon, rocks, some trees and animals and, especially, place, 'manitou' or supernatural power (Grim 1983, 6).

The Great Strawberry is also prominent in the Midé scrolls as the "Source" or tempter along the 'path of the dead' (Dewdney 1975, 103–104). On that path, it was said to be an "obstacle … *which stands on the roadside like a huge rock*" (Heming 1896, 154). Importantly, strawberries also possess a symbolic dimension of color. They are red; the color of fire or the sun when it first rises in the east or sets in the west, and of blood or life (Carl 1991, 15; Densmore 1913, 155). The strawberry, the *odeimin*, can therefore represent archetypal elements seen in of both the 'core of religiosity' and the Wabeno traditions. Furthermore, and perhaps more profoundly, they were said to be growing on Strawberry Island, the "island in the east", home to the Creator.

Mirroring creation and the Ojibway afterlife

Recent, innovative research strongly suggests that certain landform areas were sought during Native migrations (Bender 1995; Bender 2003b, 49–53; Benson – Hoskinson 1993, 37–46; Schlesier 1987, 77–79, 116; Steinbring 1992, 102–113). These landforms would have physically matched or reflected the ancient beliefs, i.e. tribal ethos and traditions of sacred land that the Anishinaabe (and other Algonquian groups) carried from the east (Taylor – Sturtevant 1996, 136, 384). Because of this purposeful and profound mindset, the landscape about the greater Lake Superior area spawned another Anishinaabe ceremonial group, the *Midewiwin* or Midé, meaning "grand medicine society". Not nearly as old as the Wabeno society, yet incorporating some of the core beliefs and elements, the Midé developed sometime in the 17th century as a reaction to European encroachment (Brehm 1969, 690–692; Schlesier 1987, 71). Development of the Midé also helped give purpose to the Anishinaabe westward migration. Wherever the Anishinaabe settled, Midé lodges would be established, a means of both consecrating and claiming territory as their rightful, sacred landscape (Warren 1984, 77–81).

The tradition of a 'sacred landscape' is, at times, a reflection of (Mother) Earth and (Father) Sky, at other times a place where the two meet with the sun as His representative. It is considered a sacred compact (Bender 2004, 9). The 'sacred' has been described as "a place where power rests ... Everything as it moves now and then, here and there makes stops ... So the god [Michabo] has stopped. The sun, which is so bright and beautiful is one place where he has stopped" (Grim 1983, 5). The horizon, where land and sky meet, is the place where the sun, when at solstice, stops. It is considered sacred, as Grim says (1983, 6), of "… a cosmic character."

In 1994 with the solstice sun as the primary focus, a trigonometry formula was utilized to calculate the rise and set azimuths of the solstices (and associated lunar events) at the 46° North latitude of Lac du Flambeau of (Behm *et al.* 1989, 33). The summer and winter solstice rise and set azimuths were determined to be approximately 35.5° north and south of an east-west line. It soon became apparent that, if the intersection of the projected solstice lines was centered over the high point on Strawberry Island, two key events, a sunrise and moonrise, would occur when looking toward Strawberry Island from the northwest (*Figure 6.5*).

When viewed from the knoll overlooking the original village and old cemetery, the Winter Solstice Sunrise occurs directly over Strawberry Island to the (south) east, i.e. the island home of Michabo. During the winter solstice, the sun, that is Kitchi-Manitou's or Michabo's physical representation in the sky, would appear to rest or 'stand still' at sunrise over Strawberry Island, before beginning its journey back north. Six months later, in June, the summer solstice sunset is observed in the direct opposite direction,

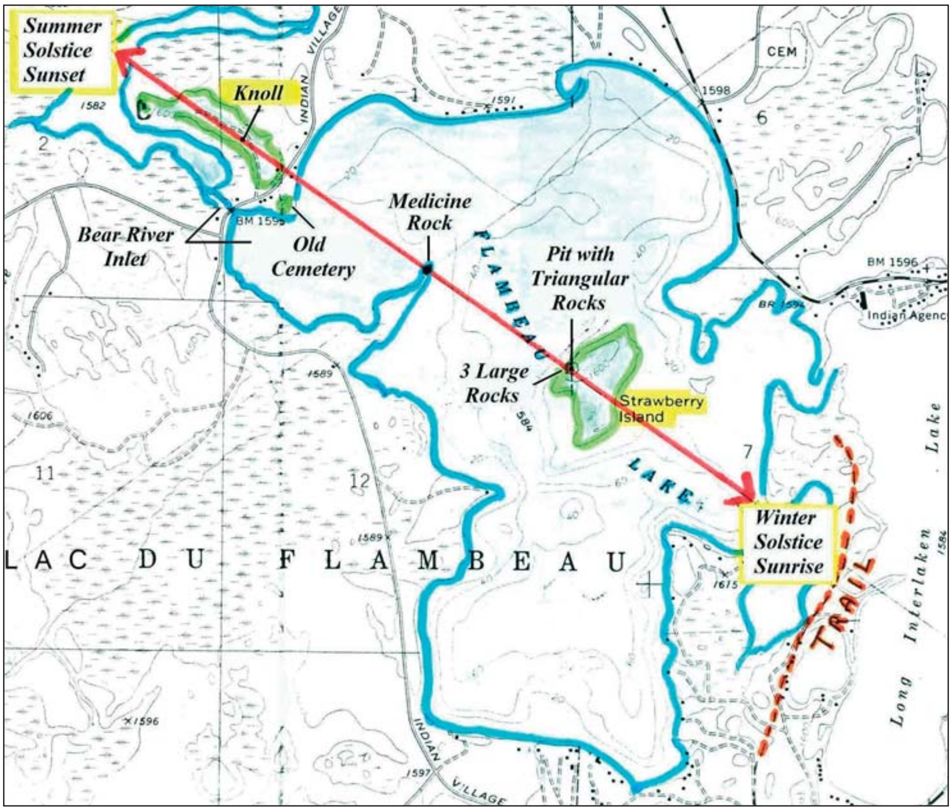

Figure 6.5. Portion of the Lac du Flambeau, Wisconsin, 7.5 minute topographic quadrangle map *with hi-lighted details showing the summer and winter solstice alignments in relationship to Strawberry Island, Medicine Rock, the old cemetery and knoll near the location of the original village.*

i.e. the northwest, over the cemetery and old village on the knoll (*Figures 6.6* and *6.7*). Like most Native people, the Anishinaabe ancestors would have been aware of this phenomenon (Bender 2008). And like others, they incorporated physical markers, ceremonies and songs to celebrate the events.

At one time, the Ojibwa at Lac du Flambeau sang a song during the ceremony of Restoring the Mourners, held in the late Fall at the time of a full moon (Densmore 1913, 153–157). The ceremony took place on the knoll overlooking the old Indian village (Densmore 1913, 153). The words of the song *I am Small*, usually sung in the winter, are recalled: "I am small, from the south, I come" (Densmore 1913, 161). This song may have been given to recall the Algonquian legend of Glooskap, another name for Michabo, i.e. the Sun, who "goes south in the dead of winter" before journeying northward, bringing Summer, queen of the "little people", a "tiny creature", to reawaken nature (Garvie 1991, 99–100; Spence 1986, 147–49). Thus, at Lac du Flambeau, a song, a legend and a winter sunrise viewed over Strawberry Island (home of the "little people"), strongly suggests that all were united, in times past, to form a spiritual covenant.

The sacred covenant that unites the Creator with the land and the people was or is again renewed, celestially, in the summer. In the summer, the full moon rise and set azimuths are almost directly opposite those of the summer solstice sun, sharing the winter solstice azimuths. The Algonquian name for the late June moon is *odeiminigizi'*, meaning the "strawberry moon". In late June, usually within days of the summer solstice, the strawberry moon full-moon rise, viewed to the southeast from the location of the knoll overlooking the old village, is seen rising over Strawberry Island (*Figure 6.5*). Therefore, at the time of both the winter and summer solstices, the marriage of earth and sky is consummated on the horizon over Strawberry Island. However, this critical line-of-sight represented far more than a pretty view.

Almost 400 years ago a Huron said to the Jesuit priest Father Brebeuf, "Do you not see that we inhabit a world so different from yours, there must be another heaven for us and another road to reach

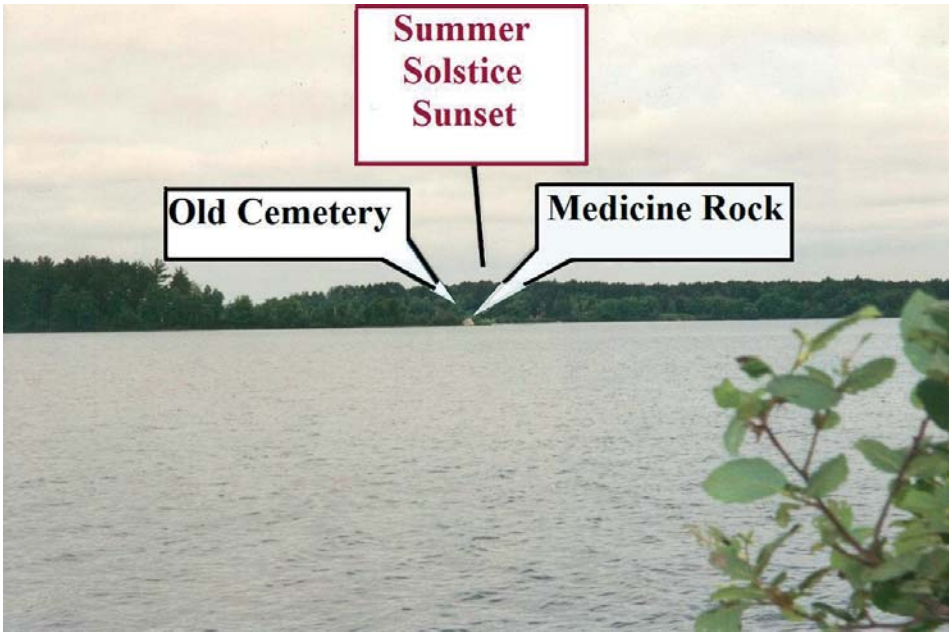

Figure 6.6. View toward the direction/azimuth of the summer solstice sunset from the high point on Strawberry Island with Medicine Rock and the location of the old cemetery (established. ca. 1745) indicated.

Figure 6.7. Photo of the two large, triangular-shaped rocks found on the northwest high-point of Strawberry Island during a reconnaissance in July, 1994. The rock on the right has a flat, un-weathered base and appeared to have been perched on top of the rock on the left. There is a Swiss Army knife for scale. From this vantage point, Medicine Rock and the old cemetery are easily visible with both aligned on a 304º–305º azimuth (see Figure 6.6*).*

it?" (Heming 1896, 27). The Anishinaabe shared this tradition of 'two roads' (*Figure 6.8*), telling the explorer and trader Nicholas Perrot "that we have a particular country for our dead, and they (i.e. the French) for theirs" (Heming 1896, 136). Other 'after life' traditions, not normally discussed by the Anishinaaabe, abounded.

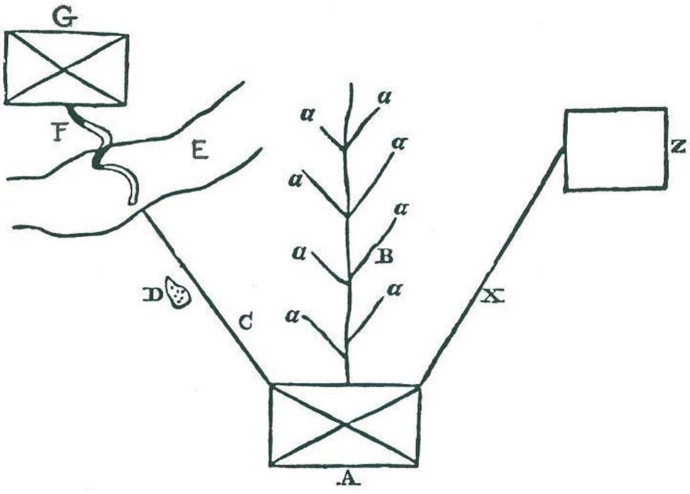

Figure 6.8. The Ojibwa map of the "path for souls" or road to paradise drawn for J. G. Kohl in the mid-19th century. Slightly different versions, but always with the same elements appear in the Mide Ghost Scrolls. Explanation is as follows: IAI is the (created) earth upon which "God has planted his law, like a tree (B) straight upwards". "Some wander the right path (B), but many get on the side-paths of the lane (a a a a). These run into the desert". "When men die, they all go, after death, along the path of souls (C). On the center of this path (at D) thou seest the strawberry lying on one side. It is extraordinarily large..." After a "journey of from three to four days...a large broad river (E) bars the way. Over it there is no regular bridge. Something that looks like a great tree-stump (F) lies across it...In reality, it is a great serpent, which has its tail on the opposite shore, and thrusts forth its head to this side. On this head the souls are obliged to leap". The Great Spirit grieved for men and "ordered Menaboju to prepare a paradise (G)...in the west", or "the direction of the setting sun" according to the Mide Ghost Scrolls. The name for Paradise is "Wakui or Wakwi". "With that, the Indian told me wished to designate the paradise of the Christians. They...had also a paradise (X and Z) ...He knew nothing at all of its nature, but he [drew] it for the sake of giving me a perfect idea" (Kohl 1860, 215–219).

The 'branched' tree, actually a cedar, is an ancient, conceptual icon, commonly seen in Ojibway pictography (Granzberg – Steinbring 1994, 51–52). The (cedar) tree was both a symbolic representation of the cosmic axis (Grim 1983, 78–81; Taylor – Sturtevant 1996, 481; Warren 1984, 77), and the multi-layered universe (Grim 1983, 81; Owusu 1999, 194–195). Like rocks and fire, the cedar tree possessed Manitou and was incorporated into both the Wabeno and Midé lodge designs (Grim 1983, 6, 80–81). A symbolic element in the Midé scrolls and/or erect in the lodge, the cedar was an indication of an orientation toward the direction north, the cosmic axis (Dewdney 1975, 84; Granzberg – Steinbring 1994, 52). Furthermore, a so-called 'Master Ghost scroll', drawn sometime in the 19th century by an Ojibway Midé master named Skewkomiks, shows the 'path of the dead' in the direction of the setting sun (toward the west) with upright trees at right angles or perpendicular to it, i.e. the north (Dewdney 1975, 103). An accepted convention, this was not the only Midé 'Ghost scroll' which pictured the tree at a right angle to the westward pathway. From these descriptions, one can infer that the spiritual map of the Ojibway afterworld is oriented with north to the top (*Figure 6.8*), the same convention employed in modern maps. This seemingly indicates that 'road to paradise' or the 'path of the dead' was, at times, oriented along a southeast/northwest line, the same orientation of the line that connects the winter solstice sunrise and summer solstice sunset.

One other phenomenal landscape feature, "Medicine Rock", located near Strawberry Island, bears examination (*Figure 6.9*). Medicine Rock is, in fact, a massive red granite, glacial erratic (*Figure 6.10*), and like many other rocks of its size (and color), it was considered to possess Manitou (Bender 2003a). So sacred was Medicine Rock that people were not permitted to venture near it, and those who would did so at their own peril, warned away by gunshots (Borken 1987; Valaskakis 1988, 271). Much like the origin of the name Strawberry Island, the tradition of the sacredness of Medicine Rock was largely forgotten, and it was only mentioned at the 1994 informational sessions because of its name. It is now used as a diving platform by those wishing to swim (*Figure 6.11*). After the comprehensive investigation began, its true importance, sacredness and symbolic standing as a transformation icon were rediscovered.

Figure 6.9. Medicine Rock.

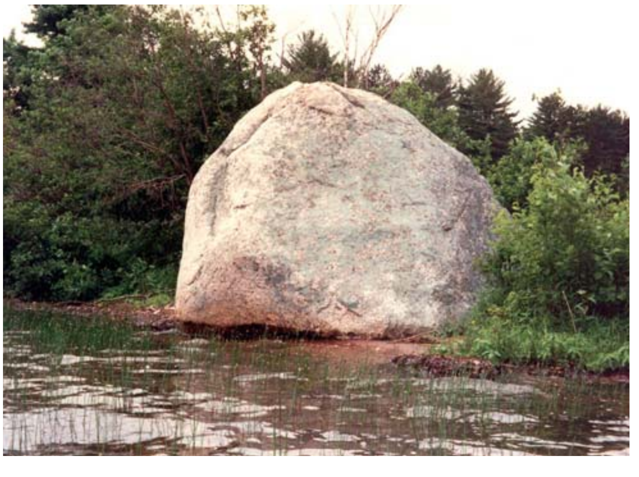

Figure 6.10. Close-up of Medicine Rock (looking south), a red-granite glacial erratic which is "extraordinarily large".

Figure 6.11. Medicine Rock (looking west/northwest) with a board ladder resting on its side and now used for a diving platform.

The Epiphany

After two years spent gathering all of the information, there was moment of inspiration in early 1996 when a direct comparison was made between a map of Lac du Flambeau (*Figure 6.5*), the map of the 'Ojibway afterlife" (*Figure 6.8*), and illustrations of the Midé Ghost Lodge scrolls (Dewdney 1975, 103–104; Kohl 1860, 215). By utilizing the concept of the tree as an indication of the direction north, features along the 'path of the dead' in the Ojibway afterlife map (*Figure 6.8*) almost exactly matched spacing on the physical landscape map (*Figure 6.5*). Strawberry Island, Medicine Rock, the Bear River inlet on Lac du Flambeau and the location of the old cemetery all became earthly Map comparison and juxtaposition of the physical landscape features at Lac du Flambeau (*Figure 6.5*) with the lettered, spiritual landscape features (*Figure 6.8*) of the Ojibway "path of souls" or afterlife representations on the spiritual landscape map (*Figure 6.12*). Stretching along a line from the southeast to the northwest, Strawberry Island reflected the created earth. Medicine Rock was the Giant Strawberry, "stand[ing] on the roadside like a huge rock" (*Figure 6.13*), and tempting spirits on the path to paradise. The Bear River inlet mirrored what Fr. Verwyst, another Jesuit priest, described as a "deep, rapid stream …" or barrier to the soul traveling the "Ghost road" after death, (Heming 1896, 135). The Anishinaabe and Ojibway called this stretch the *Jibekana*, meaning "the path of the dead" or "the path of souls" and it has its counterpart in the night sky. The Milky Way was seen by many tribes as a bridge stretching across the night sky toward the west (southwest or northwest) and along which the souls of the deceased (and shamans in full consciousness) travel (west) on their way to paradise (Goodman 1992, 22–223, 38; Hadingham 1984, 94; Krupp 1991, 272–273; Russel 1980, 46–47; Schwartz 1997, 93–96), a place which, according to some Midé, was "somewhere in space" (Densmore 1929, 75).

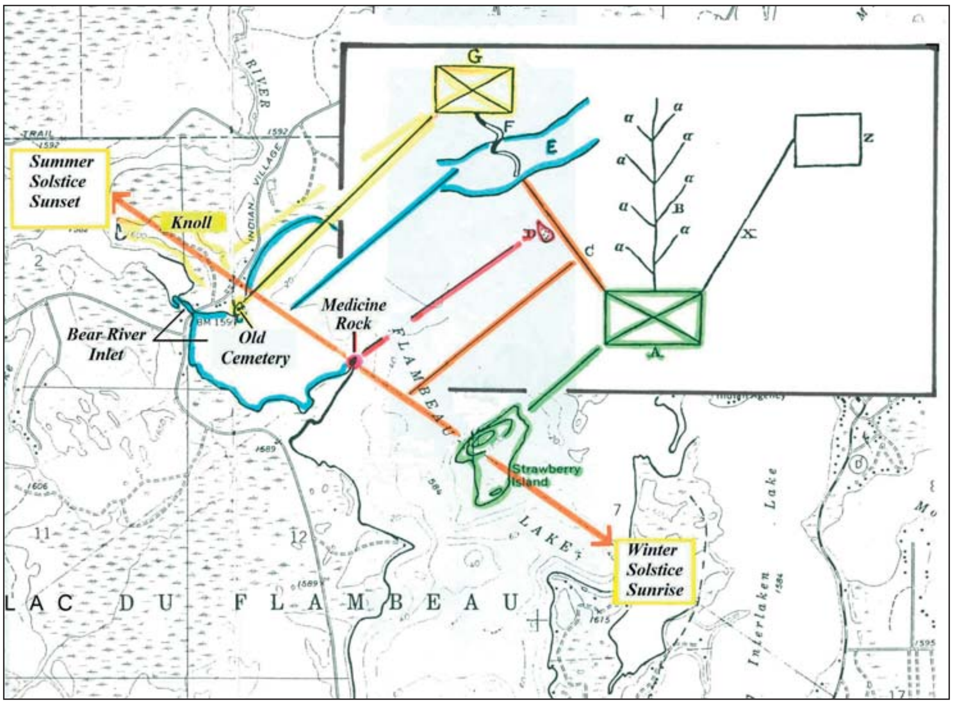

*Figure 6.12. Map comparison and juxtaposition of the physical landscape features at Lac du Flambeau (*Figure 6.5*) with the lettered, spiritual landscape features (*Figure 6.8*) of the Ojibway "path of souls" or afterlife.*

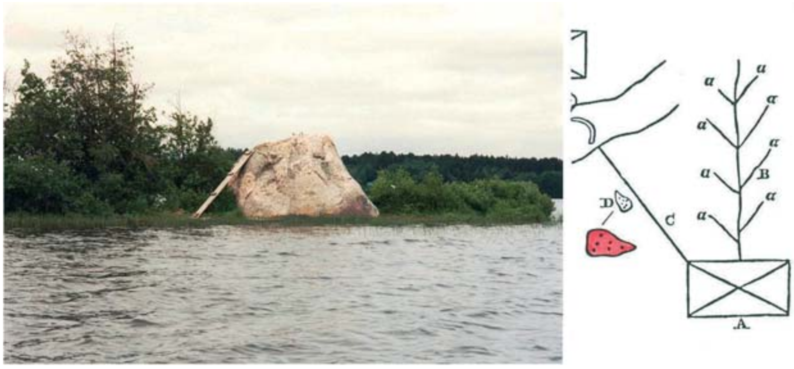

Figure 6.13. Medicine Rock does, indeed, resemble "a giant strawberry lying on its side" (element d, Figure 8*) which is "extraordinarily large". The congruence, perhaps iconic, may be another phenomenal attribute (Steinbring 1992), contributing to the quality of the sacred landscape encountered in the Lac du Flambeau/Strawberry Island area.*

The word *Jibekana* can also directly translate as "the serpent's path" and/or "the Milky Way" (Joe Chosa, Ojibway language teacher personal communication). A further remark by Fr. Verwyst expressed this when he said that the soul traveling (west) to paradise must cross the "… stream over which lies the much dreaded *Ko-go-gaup*-ogun, or rolling and sinking bridge … [which], once looking back it assumes the shape of a huge serpent swimming, twisting and untwisting its folds across the stream" (Heming 1896, 135). The correlation of the bridge or Milky Way with a serpent is evident, and it is pictured with a serpent-like shape and described as such in the Ojibway afterlife map (*Figure 6.8*). The Mide 'Ghost scrolls' offer further insights. In two of the Midé 'Ghost scrolls', a circular 'village of the dead' is pictured at the (west) end of the 'path of the dead'. Within the village on one illustration is a slightly northeast/southwest oriented 'Ghost Midewagun' while the second scroll shows the 'Ghost Midewagun' with a west/northwest-east/southeast axis (Dewdney 1975, 103, 105). The northeast/southwest and west/northwest-east/southeast orientations seen in both of the 'Ghost Midewagun' scrolls are almost certainly veiled indications of the seasonal movement of the Milky Way as it rotates from a northeast/southwest orientation in the late Spring to a west/northwest-east/southeast one in late Autumn. In the late Summer to late Fall, when the Cygnus rift in the Milky Way lays on the western horizon, its Y-shape is seen as the head of the open-mouth serpent with its coiled body stretching back to the east. Like many Native American traditions, this conceptual view of the Milky Way is not new.

Of interest, there are ancient rock art images and petroform dating back thousands of years which portray an open-mouth snake stretched across the sky. In the oldest, an approximate 4000 years-old, Maritime Archaic rock art image discovered in the Naragansett Bay drainage near Bridgewater, Massachusetts, a shaman is walking (west) up the serpent's back from its tail (the east) toward the open mouth (*Figure 6.14*). It is associated with the Maritime Archaic culture dating back at least 4000 years. The engraved image pictures a shaman walking up the back of a serpent or snake whose body stretches across the zenith of the sky above the sun. The likely configuration is with the tail to the east and the open-mouth of the serpent to the west, the orientation of the Milky Way from late Summer through early Winter (see *Figures 6.15* and *6.16*). The Sun is prominently pictured below the serpent which is at the zenith (Russel 1980, 70), the same as the Milky Way when it lays east-west in the night sky. Another rock art scene at Cave in Rock, Illinois on the Ohio River (now destroyed), pictured a serpent with an open mouth and undulating body (*Figure 6.15*). The undulating or serpentine body of the snake with an open mouth pictured in the cave mirrors the Milky Way turn-for-turn when it is aligned east-west with its head to the west. The sun and moon at various phases were also represented as well as "seven stars"

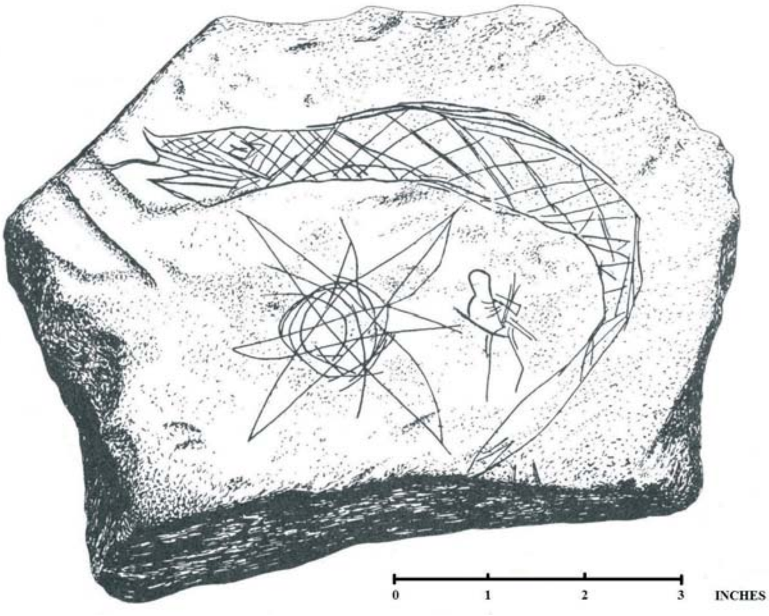

Figure 6.14. Line drawing (with scale) of an engraved rock found in the Narragansett drainage basin of Rhode Island in the northeastern U.S (Russel 1980, 70). It is associated with the Maritime Archaic culture dating back at least 4000 years. The engraved image pictures a shaman walking up the back of a serpent or snake whose body stretches across the zenith of the sky above the sun. The likely configuration is with the tail to the east and the open-mouth of the serpent to the west, the orientation of the Milky Way from late Summer through early Winter (see Figures 6.15 *and 6.*16*).*

(Pidgeon 1858, 223), very likely the Pleiades, and correctly placed relevant to the serpent's tail in the east when compared to a star map of the night sky showing the Pleiades and Milky Way in late autumn (*Figure 6.16*).

What the uncanny comparisons represented became an epiphany, and it was personally felt that direct observation of either astronomical event would help to confirm the physical and conjectured spiritual 'landscape' connection. An announcement was published in the July, 1996 *Lac du Flambeau News* (Vol. 4, No. 6), inviting those interested to come and hear An Untold Story of Strawberry Island: Rediscovering the Sacred Landscape, Oral Traditions, and the Land. In the announcement, it was noted that, "*Strawberry Island is part of the tradition of sacred landscapes studied extensively by Herman Bender ... sessions will include Strawberry Island ... and Algonquin oral traditions" ... Full Strawberry Moonrise over the Island will occur at 8:30 p.m. on June 30. At that time, the moon will align with Strawberry Island and Medicine Rock. Best viewing is from the high point of land in the vicinity of the old cemetery, Bender said*".

After the presentation on the evening of June 30, 1996, a large group of people boarded boats on Lac du Flambeau and we motored out to watch the moonrise. A mathematical calculation, two years worth of research and my personal reputation were all on the line. Yet, the feelings of expectation ran high. We were not to be disappointed.

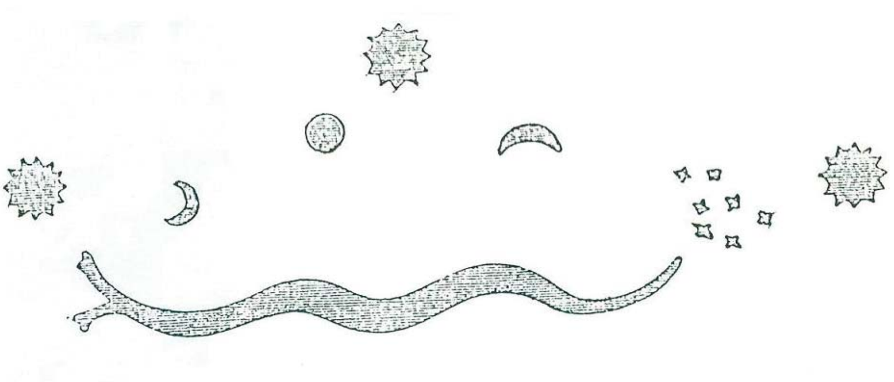

Figure 6.15. Detail from Pigeon (1858) of the Cave in Rock, Illinois rock art showing an open-mouth serpent with an undulating body, together with the sun, moon and "seven stars" which are likely an indication of the Pleiades (see Figure 6.16*).*

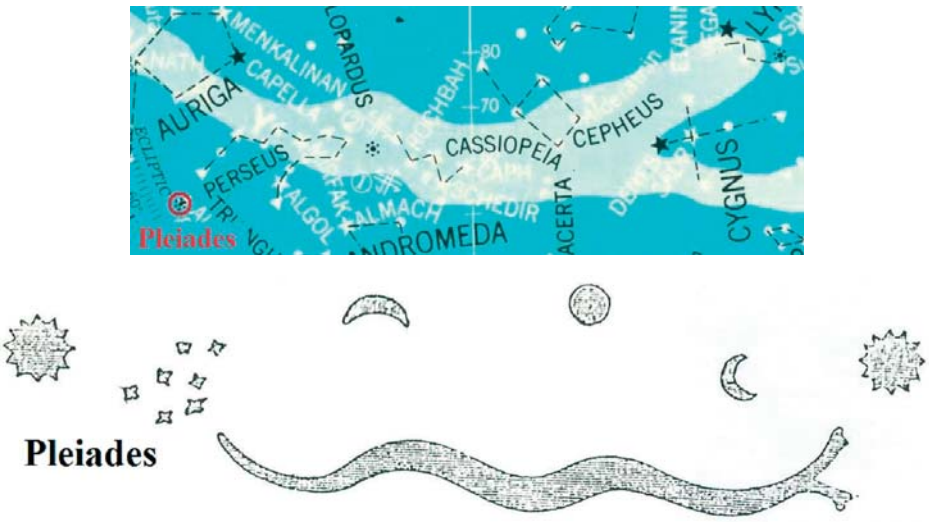

Figure 6.16. Star Chart or map of the Milky Way and Pleiades (circled in red) during the late Fall and early Winter with the a reverse-view of the open-mouth, rock art serpent shown in Figure 6.15*. Please note the open mouth and turn-for-turn comparison between the serpent's undulating body and the Milky Way plus the correct placement of the Pleiades near the 'tail'. West is to the right.*

Field observations

The following remarks are from my June 30, 1996 field notes and observations:

"At about 8:30 p.m., we were on our way, in Tom's (Maulson) pontoon boat, to observe the Strawberry Moon full-moonrise. The weather was perfect: low humidity and, save for a few wispy clouds, perfectly clear. The first thing that we saw, as we motored to a place on Lac du Flambeau between the old cemetery/high knoll area and Strawberry Island center, was that the full moon was rising on the north side of the island, exactly where and when I had said it would (June 14, 1996 on the telephone with Sue Merchant for news release in the Vol.4, No.6 Lac du Flambeau News). I set up my camera and tripod, and both Paul Kubish and I began taking pictures. On this day only, as opposed to June 29th or July 1'st, the sun was observed setting, in the direction (to west/northwest) overlooking the old cemetery/high knoll, directly opposite the full moon as it rose over Strawberry Island in the east/southeast. As the Strawberry Moon rose over Strawberry Island, the moon's light was reflected not as a disk, but as path of light in the waters of the lake. The path ran toward the west, the direction of the setting sun. At approximately 9:00 p.m., the full moon was seen, from our vantage point on the lake, centered directly over Strawberry Island. It was low in the sky, only about 6 or 7 degrees above the horizon (*Figure 6.17*), again, as predicted. Then, with the moon appearing to almost float as its sky-path arched over the center of the island, its reflection created a visual path of light, representative of the Ojibwa map of the "soul's path", mimicking on the lake how the spirit's path or road connects individual elements: creation (Strawberry Island); the Great Strawberry (Medicine Rock); the Serpent bridge (Milky Way/ Bear River Inlet); and west shore of the lake near the old cemetery, or paradise on the map of the spiritual landscape (*Figure 6.18*). My only comment was that '"the sky has now been

Figure 6.17. The 'Strawberry Moon' full-moon centered over Strawberry Island at approximately 9:00 p.m. (DST), June 30, 1996. View is to the east/southeast.

Figure 6.18. Ojibway spiritual landscape and the Lac du Flambeau physical landscape becoming one and the same during the 'Strawberry Moon' full-moon event as viewed from the location of the old cemetery (representing paradise in the west, i.e. the direction of the setting sun opposite that of the full-moon rise) and knoll area on the west shore.

brought down to the earth". The ribbon of moonlight, connecting Strawberry Island, Medicine Rock, the Lac du Flambeau/Bear River inlet, and west shore will occur only at this time of the year because of the low angle of the moon; thus, once a year, transforming the landscape of Lac du Flambeau into the spiritual landscape of the 'path for souls' or 'spirits path'.

The Hierophany

All the participants were awestruck not only by the serenity of the scene, but the feeling that they had been touched by an unknown presence during the transition from light to dark during the twilight, and then back to light again when the moon beam appeared on the water (*Figure 6.19*). In the enveloping silence a number of pipes appeared, smoked by the men only with no words except for some prayers in Ojibway. All who were there left with the knowledge that we had been in one of those "special places", or hierophanies where power becomes manifest with exceptional vision and clarity … [invoking] a sacred presence … [and] experienced as a unique communication of sacred power … the cosmic feeling of awe" (Grim 1983, 5–6). And with that feeling of awe, the 'proof' of sacredness needed for the legal battles ahead had been gained.

Figure 6.19. The hierophany complete as the moonbeam extends across the lake from Strawberry Island, past Medicine Rock and to the viewer on the west shore.

Summary

The Ojibwa people inherited a rich tradition of orally transmitted knowledge and landscape associations from their Anishinaabe ancestors. There can be little doubt that the early Lac du Flambeau band carried these ancient traditions and used them to empower the landscape area of Waswagoning and Strawberry Island, thus creating both a sense of place and a sacred landscape. Lac du Flambeau and Strawberry Island represents 'place', an important part of the cultural landscape (Bender 2008, 202–203; Bowden 1981, 108). The Ojibwa word for place is *ing*, such as in *Meskousing* (the original name for Wisconsin) meaning "the red earth place'; *Ishpeming*, "the high place" or, as we have seen, *Waswagoning*, "the place where you fish by torchlight". Wherever there is place, there must be [a] center (Bender 1995; Bender 2008, 203–204; Schlesier 1987, 81, 120). The idea of center resonates with the Native people. It is a divine gift, their claim to superiority over other people (Neill 1882, 1). Strawberry Island was and is the center of Waswagoning (Lac du Flambeau), both spiritually and physically. Therefore, it is not too difficult to imagine why Strawberry Island and the surrounding landscape features held so much power for the ancestors of the Lac du Flambeau people. Strawberry Island, the sun, the moon, the Milky Way in the night sky and surrounding land were all intimately linked. The physical landscape and the spiritual landscape were one and the same, mirror images or reflections of the path to heaven or paradise, a 'road' that could be traveled during the transformation of the mundane into the sacred (Bender 2008, 203). Perhaps the ideal is best expressed by Conway (1992, 257): "To the Ojibwa, the knowledge preserved in the origin tale can be seen and interpreted daily in the surrounding landscape. At night, they see their history in the stars."

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Bibliography

BEHM, J. A. – BENDER, H. E. – FARVOUR, F. 1989
The Krug Petroform Site in Fond du Lac County. *Fox Valley Archeology* 14, 28–54. Published by the Robert Ritzenthaler Chapter of the Wisconsin Archeological Society, Oshkosh, Wisconsin.

BENDER, H. E. 1995
Survey Results, Comments and Recommendations Regarding the Butternut-Auburn Transmission Line Project. Unpublished report on file at State Historical Society of Wisconsin, compliance chief, and Public Service Commission of Wisconsin, Madison, WI.

BENDER, H. E. 2003a
Manitou Stones in Wisconsin. *The 3rd Stone* 45, 26–31.

BENDER, H. E. 2003b
Spirits in the Sky. *3rd Stone*, Issue 47, 48–53, Implosion (end), 2003.

BENDER, H. E. 2004
Star Beings and Stones: Origins and Legends. In: Giordano, F. – Comba, E. (ed.), *Indian Stories Indian Histories.* 7–22. Otto Editore, Torino, Italy.

BENDER, H. E. 2007
Nature's Attributes, Human Perceptions and a Sense of Place: An Integration of the Natural and Cultural Landscape. In: *Landscape Enquiries. The Proceedings of the Clifton Antiquarian Club.* Vol. 8, 117–121. Clifton Antiquarian Club, Clifton, Bristol, UK.

BENDER, H. E. 2008
Medicine Wheels or 'Calendar Sites': Indian Time or the Space/Time Continuum. *Time and Mind: The Journal of Archaeology, Consciousness and Culture*. Vol. 1, Issue 2, 195–206.

BENSON, A. – HOSKINSON, T. 1993
Transformations: Preparing the Land. In: Hyder, W. D. (ed.), *American Indian Rock Art*. Vol. 12, 37–46. American Rock Art Research Association, San Miguel, CA.

BORKEN, J. K. 1987
History and the Primary Canoe Routes of the Six Bands of Chippewa From the Lac du Flambeau District. Unpublished Masters Thesis.
BOWDEN, H. W. 1981
American Indians and Christian Missions. University of Chicago Press, Chicago London.
BRAY, M. C. 1970
The Journals of Joseph ~ Nicollet. Minnesota Historical Society, St. Paul.
BREHM, V. 1996
The Metamorphoses of an Ojibwa Manido. *American Literature* 68/4, (Dec. 1996), 677–706. Duke University Press.
BROUGHTON, J. M. – BUCKSKIN, F. 1992
Racing Smiloki's Shadow: The Ajumawi Interconnection of Power, Shadow, Equinox and Solstice. In: Williamson, R. A. – Farrer, C. R. (eds.), *Earth and Sky.* University of New Mexico Press, Albuquerque.
BUCHNER, A. P. 1980
Archeo-astronomical Investigations of the Petroform Phenomenon of Southeastern Manitoba. In: Pettipa, L. (ed.), *Directions in Manitoba Prehistory. Papers in Honor of Chris Vickers*. 89–109. Association of Manitoba Archaeologists and Manitoba Archaeological Society, Winnipeg, Canada.
CARL, D. 1991
A Glass Bead Analysis of Two Manitoba Archaeological Sites: Cameron House and Big Sand Lake. *Manitoba Archaeolgical Journal* 1/1, 1–24. Manitoba Archaeological Society, Winnipeg, Manitoba.
CONWAY, T. 1990
Spirits on Stone. Heritage Discoveries, San Luis Obispo, CA.
CONWAY, T. 1992
The Conjurer's Lodge: Celestial Naratives from Algonkian Shamans. In: R. A. Williamson – C. R. Farrer (eds.), *Earth and Sky*. University of New Mexico Press, Albuquerque.
DENSMORE, F. 1913
Chippewa Music-II. *Smithsonian Institution Bureau of American Ethnology Bulletin* 53. Government Printing Office, Washington, D.C.
DENSMORE, F. 1929
Chippewa Customs. *Smithsonian Institution Bureau of American Ethnology Bulletin* 86. Government Printing Office, Washington, D.C.
DEWDNEY, S. 1975
The Sacred Scrolls of the Southern Ojibway. University of Toronto Press, Toronto and Buffalo, N.Y.
EWING, E. 1995
San Carlos Mesa: An Integrated Sacred Landscape. In: Hedges, K. (ed.), *Rock Art Papers*. Vol. 12, San Diego Museum Papers 33, 39–44. San Diego, CA.
GARVIE, S. J. 1991
Whiteshell Petro forms and Plains Medicine Wheels: Sunrise Alignments in Different Contexts. *Manitoba Archaeological Journal* 1/2, 95–112. Manitoba Archaeological Society, Winnipeg, Manitoba.
GANZBERG, G. – STEINBRING, J. 1994
The Line, Tree and Circle in Rock Art Pictography. In: Steinbring, J. (ed.), *Rock Art Studies in the Americas: Papers from the Darwin Rock Art Congress, 1988*. Oxbow Monograph 45, Oxbow Books.
GOODMAN, R. 1992
Lakota Star Knowledge. Sinte Gleska University, Rosebud, South Dakota.

GRIM, J. A. 1983
The Shaman: Patterns of Religious Healing Among the Ojibway Indians. University of Oklahoma Press, Norman.
HADINGHAM, E. 1984
Early Man and the Cosmos. Walker and Company, New York.
HEDGES, K. – HAMANN, D. 1992
Look to the Mountaintop: Rock Art at Texas Hill, Arizona. In: Weaver, D. E. (ed.), *American Indian Rock Art*. Vol.17, 44–55. American Rock Art Research Association, EI Toro, CA.
HEMMING, H. H. 1896
The History of the Catholic Church in Wisconsin. Catholic Historical Publishing Company, Milwaukee, WI.
HOEBEL, E. A. 1960
The Cheyennes: Indians of the Great Plains. Holt, Rinehart and Winston, New York, Chicago, San Fransisco.
KINIETZ V. W. 1965
Indians of the Western Great Lakes 1615–1760. University of Michigan Press, Ann Arbor, MI.
KOHL, J. G. 1860
Kitchi-Gami: Wanderings Round Lake Superior. Chapman and Hall, London, England.
KRUPP, E. C. 1991
Beyond the Blue Horizon. Oxford University Press, New York.
LEEMING, D. – PAGE, J. 1998
The Mythology of Native North America. University of Oklahoma Press, Norman.
MAYOR, A. 2005
Fossil Legends of the First Americans. Princeton University Press, Princeton.
MILLER, J. 1982
People, Berdaches and Left-Handed Bears: Human Variations in Native Americana. *Journal of Anthropological Research* 38/3, 274–287. University of New Mexico.
NABOKOV, P. 1982
Two Leggings. Bison Books, University of Nebraska Press, Lincoln and London.
NEILL, REV. E. D. 1882
History of the Minnesota Valley. North Star Publishing Company, Minneapolis.
OWUSU, H. 1999
Symbols of Native America. Sterling Publishing Company, Inc., New York.
PARKMAN, F. 1983
France and England in North America. 2 Volumes. Library of America, New York, N.Y.
PFAFF, T. 1993
Paths of the People: the Ojibwe in the Chippewa Valley. Chippewa Valley Press, Eau Claire, WI.
PIDGEON, W. 1858
Traditions of De-Coo-Dah. Published by Horace Thayer, New York.
POWELL, P. J. 1969
Sweet Medicine. 2 Volumes. University of Oklahoma Press, Norman, OK.
RADIN, P. 1963
The Autobiography of a Winnebago Indian. Dover Publications, Inc., New York.
RITCHIE, WILLIAM A. 1969
The Archaeology of New York State. The Natural History Press, Garden City, New York.

RUSSEL, H. S. 1980
Indian New England Before the Mayflower. University Press of New England, Hanover, NH.
SCHLESIER, K. H. 1987
The Wolves of Heaven. University of Oklahoma Press, Norman and London.
SCHWARTZ, M. 1997
A History of Dogs in the Early Americas. Yale University Press, New Haven.
SPENCE, L. 1986
Myths of the North American Indians. Avenel Books, New York, N.Y.
STEINBRING, J. 1992
Phenomenal Attributes: Site Selection Factors in Rock Art. In: Weaver, D. E. (ed.), *American Indian Rock Art*. Vol. 17, 102–113. American Rock Art Research Association, EI Toro, CA.
STUART, G. E. 1993
New Light on the Olmec. *National Geographic* 184/5. National Geographic Society, Washington, D.C.
TANNER, H. H. 1987 (ed.)
Atlas of Great Lakes Indian History. University of Oklahoma Press, Norman, Oklahoma.
TAYLOR, C. F. – STURTEVANT, W. C. 1996
The Native American. Smithmark, New York.
UTLEY, R. M. – WASHBURN, W. E. 1977
The American Heritage History of the Indian Wars. American Heritage Publishing Co, Inc., New York.
VALASKAKIS, G. G. 1988
The Chippewa and the Other: Living the Heritage of Lac du Flambeau. In: Fiske, J. (ed.), *Cultural Studies*. Vol. 2, Issue 3. Routledge Publishing.
WARREN, W. W. 1984
History of the Ojibway People. Minnesota Historical Society Press, St. Paul.

7

Archaeological Constructs of Place in the Pleistocene?

ROBERT G. BEDNARIK

Introduction

The best example of an archaeological construct of place from the Pleistocene is perhaps the definition of the Franco-Cantabrian cave art of Western Europe as being endemic to a specific class of site. It is shown that this construct is a fallacy, and that most interpretations of the phenomenon are probably false. A discussion of the epistemological base of Pleistocene archaeology suggests that it is currently most inadequate to serve as the foundation of yet another niche archaeology, an 'archaeology of place'. Knowledge about the human past is not served well by expanding the current edifice of mythological explanations that Pleistocene archaeology essentially consists of.

The connection between archaeology and anthropology is not as obvious as it may seem at first sight. Traditional archaeology, the kind dominating academic discourse until the 1960s, held that culture is normative, i.e. that artefacts are expressions of cultural norms. Therefore one excavated 'cultural layers', created a taxonomy of their material finds and compared it with the contents of other layers to determine what was regarded as the geographical extent of a culture or as a sequence of cultures. Only with the advent of the 'New Archaeology' did demands arise that archaeology become 'more anthropological' – as well as 'more scientific'. Science was seen as progressing with time, whereas traditional 'culture history' seemed to be static, simply accumulating more 'data' about fetishes, i.e. objects that had come to represent something else, namely people. The reason of science's progress is its practice of testing hypotheses, of seeking falsification. But therein already lay the seeds of the later demise of the New Archaeology: the kind of archaeology practiced so far can import scientific propositions from other disciplines, but it is itself inherently non-scientific (not susceptible to falsification). Similarly, the view of culture as "man's extrasomatic means of adaptation" (Binford 1964) is doomed to failure: it presupposes that humans adapt through culture, whereas other animals do so through their bodies. But other animals, too, have culture, because the scientific definition of culture is the passing on of practice by non-genetic means, i.e. learning (Handwerker 1989). Thus a large range of learning does occur in the animal kingdom.

This is not to suggest that the New Archaeology was not an improvement over the previous approaches. The fetishes of traditional archaeology had been seen as evidence of the movement of the imagined carriers of the culture, such as ethnic groups (e.g. Childe 1929). For instance in Europe a *Glockenbecher*-culture was invented, based on the frequent occurrence of small ceramic beakers 'identifiable' by their bell shape. An itinerant 'beaker folk' was concocted as its carrier, an ethnic group that 'invaded' a variety of regions at various times (e.g. Abercrombie 1902; Harrison 1980). Alternative interpretations of the same data favour a social explanation of the phenomenon, involving no mass-movement of people (Lanting – Van Der Waals 1972; Sherratt 1994), but a movement of ideas ('memes'), perhaps about status. The same kind of colonization logic is widely found in archaeology, for instance in the concept of a Celtic nation-like people. Today we find it entrenched in the idea that the apparent diffusion of genes over enormous time spans, e.g. from Africa to Europe, proves the mass-movement of an ethnic group in the Late Pleistocene. This shows that archaeology can correct erroneous logic but in time goes on to apply it in a different context.

Nevertheless, the more positive aspects of the New Archaeology need to be made explicit. There was the demand to consider one's biases and to avoid simple intuition and implicit assumption. The concept of research design was given much more attention than previously: what were the specific questions to be addressed, how would one test specific hypotheses? Traditional archaeology had tended to focus on the more spectacular aspects of the past, the elites of civilizations, whereas the New Archaeology (or processualism) sought to secure more representative sampling to lead to more systematic description of past societies. With middle-range theory it hoped to build a platform of secure statements about the human past from which to infer and test theories.

It has not been the success it promised to be, and by the late 1980s it was considered to have introduced a narrow scientism into the discipline (Shanks – Tilley 1987a, 1987b). As Clarke (1978, 465) observes perceptively, the use of scientific techniques "no more make archaeology into a science than a wooden leg turns a man into a tree". Archaeology seemed to lack the most basic requirements of a science: there is no obvious way of satisfying the need for predictability and testability, and the independence from value judgments is hard to envisage in a discipline that is invariably humanistic and political. The experiment of creating a scientific archaeology failed because uniformitarian analogy, the basis of middle-range theory, cannot validly test propositions. There is no plausible reason to assume that all societies go through the same phases of cultural evolution, or that similar rules of their development should apply. Moreover, archaeology as practiced essentially serves contingent political power, appropriating the human past to serve present hegemonies and constructs of reality, thus lacking scientific justification.

Post-processual archaeology began to develop out of dissatisfaction with processual archaeology in the early 1980s, and also as a vehicle for a new generation of practitioners to create their own academic niches. It represents a distinctive retreat from the demand that archaeology become more like a science, in fact it explicitly acknowledges that *the discipline cannot be a science*. Instead, the many different factions of post-processual archaeology claim that all data are inevitably theory-laden. Another admission inherent in post-processual archaeology is that archaeologists merely *interpret* what they find, implicitly assuming that their hermeneutic interpretations are like those of the people of the past. It shares with Marxist archaeology an acceptance that the meanings produced by archaeologists are the results of political acts – the imposition of present-day values on the evidence. Postprocessual approaches are often called 'contextual archaeology' or 'interpretative archaeologies' (note the use of the plural). There is also an emphasis on the need to consider the values of the past, or the thoughts of the people being studied, and in that sense a similarity with the aims of cognitive processualism might be evident.

Judging from the results of the experiment, post-processualism seems to be a questionable improvement on the preceding theory. One of the examples sometimes cited refers to the interpretation of rock art. Chris Tilley, a main protagonist of this school, has conducted a much-mentioned 'analysis' of petroglyphs at Nämforsen in Sweden (Tilley 1991). He begins by telling the reader that these 'carvings', as he calls them, are of the third millennium B.C.E. – but no rock art in Scandinavia has been satisfactorily dated. He constructs an interpretation of an art of which he has only mediocre *interpretations* (much of the rock art had been destroyed since it was recorded almost a century earlier), only to then deconstruct it himself, and telling the reader that it is impossible to determine the meaning of the art. While he is very probably right, the question arises why archaeology bothers itself with a topic it is not equipped to deal with in any meaningful way.

The wave of 1990s postmodernism arrived at an inopportune time for archaeology. Weakened by its lack of underlying universal theory, by its internal divisions and epistemological contradictions, by its inability to secure scientific standing, by its wrangling with the owners of cultural heritage and by many other factors, it now faces an intellectual climate that is sceptical, even hostile to finite claims of knowledge. Archaeology has little comprehension of its own theoretical underpinnings, debate of archaeological theory is "of a very low intellectual standard" (Johnson 1999, 182); endeavours to be scientific are defined as "vacuous" and the attempts of their presenters at learning as "pathetic" (Binford 2000–2001, 334). The new relativism of postmodernism haunts all of the 'social sciences', but if it were allowed further inroads into archaeological thinking it would logically lead to the dissolution of the discipline.

The nexus between archaeology and anthropology is that both are trying to deal primarily with human culture. Traditionally the former addressed long-disappeared cultures, whereas the latter investigated extant ones. While the parameters of anthropology are much clearer, those of archaeology have become more confusing with time. Most archaeology today deals with 'historical' periods, so it should be a sub-discipline of History. In the United States it is indeed attached to anthropology, but in the British system it has acquired a puzzling identity in recent decades. The wide range of archaeologies dealing with recent or current issues belies the assumption that it addresses the distant past, and even the belief that archaeology is dominated by the method of excavation is a fallacy. Numerous branches of modern archaeology involve no excavation (e.g. aerial archaeology, rock art research, numismatics, most nautical archaeology), while several other disciplines (e.g. palaeontology, sedimentology, palynology, geology) share the method of excavation. It is therefore not apparent what it is that holds modern archaeology together as a discipline: there is no obvious common denominator for all niche archaeologies. Which brings us to landscape archaeology.

The interaction of archaeology with geography has long been given much attention; after all, archaeology is very much concerned with sites, and with the significance of their particular situation within the landscape. But by itself it is not an adequate justification for having a landscape archaeology. That is not to say that such an approach is to be discouraged; rather, the point is that at the simplistic level much of this has so far been presented it is most unlikely to lead to any credible insights. Where naive attempts to address the archaeology of landscape (i.e. the interpretation of past significance of places) fail is that they tend to ignore the severe limitations of this approach. Unless all places of significance to a particular society are known in a particular 'landscape', we are in no position to assume that we understand that society's interaction with a whole landscape (which, in any case, no longer exists, and needs to be 'reconstructed'). This presents us with two significant obstacles: taphonomy has ensured that many, even most, of the significant sites in an area are either not archaeologically available or not archaeologically known (Bednarik 2000). The older the society in question, the greater the probability that most of its sites have fallen victim to site destruction processes, of which we recognise many. Secondly, it is not always readily apparent which sites in a given area are directly related via culture, i.e. offer the evidence left by a particular society.

Obviously these considerations do not deny that an archaeology of landscape can realistically become scientifically meaningful. The obstacles to this are very similar to those faced by archaeology generally: archaeologists would need to learn to couch their propositions in terms acceptable to taphonomic logic (Bednarik 1994a) and would need to apply the harsh rigour demanded by metamorphology (Bednarik 1995). This has so far not occurred in any systematic fashion and such a scientific archaeology is not likely to emerge in the near future. The difficulties are best illustrated with examples from the earliest periods archaeology takes an interest in, because it is there that the effects of taphonomic logic are greatest. Therefore the notion that constructs of place can be examined archaeologically are considered here in the light of what Pleistocene archaeology, as it currently stands, would be likely to contribute to this approach.

Cave art

Of all forms of archaeology, Pleistocene archaeology is the one most bedevilled by problems of epistemology. This is fully predictable, because the effects of taphonomic logic increase exponentially with age, and the Pleistocene, accounting for nearly all of human history, is the earliest period being considered by archaeology (apart from some vague incursions into the late Pliocene). Of all the propositions ever formulated by archaeology about this period, since the first half of the 19th century, at least 90% need to be assumed to be false. This failure rate is unmatched in all academic disciplines, and it has been suggested that it might approximate predictions arrived at by divination of tealeaves or animal entrails. Ever since the entire discipline of archaeology rejected that humans coexisted with Diluvian fauna; that the remains from the Neander valley were those of a Pleistocene human; that Pleistocene people created cave art; or that an early human species had been found in Java, it has promoted nonsensical theories and finds (such as Piltdown) and ignored authentic ones (such as Australopithecus or the Glozel tablets). Its tendency to back false notions and to reject valid ones continues unabated to the present time. In recent decades the discipline has decreed that all humans were replaced during the Final Pleistocene by the progeny of some African Eve – even though there is not one iota of archaeological evidence to support this idea and it was initially based on the fraudulent data provided by Professor Protsch. It has accepted the Pleistocene age of a series of rock art on schist sites in Iberia – even though their petroglyphs are only a few centuries old. It has accepted the claim that a small-brained pygmy species lived in Flores in the final phase of the Pleistocene – even though there are numerous other endemic island populations in the region of fully 'modern' humans, some of which suffer from Laron Syndrome (a congenital deficiency of insulin-like growth factor, resulting from inbred genetic defects of the growth hormone receptor gene).

The issue is not that Pleistocene archaeology consists of an endless litany of mistakes; these occur in other disciplines too, though less often. The issue is that the favoured models of Pleistocene archaeology are inevitably based on mistakes, and often these erroneous notions are embraced by the entire discipline. This is important in considering any claim concerning Ice Age evidence: practically all data from the period must be expected to be tainted by biases deriving from these countless epistemological and factual errors. Until the discipline rids itself of this accident-prone status, no information provided by it can be accepted on face value.

The example drawn on here to illustrate this encumbrance is one of the most-cited phenomena of Pleistocene archaeology, Franco-Cantabrian cave art. Here, the place, the physical nature of the site, is crucial in defining archaeological perceptions of the phenomenon as a whole. The corpus is called 'cave art' because it occurs only in limestone caves. It is hard to think of any other specific Pleistocene phenomenon whose definition is more profoundly locked to a highly specific *definition of place*. Therefore all explanation attempts we have seen refer in some way to the concept of a particular class of place. These have included vision quests, shamanism, hunting-magic rituals and a great many other interpretations, inevitably based on one overarching assumption determined by the apparent choice of site (its Crucial Common Denominator of the phenomenon category). Taking a series of art traditions underground to exclusively apply them in dark, forbidding spaces, often in places of difficult access, demands an explanation of profoundness, conjuring up notions of sacred and secret rituals. In some way, all explanations offered for these many cave-specific art traditions reflected the deliberate choice of placing their products in subterranean spaces.

All of this is probably a mythology of scholars smitten by the perceived profundity of their subject. The first warning signs that something seems to be wrong with this parody of an explanation are that there are no other known occurrences of rock paintings or shallow engravings, which is what the cave art consists of, that are of the Pleistocene – but there are earlier traditions of deep percussion petroglyphs, as modelling within taphonomic logic would predict. The only rare exceptions of finding painting or shallow engraving traditions from the Pleistocene are where 'fluke conditions' apply, such as paint traces surviving under skins of mineral accretions (carbonate, oxalate or silica skins), or in limestone caves which offer highly unusual preservation conditions. Secondly, it seems rather odd that such societies, many of which may have been culturally unconnected, would share this strange predilection for placing all of their rock art inside caves. In fact, when we consider that there are much less than 10,000 such motifs known across western Europe, it would appear that much less than one image was produced per year (Bednarik 1986). It seems absurd that such a lengthy series of traditions could have survived on that low frequency of being externalized. Again it appears more appropriate to look for a systematic taphonomic bias: the art occurs in caves because that is the only environment permitting its preservation.

However, there are far more decisive factors to be considered. Two types of this cave art are capable of providing sound empirical data about the age of the artists, finger flutings (Bednarik 1986, 1987; Sharpe – Van Gelder 2006) and prints or stencils of body parts (especially hands; Guthrie 2005). The comprehensive metrical evidence shows unambiguously that the finger flutings in European as well Australian caves are largely, and often exclusively, of children, sometimes even of small infants. More decisively still is the data derived from hand stencils: of those of 30 Palaeolithic caves of western Europe, 92.5% are by children under the age of 17, and not a single one is by a person over the age of 20 (Guthrie 2005). There is one more secure index of the age of the cave visitors: imprints of human body parts on soft cave floors and walls. Again the hard evidence is perfectly clear: the sample available today comprises the foot, heel, finger or handprints of no fewer than eleven caves (e.g. Clottes 1997, 31; Clottes – Courtin 1995, 175; Roveland 2000). Although many of the tracks are rather faint and not well suited for metric determination, it is amply evident that the overwhelming majority, certainly over 90%, derive from children or teenagers, and very few can be attributed to adults (Bahn – Vertut 1997; Bégouën – Vallois 1927; Cathala 1949; Delteil *et al.* 1972; Clottes – Simonnet 1972; Clottes 1973, 1985, 1986, 2001; Clottes et al. 1995; Duday – Garcia 1983, 1985, 1990; Garcia 2003; Garcia – Duday 1993; Kiparissi-Apostolika 2000; Pales 1954, 1960, 1976; Roveland 2000; Ucko – Rosenfeld 1967; Vallois 1962). Some of these cave clay markings, for instance in Tuc-d'Audoubert, are thought to have been occasioned by infants as young as three years. The great majority appear to represent children and adolescents ranging from perhaps 9 to 15 years of age, i.e. they seem to reflect the data derived from most finger flutings; and they are slightly lower than the ages deduced from hand stencils.

To test this finding we might consult the data from another source, portable art of the same many cultural traditions. One form of mobiliary art allowing the determination of approximate age of the artist is paint that has been applied with fingertips on plaques in the form of dots. Again, the empirical evidence shows conclusively that this dot art was made by juveniles (Bednarik 2002). To maintain, in the face of such overwhelming evidence, that perhaps all of it is pure coincidence, and that it does not necessarily preclude the possibility that *all* other cave art was still made by adults for 'adult' purposes, would seem untenable. Science cannot take into account the wishful thinking of archaeologists, it is obliged to weigh the evidence and favour the most economic explanation. In the case of this art corpus, the evidence favours the proposition that a *significant part of it is the work of juveniles*. Science operates by refutation of hypotheses; this hypothesis can be refuted by providing empirical evidence that a significant part of the art is the work of adults. At this time, no such evidence of any description is available, hence all previous interpretations of Franco-Cantabrian art are probably false.

This proposition is supported by other factors the discipline has ignored to maintain its fantasies. The most startling aspect of the Upper Palaeolithic cave art of Western Europe is its prominent component of figurative graphic art, which is almost unique in Pleistocene palaeoart. It contrasts sharply with the almost complete lack of confirmed finds of graphic figurative art east of the Rhine. Across most of Eurasia, only two clear exceptions are known (Bednarik 1994b), which begs the question: if at least some Asian artists of the period did know how to draw figuratively, why did their societies not develop similar traditions? One possible answer is that non-figurative art is the more sophisticated form, and figurative art was the preserve of young 'graffiti artists' of the Pleistocene. Startling new evidence indicates that among extant traditions using exclusively non-figurative graphic art, children may be capable of producing perfect figurative images when prompted (Sreenathan *et al.* 2008). This could then be seen as a 'juvenile' form of expression, and it should have always been obvious that figurative imagery is cognitively less developed than non-figurative. Whereas in figurative symbolism, the connection between referent and referrer is purely via iconicity – a relatively simple cognitive factor building on visual ambiguity and accessible even to animals other then humans – the symbolism of non-iconic art is only navigable by possessing the relevant cultural 'software'. Figurative art results from a deliberate creation of visual ambiguity (Bednarik 2003a, 408, 412) and is therefore based on lower levels of perception and neural disambiguation than non-figurative art.

The simplistic evolutionism purporting that figurative art is more sophisticated than non-figurative has no foundation in reality, and yet it has been a guiding light of Palaeolithic art research for over a century. As if the points raised above were not enough to question all established ideas about this corpus of palaeoart, it has also been assumed that this cave art marks the 'origins of art', another fundamental fallacy of ethnocentric Pleistocene archaeology. Not only was it preceded by hundreds of millennia of palaeoart production, especially in other continents, there is in all probability far more surviving Middle Palaeolithic rock art in the world than Upper Palaeolithic (an observation Eurocentric archaeologists seem to have not yet learnt to appreciate). The presumed Pleistocene and early Holocene petroglyphs of Australia alone, all of which are the products of mode 3 technologies (cf. Foley – Lahr 1997), may be over a hundred times more numerous than those of Europe's Upper Palaeolithic (Bednarik 2003b). They are purely non-figurative. By the time we arrive at the absurd claim that the advent of the European cave art marks the arrival of mythological African invaders, the traditional explanation of this corpus has already unravelled. It contains nothing useful to any scientific consideration, and the proposition (Bednarik 2007) that some of it was created by robust Europeans (the kind of humans defined as Neanderthals) only adds to the general impression that all interpretative commentary about this cave art is severely flawed.

Constructs of Pleistocene places

Upper Palaeolithic cave art is a classical Pleistocene example of place being crucial to determining archaeological interpretations of a phenomenon. And yet the preceding deconstruction of the traditional models of meaning, purpose or authorship of this example shows that, on the basis of actual evidence in lieu of savants' wishful dreams, all interpretations relating to the place, the cave, are probably false. The same process of deconstruction can be applied to any other Pleistocene phenomenon archaeology has tried to interpret, which shows that the discipline simply lacks the ability to interpret the human past soundly. This is not because such phenomena cannot be interpreted validly, but because the epistemology employed in this endeavour has been largely faulty. If we are to consider the role of landscape or site or place in the human past during the Ice Ages, we need to begin by appreciating, firstly, that the data available to us are heavily contaminated by dogma and falsities, and secondly, that the interpretations we have inherited of such entities are probably not adequate to consider such complex dimensions as spatiality. For instance, if we were to consider the constructs 'Aurignacians' had of caves on the basis of traditional archaeological dogma, we would perhaps be guided by the following notions: that they were related to strong belief systems, e.g. of a shamanistic orientation, introduced by 'anatomically modern' invaders from Africa, connected to secret rituals held in these caves. If this palaeoart were the work primarily of juvenile graffiti artists who resembled 'Neanderthals' rather than 'Moderns', as the actual evidence implies, any pronouncement we would have made about the construct of place as it relates to caves would be an absurdity. It would be the result of our reliance on numerous notions about the context of this art that would all be erroneous. Creating an archaeology of place or landscape on such a flimsy basis would only add to an already overabundant supply of mythological explanations about the Pleistocene. It would only serve to discredit the already very troubled discipline further.

The question that needs to be foremost in the mind of every archaeologist who is interested in what really happened in the past is therefore how to resist the temptation of creating more fantasies based on other unsubstantiated beliefs. The most constructive way to proceed is to resist these epistemic shortcuts, and to accept that veracity of our interpretations of the human past demands a completely different level of rigour than that which Pleistocene archaeology has so far furnished. The overconfidence this field has developed since the mid-19th century is completely unjustified; the imagery it has painted of early human history is largely a product reflecting contingent prejudices. It does not stand up to scientific scrutiny in most respects.

This raises the issue of how archaeology might attain the status of a science, a topic this author has addressed frequently. Certainly in the case of the Pleistocene period this would not be by adding to the interpretative edifice already erected by archaeology, as would be the agenda of any 'archaeology of place' based on currently held ideas about the humans of that period. The first condition to create an *archaeology of place* for the Ice Ages would be to systematically excise all mythologies from the discipline, and to begin it anew, virtually from scratch, and this time in a scientific format. This would be an immense task, and far beyond the discipline as it currently stands. If we were to construct a landscape archaeology on the present, wholly inadequate paradigm, it could only be as worthless as the puerile models archaeology has presented so far. The ramshackle constructs mainstream archaeology offers are not likely to result in any credible model for the entire duration of the present century.

Some other century, perhaps ...

REFERENCES

ABERCROMBIE, J. 1902
The oldest Bronze-Age ceramic type in Britain. *Journal of the Royal Anthropological Institute* 32, 373–397.

BAHN, P. G. – VERTUT, J. 1997
Journey through the Ice Age. Weidenfeld and Nicolson, London.

BEDNARIK, R. G. 1986
Parietal finger markings in Europe and Australia. *Rock Art Research* 3, 30–61, 159–170.

BEDNARIK, R. G. 1987
The cave art of Western Australia. *The Artefact* 12, 1–16.

BEDNARIK, R. G. 1994a
A taphonomy of palaeoart. *Antiquity* 68(258), 68–74.

BEDNARIK, R. G. 1994b
The Pleistocene art of Asia. *Journal of World Prehistory* 8(4), 351–375.
BEDNARIK, R. G. 1995
Metamorphology: in lieu of uniformitarianism. *Oxford Journal of Archaeology* 14, 117–22.
BEDNARIK, R. G. 2000
Some minor caveats about the place of rock art in the landscape. In: Nash, G. (ed.), *Signifying place and space: world perspectives of rock art and landscape*. 129–130. BAR International Series 902, Archaeopress, Oxford.
BEDNARIK, R. G. 2002
Paläolithische Felskunst in Deutschland? *Archäologische Informationen* 25(1–2), 107–117.
BEDNARIK, R. G. 2003a
A figurine from the African Acheulian. *Current Anthropology* 44(3), 405–413.
BEDNARIK, R. G. 2003b
The earliest evidence of palaeoart. *Rock Art Research* 20, 89–135.
BEDNARIK, R. G. 2007
The Late Pleistocene cultural shift in Europe. *Anthropos* 102(2), 347–370.
BÉGOUËN, H. – VALLOIS, H. V. 1927
Les empreintes de pieds préhistoriques. In: *Institut International d'Anthropologie*, Amsterdam, 3rd Session, 323–327.
BINFORD, L. R. 1964
A consideration of archaeological research design. *American Antiquity* 29, 425–441.
BINFORD, L. R. 2000–2001
On science bashing: a bashful archaeologist speaks out. *Bulletin of the Deccan College Post-Graduate and Research Institute* 60–61, 329–335.
CATHALA, D. 1949
Découvertes en 1948 dans la grotte d'Aldène (Hérault). *Bulletin de la Société de Spéléologie et de Préhistoire* 24, 209–214.
CHILDE, V. G. 1929
The Danube in prehistory. Oxford University Press, Oxford.
CLARKE, D. L. 1978
Analytical archaeology. Methuen, London.
CLOTTES, J. 1973
Informations archéologiques. *Gallia Préhistoire* 16, 481–523.
CLOTTES, J. 1985
Conservation des traces et des empreintes. *Histoire et Archéologie* 90, 40–49.
CLOTTES, J. 1986
Comment on R. G. Bednarik, 'Parietal finger markings in Europe and Australia'. *Rock Art Research* 3, 160–161.
CLOTTES, J. 1997
Niaux. Die altsteinzeitlichen Bilderhöhlen in der Ariège. Jan Thorbecke Verlag, Sigmaringen (transl. French edn 1995).
CLOTTES, J. 2001 (ed.)
La Grotte Chauvet: l'art des origines. Seuil, Paris.

CLOTTES J. – CHAUVET, J.-M. – BRUNEL-DESCHAMPS, E. – HILLAIRE, C. – DAUGAS, J.-P. – ARNOLD, M. – CACHIER, H. – EVIN, J. – FORTIN, P. – OBERLIN, C. – TISNERAT, N. – VALLADAS, H. 1995
Les peintures paléolithiques de la Grotte Chauvet-Pont d'Arc, à Vallon-Pont-d'Arc (Ardèche, France): datations directes et indirectes par la méthode du radiocarbone. *Comptes Rendus de l'Académie des Sciences de Paris* 320, Ser. II: 1133–1140.

CLOTTES, J. – COURTIN, J. 1995
La grotte Cosquer: peintures et gravures de la caverne engloutie. Seuil, Paris.

CLOTTES, J. – SIMONNET, R. 1972
Le Réseau René Clastres de la Caverne de Niaux. *Bulletin de la Société Française* 69, 293–323.

DELTEIL – DURBAS, J. P. – WAHL, L. 1972
Présentation de la galerie ornée de Fontanet (Ornolac-Ussat-les-Bains, Ariège). *Bulletin de la Société Préhistorique de l'Ariège* 27, 11–20.

DUDAY, H. – GARCIA, M.-A. 1983
Les empreintes de l'homme préhistorique: la grotte du Pech-Merle à Caberets (Lot). *Bulletin de la Société Française* 8, 205–215.

DUDAY, H. – GARCIA, M. 1985
L'homme et la caverne. *Histoire et Archéologie* 90, 35–39.

DUDAY, H. – GARCIA, M.-A. 1990
L'ichnologie ou la mémoire des roches. In: Navialoff, N., Jaffard, R. – Brenot, P. (eds.), *Le concept de mémoire*. 55–66. Hartman, Paris.

FOLEY, R. – LAHR, M. M. 1997
Mode 3 technologies and the evolution of modern humans. *Cambridge Archaeological Journal* 7, 3–36.

GARCIA, M.-A. 2003
Prints of traces of humans and animals. In: Clottes, J. (ed.), *Chauvet Cave: the art of earliest times*. 34–43. University of Utah Press, Salt Lake City.

GARCIA, M.-A. – DUDAY, H. 1993
Les empreintes de mains dans l'argile des grottes ornées. In: *La main dans la préhistoire*.. 56–59. Dossiers d'Archéologie 178, Paris.

GUTHRIE, R. 2005
The nature of paleolithic art. The University of Chicago Press, Chicago/London.

HANDWERKER, W. P. 1989
The origins and evolution of culture. *American Anthropologist* 91, 313–326.

HARRISON, R. J. 1980
The beaker folk: Copper Age archaeology in western Europe. London.

JOHNSON, M. 1999
Archaeological theory: an introduction. Blackwell Publishing, Malden and Oxford.

KIPARISSI-APOSTOLIKA, N. 2000 (ed.)
Theopetra Cave. Twelve years of excavation and research 1987–1998. Institute for Aegean Prehistory, Athens.

LANTING, J. N. – VAN DER WAALS, J. D. 1972
British beakers as seen from the continent. *Helenium* 12, 20-46.

PALES, L. 1954
Les empreintes de pieds humains de la Tana della Basura (Toirano). *Revue d'Etudes Ligures* 1, 1–12.

PALES, L. 1960
Les empreintes de pieds humains de la ‘Grotta della Basura’. *Revues d’Etudes Ligures* 4, 25–90.
PALES, L. 1976
Les empreintes de pieds humains dans ls cavernes. *Archives de l’Institut de Paléontologie Humaine, Paris* 36, 1–166.
ROVELAND, B. 2000
Footprints in the clay: Upper Paleolithic children in ritual and secular contexts. In: Sofaer Derevenski, J. (ed.), *Children and material culture*. 29–38. Routledge, London.
SHANKS, M. – TILLEY, C. 1987a
Re-constructing archaeology: theory and practice. Routledge, London.
SHANKS, M. – TILLEY, C. 1987b
Social theory and archaeology. Polity Press, Oxford.
SHARPE, K. – VAN GELDER, L. 2006
Finger flutings in Chamber A1 of Rouffignac Cave, France. *Rock Art Research* 23, 179–198.
SHERRATT, A. 1994
The emergence of elites: Earlier Bronze Age Europe. In: Cunliffe, B. (ed.), *The Oxford illustrated prehistory of Europe*. 244–277. Oxford University Press, Oxford.
SREENATHAN, M. – RAO, V. R. – BEDNARIK, R. G. 2008
Palaeolithic cognitive inheritance in aesthetic behavior of the Jarawas of the Andaman Islands. *Anthropos* 103 (in press).
TILLEY, C. 1991
Material culture and text: the art of ambiguity. Routledge, London.
UCKO, P. J. – ROSENFELD, A. 1967
Palaeolithic cave art. World University Library, London.
VALLOIS, H. V. 1962
Les empreintes de pieds humains des grottes préhistoriques du midi de la France. *Paleobiologica* 4, 84.

8

Places with Faces: The Role of Simulacra in the Mythic Reading of Landscape in Prehistoric and Early Societies

PAUL DEVEREUX

Introduction

This chapter presents a cross-cultural overview of the often understated role of topographic simulacra (the chance likenesses of landscape forms to anthropomorphic, zoomorphic or symbolic imagery) in the designation of sacred or "special" places by early societies. To this are added preliminary observations about what this former appropriation of topographical simulacra tells us about "Dreamtime" or mythic interaction with the land by early peoples, its function as an externalised tribal memory system, and, if properly valued today, its potential use in archaeological and anthropological interpretation.

> "The land is a living book in which the myths are inscribed ... A legend is captured in the very outlines of the landscape." *Lucien Lévy-Bruhl*

> "For double the vision my Eyes do see, And a double vision is always with me, With my inward Eye 'tis an old Man grey, With my outward a Thistle across my way" *William Blake*

Dreamtime perception

A simulacrum is the chance likeness to a face, animal, human figure or other form seen in the configurations of clouds, the coals of a fire, the bark of a tree, or other surface. Strindberg saw heads as if sculpted out of marble by a spectral Michelangelo in the folds and creases of a rumpled pillow; Leonardo da Vinci advised his apprentices to study the "exquisite landscapes" formed by the mould stains on his studio walls. Simulacra can also be large scale, spied in topographical forms: the French poet and playwright Antonin Artaud, on the verge of madness, repeatedly saw "signs, forms and natural effigies" in the plays of light and shadow on crags and rock faces in Mexico. It is in the nature of human beings to seek patterns in randomness, and the images that result can sometimes tell us more than any picture we might artfully create. A face that is a simulacrum, for instance, can possess profound and even disturbing depths, as if regarding us from out of the well of the unconscious mind.

Appropriation of such natural images allowed an ancient society to see its mythology emblazoned on its territorial topography; the very landscape became mythically alive with the forms of culture heroes, deities, totemic beings or some symbolically significant icon. The Australian Aboriginal perception of the topography as being formed by Dreamtime beings is now well-known. A dome of rock with quartzite veins can be the head of one of these beings emerging from the ground; a gaping cave entrance can be the mouth of a grieving Dreamtime mother. Ancestral beings were "turned into the place" (Morphy 1995).

The scale of features recognised by this "Dreamtime" mode of perception could range from a small boulder to a rock outcrop or to a whole hillside or mountain range. Richard Bradley has observed that in Lapland, Saami sacrificial sites or *siejddes* “are often characterised by rock formations that bear a certain resemblance to humans, animals, or birds” (Bradley 2000).

Figure 8.1. Saami seite *stone.*

The Wintu Indians of northern California consider that “rock features of unusual configuration” harbour indwelling spirits (Theodoratus – Lapena 1994). Levy-Bruhl noted that for New Guinea natives and Australian Aborigines remarkable features of the landscape were “indications … of the presence and the activity (in the past and now) of the mythic ancestors” (Lévy-Bruhl 1935/1983). The landscape was filled with dramatic events, which gave it meaning.

There are many factors that can cause a people to identify a natural place as sacred or special, but one of the least commented upon is the role of simulacra. Yet it is an important factor that can be traced cross-culturally, and if recognised can aid in the interpretation of an archaeologically or anthropologically significant location. The following range of examples has been selected to demonstrate just how widespread, varied and far-reaching in its implications this factor is.

Asia

The pre-Buddhist perception of simulacra as a mode of sanctifying a landscape passed into later Buddhist sensibilities in Asia, as the following examples can indicate.

In the Himalayan landscape of Karzha, in Lahul, Himachal Pradesh, India, mountain simulacra have taken on deep significance as an eighteenth-century poem by a yogin-saint demonstrates: “The mountain to the right is like a pile of jewels/ The mountain to the left like the fierce deity King of Wrath/ The mountain in front like the triangle of origin piled up/ The mountain behind like a crouching lion". The arrangement and suggested imagery of the mountain peaks were turned into a mandala of meaning. In the same landscape, a double-peaked mountain and a glacier combine to form the image of a Buddhist deity, and pilgrims come to meditate on the simulacrum. Another mountain configuration in the region looks like a woman reclining on her back, her hair outflowing. "It seems that few peaks are not imbued with meaning through the perceived presence of a deity or some other being which not only gives form and shape to the geographical feature, but is seen to emanate the energy of that form," Elisabeth Stutchbury observes (Stutchbury 1994). In Karzha, this mode of geographical perception is linked with observations in which the annual progression of the sun is associated with particular skyline features, and is extended into a tradition called *satalegpa*, a form of landscape divination which, among other things, places attention on the specific geographical location of buildings. So the temple of Dodrup Chen, for instance, is situated within topography said to look like a specific Dzogchen master sitting in a meditation posture.

The holy area of La phyi in south-west Tibet is an important pilgrimage landscape made up of three mountains. One is thought of as the body of Vajravarahi, with a rock outcrop known as Ras chen seen as her head, the Seng khyams rock as her belly, and a rock in front of the bDud'dul cave as her knee. Samvara is another deity seen elsewhere at La phyi in the lie of the land. "When asked to describe the mountain, local residents and pilgrims indicate rock outcrops which represent the deity's head and shoulders, while ridges on either are said to be his legs, the river that flows south from the place is said to be the stream of his urine, and so forth." (Huber 1994.)

Gina Barnes has studied two specific Buddhist landscapes in eastern Asia, one at Haitangshan in north-east China, and the other in Namsan in south-eastern Korea (Barnes 1999). Each consists of complexes of temples built in mountainous terrain and accompanied by outdoor Buddhist sculptures. Barnes sees both examples as resulting from a mix of Buddhist cosmology concerning axial World Mountains, and Chinese folk beliefs regarding sacred mountains.

The first sacred spot or locus on Haitangshan (near Fuxin, Lianing province) was a cave used by a Tantric Buddhist monk. From this seed developed a whole Buddhist geography on the mountainside. Legend has it that guided by this monk and other locals, and using various forms of divination including the seeking of rocks of certain shapes, representatives of a prince early in the Qing Dynasty (1644 AD – 1912 AD) determined the location of what was to be the second largest temple in the area. This was the Pu'an Temple, now defunct. Around this temple are boulders carved with images of Buddhas, bodhisattvas, and other guardian deities and holy warriors. They are interspersed with unadorned rocks whose shapes suggest animals or objects – so there is Toad Rock, Mountain Eagle Rock, Coiled Dragon Rock, among many others. The complex as a whole, which evolved over two centuries, covers several acres of the mountain's slopes and involves twenty-six large buildings, five miles of preaching paths, and two hundred sculpted boulders.

A more extensive sacred landscape is centred on the sacred peaks of Namsan, on the southern border of the Kyongju Basin. Namsan is a massif with many valleys and slopes. It was co-opted by Buddhism in the sixth century AD, but it was sacred before then – shamans conducted rain dances on parts of the mountain, and megalithic monuments, dolmens, dating to the first millennium BC, have been found. There is evidence that certain places on Namsan were used for making offerings to nature spirits, so it is perhaps not surprising that the Buddhists believed that Namsan harboured many Buddhas and Bodhisattvas. Barnes believes that one reason the mountain attracted spiritual attention over such a long period of time was because of the many granite rocks scattered over it "resembling animals and objects", bearing such names as Fierce Tiger, Lion, Big Bear, Old Man, Boar, Cat, Python and even Dung Rock.

The Americas

A similar mythic sensibility involving simulacra existed in wholly different cultural contexts in the Americas, too, and operated at varying scales in both open and closed environments. Take first, for example, a cavern in the Mayan and pre-Mayan Lol-tun ritual cave complex, in Yucatán, Mexico, where there are holes in the roof allowing dramatic beams of sunlight to enter.

These rays punctuate a gloom in which can be seen weirdly-shaped rocks and boulders, formed by the incessantly dripping water. Some of these look like human figures and others like animals, including

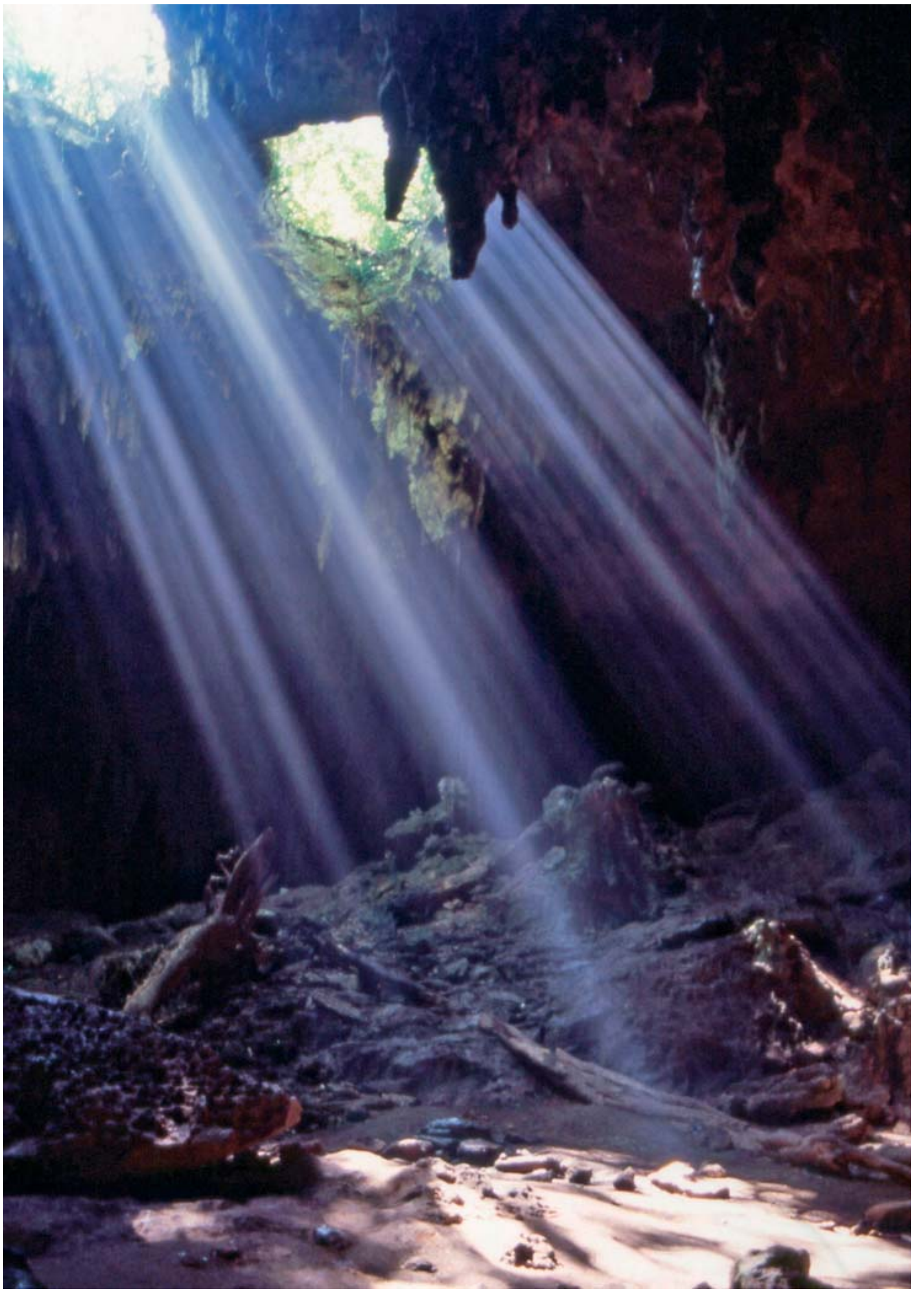


Figure 8.2. A cavern in the Lol-tun system.

one massive boulder suggestive of a large cat-like creature, perhaps a jaguar. These formations have (undated) carvings of spirals and other geometric images on them, indicating an ancient response to the power of these suggestive forms. Henry Mercer noted that at "several places masses of stalagmite had been crudely chiselled to represent human shapes" (Mercer 1895/1975) – the giving of such a helping hand to natural simulacra is encountered in many ancient cultures, and serves to underline the mythic mode of perception that was in play.

Another Mayan ritual cave, Balankanché, also in the Yucatán, near Chichén Itzá, is home to a remarkable simulacrum. The entrance to the cave had long been known to the local Maya, but it was

Figure 8.3. The "stone tree" of Balankanché.

blocked by a rock fall. Maya legends persisted that there was something remarkable hidden inside. In 1959, a guide at Chichén Itzá cleared a way through and, proceeding with great difficulty, encountered offerings just as they had been left by the ancient Maya. The full cave system has various small chambers and side passages, some with incense burners and pots placed many centuries ago beneath rows of stalactites in order to catch "virgin water" dripping from them. The main passageway leads into a great circular cavern with a curiously domed floor rising in the centre. There, linking the cavern's ceiling and the dome's crest is a giant calcite feature in the remarkable likeness of a great tree – a stone *axis mundi* wrought by nature. The "trunk" is actually formed by the fusing of a stalactite and a stalagmite, and the impression of "foliage" is created by countless small, spiky stalactites. The "tree" is surrounded by innumerable offerings, including stone and wooden figures, spiked or knobbed pottery incense burners, stoneware, charms, many small pieces of jade (probably from what was once a mosaic), miniature corn grinders, tiny pots, and spindlewhorls.

The startling likeness of this formation to a tree would not, could not, have been lost on the worshippers at Balankanché. And the Maya had a World Tree concept: they imaged it in the form of a great ceiba linking heaven and Earth, with its roots penetrating to the underworld. This must have made Balankanché an especially powerful place for the Maya, perhaps the reason why its memory could persist in local lore for a millennium.

Out in the open landscape, the same mode of perception was applied to whole mountains, as in Asia. For instance, in Blackfoot Indian territory in Montana, virtually on the USA-Canada border, there is a distinctive peak called by the Indians, Ninaistákis, "Chief Mountain". From certain angles, the mountain looks, variously, like a capped hat, a Piikani chief's top-knot, or a traditional Blackfoot chieftain's head-dress or bonnet. The Blackfoot consider it to be a place of great power, the home of Thunder-bird, and there are vision questing "beds" in the form of rings of loose rocks or slabs forming small platforms on and around the mountain at heights of up to 10,000 feet (Reeves 1994). The name of the mountain is said to refer to a Blackfoot legend concerning a young chief long ago who had to go into battle, reluctantly leaving his wife and baby. He was killed, and in overwhelming grief, the woman, carrying her baby, climbed the mountain peak and threw herself off. The configuration of one of the great rock faces forming the mountain's summit is such that the Blackfoot can see in it the form of the young wife with the baby in her arms.

Another example, one of many in the Americas where the shape of a mountain was seen in mythic terms, is the isolated ridge of Ute Mountain, Colorado, in which today's Ute Indians see the form of a sleeping chieftain. Seen in this way, the ridge does look somewhat like a supine human figure beneath a blanket; the legend has it that he will awake at the time of greatest need. If this simulacrum has insinuated itself into Ute mythology, we may reasonably suppose that the much earlier Anasazi saw something very similar – especially as Ute Mountain is a prominent part of the visible skyline when viewed from the ruined Anasazi complex of Hovenweep.

On a lesser scale, rock outcrops register in the pantheon of mythic simulacra in the Americas as elsewhere in the world. In the Andes, for instance, the seventeenth-century Spanish Jesuit, Bernabé Cobo, noted that the Inca "worshipped the works of nature that were unaltered by human contrivance". The Inca typically selected a sacred place or *huaca* "due to its state of difference, an arresting visual characteristic or peculiar feature . . . A stone is marked for its resemblance to a human being, and another for a shape in the manner of a falcon" Maarten van de Guchte has stated. He emphasises that this was a "crucial factor" in such a selection process (Guchte 1999). Some *huacas* functioned as "seats" from which specific mountain peaks could be observed, very much as in Asian sacred landscape traditions. The Inca even worked body parts into their perceptions of landscape, so that various shapes of noses could be read into the forms of mountains and ridges. This Inca obsession with landscape features and forms was very much tied in with their schemes of social order.

Far away, towards the northern end of the Americas, in Manitoba in fact, the Ashinanabe continue to make offerings at Buffalo Rock, a boulder yielding the likeness of a buffalo at rest.

This boulder is located on the fringe of the petroform or boulder mosaic landscape at Tie Creek, Whiteshell Provincial Park, and as the petroform patterns are the result of human effort while the boulder is a work of nature, one is tempted to wonder if the patterns resulted from the presence of the boulder simulacrum and are not merely coincidental.

Figure 8.4. Buffalo Rock, Tie Creek, Manitoba.

Figure 8.5. Some of the petroform patterns or boulder mosaics at Tie Creek. This area is known to the Indians as Manito Ahbee, [The Place] Where God Sits, and gives the name to the entire province of Manitoba.

Prehistoric Europe

The same sort of mythic interaction with the environment is equally discernable in prehistoric Europe. A particularly dramatic Neolithic appropriation of a simulacrum is evident in the south-west coastal area of Scotland; it involves the standing stone site of Ballochroy on the Kintyre Peninsula and features on two of the islands of the Inner Hebrides, Islay and Jura, located a bare twenty miles offshore. The Ballochroy site consists of three standings stones on a ridge overlooking the western shoreline of the peninsula; the middle stone is of the "playing card" variety, being thin, broad and flat. Its thin edge is oriented out to sea, and thus to Jura. Looking along the broad, flat face of the stone directs the eye to Ben Corra in the mountain range known as the Paps of Jura. This alignment indicates the sunset point on the summer solstice when the solar disk as viewed from Ballochroy seems to set into the Paps.

Figure 8.6. The Paps of Jura viewed from the coastal waters of the Kintyre Peninsula.

Figure 8.7. The Paps of Jura viewed from the hillock of Cnoc Seandda, which contains a stone chamber and evidence of a period of Mesolithic usage. The Neolithic standing stone, once at the head of a stone row, can be seen in the field at lower right.

The term “paps” in Gaelic indicates breasts, and the two main peaks of the Jura Mountains are indeed rounded and considerably breast-shaped in appearance. We could therefore assume that the people who constructed and used Ballochroy saw the Paps of Jura as expressive of the Earth Mother, and at midsummer the sun settled down into her breast. But would we be right in making this assumption? Could it not just be a coincidence involving a range of mountains, a megalithic site, and a name relic? In this case, we can be reasonably sure that we are indeed picking up on a piece of mythic information from the Stone Age, because this myth can be triangulated. To do this, we have to travel to the Isle of Islay, the closely adjacent southern neighbour of Jura (the two islands almost touch). There, we go to a sacred lake, Loch Finlaggan. How do we know it was sacred? First of all, because Mesolithic remains have been found on its shores and a substantial Neolithic monolith stands nearby.

Viewed from the lake’s location, the two highest, domed peaks of the Paps of Jura project dramatically and in isolation above an intervening ridge to the north-east. Geophysical investigation has revealed that the Neolithic monolith was at the head of a now non-extant stone row that led from the lake shore up to the Neolithic standing stone. The alignment of the row was towards the twin peaks.

Probably the best-known prehistoric simulacrum in Scotland, though, is to be found further north on the Isle of Lewis in the Outer Hebrides. At Callanish on this island there is a group of stone circles and arrangements that seem to have been associated with the observation of the moon. At their latitude during the major standstill period every 18.61 years in the long and complex lunar cycle, the moon just skims the horizon between its rising and setting points. (Indeed, the moon cannot be seen to rise at all at this point in the lunar cycle from positions very much further north than Callanish.) At this time the moon appears to rise out of the Pairc Hills, which, from the area of the Callanish sites, resemble the form of a woman reclining on her back. Sometimes called the “Sleeping Beauty”, her Gaelic name is *Cailleach na Mointeach*, the Old Woman of the Moors, a pseudonym for the Hag or Earth Mother. She is well-known

Figure 8.8. The Externsteine rocks. Near the top of the tallest pillar (Tower Rock) is a rock-hewn chapel, either pagan or early Christian, which has a round window through which the midsummer rising sun shines. Near the base of another pillar there is a relief panel carved in the medieval period showing Christ’s descent from the cross, confirming the Christianisation of the site. In the twentieth century, the Externsteine became a centre for the Nazi SS.

to the present inhabitants of the Callanish area and was doubtless so to their distant ancestors. The moon then skims the horizon, passing up the body of the Sleeping Beauty and finally setting into the Clisham range on a nearby island, but what is seen by an observer standing at the end of the avenue of stones at the main Callanish site is the moon setting within the tall stones of the central circle there. It would seem probable, then, that every 18.61 years in its great cycle at Callanish, the moon is symbolically born out of the Earth Mother portrayed by the simulacrum of the reclining figure, and then "dies" into the stones, enacting a kind of Neolithic Mystery Play.

Figure 8.9. The Externsteine simulacrum of a hanging figure. Note the small hole in the figure's right side.

A quite different kind of simulacrum exists in the completely different context of the Externsteine rocks, a group of five weathered fingers of sandstone located in the Teutoberger Wald district near Detmold, Germany.

Remains have been unearthed around them suggesting the presence of reindeer hunters as far back as 10,000 BC, and some researchers have maintained that the place was a centre for pagan worship until Christianisation by Charlemagne in 772, while other scholars have suggested that very early Christian worship took place at the rocks. Whatever the truth of these conflicting claims, the site presents a bizarre appearance today, with steps rising to now empty platforms carved out of some of the sandstone pillars, an apparent sarcophagus hewn out of a giant boulder, and caves or "rooms" honeycombing the bases of some of the pillars. These artificial caves may once have been used by anchorites. And the site has one further surprise: on the side of one of the rock columns is an overhanging segment that from certain angles looks strikingly like a man with his arms raised, as if tied to the rock.

This natural feature has long been noted and there have been suggestions that it was seen as Odin hanging on the World Tree. By the same token, others have argued that the feature was "Christianised" by the addition of an artificial hole, representing the spear wound made in Christ's side as he hung on the cross. If this speculation is correct, then it may be the only known case of the Christianisation of a simulacrum.

Figure 8.10. The Carn Brea "Giant".

Another remarkable rock simulacrum is to be found in England, on the Cornish hill of Carn Brea. On the summit of this are the remnants of an early Neolithic settlement, and also the massive granite simulacrum of a head complete with brow, cheekbones, and lips, nicknamed the Carn Brea Giant.

This natural visage stares out northward toward another hill, six miles distant, known as St Agnes' Beacon. Legend states that there was a giant on that hill, too, who went by the name of Bolster. The giants of the two hills threw rocks at one another until Bolster ran out of ammunition, so explaining why St Agnes' Beacon is devoid of rocks and Carn Brea littered with them. This sort of topographically-related legend is of course rather similar to the Dreamtime myths of the Australian Aborigines.

Egypt

On the western side of the Nile opposite present-day Luxor, the ancient Thebes, rises the Theban Peak (*el-Qurn*, "the Horn"). This is a natural feature of striking pyramidal form, and it has been suggested that it was this which inspired the architects of ancient Egypt to create their monumental pyramids. Whatever the truth of that, people certainly seem to have been drawn to this mountain for many thousands of years, long before dynastic Egypt. Within the valleys of this mountain complex the Egyptians built the tombs for their kings and queens. One of the valleys, Deir el-Bahri, was sacred to Hathor, the goddess who was Mistress of the West, and often shown as a cow, or a woman with cow's ears and horns, an aspect which betrays her origin in the prehistoric cults of nomads and pastoralists. She emerged from the mountain to receive the souls of the dead kings. She it was who nurtured Horus, so was deeply involved with the divine kingship of Egypt. She was also depicted as a cobra, the symbol of royal power. In this, she was an extension of Meresger, "She Who Loves Silence", a cobra-goddess of popular worship, who was

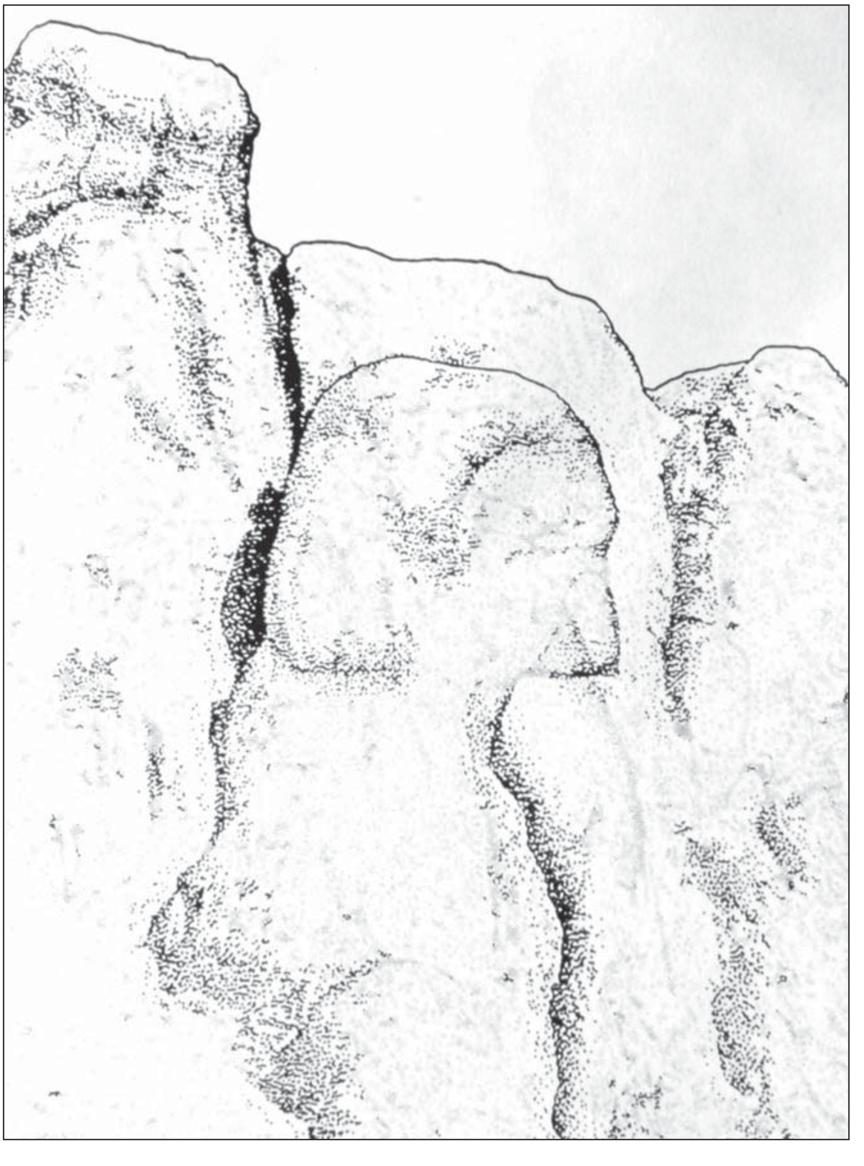


Figure 8.11. A drawing showing the configuration on the cliff-face above the temple of Hatshepsut, Deir el-Bahri. (Drawing by N. Griffiths. Courtesy of V.A. Donohue).

identified with the Theban Peak. In the shrine of Hathor within the temple of Thuthmosis III in Deir el-Bahri, a statue was found showing Amenophis II being brought forth by the goddess in her cow form and being suckled by her; across the Nile in the temple of Karnak, Amenophis II is shown with a cobra wearing horns (this statue may have originated in Deir el-Bahri).

Within the terminal bay of Deir el-Bahri is the vast New Kingdom temple of Queen Hatshepsut. This has three successive terraces set into the cliff wall behind it, and the temple's structure is particularly focused on a column of rock which obtrudes from the cliff face and reaches up to and beyond the cliff edge. No one saw anything special about this column until the winter of 1990–91, when Egyptologist V.A. Donohue, then of the Griffith Institute, was conducting fieldwork at the site. He suddenly perceived that the forms comprising the rock column "simulate the configuration of a statue-group in which the cobra, its eyes and the lateral markings on the underside of its distended hood clearly observable, rears to the full height of the cliffs behind a standing anthropomorphic figure, either sovereign or deity, who wears the head-dress and beard" (Donohue 1992).

This colossal figure group, hundreds of feet high, is heavily eroded but still discernable for those who have the eyes to see. It awaits further technical investigation to determine whether or not this is a case of untouched simulacra or of suggestive natural features being enhanced by human sculpting. The implications are intriguing: in either case there had to be recognition of the forms in the rock column, which means that people must have looked at the natural topography for symbolic meaning. Either they projected into the natural forms an expression of their own religious ideas, or, a more startling possibility, the mountain with its pyramidal peak and simulacra may have promoted royal and religious iconography in the minds of the Egyptians. Donohue subsequently identified several other temple locations in Egypt that exhibit such rock-face simulacra.

Australia

It is probably appropriate to finish this lightning tour of world simulacra within the continent in which they are probably best known – the Dreamtime landscape of the Australian Aborigines. The Australian Aborigines walked through a landscape that was a topographic myth. They followed dreaming tracks (so-called "songlines") which were both outer and inner journeys, the two aspects exquisitely interactive. The sites of significance, the "Big Places", along these routes had their songs, their dances, their legends. Each was a mythologised place. "The bond between a person and his (or her) country is not merely geographical or fortuitous, but living and spiritual and sacred," A.P. Elkin wrote. "His country... is the symbol of, and gateway to, the great unseen world of heroes, ancestors, and life-giving powers which avail for man and nature." (Elkin 1932–33) One settler, Olive Pink, was inducted into the myths of the land by an Aborigine in the 1930s. She was shown *arumba arunga* ("spirit doubles") within the land. Two pieces of blue stone, one large, the other smaller, were pointed out to her as "that mother and baby blue kangaroo"; another was a low hill, the forms of which were said to be the heads of two Dreamtime women who had gone back into the ground. "To the spiritually blind eyes of a non-native, this was simply a low hill, though remarkable because of its isolated white limestone cap on the bronze country ... When one's spiritual eyes had been opened … one could quite well imagine it as the decorated heads of two altjira women." (Pink 1933–34) It is not that the Aborigines were unable to see the physical topography and understand the land in its material form as we do today it is simply that the landscape was being seen with Blake's "double vision".

Concluding remarks

The perception of simulacra results from a neuropsychological reflex that is hard-wired in humans, and so occurs cross-culturally. The examples given in this chapter could be multiplied hundreds of times worldwide. While *we* may see the perception of simulacra as nothing more than a parlour game, it was major mode of perception in the ancient world. In some cases, this mythic reading of landscape became even more developed, so that an actual discourse with the land could be entered into. One example of this has been well chronicled by Keith Basso (Basso 1996). He studied with the Western Apaches in the community of Cibecue, on the Fort Apache Indian Reservation, south-west of Flagstaff, Arizona. Basso discovered that the names of places held great significance there, and stories or legends attached to those places could even inform the social behaviour of the people. To the Apache, the land "stalked" the people, telling them tales to make them "live right". Place names were "pictures" and stories related to them were "arrows". Basso noted that Indians who would repeat the name of a place two or three times because "those names are good to say", and he sometimes heard Apaches reciting long lists of place names quietly to themselves. There is surely a vague echo in this of the Celtic *Dindshenchas*.

The basic idea of the land being like a text developed a specific religious dimension with mountain mystics in the Kunisaki Peninsula, Oita Prefecture, Japan. They saw the landscape there as being the natural embodiment of the Lotus Sutra. The peninsula's eight valleys were seen as landscape expressions of the eight scrolls of the scripture, twenty-eight temples were built to correspond to the twenty-eight chapters of the text, and it is said that as many statues were carved and erected as there are words in the Lotus Sutra. Walking in this terrain and listening to the natural sounds there took on the equivalence of reading the scripture.

Not only could it be read, but in some cultures the land was perceived as being able to actually speak to people. Take the case of the Paiute Indian, Hoavadunuki, who was a hundred years old by the time he was interviewed by ethnographers in the 1930s. They knew him as Jack Stewart. He stated that a local peak, Birch Mountain, spoke to him in his dreams, urging him to become a "doctor" (Steward 1934). Communication from this mountain occurred a number of times throughout the old man's long life and was not seen as strange or peculiar by him – indeed, the idea of a physical place being capable of speaking to humans in dreams seems to have been deeply embedded in American Indian sensibility.

Lévy-Bruhl famously (or infamously) coined the term *participation mystique* to refer to a local relationship with the material environment that surpassed mere utility and subsistence. We do not have to embrace Lévy-Bruhl's ideas about the evolution of cognition to recognise that, in many cases, the whole mythic story of a people was externalised in the terrain, was memory embedded in the land. That is why when a traditional people is removed from its native landscape it can in a sense lose its tribal memory.

As long as we dismiss simulacra as an amusing, idle pastime we will miss out on a potentially important source of information about natural places venerated by former cultures and in some cases monuments that were erected in relation to them. We can take a specific example – Avebury in Wiltshire.

Many visitors note in passing that some of the standing stones at Avebury suggest anthropomorphic and zoomorphic forms. Alexander Keiller, who restored some of the Avebury complex in the 1930s, was more specific about this, as he indicated in a 1936 issue of *Antiquity*: "There can be no question that the stones were dressed to conform to certain required shapes, and to this end were selected as near to the required form as possible."

While it is all too easy to read meaning into what are simply fortuitous forms, it is also important not to be overly dismissive. If we can readily see suggestive forms in some of the Avebury megaliths, so could the Neolithic builders of the monument. Whether or not stones have been dressed, some of them may have been selected because of their basic shapes (as distinct from subsequent weathering effects). It is unquestionably important to guard against wanton flights of fancy, seeing faces and forms in every nook and cranny of the great stones, but neutral observation could allow authentic insight to emerge from them. They can still "communicate" with us. (For instance, can it reasonably be thought that the

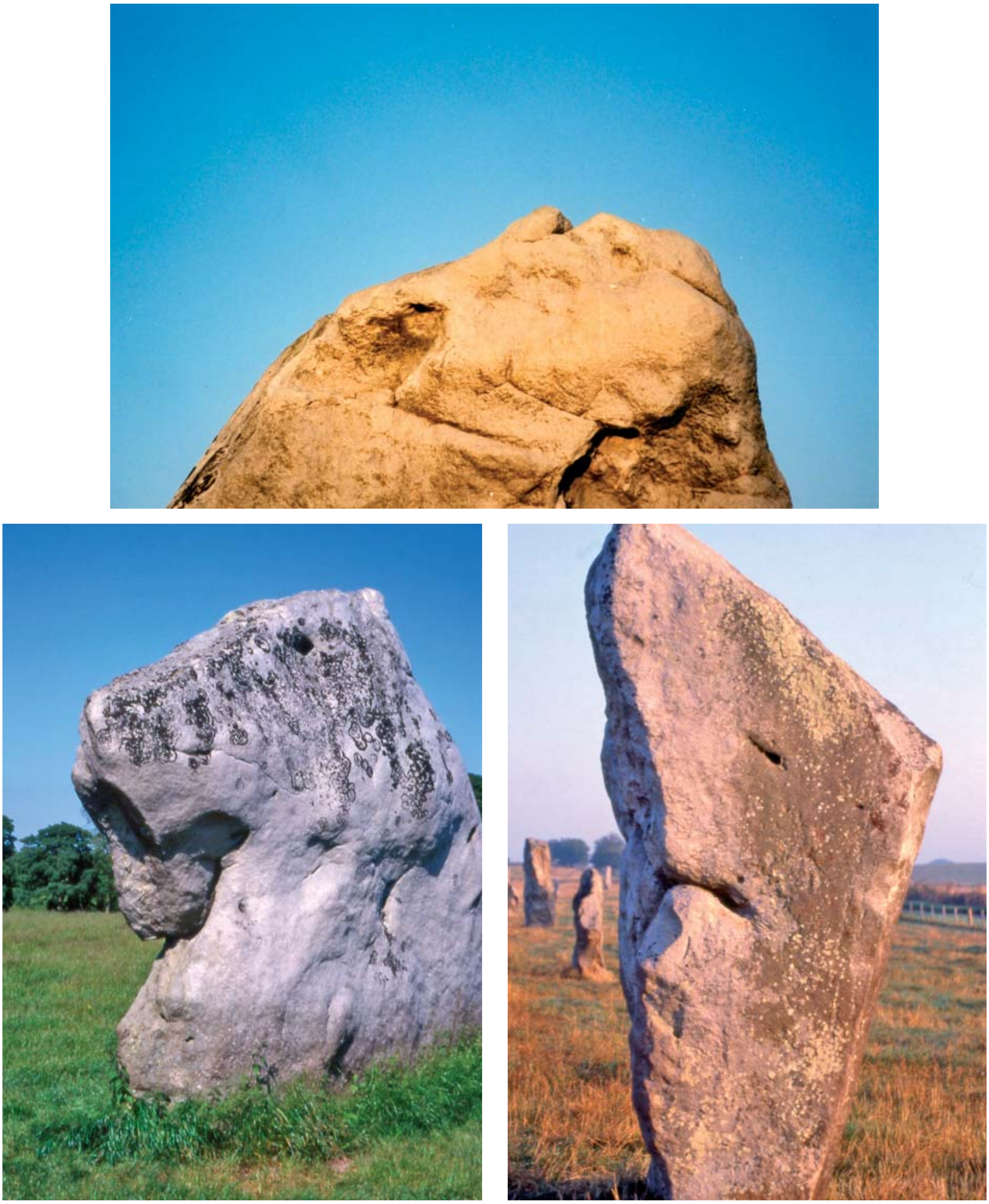


Figure 8.12a, b, c. Three examples of suggestively-shaped stones at Avebury. There are more. Are these representative of the gods or totemic spirits of the people who built the monument?

people who laboured for many days to bring and erect the stone shown in *Figure 8.12c* failed to notice its unusual form?) If we look quietly, carefully, as if through ancient eyes, we can perhaps still catch glimpses of the old gods of the Neolithic pantheon. With care and discipline, it is possible to handle subjectivity in an objective manner.

References

BARNES, G. 1999
Buddhist Landscapes of East Asia. In: Ashmore, W. – Knapp, A.B. (eds.), *Archaeologies of Landscape*. Oxford: Blackwell.
BASSO, K. 1996
Wisdom Sits in Places. Albuquerque: University of New Mexico Press.
BRADLEY, R. 2000
An Archaeology of Natural Places. London: Routledge.
DONOHUE, V. A. 1992
The Goddess of the Theban Mountain. *Antiquity* 66/253. December.
ELKIN, A. P. 1932–33
The Secret Life of the Australian Aborigine. *Oceania* 3.
GUCHTE, M. van de 1999
The Inca Cognition of Landscape. In: Ashmore and Knapp, op. cit.
HUBER, T. 1994
Putting the *gnas* back into *gnas-kor*: Rethinking Tibetan Buddhist Pilgrimage Practice. *The Tibet Journal* 19/2.
LÉVY-BRUHL, L. 1935/1983
Primitive Mythology. St. Lucia: University of Queensland Press.
MERCER, H. 1896/1975
The Hill-Caves of Yucatán. Norman: University of Oklahoma Press.
MORPHY, H. 1995
Landscape and the Reproduction of the Ancestral Past. In: Hirsch E. – O'Hanlon, M. (eds.), *The Anthropology of Landscape*. Oxford: Clarendon Press.
PINK, O. 1933–34
Spirit Ancestors in a Northern Aranda Horde Country. *Oceania* 4.
REEVES, B. 1994
Ninaistákis – the Nitsitapii's sacred mountain: traditional Native religious activities and land used/tourism conflicts. In: Carmichael, D. L., Hubert, J., Reeves, B. – Schanche, A. (eds.), *Sacred Sites, Sacred Places*. London: Routledge.
STEWARD, J. H. 1934
Two Paiute Autobiographies. University of California Publications in American Archaeology and Ethnology, Vol.33, No.5.
STUTCHBURY, E. 1994
Perceptions of Landscape in Karzha: 'Sacred' Geography and the Tibetan System of 'Geomancy'. *The Tibet Journal* 19/4.
THEODORATUS, D. – LAPENA, F. 1994
Wintu sacred geography of northern California. In: Carmichael *et al.*, op.cit.

9

Tracking Contact and Exchange Networks Across a Late Mesolithic Landscape: A Case for Ertebølle Bone and Antler Design Encoding TRB Danubian Ceramics

GEORGE NASH

Introduction

Based on the artefactual evidence and spatial/temporal ideas expressed by Jennbert (2007), Larsson *et al.* (1988), structuralist approaches by Tilley (1984, 1996), Nash (1998, 2004) and Hodder (1982, 1990) and general discourses by Whittle (1988), Baldia (1995, 2003) and Price (2000a, b) this chapter discusses the relationship between two neighbouring material cultures: ceramics and decorated antler and bone. I suggest that the design coding present on the Linearbandkeramik (LBK) [and later LBK regional variants such as the Stichbandkeramik – STK, located around the Hamburg area] and Trichterrandbecher (TRB) [also referred to as the Funnel-Beaker Culture and distinguishable by long-necked ceramics] ceramics replicates the design coding on well-established inscribed Ertebølle antler, bone and amber. This act of replication can be seen as an attempt to hold onto ancestral symbols, once expressed on antler and bone, whilst adopting new materiality: pottery. The design coding for both Ertebølle artefacts and pottery may have had wider implications in binding together different economic-based groups (i.e. farming groups with hunter/fisher/gatherers). Moreover, this exchange process would have had significant implications when the economy driving the Ertebølle period began to give way to *Neolithicisation* [or termed *Neolithisation*] (Whittle 1985; e.g. Edmonds 1999). The process of trade and exchange between Danubian Neolithic communities (of Northern Germany, Holland and Poland) and their hunter/fisher/gatherer counterparts in the Ertebølle (Denmark and southern Sweden) would have involved lengthy trade expeditions across two distinct economic landscapes. I suggest that contact/exchange networking was complex, involving mundane goods as well as special commodities. The thrust of this chapter though promotes the ideas and design concepts that were accompanying trading parties from the Ertebølle areas and stimulating their trading counterparts from the Danubian lands to the south, in particular the influences placed upon the manufacture and decoration of TRB ceramics (*Figure 9.1*).

Becoming materially-cultured

Evidence for contact/exchange networking within the early Mesolithic of southern Scandinavia is by and large difficult to assess (e.g. Bonsall 1989; Price – Brown 1985; Zvelebil 1986; Nash 1998). However, during the Ertebølle there appears to be evidence not only for local exchange networks in Denmark and Sweden, but also regional contact, especially with the Danubian areas to the south and the eastern Baltic, in particular towards the end of the Ertebølle (c. 3,200 cal BC). This region was the last Mesolithic enclave in North-western Europe to eventually conform in part to the Neolithic package (Zvelebil – Rowley-Conwy 1986; Tilley 1996). I say 'in part' meaning that probably not all of the Neolithic package – i.e. burial practice, ceramics and agriculture was initially adopted in these economically richly-resourced northern lands.

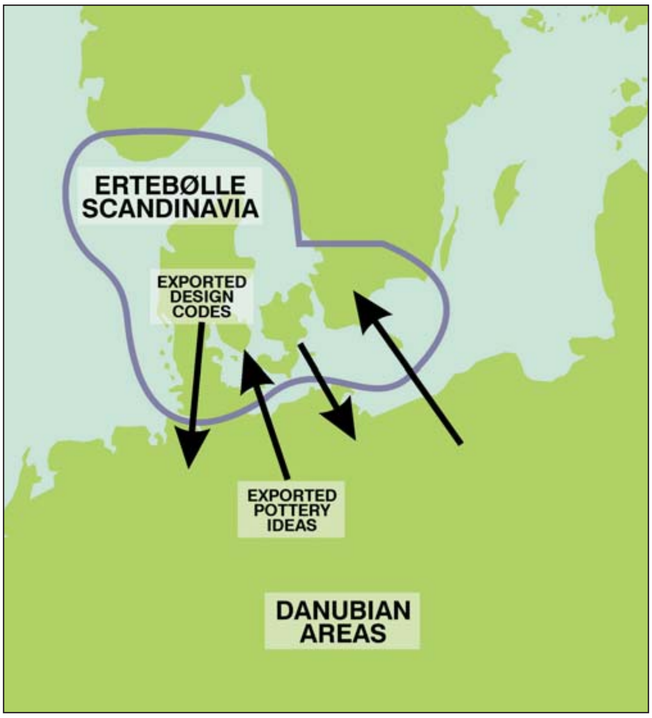


Figure 9.1. Exchanging trades: Economic movements between Ertebølle and the Danubian areas.

Vang Petersen (1984) has recognised four Ertebølle artefacts that may represent commodities belonging to local exchange networks – T-shaped red deer axes, bone combs, Limhamn greenstone axes and bone rings and discs. These artefacts were manufactured in various parts of southern Scandinavia and their concentrated distribution suggests that exchanges were regionalised between east and western Denmark. Tilley (1996) and Nash (1998) have undertaken specific research using ethnography as a way of indicating the movement of artefacts around southern Scandinavia. Tilley has suggested that TRB commodities are moving around in a similar fashion to that of the rigid exchange networks that occur in the Trobriand Islands in Melanesia. Nash (1998, 2004), has in particular, used one motif – the so-called *sheaf of grain* or *wheatsheaf* design to argue an exchange network existing around eastern Jutland during the Ertebølle, using data from archaeologist Søren Andersen (1980, 1986) and ethnographic observation from Melanesia (e.g. Malinowski 1922; Munn 1983). The wide distribution of the *wheatsheaf* motif suggests that it was a recognised motif, extending across an area of some 6,000 nautical square kilometres and would have united many communities who recognised and accepted this particular motif (*Figures 9.2* and *9.3*). The circulation of the *wheatsheaf* motif reinforces the notion that other special motifs and commodities such as ceramics were being circulated around the landscapes and seas of northern Europe.

Decorated bone, antler and amber using a restricted repertoire of motifs appears to have had a wide distribution, with many unique designs appearing on portable items across southern Scandinavia, the Baltic and northern Germany (Müller 1918; Nash 1998; Płonk 2003; Vang Petersen 1998). It has been suggested that the application of such design coding on bone and antler changed over time, from representative imagery such as human and animal figures during the Maglemose (c. 8,000–5,500 cal. BC) and Kongemose (c. 5,500–4,500 cal BC) to geometric forms such as banding, chequers, chevrons, lozenges and triangles during the Ertebølle (c. 4,500–3,200 cal. BC) (Płonk 2003). During the latter phases of the Ertebølle antler and bone artefacts become highly polished and many are not decorated (Andersen 1980, 45), suggesting that inscribing antler and bone was becoming unfashionable. It also

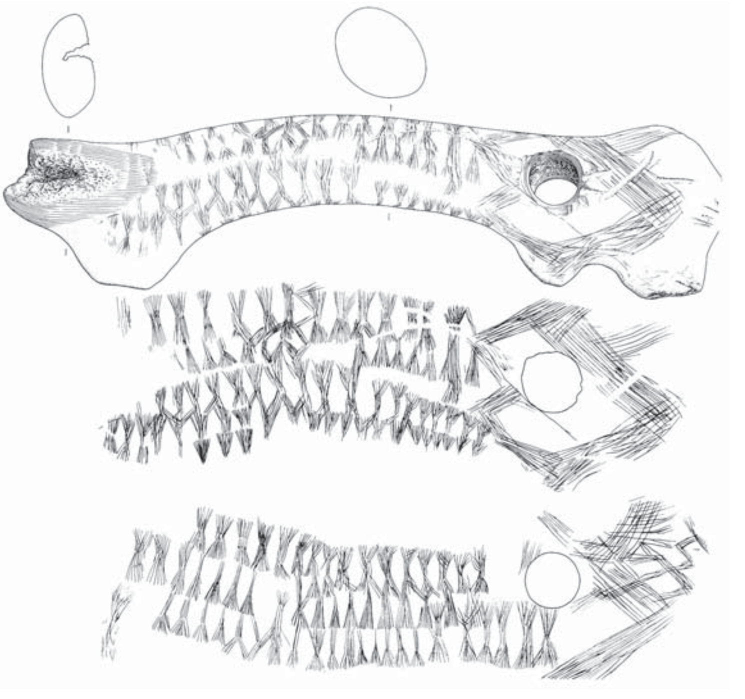


Figure 9.2. The Bogø vig axe, Langeland with multiple wheatsheaf motifs (after Andersen 1980, fig. 7).

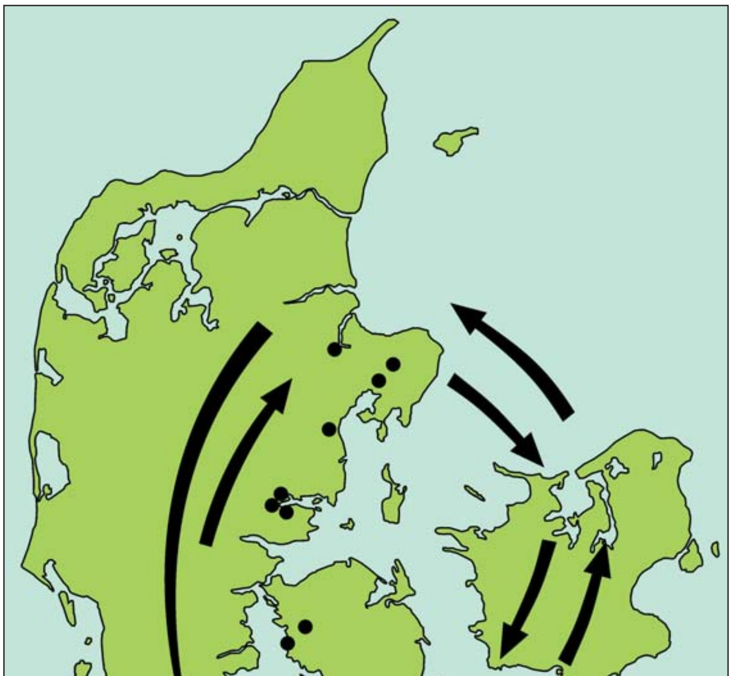


Figure 9.3. The Ertebølle Ring (after Nash 1998).

suggests that other economic resources such as agriculture were beginning to spread into the hunter/fisher/gatherer areas and with it other forms of visual expression. Cavalli-Sforze *et al.* (1996) suggests that LBK people (or their ideas) could have been moving westwards through Central Europe as much as 1km per year. In essence amber, antler and bone, the ritual symbols of the hunting way of life was being replaced by something more typical of farming – decorated ceramics. Interestingly, some of the design-coding present on Ertebølle portable art is also present on imported pottery that originates from the Danubian areas to the south, in particular on pottery from the Early Neolithic or Trichterrandbecher (TRB) phase in various localities in northern Germany, eventually reaching Denmark and southern Sweden (*Figure 9.4*). It is conceivable, but unproven, that these Ertebølle designs on bone and antler were also applied to a much earlier and less decorated ceramic tradition – Linearbandkeramik (LBK) pottery (c. 5,500 cal. BC). It is more than likely that contact and exchange networks had become well-established at around this time between these two diverse economies. Furthermore, the flow of information including the sharing of concepts such as the meaning and replication of geometric designs may have formed part of a socio-political and ritual discourse between contact/exchange trading groups, where decoration is encoded and understood. It should be noted that the boundaries between the two economies cannot be clearly defined. Indeed, Baldia (1995) and Price (2000a, 2000b) each postulate the LBK – Ertebølle boundary extends some distance into northern Germany, occupying areas such as Schleswig-Holstein.

Figure 9.4. Elaborate decoration featuring multiple chevrons and vertical and horizontal banding motifs on a TRB southern Swedish bowl (photograph: G. H. Nash).

A tale of three economies

Danish archaeologist Jørgen Jensen (1982) has suggested Maglemose and Kongemose settlement and economy was concentrated mainly on terrestrial resources in particular elk and auroch, the remains of which were found on a number of inland lakeside settlement sites such as Svaerdborg, Åamosen, Maglemosegårds and Storebælt [area] (Friis Johansen 1919; Mathiassen 1937, 1943; Brinch Petersen 1971, 1973; Pedersen *et al.* 1997). As the climate began to get warmer, open woodland species such as *Betula* and *Pinus* began to migrate northwards and were replaced with broad-leaf species such as *Quercus.* With this change elk, a long-term food resource for early hunter-gatherers also migrated northwards and was replaced predominantly by red deer. This change in food resource, occurring around c. 5,500 cal. BC is reflected in the ratio between elk and red deer bone and antler artefacts. Based on the analysis of 100 portable artefacts, I have suggested that the majority of decorated bone and antler from the Scandinavian Mesolithic belongs to red deer, accounting for 87% of my assemblage, whereas the remaining artefacts use elk and auroch. Not surprisingly these elk and auroch pieces are nearly all dated to Maglemose and Kongemose periods (Nash 1998, 139).

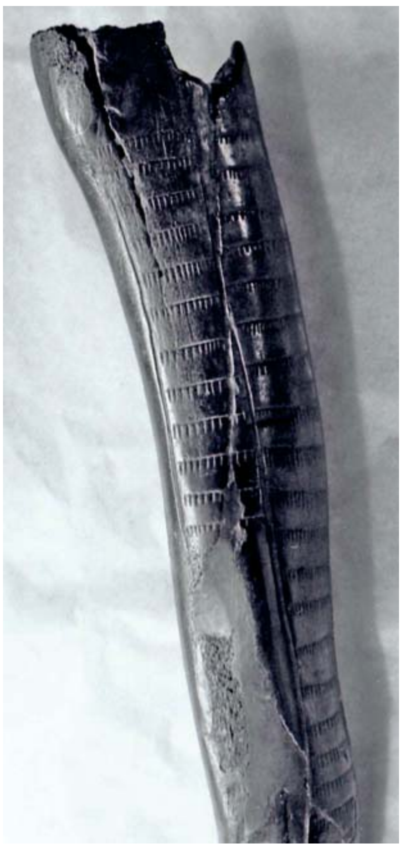
By around c. 5,000 cal. BC the settlement pattern had begun to shift, occupying coast/estuarine environments where economic resources were more diverse and rich. This desire to occupy the coastal regions may have been due partly to the increase in social and political complexity within hunter/fisher/gatherer societies. David Clarke postulates the idea that coastal areas provided the greatest calorific potential, offering a mixed economy of coastal, marine and terrestrial resources (1976, 13). This shift may have coincided with expanding populations, resulting in the consolidation of prime hunting, fishing and gathering lands and the establishment of firm territorial boundaries (e.g. Yesner 1980; Nash 2004). Interestingly, from these sites there are no decorated portable artefacts that are made from marine mammals despite the fact that the physical remains occur on Ertebølle coastal habitation sites.

A hint of linear decoration: Linearbandkeramik (LBK)

The first fully recognised Neolithic tradition in Europe – the LBK embraces most of, if not the entire Neolithic package. The LBK phenomenon occurs within central Europe between c. 5,700 and 4,500 cal BC. It is suggested that the LBK developed in the middle Danube area (Bohemia and Hungary) and spread westwards at a rate of 4km per year, dispelling earlier ideas that the LBK formed part of an invasion package (Haak *et al.* 2005). The influence of this ceramic tradition extended as far north as the North Sea and the Baltic and bordered the lands occupied by the Ertebølle culture. The chronology for LBK has in the recent past undergone reappraisal and Gordon Childe's Danubian I and II has been replaced with a more regionalised sequence (see Luke – Zvelebil 2004).

This extensive cultural phase is characterised by the linear designs present on its ceramics. The ceramics according to Stäuble (2005) is divided into three sequential phases: Early, Middle and Late LBK. It is conceivable but unproven that the later phase (including the STK variant culture) of the LBK either influenced, or was influenced by the design coding on Ertebølle bone and antler. Of course ceramics was just one commodity of the Neolithic package that also included stock rearing and permanent settlement usually occupying the fertile loess soils of the central and northern plains of Europe. It is possible that the communities of the Ertebølle and LBK exchanged other ideas such as burial practice, in particular cemetery burial (e.g. the Ertebølle cemeteries of Skateholm and Vedbæk in southern Scandinavia [Larsson 1993], and the LBK cemeteries of Aiterhofen-Ödmühle and Sengkofen, both in Bavaria [Nieszery 1995]). Although the dates for both cemeteries groups are not contemporary, the grave good assemblages are, each offering to their male dead commodities such as food, weapons, tools and red ochre (jewellery in female graves only).

As intimated earlier it is difficult to establish any cultural contact and synergy between Ertebølle and Linearbandkeramik (LBK) communities. However, similar motifs do occur on both LBK ceramics and Early Mesolithic antler and bone and therefore one cannot rule out a possible cultural link (*Figures 9.5a, b, c*). Contrary to my thoughts on a diffusion of ideas moving from north to south during the TRB – Ertebølle period (c. 4,500 cal BC), simple repeated geometric decoration may have its origins with LBK communities diffusing their ideas to artists of the Ertebølle, suggesting a cultural movement from south to north during this period. Although complex and based on specific type-site examples, the various



Figures 9.5a, b, c. Decoration on TRB bowl and selected Mesolithic antler [axe shafts from Bjernede and an unknown site, Denmark](Photographs: G. H. Nash).

ceramic assemblages in the northern lands of the LBK comprise simple and curvilinear forms, multiple lines, infilling and banding (Hodder 1982).

Ornamentation in full: The Ertebølle

During the early part of the Ertebølle, between 4,500 and 3,200 cal. BC the shift from inland settlement to coastal settlement expanded the culinary menu of advanced hunter/fisher/gatherers (Clarke 1976). The varied food resources are recorded from large midden sites such as the type-site of Ertebølle in northern Jutland. Whilst a hunting, fishing and gathering economy flourished in southern Scandinavia, the Danubian areas to the south embraced an agricultural package (referred to as the Early Neolithic (EN), TRB culture or *funnel beaker* phase). This package included animal husbandry, allotment agriculture, burial monumentality and the production of pottery. It was during the early part of the Ertebølle that pottery appears to enter the archaeological record in the form of large S-shaped pointed-base jars and flat-based oval bowls. These vessels were probably an earlier indigenous innovation that occurs at the same time as the development of large shell middens (from c. 3,600 cal. BC) (*Figure 9.6*). Limited decoration, including finger tip or nail ornamentation, usually occurs around pottery rims and it is probable that these ceramics were manufactured for domestic purposes such as cooking (Hodder 1990, 184). Further east, in southern Skåne more elaborate pottery decoration techniques are found that include banding, lozenges and triangles, otherwise referred to as Löddesborg types (Jennbert 1984, 2007). These designs, sometimes covering all of the surface area of the vessel, are similar to those found on many decorated portable Ertebølle artefacts, such as bone, amber and antler. Other decorated forms occur alongside burial monuments within the Volling-Svaleklint area, comprising beakers and jars (*ibid.* 185).

Vang Petersen (1984) and later Nash (1998) have recognisedcollectively up to 450 cultural artefacts from the south Scandinavian Mesolithic, and approximately 75% of these date to the Ertebølle

Figure 9.6. Local innovation: S-shaped pointed-base jars (after Müller 1918).

phase; many found within the coastal areas of east Jutland and lakeside sites of central and western Zealand. Płonka has identified 253 pieces of amber, antler and bone that show clear evidence of deliberate and systematic decoration, the majority of which are constructed using a restricted repertoire of geometric designs (2003, 148, Table 53). The engraving technique used during this period includes carving, scratching and drilling (*ornamentation pointillé*). Some examples have inscribed along with geometric designs, anthropomorphic and zoomorphic imagery such as those antler axes found at Hjarnø (Horsens fjord) and Ølby Lyng (Zealand) (Andersen 1980; Nash 1998; Płonka 2003). During the same period and found mainly on Jutland are a series of shaped wild animals made from amber, such as cervids and wild fowl.

The occurrence of representational iconography though, is rare. The majority of the design coding is geometric in form. Geometric designs include banding, chevrons, diamonds, single and multiple dots, single and multiple lines, lozenges, mesh/netting, parallelograms, triangles and zigzags. These can appear as either single or multiple designs. Graham Clark (1936, 1975) was the first scholar to recognise and re-appraise a generic design code for portable artefacts from the south Scandinavian Mesolithic (*Appendix 1*). This series of geometric variants embraced designs that were present on mainly antler and bone. Nash (1998) established that some of the designs were also indicative of early Mesolithic phases (Maglemose and Kongemose). Søren Andersen later refined Clark's generic list and established a series of design variants for the Ertebølle (1980, 47) (*Appendix 1*). These generic lists have recently been comprehensively re-structured and made more elaborate, with particular emphasis on linear designs (Płonka 2003, 210–15).

As part of two extensive research projects Nash (1998) and Płonka (2003) updated both classifications. Nash, analysing one hundred decorated pieces integrated Andersen and Clark's lists, whilst Płonka completely re-appraised these and introduced further design variants from other parts of Mesolithic Europe (2003, 315–25).

It is clear that towards the latter part of the Ertebølle (*c.* 3,500–3,200 cal. BC) many Neolithic traits had been introduced including the import and/or production of decorated pottery. At this time the lands south of Ertebølle Denmark and southern Sweden had fully embraced the Neolithic package. Outside the realm of Ertebølle and around 500–600 years previously, pottery styles had changed from LBK (or Western Linear Pottery Culture) and had been replaced by TRB phase (or the Funnel Beaker Culture). At the same time, some communities in southern Denmark had also adopted burial monumentality (Tilley 1999). Although the geometric designs found on portable bone and antler artefacts occur at a time when probable cultural trading and exchange links with TRB communities were at a zenith, earlier influences arguably existed with ceramics derived from the LBK culture. However, the surface decoration although symmetrical is not elaborate, unlike the decoration on many early Ertebølle antler and bone.

Many notable coastal settlements such as Ringkloster (eastern Jutland) and Tybrind Vig (Fyn) also date from this period. Associated with settlement is an assemblage of portable artefacts that include amber, antler, bone, clay plaques, flint and wood. Apart from settlement these items are also found in burial and bog contexts, probably the result of ritual votive deposition. In Skåne, Ertebølle pottery sherds have been recorded within the settlement and burial contexts of Skateholm (Larsson *et al.* 1988; Larsson 1993) suggesting pottery fulfilled a dual role, supplying mundane implements for the living as well as special vessels within the realm of the dead. Jennbert (1984) recognises at Löddesborg that only 15% of all pottery is decorated, using eight different motifs; Ertebølle pottery accounted for 26% of the total ceramic assemblage. Jennbert also recognised that some of the Ertebølle pottery was not made on site but had been regionally imported, as alien cereal grain imprints were found on some sherds. It is probable that these vessels were made by agriculturalists who were also involved in cereal production.

Around the same time grain pollen has been has been found in the ceramic matrix of locally made Ertebølle pottery in Schleswig-Holstein, northern Germany (Price 2000b).

Recovered from the submerged excavations at Tybrind Vig were two dug-out log canoes, each exceeding 7m in length with associated paddles, all in a good state of preservation (Andersen 1985). The presence of both items suggests that the people using this coastal settlement were involved in short and long distance expeditions. A hearth, measuring 60cm x 35cm was located at the stern of each boat. Environmental evidence reveals that possibly food was cooked on a 'makeshift' stone and sandy-clay surface (Andersen 1985). Shell fragments, charcoal and small splinters of flint were embedded into the inner hull surface. The preparation and cooking of food would be important on long voyages, especially if expeditions between settlements were to run for days rather than hours. A similar type of hearth can be found on canoes in the lowland areas of the central highland region of Papua New Guinea, where women (and accompanying children) hunt for fish and will use these hearths on expeditions lasting more than a few hours (Brown 1978). Blomqvist (1989, 168) calculated the approximate distances and time taken between the mainland and the islands of Furen, Langeland, Jutland and Zealand. For example, the distance between Langeland and Skåne would have taken a canoe 56 hours at an average speed of 6 knots. Similarly, a journey between eastern Jutland and north-east Zealand would have taken 23 hours. The discovery of these and other canoes in southern Scandinavia reinforces the notion that Ertebølle people relied on the sea in order to communicate with other seafaring communities. It is conceivable that much of the diffusion of ideas concerning artefact decoration was the result of contact/exchange networking amongst the coastal and island communities of eastern Jutland, Fyn, Langeland and Zealand. Nash has postulated that the *wheatsheaf* motif which is found on at least nine antler axes within the coastal zone of eastern Jutland may constitute part of an extensive seafaring exchange network (see *figure 9.3* above). Here, the *wheatsheaf* design behaves similarly to shell valuables that operate within the Melanesian Kula Ring in that they are being circulated around a proscribed area (Malinowski 1922 and adapted by Tilley 1996; Nash 2004).

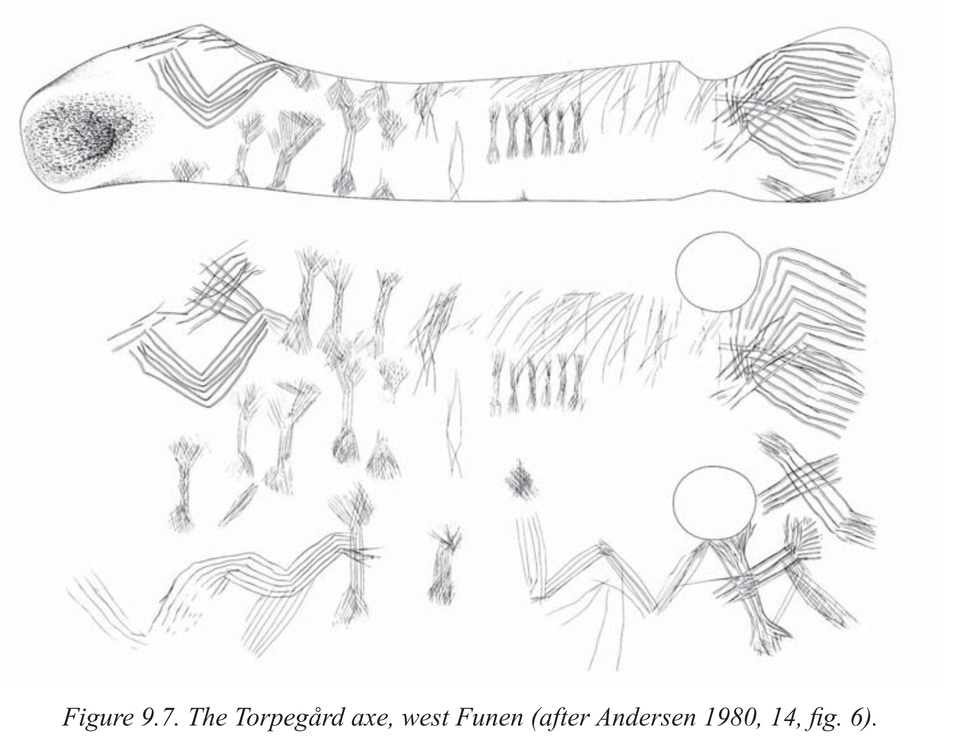


Figure 9.7. The Torpegård axe, west Funen (after Andersen 1980, 14, fig. 6).

Based on the available evidence reproduction of geometric art on pottery and bone and antler is chronologically sequential. As a result of reliable calibrated radiocarbon dates taken from forty decorated Ertebølle bone and antler artefacts, it is clear that these designs are first to enter the Ertebølle record. Some artefacts such as those found at Horsens fjord, Torpegård (*Figure 9.7*) and Tybrind Vig are clearly early Ertebølle in date (e.g. 4,500–4,000 cal BC; see Andersen 1980, 46).

The repeated and symmetrical geometric designs occurring on late LBK and TRB pottery appear to enter the archaeological record from 4,000 cal BC and are roughly similar to those designs found on bone and antler artefacts.

Replication and transmission of commodities and meaning: The Trichterrandbecher

The LBK communities of Central and Western Europe with their distinct material culture slowly adopted new ideas, being replaced by the TRB culture at around c. 3,500 cal. BC (what is also termed as the *funnel-beaker phase*). Whether or not this change in material culture and ideology was indigenous remains a question of debate. The TRB influence had fully embraced the Neolithic package and had by 3,100 cal. BC spread into southern Scandinavia (Tilley 1996, 1999). It is during this period that the first megalithic burial monuments were constructed within the former Ertebølle lands. Stock-rearing, in particular cattle, was accompanied by limited cereal cultivation alongside arguably small-scale hunting, fishing and gathering, establishing a mixed economy. It is probable that such a system existed elsewhere within those Danubian areas that had embraced *Neolithicisation* some 1,500 years previously. Based mainly on the ceramics, communities at this time appear to form a common identity with households bound together by a common ancestry (Tilley 1984, 112). Within these kinships, trade and manufacture of pottery could have been the responsibility of a guild/school or family unit who over a few generations became established craft specialists.

In essence the TRB culture is characterised by a distinct pottery type – the highly decorative globular-type vessel with its long funnel-like neck which was manufactured across the TRB regions of Europe using many localised and chronological variants. Variations on the funnel-beaker theme include amphorae-type vessels and pedestal vessels. Most are decorated using a variety of repeated geometric motifs and in some cases representative figures such as stylised anthropomorphic and zoomorphic forms are present. Concentrated in mainly Zealand and dating to the TRB Middle Neolithic is the face pot phenomenon (Tilley 1996). These small ceramic bowls are chiefly associated with burial and the design narrative is usually constructed using simple repeated motifs such as banding, multiple zigzag lines, each arranged in curvilinear forms (*Figure 9.8*). At this time very few antler and bone pieces are being decorated (Andersen 1980).

In the later stages of the TRB culture, metal was introduced and the ceramics characteristic of the TRB are replaced by Corded Ware tradition, sometime after *c.* 3,000 cal. BC. Interestingly, geometric designs also occur on this new material culture, probably representing a physical act to embody the ancestral or heraldic designs of the ancestors. These designs, repeated over generations, would have assisted in established individual and tribal identity. If one is to accept the notion of family guilds or craft specialists monopolising pottery manufacture, one could consider that identity through design was in the control of these select people.

Transmitting ideas across landscapes

Vang Petersen (1984), Tilley (1996) and Nash (1998) have postulated that portable artefacts such as amber, antler, bone, flint, stone and wood were being regionally circulated around the Ertebølle

Figure 9.8. Middle Neolithic face pot from the Svinö passage grave, Southern Sweden, constructed from simple repeated decoration (Photograph: G.H. Nash).

landscape. The circulation of these artefact types probably indicates contact and exchange networks operating between Jutland and Zealand. However, the Mesolithic of southern Scandinavia extends to some 5,500 years, the Ertebølle accounting for just 1,300 years. Nevertheless, both time spans represent long periods in time in which change both locally and regionally occurs. The artefact evidence, in particular the occurrence of decorated amber, bone and antler is relatively rare. Previous studies by Müller (1918), Sarauw (1903), Vedbæk (1939), Liversage (1967) and Andersen (1980) have specifically highlighted the importance of this assemblage, by placing it into a context dominated by the development of lithic technology. It is clear from this assemblage that these items were special and possessed meaning, either universal or restricted; moreover they appear to be central to any exchange network occurring (e.g. Mauss 1954). Based on the design variants expressed in Clark (1936, 1975), Andersen (1980) and Płonk (2003) many of the same generic motifs are used repeatedly and cover a vast geographic range such as Clark's design variant No. 32 and Andersen's No. 8. However, not all the design variants from Andersen's and Płonka pattern classification charts are used. The most numerous designs used on pottery, bone and antler include various banding, zigzag lines and triangles. It is conceivable that a hierarchy embracing certain designs was practised by both Ertebølle and TRB people. Furthermore, the way in which these designs were used may have influenced pottery design sequencing and vessel shape.

Overlapping material culture

The *Neolithicisation* of Mesolithic Europe during the 5th and 4th millennium BC was a slow affair and was probably the result of a diffusion of ideas through localised contact and exchange networking. By the time the TRB culture infiltrated southern Scandinavia, the Neolithic package had been fully embraced in Britain and Ireland. However, problems exist in determining the role of ceramics in the

Neolithic of north-western Europe. To exacerbate the problem there is a lack of chronometric dating to fix a transition between Ertebølle and TRB ceramics, although Jennbert has collated a spread of nine dates with a range between 3080±80 and 3530±95 cal BC (2007, *table 2*). Many different variants and undecorated wares for example occur in British and Irish burial sites (Petersen 2003). Furthermore, the condition and state of preservation in many cases hampers interpretation. As far back as the turn of the 20th century the archaeologist Kjellmark had recognised both Ertebølle and TRB pottery confusingly within the same context at Soldattorpet, suggesting a distinct transition between the two cultures (1903). On other sites, such as at Löddesborg, both Ertebølle and TRB pottery lie stratigraphically close suggesting a clear change in ceramics (Jennbert 1984, 2007). This is not the case though in southern Scandinavia; Tilley (1999) clearly distinguishes between decorative and non-decorative wares on late TRB sites. Non-decorative pots are usually found within domestic contexts and would have functioned as utilitarian items. Smashed decorative wares are found within burial contexts, usually the result of deliberate symbolic fragmentation. In an extensive study that includes the motif deconstruction of over 8,000 sherds, using vertical and horizontal design analysis and hierarchical classification initially adopted by Bakker (1979) and later Hodder (1982), Tilley postulated that smashing pots (and stone axes) formed part of an arena of competitive ceremonial display between rival or neighbouring groups (1984). He considered that the host group's status would be greatly enhanced through the visual display of pot-smashing. This concept is also expressed by anthropologist Marcel Mauss (1954) when he claims that greater status is gained when an individual gives commodities away (a similar political mechanism is expressed in *Potlatch* communities along the Pacific Northwest coast of America). The giver suffers hardship and depleted wealth at the expense of distributing or in the case of fragmentation, destroying wealth in order to become a more powerful individual. Greater status, according to Tilley would be gained if the pottery that was being publicly destroyed was highly decorative. Producing pottery of this status would have been labour intensive and it is probable that the circulation time for such items would have been short with the proviso that such items would finally end up as an offering to the dead. Coincidentally, many of the Ertebølle antler and bone finds are regarded as stray (e.g. Płonka 2003), possibly votive deposits (e.g. Nash 1998, 2004) whereby the owner has, similar to his or her counterparts in the TRB lands, deliberately discarded such wealth. Maybe greater status was given to those who could undertake such potentially destructive tasks. Certainly in the TRB Middle Neolithic large quantities of smashed decorated pottery is found in burial contexts, sometimes under the floor of passage and façade areas, possibly indicating a giving of wealth to the dead.

Two material cultures, one style

This paper has briefly summarised the LBK, TRB and Ertebølle and the material culture that is intricately woven into each period. It is clear that ceramic production has a significant influence in each phase. Within LBK and TRB cultures ceramics feature largely in the *Neolithicisation* process whereas within the Ertebølle culture pottery is an adopted commodity that is strategically integrated into an existing hunter/fisher/gatherer economy. During the latter part of the Ertebølle other parts of the Neolithic package begin to infiltrate eventually giving way to the Ertebølle lands developing a full Neolithic package, thus embracing TRB commodities and customs. Of course this enculturation process was resisted for nearly 1,300 years whilst the whole Neolithic way of life was being embraced in the Danubian areas of central Europe. In contrast to enculturation, Clark (1975) and Larsson (1986) have tentatively suggested that resistance may have been the result in changes in climate. It is more than probable though that the economic conditions in the Ertebølle lands were too favourable for its communities to ignore. Towards the end of the Ertebølle changes in society and in particular adopting TRB pottery may have been due to changes in habitat (Jennbert 2007). Nevertheless, there may have been a combination of these and other factors such as the formation of social and political alliances between certain dominant groups, introducing complex and dominant networks, what Jennbert terms as 'creolisation', meaning colonisation (2007).

A similar scenario was probably being encountered during the first wave of farming when LBK ideology penetrated the hunting, fishing and gathering lands of Europe during 5th and 6th millennium cal. BC. At this point I am careful not to suggest that enculturation was in the form of advancing farming groups entering into and forcing *Neolithicisation* onto well-established hunter/fisher/gatherer communities as sometimes postulated by some scholars. If one is to assume that the spread of the Neolithic package was a slow process – maybe moving westwards at a rate of 4km per year, ceramic shape and design would have been slow to adapt. Associated with this slow development would have been mortuary and burial practices and new ideas concerning farming economy (from stock rearing to cereal production).

The resistance by Ertebølle communities in Denmark and southern Sweden suggests that these communities were content with their economics and socio-political organisation. In the past the language used to describe TRB and Ertebølle communities tends to be one of subordination whereby the stronger and more dominate TRB eventually infiltrates and dominates the weaker Ertebølle culture. It should be stressed that by 3,100 cal. BC, TRB communities were well-established in former Ertebølle lands and the Neolithic package had been adopted. However, hunting, fishing and gathering still remained fundamental to the community's survival and success. At the Skåne sites of Löddesborg, Siretorp and Vik there is evidence of a mixed economy flourishing where both domestic and non-domestic faunal remains were present (Althin 1954; Bagge – Kjellmark 139; Jennbert 1984, 2007). It is probable that the beliefs and ideology of the hunter/fisher/gatherer were firmly integrated into the new ideology and technologies of the TRB culture, establishing a creolisation whereby old and new ways integrate.

Ceramic development within LBK, TRB and Ertebølle cultures over a *c.* 1,500 year period, both in terms of technological innovation and motif insignia is significant. During the latter phase of the LBK pottery design becomes standardised with some pottery having much of its surface area decorated with simple geometric motifs such as broken and continuous lines. Towards the end of LBK and the emergence of the Ertebølle, Andersen (1980, 45) has recognised distinct morphological changes in Ertebølle motifs on amber, antler and bone which essentially show the simplification and eventual disappearance in design complexity from the early to the late Ertebølle, between 4,500 and 3,200 cal. BC. Based on the artefact evidence there are similarities between the geometric designs on ceramics and Ertebølle bone and antler.

The fundamental question is which cultural phase influenced which. The earliest dates for the development of the LBK in the northern part of Europe are between 5,750–5,650 cal. BC (Baldia 1995). At the same time in early Mesolithic southern Scandinavia, a quite different set of design motifs are being incorporated onto bone, antler and amber that include complex banding, curvilinear designs and dot drill ornamentation (e.g. the Carstensminde and Lammefjord axes, Zealand). Also found within this period are significantly more anthropomorphic and zoomorphic designs such as the Maglemose aurochs axe from Ryemarksgåard, again in Zealand (Nash 2003). There are several artefacts from this period that do conform to similar design coding on LBK and TRB pottery (e.g. the antler sleeve and point from Ølby Lyng, Zealand and the Ystad axe from Skåne – *Figures 9.9* and *9.10*). The Ølby Lyng axe, found on the eastern coast of Zealand forms part of the beam of a red deer antler and had undergone scraping and polishing prior to decoration. The majority of the decoration is geometric, although some form flatfish and eel designs (Liversage 1966). The design sequence on the Ystad axe appears to be multi-phased with the scratched outlines of two cervids (probably red deer) being the first designs.

Figure 9.9. Polished and decorated antler beam from Ølby Lyng, Zealand (Photograph: G.H. Nash).

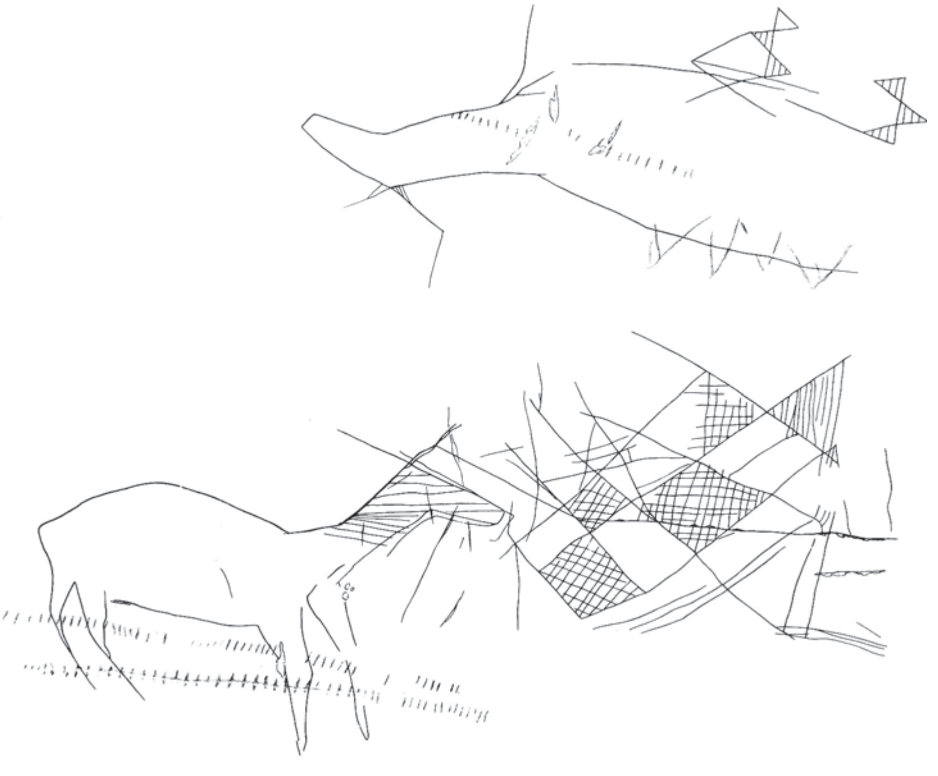


Figure 9.10. The rolled out multi-phased design on the Ystad Axe, Skåne (after Clark 1975, 151).

These two representative figures are arguably indicative of Early Mesolithic decoration. However, at some point after they were scratched, two horizontal parallel rows of lines are superimposed over one of the deer figures. In addition and akin to TRB pottery design coding, a chequer design which partially extends over the head of the same deer figure is added. Less obvious multiple decorations are also superimposed over the other deer figure. It is probable that the design sequence represents two different cultures, one acknowledging the hunter way of life, the other representing Neolithic.

Summary: Morphology of design

Based on the archaeological evidence significant social, political and economic changes occur in central and north-western Europe between the 6th and 4th millennium cal. BC. These changes are mainly reflected through the material culture and in particular, changes in ceramic style. At this time pottery manufacture and use is exercised mainly by communities living within the Danubian areas of central and Western Europe.

Earlier LBK communities, who also adopt sedentary settlement and burial monumentality, were the first to introduce this new package of ideas and technology. This cultural phase is later replaced by the TRB phase. These people basically adopt and enhance the *Neolithicisation* process of the former LBK phase. Parallel to both Neolithic phases is the Ertebølle, the final phase of the south Scandinavian Mesolithic. This probable sedentary advanced hunter/fisher/gatherer culture, after 3,600 cal. BC, begins to slowly import, adopt and later produce simple forms of pottery. Continuing through the Ertebølle and running alongside this pottery tradition is a substantial portable art assemblage, comprising amber, antler, bone, clay, flint and wood. The decoration from this assemblage consists mainly of geometric patterns, either repeated or single motifs. These designs are carved, scratched or drilled. However, by the latter part of the Ertebølle these designs are absent and are replaced by highly polished amber, antler and bone. At this point in time, trade, exchange and ideology between late Ertebølle and early TRB communities intensify including the increased transmission of Ertebølle geometric forms to TRB pottery. Shortly after c. 3,200 cal. BC the Ertebølle way of life is replaced by the Neolithic package of the TRB culture. From this fragmentary archaeological record it seems that synergy occurs between Ertebølle decorated bone and antler and TRB pottery designs. One can suggest that both assemblages:

- Strengthened and legitimised long-term social and political alliances at both local and regional levels;
- Assisted in trade and the redistribution of wealth and commodities;
- Were used as passports in order to gain access to neighbouring communities;
- Forged alliances and established trading links between communities, maybe the result of ‘creolisation’ (or colonisation) as expressed by Jennbert 2007);
- Shifted the balance of cultural and economic power from the Ertebølle lands to the Danubian areas during the Ertebølle/TRB transition (c. 3,200 cal BC);
- Established a status for people producing and using decorated artefacts;
- Allowed the *Neolithicisation* to take hold in areas that had resisted social and economic change; and
- Established craft specialisation centres or schools for the design and production of decorated amber, antler and bone in the Ertebølle land and, ceramics in the Danubian areas (LBK and TRB cultures).

In essence, as artefacts changed regionally within the Ertebølle lands so did the design coding on antler and bone artefacts and imported pottery. However, the design coding remains relatively unchanged as new artefacts bearing the ancestral designs once used by hunter/fisher/gatherers are re-introduced from TRB to Ertebølle communities. The movement of design coding from north to south and vice-versa suggests that complex social relations existed between these different ethnic groups. It is probable that both communities shared a commonality through design rather than more direct forms such as linguistics and, at first, economics.

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Bibliography

ALTHIN, C-A. 1954
The chronology of the Stone Age settlement of Scania, Sweden: *1 The Mesolithic Settlement. Acta Archaeologica* 4/1 Lund.

ANDERSEN, S. H. 1980
Ertebølle Art: New Finds of Patterned Ertebølle Artefacts from East Jutland. *Kuml* 4, 6–60.

ANDERSEN, S. H. 1985
Tybrind Vig: A Preliminary Report on a Submerged Ertebølle Settlement on the West Coast of Fyn. *Journal of Danish Archaeology* 4, 52–69.

ANDERSEN, S. H. 1986
Mesolithic Dug-outs and Paddles from Tybrind Vig, Denmark. *Acta Archaeologica* 57, 87–105.

BAGGE, A. – KJELLMARK, K. 1939
Stenåldersboplatserna vid Siretorp I Blekinge. *Kungl. Vitterhets-, historie- och antikvitetsakademien*. Stockholm.

BAKKER, J. A. 1979
The TRB West Group: Studies in the Chronology and Geography of the Makers of Hunebeds and Tiefstich Pottery. Universiteit van Amsterdam, Subfaculteit der Pre- en Protohistorie. Cingula V. De Bussey Ellerman Harms, Amsterdam.

BALDIA, M. O. 1995
A Spatial Analysis of Megalithic Tombs. Vol. 1-2. Unpublished PhD. Dissertation. Southern Methodist University.

BALDIA, M. O. 2003
Breaking Unnatural Barriers: Comparative Archaeology, Climate, and Culture Change in Central and Northern Europe (6000–2000 BC). Paper presented in the Session "Comparative Archeology and Paleoclimatology: Sociocultural Responses to a Changing World" under the Theme "Past Human Environments in Modern Contexts" at the Fifth World Archaeology Congress, Monday, June 23, 2003, Washington DC, USA.

BLONQVIST, 1989
Megalitgravarna i Sverige. *Typ, Tid, Rum och Social Miljö, Theses and Papers in Archaeology 1*. Stockholm.

BONSALL, C. 1989 (ed.)
The Mesolithic in Europe. Edinburgh, Edinburgh University Press.

BRINCH PETERSEN, E. 1971
Svaerdborg II, A Maglemose Hut from Svaerdborg Bog, Zealand, Denmark. *Acta Archaeologica* XLII, 343–77

BRINCH PETERSEN, E. 1973
A survey of the Late Palaeolithic and the Mesolithic of Denmark. In: Kozlowski, S. (ed.), *The Mesolithic in Europe.* 77-127. Warsaw University Press.

BROWN, P. 1978
Highland Peoples of New Guinea. Cambridge: Cambridge University Press.

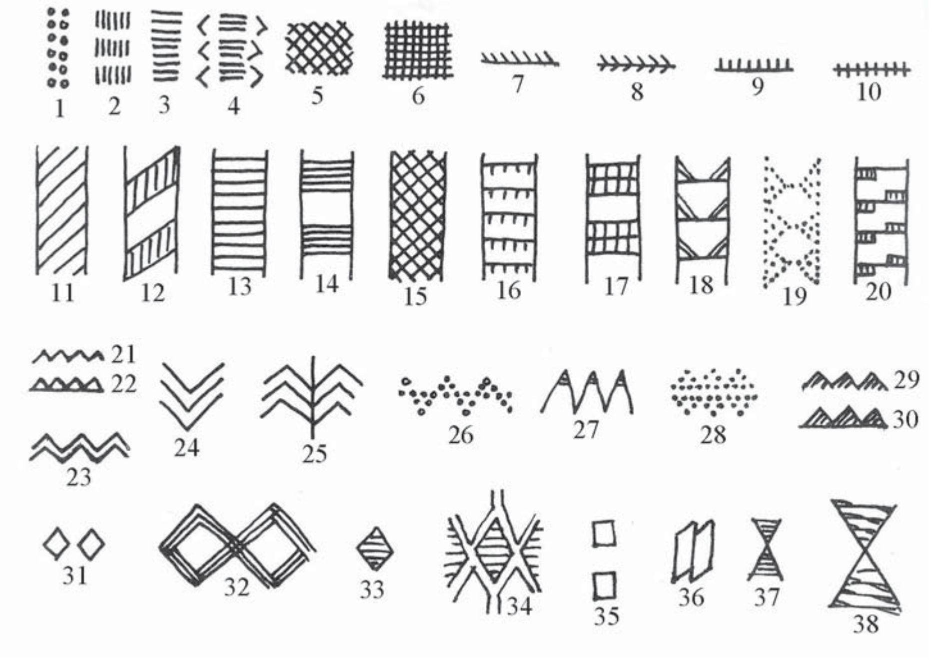
CAVALLI-SFORZA, L. L. – MENOZZI, P. – PIAZZA, A. 1996
The history and geography of human genes. *Journal of Human Evolution* 30/1, 95–6.

CLARK, J. G. D. 1936
The Mesolithic Settlement of Northern Europe. Cambridge: Cambridge University Press.
CLARK, J. G. D. 1975
The Earlier Stone Age Settlement of Scandinavia. Cambridge: Cambridge University Press.
CLARKE, D. 1976
The Mesolithic: An economic basis. London: Duckwork
EDMONDS, M. 1999
Ancestral Geographies of the Neolithic: Landscapes, Monuments and Memory. London: Routledge.
FRIIS JOHANSEN, K. 1919
Une station du plus ancien age du la pierre dans la Tourbiere do Svaerdborg, *Men. d. Antiqu. du. Nord* 241–359.
HAAK, W. – FORSTER, P. – BRAMANTI, B. – MATSUMURA, S. – BRANDT, G. – TÄNZER, M. – VILLEMS, R. – RENFREW, C. – GRONENBORN, D. – WERNER ALT, K. – BURGER, J., 2005
Ancient DNA from the first European farmers in 7500-year-old Neolithic sites. *Science* 310, 1016–18.
HODDER, I. 1982
Sequences of structural change in the Dutch Neolithic. In: Hodder, I. (ed.), *Symbolic and Structural Archaeology*. 162–178. New Directions in Archaeology, Cambridge: Cambridge University Press.
HODDER, I. 1990
The Domestication of Europe. London. Blackwell Press.
JENNBERT, K. 1984
Den produkiva gåvan. Tradition och innovation I Sydskandinvien for omkring 5300 år sedan., *Acta Archaeologica* Lundensia, Lund.
JENNBERT, K. 2007
Ertebølle pottery in southern Sweden: A question of handicraft, networks, and creolisation in a period of neolithisation. Proceedings from the workshop “Early Pottery in the Baltic”. Berichte der Römisch-Germanische Kommission, Frankfurt.
JENSEN, J. 1982
The Prehistory of Denmark. London: Methuen Press.
KJELLMARK, K. 1903
En stenåldersboplats I Järavallen vid Limhamn. Stockholm.
LARSSON, L. 1993
The Skateholm Project: Late Mesolithic Coastal Settlement in Southern Sweden. In: Bogucki, P. (ed.), *Case Studies in European Prehistory*. 31–62.
LARSSON, L. – LEMDAHL, G. – GÖRANSSON, H. – GAILLARD, M-J. – HÅKASSON, H. – JONSSON, L. – PERSSON, O and E. – ALEXANDERSSON, V. – NEWELL, R.R. – JENSEN, J. 1988
The Skateholm Project. 1, Man and environment: interdisciplinary studies. Lund.
LIVERSAGE, G. D. 1966
Ornamented Mesolithic artifacts from Denmark. *Acta Archaeologica* 37, 226–229.
LUKES, A. – ZVELEBIL, M. 2004
LBK Dialogues Studies in the formation of the Linear Pottery Culture. British Archaeological Reports International Series 1304.
MALINOWSKI, B. 1922
Argonauts of the Western Pacific. Routledge & Kegan Paul (Reprinted and Published in 1978).
MATHIASSEN, T. 1937
Gudenne-Kulturen. En mesolitisk inlandsbebyggelse i jyland. *Aarboger* 1–186.

MATHIASSEN, T. 1943
Stenalderbopladser i Aamosen. Copenhagen.
MAUSS, M. 1954
The Gift. London: Routledge.
MÜLLER, S. 1918
Stenalderens Kunst i Danmark. Copenhagen.
MUNN, N. 1983
Gawan Kula: Spatiotemporal control and the symbolism of Influence. In: Leach, J. W. – Leach, E. R. (eds.), *The Kula: New Perspectives on Massin Exchange*. 277-307. Cambridge. Cambridge University Press.
NASH, G. H. 1998
Status, Exchange and Mobility: Mesolithic Portable Art of Southern Scandinavia. Oxford: BAR International Series No 710.
NASH, G. H. 2004
Exchange, Status and Mobility: Doing Kula in the Danish Mesolithic. In: Otte, M., Oosterbeek, L., Seglie, D., Remacle, L. – Bertollo, V. (eds.), *Upper Palaeolithic and Mesolithic art.* 175–185. Acts of the XIVth UISPP Congress, University of Liège, Belgium, 2–8 September 2001. BAR International Series 1311.
NIESZERY, N. 1995
Linearbandkeramische Gräberfelder in Bayern (Aiterhofen-Ödmühle, Senkhofen, Mangolding und Dillingen-Steinheim). Espelkamp: Verlag Marie Leidorf [Internationale Archäologie 16].
PEDERSEN, L. – FISCHER, A. – AABY, B. 1997
The Danish Storebælt since the Ice Age – man, sea and forest. A/S Storebælt Fixed Link, Copenhagen.
PETERSEN, R. 2003
Neolithic Pottery from Wales: Traditions of construction and use. British Archaeological Report Series 344.
PRICE, T. D. 2000a
The introduction of farming in North Europe. In: Price, T. D. (ed.), *Europe's First Farmers*. 260–300. Cambridge University Press, Cambridge, UK; New York.
PRICE, T. D. 2000b (ed.)
Europe's First Farmers. Cambridge University Press, Cambridge, UK; New York.
PRICE, T. D. – BENTLEY, R. A. – LÜNING, J. – GRONENBORN, D. – WAHL, J. 2001
Prehistoric human migration in the Linearbandkeramik of Central Europe. *Antiquity* 75, 593–603.
PRICE, T. D. – BROWN, J. A. 1985
Aspects of Hunter-Gatherer Complexity. In: Price, T. D. – Brown, J. A. (eds.), *Prehistoric Hunter-Gatherers: The Emergence of Complexity*. 3–19. Academic Press.
PŦONKA, T. 2003
The Portable Art of Mesolithic Europe. Wydawnictwo Uniwerstetu Wroclawskiego.
SARAUW, G. F. L. 1903
En Stenalders Boplads i Maglemose ved Mullerup sammenholdt med beslaegtede. Lund.
STÄUBLE, H. 2005
Häuser und absolute Datierung der Ältesten Bandkeramik. Habelt.
TILLEY, C. 1984
Ideology and the legitimisation of power in the Middle Neolithic of Southern Sweden. In: Miller, D. – Tilley, C. (eds.), *Ideology, power and prehistory. New Directions in Archaeology*. 111-46. Cambridge University Press.

TILLEY, C. 1996
The Ethnography of the Neolithic. Cambridge: Cambridge University Press.
TILLEY, C. 1999
The Dolmens and Passage Graves of Sweden: An Introduction and Guide. Institute of Archaeology, UCL.
VANG PETERSEN, P. 1984
Chronological and regional variation in the Late Mesolithic of Eastern Denmark. *Journal of Danish Archaeology* 3, 7-18.
VANG PETERSEN, P. 1998
Rav, hjortetak og mesolitisk magi: Danefæ fra jægerstenalderen. *Nationalmuseets Arbejdsmark* 87–100.
VEBÆK, C. L. 1939
New finds of Mesolithic Ornamented Bone and Antler Artefacts in Denmark. *Acta Archaeologica* 9, 205–223.
WHITTLE, A. 1985
Neolithic Europe: A Survey. Cambridge. Cambridge World Archaeology.
YESNER, D.R. 1980
Marine Hunter-gatherers - Ecology and Prehistory, *Current Anthropology* 21, 727–750.
ZVELEBIL, M. 1986
Mesolithic Prelude and Neolithic Revolution. In: Zvelebil, M. (ed.), *Hunters in Transition*. 5-15. Cambridge: Cambridge University Press.
ZVELEBIL, M. – ROWLEY-CONWY, P. 1986
Foragers and Farmers in Atlantic Europe. In: Zvelebil, M. (ed.), *Hunters in Transition.* 67–93. Cambridge: Cambridge University Press.

Appendix 1 – The repertoire of motifs



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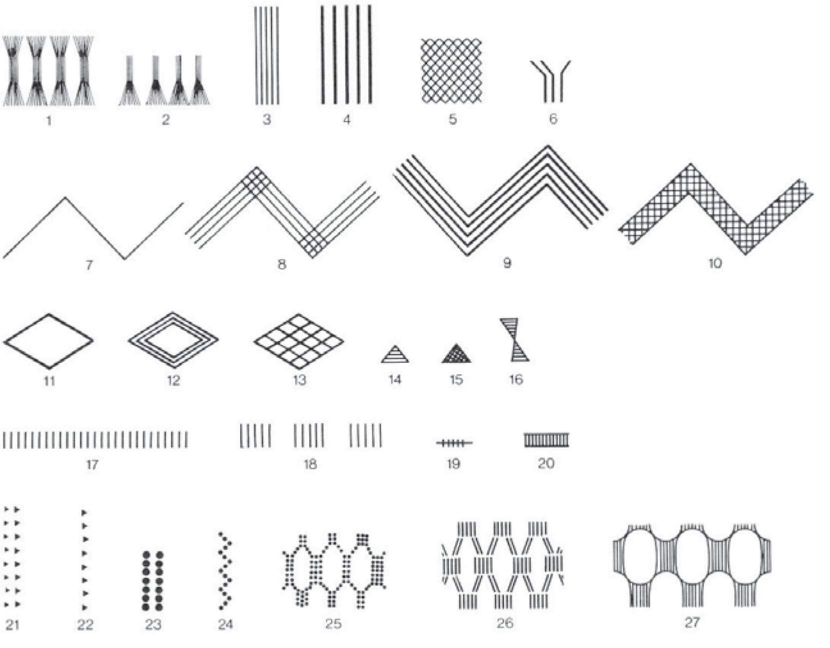

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10

Faith in the Countryside: Holy Wells and the Creation of Sacred Place in Medieval England

JEREMY HARTE

There is more to holy wells than water, just as there is more to the world than appears on our maps. We know that we live, not in the flat expanse shown on paper, but in a network built up by experience out of places, great and small. And the differences between these places are not always to be found in some measurable or objective quality, but in the penumbra of associations which they bear – 'ground', as Samuel Johnson says, 'which has been dignified by wisdom, bravery, or virtue. That man is little to be envied, whose patriotism would not gain force upon the plain of Marathon, or whose piety would not grow warmer among the ruins of Iona' (Johnson 1985, 124)'!

Johnson, always a pugnacious controversialist, intended this statement as a challenge and not a platitude. Here he was, a Protestant and a member of the Church of England, standing in the ruins of a great Catholic abbey; while his remarks were addressed, in the first place, to Boswell, whose religion was Kirk of Scotland, when he remembered that he had any. For Boswell, whose Romantic sensibilities were barely restrained by the solid sense of his travelling companion, Iona provided a warm glow of pious sensations, regardless of any religion that he might himself profess. But Johnson's feelings belonged to an older world, and we do not understand him unless we are aware of the deep fault-line in the Anglican tradition between a reformed theology and an unbroken tradition of churchmanship.

Even in 1628, with the last of the old monks scarcely in their grave, English antiquaries had learnt to cultivate the backward glance of nostalgia. 'A great admirer is he of the rust of old Monuments… Hee will goe you forty miles to see a Saints Well or a ruin'd Abbey' (Piggot 1989, 16). When it came to holy wells, Robert Plot spoke for the interests of many others when, in his *History of Oxfordshire*, he described them as waters 'accounted sovereign for the Eyes, and cure of inveterate Ulcers, after the ineffectual trials of the best Chirurgions. These for the most part, and perhaps not undeservedly, are commonly stiled Holy-wells, not only for the good they have formerly done, but for that they seem to be the immediate gift of God, and designed for the poor' (Plot 1677, 48). There was, for instance, St. Edmund's Well not far from where he wrote at Oxford, which 'was believed to be so effectual in curing divers distempers, and thereupon held of so great sanctity, that here they made vows, and brought their alms and offerings; a custom, though common enough in those days, yet always forbidden by our Anglican Councils… Against these superstitions so ordinary in those days, there are several prohibitions'.

Much the same discourse appears in White Kennett's *Parochial Antiquities* of 1695 and in Anthony Wood's unpublished notes (Kennett 1818, 1.191–2, Wood 1888–99, 1.323–9). Its scholarly apparatus was taken, complete with often-repeated citations of the Canons of Edgar and the *Homilies of Wulfstan*, from the learned Henry Hammond (1689, 658). Local examples may vary, but the story is always the same. Holy wells are natural springs, distinguished by healing powers of the water. This quality was abused in the early ages of Christianity, when the ignorant people made them into shrines, but such practices were gradually suppressed by the leaders of the Church. Thus the memory of holy wells could be perpetuated, and the honour of the old church saved, without any taint of papal superstition. As the antiquaries saw it, the wells really were special gifts of God, but only because they were natural medicinal waters, not as places of miracle. If they had been the objects of superstition, that was a natural fault in a people newly converted from paganism, and the work of the Reformation in suppressing it had been anticipated centuries before by 'our Anglican Councils'.

It is a temptingly consistent style of discourse, which is why, from that day to this, it has formed the basis of much thinking about holy wells and the way in which they come into being as sacred places. God plays a lesser role on holy well books than he once did, but otherwise their historical narrative still runs on the old lines – it supposes that the springs which became holy wells were naturally special in some way, and that the cult which grew up about them was a superstitious way of acknowledging that special power. In short, there was never any question of holy wells having been chosen as such. They had no history; they were recognised, not created.

It is surprising to find antiquaries taking such an attitude. Why exempt a whole class of monument from historical enquiry into its origins? But for the seventeenth century, holy wells had become something of an anomaly, viewed in a quite different light from other Christian monuments such as chapels, crosses and other landmarks. And this, by and large, is an attitude which still applies. 'There is a tendency on the part of many commentators to assume an early origin', says Richard Morris, 'and hence to tilt the whole subject towards a generalised expectation involving pagan beginnings' (1989, 89).

The search for pagan origins may be misguided, but it recognises an important feature of these sites. Wells, along with stones and trees, differ in one important respect from the churches, chapels and monasteries which preoccupy the religious historian. They are consecrated natural places, and as such they pose all the obstacles to inquiry that Richard Bradley has identified for their prehistoric counterparts. In fact the problems are greater for medieval sites, since these do not have the ritual deposits which distinguish their pagan equivalents. There is no Christian equivalent to the votive finds which Barry Cunliffe excavated at Bath. At Canterbury and Walsingham, the offerings of pilgrims were directed to the high altar, not to the comparatively obscure holy wells, and as for the modern custom of dropping coins and pins into wishing wells, this cannot be traced any further back than 1750 (Brand 1789, 2.54). That leaves nothing to identify a holy well but its name and the associated story; and when the story and the name are forgotten, so is the special status of the well as a sacred place.

But what exactly did holiness mean in the Middle Ages? It is not easy for the modern reader to enter that world, although many have tried. One of the first classic studies, Rudolf Otto's *The Idea of the Holy*, continues to influence thinking, not least through his idea of the *numen*. Certain places, says Otto, certain sensations or situations, arouse a primal sense of awe at the numinous, and this is the original experience which, through the ideas and ceremonies of religion, is transmuted into the holy (Otto 1928).

Surely, then, holy wells – along with rocks, caves, trees, pools, and other venerated natural places – would be the sites where holiness was first encountered, so to speak, in the raw. When it comes to tracing their origins, we can bypass the historian's tiresome questions about context and community: we only need to imagine a medieval peasant, going about his business in the woods and fields, as he stops to drink from a living spring. The sparkling water gushes in an unfailing stream from the mysterious depths of the earth. The dark recess of the rock is framed by glossy ferns and the bright primroses of spring. It is a beautiful, wonderful, magical place. 'Good heavens', says the peasant, 'this must be a holy well'.

As a myth of origin, this has great appeal; but it doesn't stand up well against the facts. We now know a great deal more about holy wells than Robert Plot did in 1677, and the picture which emerges is less romantic. There are some 1,200 holy wells in England, of which 600 can be probably and 300 definitely traced to the Middle Ages. In Wales 500 some are known, in Cornwall 100, and in mainland Scotland 350. The earliest sites are those mentioned in the first saints' lives, such as that of Samson of Dol, but there is no later date for holy wells, since they are being created all the time by modern piety – Christian or otherwise. In the Celtic zone they are typically dedicated to local saints, although a large number bear the names of regionally culted saints and of the Virgin. In England and the Lowlands of

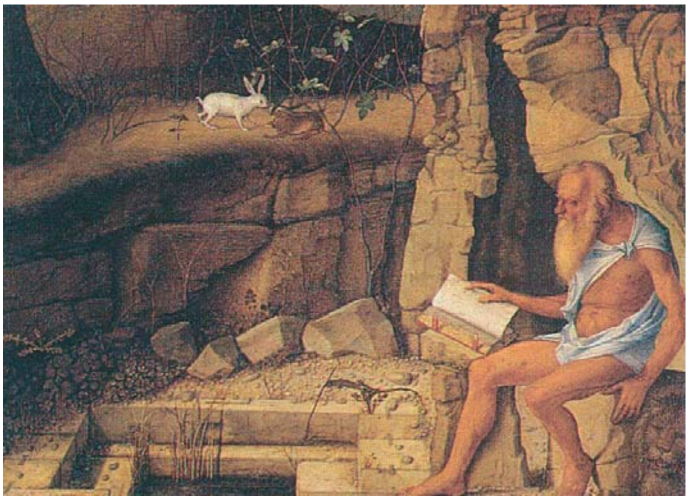

Figure 10.1. St. Jerome, the archetypal hermit, sitting beside a well. Detail from Giovanni Bellini, St. Jerome Reading*, c. 1480.*

Scotland there are sites called Holywell, along with others dedicated to local and regional saints, to the Virgin, and to the saints who are venerated universally through Christendom.

This is where doubts about the numinous quality of holy wells begin. In England, for instance, some 320 are dedicated either to the Virgin or to the saints of the universal Church. One can imagine a local saint taking on the mantle of some ancient nymph or fairy, but it is harder to see why St. Peter or St. John the Baptist would be appropriate to such a role. There are, in addition, wells dedicated to All Saints, to the Trinity and to the Holy Sepulchre, and these are clearly not founded on direct encounters with their dedicatees. About a third of the saints' wells are patronal – they share their dedication with a building. Typically this is a church or chapel, but there are patronal wells that take their saint from local monasteries, hospitals and chantry chapels. St. Clement's Well in London shared its dedication with one of the Inns of Court; St. Mary's in Heversham with the local landowner. 'St. Mary's Well, opposite the Blue Bell Inn, is spoken of just in the same sense as we should speak of the trough, opposite the Grammar School, as the County Council's trough. This well belongs to St. Mary's Abbey; all polluters will have to suffer penance, or, as we should now say, be prosecuted' (Curwen 1925, 48). Other landlord dedications can be found at Ovington, where the well is named after a nearby cell of St. Andrew's monastery at Hexham, and at Coley Hall and Ribchester, where two St. John's wells take their name from granges held by the Order of the Knights Hospitaller.

Faced with facts like these, it is hard to believe that holy wells become sacred places through some awestruck, magical encounter with the numinous. Otto's concept of the holy does not apply convincingly to these holy wells or, indeed, to most other medieval sacred places. Indeed, its theological grounding is weak. The concept of *sanctitas*, as derived by the Church from its earlier development in Torah, means an external attribute, not an intrinsic quality. Holy things and places look just like any other things and places; they are holy only because they have been set aside from common use for the service of God. 'The Rabbis outline the temple system in great detail… Sacred personnel, furniture, food, and vessels, along with a host of various items donated to the sanctuary, form a category of *qodesh*, "holy things"' (Harrington 2001, 40).

So it would be an anachronism if we imagined that ancient or medieval people developed a category of the holy out of their experiences of the numinous. That would be very much a Romantic reading; typically for Romanticism, it is grounded in the mystique of personal experience, which is where we as moderns expect to find our deepest identity. Other cultures, including medieval Christians, were more inclined to find the holy as it was dictated through the world of social relations: between God and man, between saints and followers, and even between institutional relations – among them that of landlord and tenant. No doubt some holy wells came about through personal, Song-of-Bernadette experiences, but most did not: and if we want to get back to the world in which these dedications were made, we need to accept that religion can also work through the kind of social authority which we are more inclined to see working in law or administration.

There is something Romantic, too, about our willingness to credit the first discovery of holiness in holy wells to pagans, or to the simple country folk. These people certainly existed, but their real presence in history has been overlaid by many centuries of fantasy in which both have acted as projections of others' ideas. The peasant/ pagan (for the purposes of rhetoric both are one) is always set at the opposite pole to contemporary life and values. They are ancient, where we are modern; credulous, where we are scientific; intuitive, where we are rational; natural, where we are civilised. As moderns, we may rejoice in the progress that has delivered us from all this, or we may call for the revitalising influence of its simple pieties, but in either case we are wrestling with a caricature, not with the real people of history. 'Popular religion' – the more polite term for what used to be called superstition – is seldom helpful in understanding medieval cult, and certainly not for holy wells.

Consider, for example, the well outside Evesham which began to work wonderful cures in the 1270s. Sick people drank the water or washed themselves in it, and were healed. The cult spread rapidly through the country; its miracles may have begun with people from the immediate neighbourhood, but we soon hear of pilgrims from Oxfordshire and Leicestershire, and bottles of the water were carried to London where they saved many a believer whose case had been given up by the doctors. And who was this wonder-working saint, whose powers had newly dazzled the world? Simon de Montfort, leader of the baronial party in the wars against Henry III and his son. Killed and mutilated in the Battle of Evesham, he had been carried off to a hasty funeral in 1265: but though his cause died with him, political debate remained fresh about the rights and wrongs of his taking up arms against the Crown. Indeed, the well on the battlefield had been created during the course of one such argument, nine years later, when a knight in the retinue of William Beauchamp called on Simon to prove that he had been a saint by providing them, there and then, with living waters. He seized a horse's shoulder-blade from the bones that littered the site, and began to dig. 'God works wonders!', says the chronicler. 'Out of that dusty hard ground there shot up a spring of sweet water, high as the hills' (Halliwell 1840, 67–8).

Not everyone was so impressed. Edward I did not like the cult's anti-royalist tendencies, and by 1280 he had succeeded in stamping it out (Valente 1995). Certainly the shrine was political, since to receive cures from a dead rebel was itself a kind of treason. But no-one would have invoked Earl Simon in their distress unless they had already discussed and supported his role in national affairs. Whatever dramas were being acted out at Evesham, they derived from keenly debated issues in contemporary politics, not from the superstition of local rustics.

Robert Plot was wrong. Holy wells are not natural healing springs which are put under the tutelage of saints; rather, they are sites associated with saints, and because of that association they are expected to deliver healing. The saint comes first, and their *Life* will offer an account of the sacred acts which transformed secular space into holy place, among them the miraculous creation of wells. Hagiographers may skip over the details of cures, but they are always careful to make the link between mythic past and living present. 'At the place where he was first buried, there rose a spring of sweet and clear water, which has run from that day to this. Taking its name from the saint, it is called St. Edward's Well. Many gifts of healing for the sick are shown here, to the praise of our Lord Jesus Christ' (Fell 1971, 8).

That was at Corfe Castle, where Edward, King and Martyr, fell stabbed from his horse in 979. It was another political death, though the development of events after the tenth century would give St. Edward's cult a more secure future than that of Earl Simon. His well was still pointed out to visitors eight centuries later, although it was Corfe's only site of memory for the saint, whose relics had been removed ('translated' in the language of the Church) to Shaftesbury thirty miles (48 km) away.

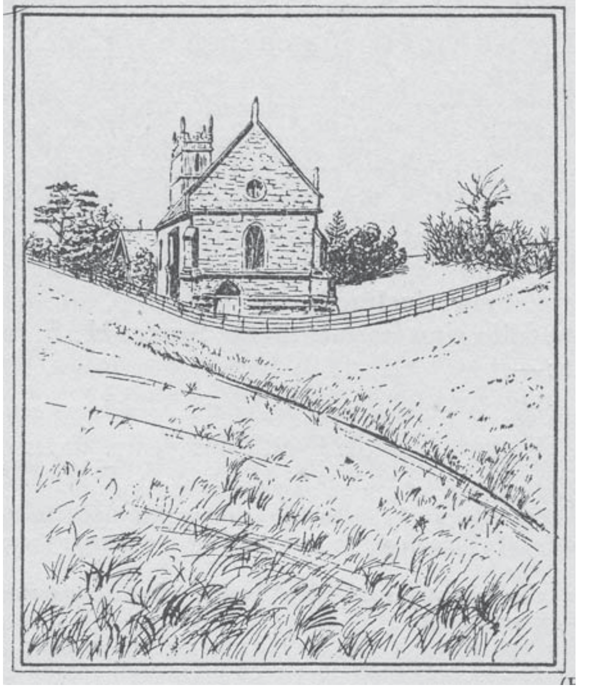

Figure 10.2. St. Kenelm's well and church at Clent in Worcestershire. Drawing by J. F. Tucker (1928).

Saints are powerful people, and they naturally take themselves to places where power can be exercised, to the great abbeys and populous cities: that is, they go in the person of their relics, which are carried for them by acquisitive kings and bishops. Many a small village has lost its saint to this centripetal urge, as Corfe Castle did, and only a holy well is left as witness to the saint's death and first burial among them. Clent lost Kenelm, another youthful saint-king, to Winchcombe; East Dereham lost Withburgh to Ely; Doulting lost Aldhelm to Malmesbury; Ryhall lost Tibba to Peterborough; Slepe (later St. Ives) lost Ive to Ramsey; even Holywell in Flintshire, later to become the greatest well-shrine of them all, would not have come into being if the relics of St. Winifred had not been translated to Shrewsbury in 1138.

These wells were not venerated for their own sake; they derived their sanctity from the saints whose names they bear. Flowing without cease from the hard ground, springs cannot be smashed or looted or broken, as the saint's own shrine can, and this is why cults were able to continue at wells for Earl Simon during the 1270s and for St. Winefred throughout the 17th century, whatever the hostility of the authorities. But in less contested times, the relics of the saints themselves would have a much more powerful draw for the faithful than their well, or indeed any other example of what Diana Webb (2000) calls 'secondary shrines'. The wells at Corfe, Clent and the rest only mattered because their saint was lost. Indeed, some of them may have been created physically through the process of translation itself. When Withburgh was taken to Ely 'there was left behind a clear spring welling up in the precinct, in the spot where the holy virgin had been given a shrine at the time of her first burial. Those who were sick used to drink from this, and were cured by the healing waters' (Goscelin 2004, 206). Here the hagiographer's language of divine wonder throws only the thinnest of cloaks over the facts of hydrology. East Dereham is in a part of Norfolk so low-lying that it would be a miracle to dig a hole here and *not* find water.

Most holy wells, however, are natural springs. They were created as sacred places, not through hard labour with pick and mattock, but through the conferring of a name and reputation on what had until then been an ordinary source of water. In this respect natural shrines are the polar opposite of monuments. A monument is a thing shaped and elaborated by art to elicit the wonder of all who pass it by; imperiously it demands from them a repetition of the story for which it was raised. 'My name is Ozymandias, king of kings. Look on my works, ye mighty, and despair!'. But rocks and springs and trees have no such hold on the viewer's gaze. Here, the learning process runs in quite the reverse direction. First we must hear the story, and only then do we search out the place to which it belongs. The landmark is, in itself, insignificant, but it matters because it is (in Jennifer Westwood's [1985] felicitous phrase) the story-peg which holds an entire cycle of narrative down to its own native spot of earth.

Monuments can last for millennia, but it only takes a generation, if the perpetuation of its story is left to the frailty of oral tradition, for a holy well to slip back into the landscape from which it emerged. Most wells, it is true, have received some human fashioning. The spring may flow into a flat or sunken basin, or be penned in a raised cistern; its waters may run from an arch or alcove set in the rocky slope, and, especially in the West Midlands and the South-West, there may be a conduit-house, like a stone dog-kennel, protecting the water from falling leaves and cattle's feet. But none of these constructions are specific to holy wells. They can be found on springs of all kinds, sacred and secular, and serve only to remind us that a holy well, while it could act on the right occasion as a focus of cult, still kept its more quotidian duties as a water supply. There is no sense, in the English tradition, that holy wells were sacrosanct, or that the use of their water was tabooed in any way for other purposes.

And often a holy well has continued to flow with no outward signs of its existence at all. Our sympathies go out to members of the Worcestershire Naturalists' Club, searching for the holy well at Ombersley, c. 1897. 'An effort was made to find it, which would have been unsuccessful but for a local guide, who led most of the party to the spot, which is so concealed amidst thickets of brambles and weeds, that it was evident its fame had passed away, though the guide stated that within forty years it had been a place of resort. An old stone, concealed amongst brambles, mosses, and weeds, was with some difficulty got at, which proved that some erection, or venerated stone had been placed here' (Lees 1847–96, 156).

The struggle to reach the holy place, the discomforts followed by mounting triumph, even those nagging uncertainties at the moment of discovery – that, just *that*, is what we came all this way to see – what is this, but a modern rendition of pilgrimage, set in a more secular key? The pilgrim route may pass through the city to its cathedral, through the cathedral to its gilded and monumental shrine, but at the heart of all this magnificence there is nothing to be seen but a few broken old bones: which might be anybody's bones, if it were not for the spiritually charged story that they bear, a story so powerful that it was able to command bright gold and soaring arches to cluster round it. Relics are humble things to look at, but in this humility rests their transformative power. The same paradox is found in a lesser measure at those secondary relics, the holy wells.

The medieval love of paradox finds its fulfilment in the hermit saint, who is both humble and powerful – powerful, of course, just because he is so humble. Profoundly true at the mythic level, this imagery placed some formidable obstacles in the path of real-life hermits. After all, most societies have arrived at some kind of equilibrium between the different powers that dominate their world: national and local elites, productive and dominant classes, sacred and secular authority. The arrival of a holy man, with seemingly unlimited access to a fund of otherworldly power, was bound to disrupt such delicate balances. The *Life* of a hermit-saint commonly shows its hero being shunted from pillar to post before he can find a place where his virtues are at home.

St. Robert of Knaresborough, for instance, began his career at the Cistercian abbey of Newminster. He first began to live the hermit's life in a rock-hewn shelter at Knaresborough, before moving to Rudfarlington, Spofforth and Hedley; his *Life* details the supportive and hostile treatment that he received from different landowners at these places (*Metrical Life* 1953, 44–56). At last he settled back in his old cave. The situation is wild, but not isolated – it is a walk of ten minutes or so from Knaresborough town centre. A hermit must live, and whatever it may say in the *topoi* of hagiography, a diet of roots and herbs won't sustain life through Yorkshire winters. St. Robert depended, no doubt, on the food brought by people from the town as gifts, or rather as exchange for his advice, mediation and other spiritual work. He also had a plot of land worked by four servants, who shared to some extent in the holiness of their master; the defining line between a large hermitage and a small monastery is not easily drawn. The lands of the community extended for some 40 acres, and stretched as far as St. Robert's holy well, which appears as the source of the Halikeld Sike in 1257 (Purvis 1927–9, 391–2).

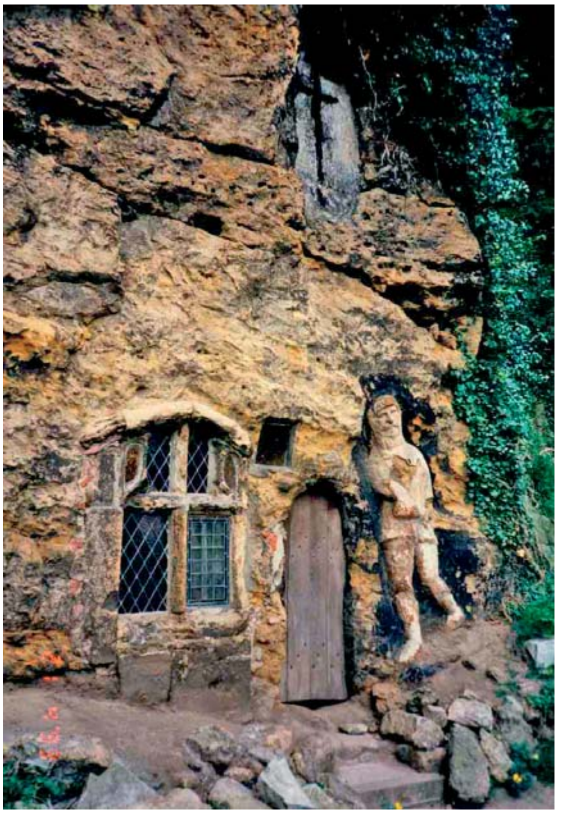

Figure 10.3. The Chapel of Our Lady of the Rock near St. Robert's cave in Knaresborough. Photograph courtesy of Janet Bord.

St. Robert was given his lands by King John. There were stories about the meeting of the saint and king, told and retold at the well and cave right down to the 17th century, for the continuity of respect for the saint was not broken by the Reformation (Lankester 1846, 140–1). Visitors would hear how King John sent a messenger one day to fetch the saint. Robert was at his prayers, and wouldn't go. The king, not used to contradiction, sent the servant back with a more peremptory demand. Robert only broke off an ear of corn, and gave it to the messenger. 'My master made that', he said. 'Take it back to your master, and tell him, when he can make another one like it, then I will come first to his call'. King John accepted defeat, and gave Robert an estate in memory of the incident.

It is an instructive story. The saint calls on nature to refute the pretensions of a worldly king, but nature in itself has no intrinsic value for him; it serves as a sign, a way of pointing beyond the created world to the superior reality of the Creator. Several of St. Robert's miracles involve a contrast between homely things and those of the wild. Typical is the story of the stags which came from the woods to draw his plough when he complained that the forest game were treading down his corn, and a sneering lord gave him license to impound the offenders.

Perhaps we should see the development of the Halikeld in the same way. At first it is an ordinary spring in a lonely spot by the river. St. Robert draws his water from it, and it acquires a certain air of holiness, though this remains noncommittal since the spiritual status of the hermit is still undecided. Once Robert is dead, however, he can be accepted without demur as a saint, and it becomes St. Robert's well. No longer supplying water to the saint, it now provides the water of the saint; its function has become mnemonic, not domestic. And so it remains until Catholic devotion mingles with, and is later superseded by, mere sight-seeing. At last, in 1791 the mundane asserted itself once more when 'Bath rooms were erected by subscription. It is valuable as a Cold Bath, but has of late years been very much neglected' (Calvert 1844, 104). And it is as a Cold Bath, not a holy well, that it makes its appearance on the first large-scale edition of the Ordnance Survey.

But can we be certain that the holy well owes its reputation to St. Robert? Might he not have gravitated towards some earlier, half-forgotten shrine? There is good philological evidence to show that this is not the case. The well is first recorded in 1257, but given the association with St. Robert, it must have gained its reputation before his death in 1218. On its first appearance, it is called *halikeld*, not *holywell*. *Hali*- is simply the Old English *halig*, 'holy', with typical northern retention of the vowel *a*. The ending -*keld* is from Old Norse *kelda*, 'spring', but the name was not coined by a Norse-speaker; if that had been the case, they would have used their own word for 'holy'. Instead, it comes from the era when the Scandinavian colonists in Yorkshire had lost their independence and were assimilating to English language and culture (Townend 2002). People in such a situation often carry over a few words from their mother-language, and *kelda* for 'well' was evidently one of them . But there was no incentive for Norse-speakers to become English until their loss of independence in the 11th century; the earliest form of *halikeld* comes from Melmerby, where it appears as a wapentake name in 1066. St. Robert was born in 1160. So the period in which *halikeld* names were being coined corresponds with his own life and times, a fit so close that it is hard to see the well taking its name from anyone but him.

The Halikeld names – there are seven of them, all from Yorkshire – offer a clue to an otherwise intractable problem of chronology. Springs which are just called 'holy well', without any qualifying dedication to the Virgin or the saints, are very common in England, with some 340 examples definitely or probably attributable to the Middle Ages. They are found most frequently in a belt of land centred on the Midlands and extending south and west to the Welsh border and West Country, northwards to the West Riding, and southwards to the Home Counties. The earliest examples are in Anglo-Saxon

Figure 10.4. Robert of Knaresborough ploughs with stags. Detail from stained glass window, c. 1482, from St. Matthew's church, Morley; originally from Darley Abbey.

charters, with one reference of c.800 at Withington in Gloucestershire, and another of 854 at Ruishton in Somerset (Smith 1964–5, 1.190; Grundy 1935, 23). There is no doubt that many of these names are early, probably much earlier than the documents in which they are recorded. They are embedded in local toponymy, as the saints' wells are not; rivers, streets, fields and people take their names from the holy well, and in 80 cases Holywell has been adopted as the name of a farm, hamlet or village. 6 of these instances are recorded in Domesday Book, which is usually a sign of early settlement. So there is a case for Holywell being a more archaic type of name than St. X's well.

But set against this, there are the Halikeld names, which on linguistic grounds cannot be earlier than the 11th century. And there are other regions where the history of language contact argues for a later origin of the names. Holywell is found as a name in Monmouthshire, Pembrokeshire, and of course at the famous shrine in Flintshire, where it is first recorded in 1093. That is about as early as we can expect for an English-language place-name in Wales. It cannot be a translation, for St. Winifred's Well is Ffynnon Wenfrewi in Welsh, and in fact there is no equivalent to Holywell in the other languages of the Isles – not in Welsh, nor in Cornish, Irish, Manx or Gaelic. All these cultures name their wells after saints, and have done so since an early period.

But although the Celtic countries do not employ Holywell as a name, their literature features holy wells much more often than the writings in Old English. Manchán of Liath, in the 10th-century poem, writes:

> 'I wish, O son of the Living God, ancient eternal King, for a secret hut in the wilderness that it may be my dwelling.
> A very blue shallow well to be beside it, a clear pool for washing away sins through the grace of the Holy Ghost.
> A beautiful wood close by around it on every side, for the nurture of many-voiced birds, to shelter and hide it' (Jackson 1951, 280).

Here, as at Knaresborough, we have a hermit defining himself through links with nature. The song of the blackbird echoes through these poems, and still, after the passage of ten centuries, they come to us with a freshness and life which is absent in contemporary Latin writing. But a purely literary response to these wonderful verses will not understand them in their cultural and historical setting. Liath is not Grasmere; Manchán does not value nature, in Romantic style, for its own sake, but as the scene of renunciation. He has fled from the world to God, and the wooded glade pleases him most when he remembers how far it is from the courts of kings. If the blue water of the shallow well is treasured, it is not just for its own freshness, but because it does not taste of red wine.

Though the landscape of the forest hermitage, with its hazel trees and watercress, is native, its inspiration is not. Like all Christian poetry, it finds its source in the Psalms. It was from these that the monastic poets learnt to combine their themes of repentance and longing for heaven with sharply observed natural detail. Here they found the whole order of creation celebrated as a sign and fruit of God:

> 'He sendeth the springs into the valleys, which run among the hills.
> They give drink to every beast of the field: the wild asses quench their thirst.
> By them shall the fowls of the heaven have their habitation, which sing among the branches.
> He watereth the hills from his chambers: the earth is satisfied with the fruit of thy works' (Ps. 104, 10–13).

These verses were not just read; they were absorbed into spiritual practice, until they flowed through the mind as a deep, silent river below thought. It was the common practice to abandon sleep and say the whole Psalter through once a night. We hear of solitaries who, with the preposterous heroism of Insular sanctity, achieved this feat by standing upright in a cold spring all night long, with nothing but their chanting heads above the level of the water. The story is told of Gildas, Illtud and Gwynllyw on the Welsh side of the border (Doble 1970, 12), and of Godric and Wulfric among the English (Clay 1914, 119). It is a common trope in Irish hagiography, and the practice may have been brought to Malmesbury by its founder Maildub. If so, it was transmitted to his successor St. Aldhelm, who 'got his rebellious body under control by immersing himself up to the shoulders in a spring which was near the monastery. Impervious to the winter's icy cold or the summer's mists arising from the marshes, he would pass the nights there uninterruptedly. Only when he had sung through and got to the end of the whole Psalter did he bring his labours to an end'. William of Malmesbury, who preserved the tradition, was familiar with the well, which stood 'in a dell in the monastery grounds. Its waters bubble up gently. It is a delight to look upon and its water has a pleasant taste' (William of Malmesbury 2002, 243–4).

St. Aldhelm was later made Bishop of Wessex, after which he left Malmesbury and presumably gave up his nocturnal austerities. But the spring flowed on, and when he died and was buried at his old abbey, it formed a valuable secondary focus of the cult. In a situation like this, we can perhaps trace the history behind the English habit of calling their springs Holywell. Sainthood was always contested. Since it could not be conferred until after death, it required active support from others – from a religious community, a lineage of landowners, or an impresario of pilgrimage; anyone, in short, who cared enough about their local holy man to turn pious memory into organised cult. In the churches of Wales, Cornwall and the Gaeltacht, where there was little central control over the actions of individual churches, saints could be created wholesale, and the wells associated with them bear their own names. In England, especially in the heart of the English Midlands, the minster churches were kept on a tighter rein, and sainthood had to satisfy more stringent tests. In the sites called Holywell, we may be looking at springs which had been linked with hermits and other holy men; springs which were thought worthy of perpetuating the memory of a saint but which were described in neutral terms pending a canonisation which, in the end, never came.

This interpretation makes sense, too, of the chronology of Holywell names. They may well have been at their most numerous in the eighth century, when the landscape of Christian England was being created and opportunities for sainthood were at their best. But the conditions which generated them never quite went away. We have seen that a number of these names were created in the twelfth century, and there is evidence for their coinage still later than that. In 1385, Bishop Erghum of Salisbury suppressed the cult of a well at Bisham which was being attended by crowds from Wycombe and Great Marlow. People spoke excitedly of the miracle of a bird which nested in a bush over the well and, made tame by the holiness of the place, did not fly away even when they handled it and placed offerings in its nest. They also told how a man had recovered his sight by bathing his eyes there; but the Bishop brusquely attributed the cure to cold water, and ordered the Rural Dean to fill in the well, tear up the tree, and pronounce greater excommunication against those who visited there (*Victoria CH Berks.* 1906–27, 2.14). This site can be identified with the field called *Holywellfette* in 1534, on the left at the foot of Bisham hill, coming from Maidenhead (Gelling 1973–6, 1.61; Compton 1979, 33–4). By the 14th century, the creation of local cults and local saints was evidently a thing of the past, but at least the enthusiasm of the villagers at Bisham was following the old pattern.

Sponsorship from a local holy man was not essential to the rise of a cult; he could be borrowed, if necessary. Reginald of Durham, writing his *Life of St. Oswald* in 1165 (Simeon 1882, 1.355–8), tells several stories about that saint which are not to be found in the more authoritative narrative of Bede. The *History of the English Church and People* records the death of the saint at a battle in Maserfeld, wherever that was – Bede does not say – but Reginald has no doubts on the matter. He locates the battle at Oswestry, and explains that after Oswald's right arm and head were cut off, a great bird like a raven flew away with the arm to its nest in a withered ash tree. The tree grew green again, and when the remains dropped out from this tree 'the arm, with its consecrated right hand, fell on the bare hard rock. All at once, through God's wonderful power, from the spot where the holy arm touched the ground in its fall, there gushed out a clear unfailing spring… It so happened that Oswin the king, prompted by a message from God, found his way to this spring… He took the arm and hand out of its waters, and as the vision had commanded, he bore away the most holy head with its arms and hands. On this spot, right up until today, miracles are worked through the power of God and the merits of St. Oswald. Here sick people receive the gift of health; the mad who come here are freed of their demons; and through drinking the consecrated waters, many kinds of illness are redeemed'.

Oswestry does indeed mean 'Oswald's tree', but there was more than one Oswald in Anglo-Saxon England, and there is no reason to think that this instance belongs to the saint of that name. Place-names in the form So-and-so's Tree are not uncommon, and always refer to landownership (Gelling 1990–2006, 1.229–31). It seems more likely that people in this part of Shropshire, long after the original giver of the name had been forgotten, wanted to link it with the growing cult of St. Oswald, probably after his relics had been translated to Gloucester in 909. Where there is a tree, then in popular judgement there is likely to be a well and a bird, as at Bisham. Local tradition would provide the nucleus of the story which Reginald then grafts onto the Bedan narrative.

These images are act as a fresh, vernacular counterpart to the urban dignities of Oswald's shrine at Gloucester Cathedral. The trio raven-ash-well belongs to the same outdoor world as the Irish poems, with their well, hazel and blackbird. But as this parallelism shows, folk imagery does not necessarily imply primitiveness of thought. We are all too liable to brush it off into the category of popular religion, or even more dismissively, of pagan survival. As it happens, the linkage of bird, tree and well can be found in texts with an unimpeachable pedigree in high culture, including Lactantius' *De Ave Phoenice*, known in an Old English translation from the 9th century.

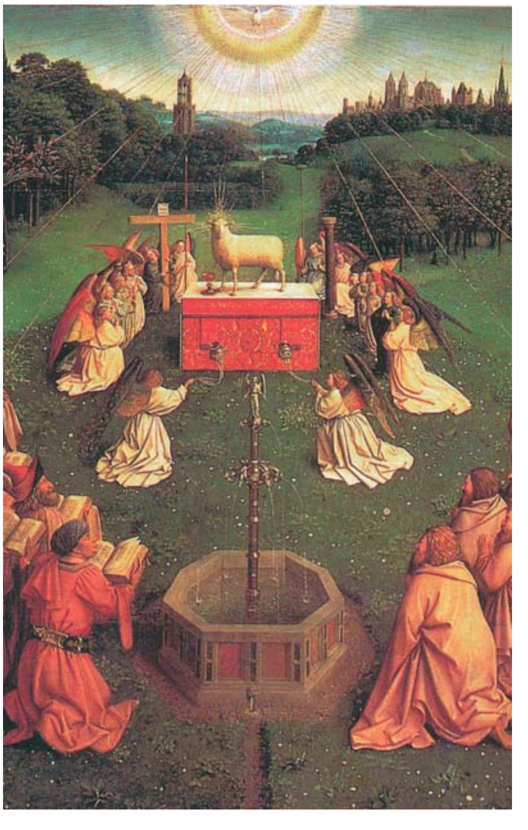

Figure 10.5. The sacramental well, with its effusion of water reflecting that of the blood of the Lamb. Detail from Jan van Eyck, Adoration of the Lamb*, 1432.*

Reginald presents the local belief with some subtlety. He says, not just that illnesses were cured by the well, but that they were redeemed by its holy water (in the original, *potu sacrati laticis multimoda infirmitas expiatur*). This is theological water: it saves as well as cures. And Reginald also makes great play on the moment of miracle when the falling relic touches the bare hard rock, and makes it yield a gentle perennial spring. In that moment of healing epiphany, water comes from rock as life comes from death. To a mind which was always humming with the music of the Psalms, this would recall Psalm 78: 20, 'Behold, he smote the rock, that the waters gushed out, and the streams overflowed', and beyond that, the narrative of Exodus 17: 6, and beyond *that*, Paul's exegesis in 1 Corinthians 10: 4, 'Did all drink the same spiritual drink: for they drank of that spiritual Rock that followed them: and that Rock was Christ'.

The type of Moses is often present in the minds of hagiographers when they tell how wells first came to be. The earliest account of a holy well in England, in the anonymous *Life of St. Cuthbert* c. 700 (Colgrave 1940, 98–9), uses this trope. St. Cuthbert, finding a need for water in his rocky hermitage island, encourages his brethren to 'pray to God for help and do you dig this rocky ground in the middle of the floor of my dwelling, because God is able from the stony rock to bring forth water for him who asks'. And lo! they dig and it is revealed. The element of miracle here, as in other stories of St. Cuthbert, is kept deliberately low. Wonders, not far from fantasy, abound in contemporary Celtic hagiography, and the author clearly knows about this and wants nothing to do with it. His purpose is to make events into signs, to move easily from the mundane hacking into hard ground to the slow discovery of spiritual refreshment.

Like Moses, the saint was a leader, a teacher, a provider and a judge. He brought communities together, and gave them a sense of purpose as God's people. Clad in the armour of faith, he fought as their champion against the black ranks of Hell; in that respect, at least, Dr. Johnson's comparison of Iona with the battlefield of Marathon would have met with murmurs of assent from a medieval audience. For Christianity is a profoundly personal religion. A faith based on the Incarnation, it will find itself, sooner or later, returning to the human gaze. This has social implications which find their repercussions in cult and worship. All religions slip, at some time or another, into a veneration of holy men, with whispered stories of their marvels and vigils at their tombs: but only Christianity has made the communion of saints an integral part of its liturgy, teaching and landscape.

The transformation of secular space into Christian place is superficially a consecration of things, but at heart it is a commemoration of people. We, as moderns, are not always comfortable with this – holy men have an embarrassing habit of making moral demands, which sacred landscapes do not – but if we want to understand what holy wells meant in the centuries when they were created, we could do worse than begin with the saints whose names they bear.

Bibliography

BRAND, J. 1789
The History and Antiquities of Newcastle upon Tyne. London: B. White.
CALVERT, M.1844
The History of Knaresbrough. Knaresborough: W. Parr.
CLAY, R. M. 1914
The Hermits and Anchorites of England. London: Methuen.
COLGRAVE, B. 1940
Two Lives of Saint Cuthbert: A Life by an Anonymous Monk of Lindisfarne and Bede's Prose Life. Cambridge University Press.
COMPTON, P. 1979
The Story of Bisham Abbey. Bath: Thames Valley Press.
CURWEN, J. F. 1925
'Heversham Church'. *Tr. of the Cumberland & Westmorland Antiq. & Arch. Soc.* 2nd ser 25, 28–79.
DOBLE, G. H. 1970
The Saints of Cornwall V: Saints of Mid-Cornwall. Dean & Chapter of Truro.
FELL, C. 1971
Edward King and Martyr. University of Leeds School of English.
GELLING, M. 1973–6
The Place-Names of Berkshire. English Place-Name Society 49–51.

GELLING, M. 1990–2006 (and ongoing)
The Place-Names of Shropshire. English Place-Name Society 62/3, 70, 76, 80, 82.
GOSCELIN OF SAINT-BERTIN, 2004
The Hagiography of the Female Saints of Ely. ed, tr Rosalind C. Love. Oxford: Clarendon.
GRUNDY, G. B. 1935
The Saxon Charters and Field Names of Somerset. Somerset Arch. & Nat. Hist. Soc.
HALLIWELL, J. O.1840 (ed.)
The Chronicle of William de Rishanger of the Barons' Wars and the Miracles of Simon de Montfort. Camden Soc. 1st series 15.
HAMMOND, H. 1689
A Paraphrase and Annotation upon All Books of the New Testament. London: Margaret Royston.
HARRINGTON, H. K. 2001
Holiness: Rabbinic Judaism and the Greco-Roman World. London: Routledge.
JACKSON, K. 1951
A Celtic Miscellany. London: Routledge & Kegan Paul.
JOHNSON, S. 1985
A Journey to the Western Islands of Scotland. Oxford: Clarendon.
KENNETT, W. 1818
Parochial Antiquities Attempted in the History of Ambrosden, Burcester, and Other Adjacent Parts. Oxford: Clarendon.
LANKESTER, E. 1846 (ed.)
Memorials of John Ray, Ray Soc.
LEES, E. 1847–96
'Holt, Ombersley, Salwarpe and Droitwich', *Tr. of the Worcestershire Nat. Hist. Club* 1, 156–68.
THE METRICAL LIFE OF ST. ROBERT OF KNARESBOROUGH 1953. (ed.)
Joyce Bazire. Early English Texts Society 1st series 228.
MORRIS, R. 1989
Churches in the Landscape. London: J.M. Dent.
OTTO, R. 1928
The Idea of the Holy. tr J.W. Harvey, Oxford University Press.
PIGGOTT, S. 1989
Ancient Britons and the Antiquarian Imagination: Ideas from the Renaissance to the Regency. London: Thames & Hudson.
PLOT, R. 1677
The Natural History of Oxford-Shire. Oxford: At the Theater.
PURVIS, J. S. 1927–9
'Seventeenth-century copies of early Yorkshire charters'. *Yorkshire Arch. J.* 29, 390–3.
SIMEON OF DURHAM 1882
Opera Omnia. ed Thomas Arnold, Rolls Series 75.
SMITH, A. H. 1964–5
The Place-Names of Gloucestershire English Place-Name Society 38–41.
TOWNEND, M. 2002
Language and History in Viking Age England: Linguistic Relations Between Speakers of Old Norse and Old English. Turnhout: Brepols.

VALENTE, C. 1995
'Simon de Montfort, Earl of Leicester, and the utility of sanctity in thirteenth-century England'. *J. of Medieval History* 21, 27–49.
THE VICTORIA COUNTY HISTORY OF BERKSHIRE 1906–27
ed. William Page et al., Institute of Historical Research.
WEBB, D. 2000
Pilgrimage in Medieval England. London: Hambledon & London.
WESTWOOD, J. 1985
Albion: A Guide to Legendary Britain. London: Granada.
WILLIAM OF MALMESBURY 2002
The Deeds of the Bishops of England. tr. David Preest, Woodbridge: Boydell.
WOOD, A. 1889–99
Survey of the Antiquities of the City of Oxford, ed. Andrew Clark, Oxford Historical Soc. 15, 17 & 37.

General references and statistics are taken from the author's *English Holy Wells: A Sourcebook* (Wymeswold: Heart of Albion, 2008).

11

Place and Space in the Late Bronze Age and Early Iron Age of Central and Eastern Slovenia

PHIL MASON

Introduction

This chapter examines the creation of place in the extensive lowland settlements and approaches to space in the wider landscape of late Bronze Age (Br D – Ha A) eastern and central Slovenia. It goes on to explore the changes in the final part of the late Bronze Age (Ha B) that are expressed in a reorganisation of place and space, which led in the rise of hillfort centres in the early Iron Age. These changes arose from and incorporated the late Bronze Age concepts of place and space.

In the last two decades recent field survey and excavation in advance of large scale infrastructure and commercial projects in central and eastern Slovenia has produced a considerable amount of data, which permits a broader examination of late Bronze Age attitudes to space and the creation of place within the landscape. It is also possible to combine this evidence with that gained through research projects and rescue excavation to examine changing attitudes to space and place towards the end of the late Bronze Age, which led to the creation of the characteristic hillfort landscape of the early Iron Age.

The area under consideration, Central and eastern Slovenia, corresponds to the modern regions of Štajerska (Lower Styria) Dolenjska (Lower Carniola) and Bela krajina (White Carniola). It is a landscape of broad river valleys and lowland basins, often sharply divided from one another by hilly and, in the south, often karsitified interfluves. The karst interfluves also contain discrete upland basins, which are visually dominated by the surrounding plateau. The distant Alps are visible on a clear day throughout Štajerska, Dolenjska and from the crest of the Gorjanci hills. The situation is somewhat different in Bela krajina, the only part of Slovenia, where the Alps are not visible. Here the western horizon is dominated by the high Dinaric hills of Kočevski rog, whilst the southern horizon is dominated by the summits of Risnjak and Klek in the Gorski Kotar mountains, which rise above the Gulf of Kvarner.

The available data indicates that the last part of the 2nd millennium BC saw the replacement of the previous early and middle Bronze Age pattern of scattered relatively small scale, often ephemeral settlements by one of large, extensive, undefended settlements on river terraces in the valleys The appearance of these settlements coincides a distinct phase of hoard and single find deposition, but there is relatively little evidence for formal cemeteries.

The Beginning of the late Bronze Age

The earliest lowland settlement sites are the terrace edge, stream side sites of Rabelčja vas in the Drava valley, Šiman near Gotovlje in the Savinja valley and Dolnji Lakoš in the Mura, which date to the end of the middle Bronze Age (Ba B/C – 1500 – 1300 BC) and the beginning of the late Bronze Age (Ba D – 1400–1200 BC) (Teržan 1999, 102) (*Figure 11.1*). These have been joined by recently discovered settlements in similar locations at Pince in the Mura valley (Kerman, *pers. comm.*), Ržišča (Mason – Bricelj 2006, 41–42) and Križevska vas (Mason – Olić 2007b) in Bela krajina, as well as from Podsmreka near Višnja gora 2 in Dolenjska (Švoljšak 2005, 229–230) and Obrežje in the Sava valley

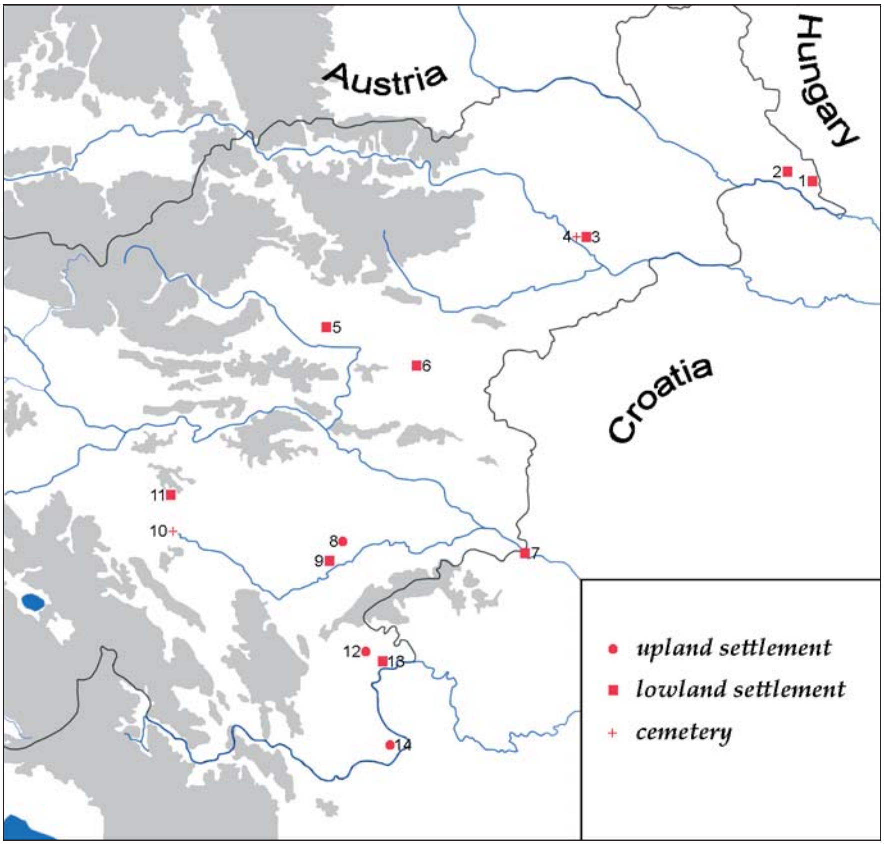

Figure 11.1. Distribution of upland settlements and lowland settlements at the end of the middle and beginning of the late Bronze Age in Central and Eastern Slovenia (After Dular 1999, 82, figure 1, with additions from Dular et al. 2002, 215, figure 47).

1. Dolnji Lakoš; 2. Pince; 3. Rabelčja vas – settlement; 4. Rabelčja vas – cemetery; 5. Šiman pri Gotovljah; 6. Črnolica; 7. Obrežje – settlement; 8. Vešče; 9. Mačkovec; 10. Krka; 11. Podsmreka pri Višnji gori 2; 12. Hrast pri Jugorju – Vrti; 13. Križevska vas; 14. Preloka – Sv. Trojica

(Mason 2006a, 131) (*Figure 11.1*). Small unenclosed settlements of this period might also be found in locations that were somewhat unusual in later periods, within or on the edges of swallow holes on the margins of river valleys, as at Mačkovec in the Krka valley. Radiocarbon dates are rare, but those available for Ržišča (Beta- 229155: Cal. BC 1360 to 1350 (Cal. BP 3310 to 3300) and, Cal. BC 1310 to 1050 (Cal. BP 3260 to 3000)) suggest a date in the Br D period.

These settlements covered relatively small areas, Oloris being under 1 ha, whilst the excavated part of Šiman is a mere 3.100 m^2. They are thus much smaller than the later Ha A sites and seem to have been undefended. Only one settlement site, Oloris, may be enclosed by a ditch, although is possible that this is s a pre-existing stream channel, containing worked wood and brushwood (Teržan 1999, 102). The limited excavated area at Mačkovec and at Obrežje (Mason 2006a, 131) suggest that there was a relatively extensive organisation of space within the settlements, the repeated reuse of the same area in the successive rebuilding of houses suggesting the development of locales within settlements. Thus the definition of space on these sites is foreshadows that on many of the later lowland settlements in the Ha A period. On the other hand the presence of cremation graves within the Podsmreka settlement suggests that formal mortuary areas distinct from settlement were not yet fully defined.

The known settlements sites in upland areas are apparently unenclosed and might also be located within or on the edges of swallow holes, as at Hrast in Bela krajina (Mason – Pintér 2006, 59). Some occupied hilltop locations, as at Preloka in Bela krajina (Mason 2006b, 157–158), whilst others are located on ridges, such as at Vešče in Dolenjska (Mason – Olič 2007a) (*Figure 11.1*) (*Plate 11.1*). They are all located on known or potential lines of communication. The internal structure of these settlements is poorly known, but it is possible to detect the presence of rectangular post-framed houses and storage/ rubbish pits, as well as discrete areas of midden deposition, although not on the same sites. The spatial relationship between the deposition of domestic debris and habitation zones is thus unknown on these upland sites.

Plate 11.1. An aerial view of the location of the settlement at Vešče near Stravberk looking towards the early Iron Age hillfort of Veliki Vinji vrh (Photo: Marko Pršina, Archive ZVKDS, OE Novo mesto).

Late Bronze Age lowland settlements and the creation of place in the landscape

The majority of the late Bronze Age lowland settlement complexes are known to date to the Ha A period (1250 BC – 1000BC), but were still occupied in the Ha B period (1000 BC to 800 BC) (Teržan 1999, 102–104, 107). They were extensive in nature and were located on river terraces beside tributary streams of the major rivers. Most have been excavated prior to motorway construction. Thus, the available intrasite spatial data is linear in nature, providing a 25m to 50m wide excavated transect through sites such as Velike njive (2.04 ha) in the Sava river valley, Rogoza (3.00 ha) and Slivnica (0.9 ha) in the Drava valley and Dragomelj (1.25 ha) in the Ljubljana basin (Djurić 2003b, 273; Strmčnik Gulič 1999, 117, 122; 2005a, 53–54; 2005b, 240–241; Turk 2000, 110; 2003, 130–132) (*Figure 11.2*). The full extent of these settlement complexes has not been fully defined, but they are known to have extended well outside the excavated area within the motorway route. At best the excavations have revealed the limits of the settlements in two directions as is the case at Rogoza and Velike njive. The true extent of such settlements can only be appreciated by examining field survey data from Griblje in the Kolpa valley, where late Bronze Age settlement activity extends over an area of approximately 8 ha (Mason

2001, 24). They are thus considerably larger than later late Bronze Age upland sites and the majority of the early Iron Age hillforts.

Smaller settlement sites or activity areas are also present in the lowland areas. These are particularly noteworthy in the lowland karst of Bela krajina, where potentially arable exploitation of karst swallow holes took place at Čardak in the Dobličica valley in Bela krajina (Mason *et al.* 2006a, 23–24; 2006b, 24–26) (*Figure 11.2*). Pits and scattered posthole indicate activity throughout the Ha A and Ha B (Čardak

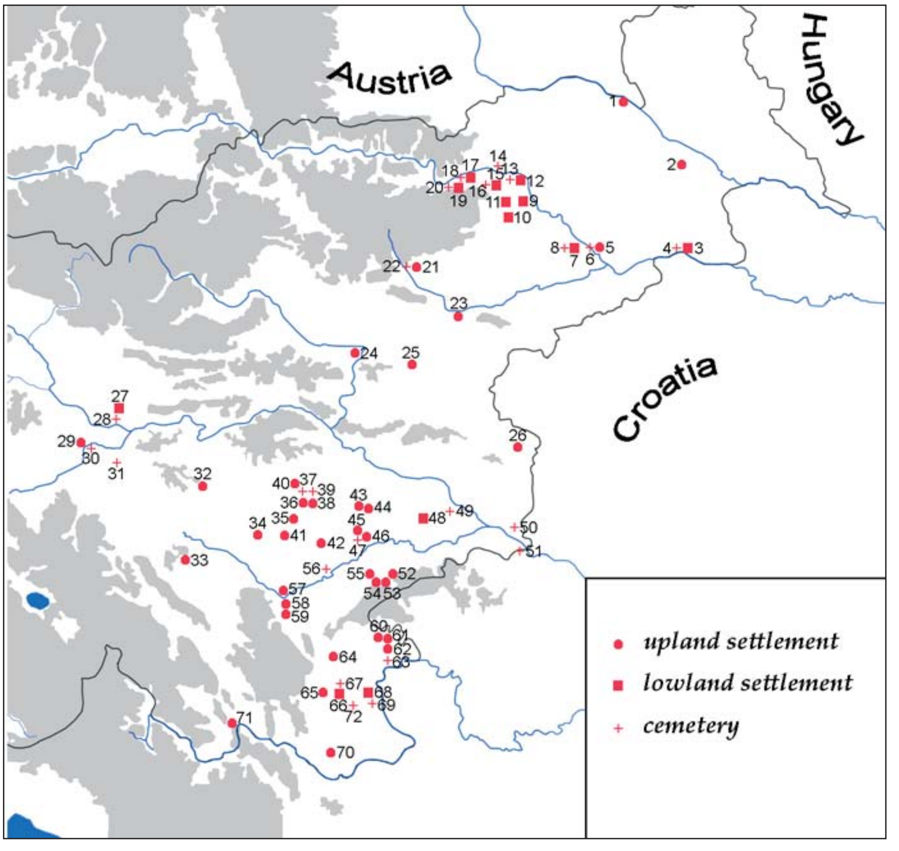

Figure 11.2. Distribution of upland settlements, extensive lowland settlements and flat cremation cemeteries in the Late Bronze Age in Central and Eastern Slovenia (After Teržan 1999, 103, figure 1; Dular 1993, 103, figure 1, with additions from Dular et al. *1995, 90, figure 1; Dular* et al. *2000, 120, figure 1; Dular* et al. *2003, 160, figure 1).*

1. Gornja Radgona; 2. Križevci pri Ljutomerju; 3. Ormož – settlement; 4. Ormož – cemetery; 5. Ptujski grad – settlement; 6. Ptujski grad – cemetery; 7. Spodnja Hajdina – settlement; 8. Spodnja Hajdina – cemetery; 9. Rogoza; 10. Slivnica; 11. Hoče; 12. Pobrežje – settlement; 13. Pobrežje – cemetery; 14. Maribor; 15. Radvanje – settlement; 16. Radvanje – cemetery; 17. Bistrica; 18. Bazena; 19. Ruše – settlement; 20. Ruše – cemetery; 21. Brinjeva gora – settlement; 22. Brinjeva gora – cemetery; 23. Zbelovska gora; 24. Miklavški hrib; 25. Rifnik; 26. Silovec; 27. Dragomelj; 28. Podgorica; 29. Ljubljana – Grad; 30. Ljubljana – SAZU; 31. Molnik; 32. Gradišče nad Mekinjami; 33. Korinjski hrib; 34. Mačkovec nad Zagorico; 35. Gradišče nad Gradiščem; 36. Žempoh; 37. Ostrožnik; 38. Križni vrh; 39. Slepšek; 40. Vesela gora; 41. Sv. Ana nad Vrhpečjo; 42. Sumenje nad Podturnom; 43. Šegonje; 44. Kocnik; 45. Vinji vrh; 46. Vihra; 47. Dolge njive; 48. Velike njive; 49. Žadovinek; 50. Dobova; 51. Obrežje – cemetery; 52. Grac; 53. Gradac nad Mihovim; 54. Camberk; 55. Golšaj; 56. Novo mesto – Bršljin, Kapiteljska njiva, Mestne njive (cemeteries); 57. Plešivica; 58. Dolenje Gradišče; 59. Cvinger pri Dolenjskih Toplicah; 60. Veliki vrh nad Dolenjim Suhorjem; 61. Metlika – Veselica; 62. Metlika – town centre; 63. Metlika – Borštek; 64. Semenič; 65. Sv. Križ nad Stražnjim vrhom; 66. Črnomelj – town centre; 67. Črnomelj – Sadež; 68. Griblje – Kohane; 69. Griblje – Požekov vrt; 70. Gradišče nad Gorico; 71. Kostel; 72. Butoraj.

II: C^{14}date – Beta- 229150: Cal. BC 1120 to 910 (Cal. BP 3070 to 2860); Čardak III: C^{14}date – Beta-229147, Cal. BC 1000 to 820 (Cal. BP 2950 to 2770); Beta- 229148, Cal. BC 1280 to1010 (Cal. BP 3230 to 2960)). This activity took place almost a thousand years after the creation of Eneolithic erosion deposits in the area and in its turn it led to intensive erosion.

Space in lowland settlements

The recently excavated lowland settlement site of Velike njive will be used to illuminate the way in which space was defined within such settlements through the definition of locales within the core zone of the settlement and through the manipulation of material culture at boundaries within these extensive unenclosed lowland settlements. The excavated part of the site covers an area of 2.04 ha and extends for almost a kilometre in length on the Pleistocene Sava gravels to the west of the Velikovaški potok stream (Mason 2006c, 230–231) (*Figure 11.3*). The western part of the site exhibits a low density late Bronze Age occupation, which gradually increases towards the main area of intensive occupation in the eastern part of the site. This intensive occupation extends for a distance of 370m, gradually decreasing in intensity towards the eastern margins of the settlement (*Figure 11.3*).

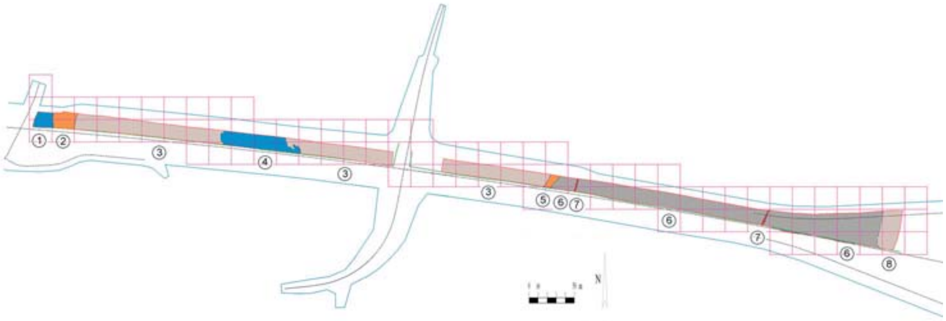

Figure 11.3. Schematic division of the excavated late Bronze Age settlement at Velike njive.

1. The western Late Bronze Age palaeochannel of the Velikovaški potok; 2. The western cobbled surface and pottery deposit; 3. The western economic activity/storage zone; 4. The central Late Bronze Age palaeochannel; 5. The burnt stone mound; 6. The domestic dwelling zone; 7. Cobbled path; 8. The eastern activity zone.

The area of intense occupation or central zone seems to be dominated by domestic dwelling units based around large rectangular post framed buildings (*Plate 11.2*). It is frequently difficult to define individual dwelling units due to the lack of surviving floor levels and hearths, although some pit ovens were recovered. The large number of postholes and the lack of a clear ground plan further complicate the definition of buildings, but this would tend to suggest repeated repair, rebuilding and/or reoccupation of the same locations within the central zone. This is further reinforced by the presence of borrow pits and some storage pits around the individual dwelling units.

In contrast to this, the outer zone is characterised by a lower density of structures, comprising isolated postholes and large pits, which often exhibit evidence of extensive re-cutting. Some of the large pits contain large storage jars, but are usually empty. At least some special deposits are present, such as dumps of large potsherds, which can be interpreted as abandonment or sealing deposits. The isolated postholes show some indications of forming small discrete structures, which may have been used for grain storage. It is posited that this is relatively low density of occupation was a zone of economic activity or possibly of storage (*Figure 11.3: 3, 8*).

Plate 11.2. Part of the domestic zone in the Late Bronze Age settlement at Velike njive during excavations in 2003 (Photo: Ildikó Pintér, Archive ZVKDS, OE Novo mesto).

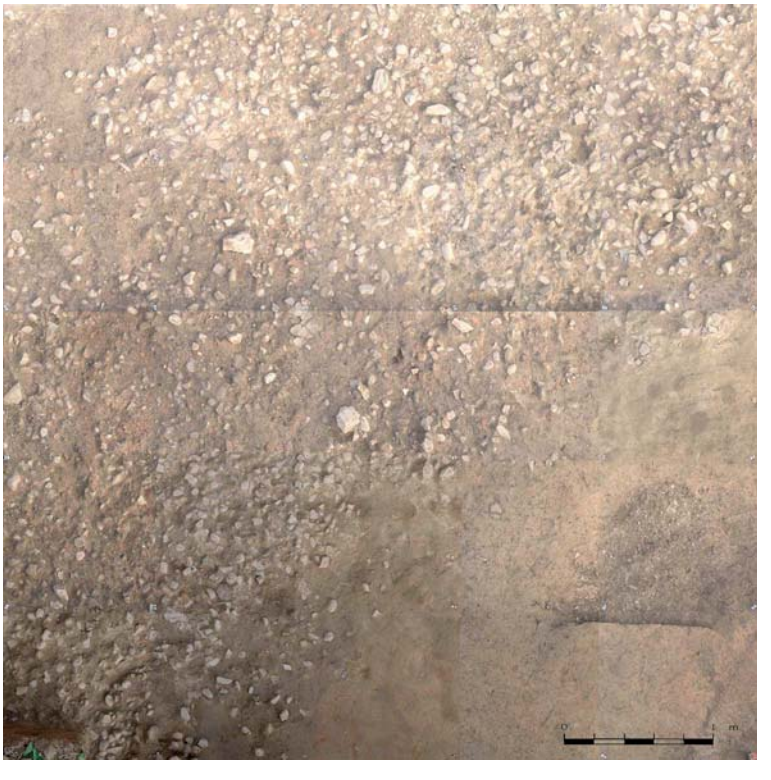

Plate 11.3. Detail of the Late Bronze Age burnt stone mound on the western edge of the domestic zone at Velike njive (Photo: photo plan Ildikó Pintér, Archive ZVKDS, OE Novo mesto).

However it should be noted that this division into a central dwelling zone and a zone of economic activity is not merely a functional spatial division on the settlement as perceived by the excavator, but that they were perceived as such in the Late Bronze Age. The boundaries between these zones were emphasised at Velike njive by paths and especially burnt stone mounds/midden areas. This is especially clear, where the western edge of the central dwelling zone was defined by a path or hollow way, which was later utilised as a burnt stone mound or midden (*Plate 11.3*). The burnt stone mound was 7 m wide and ran for a length of 25m within the excavated area. However it was visible in the ploughed field surface for a distance of 25m to the north, and was also visible to the south of the existing main road (25m wide), which bounded the excavation to the south. It thus ran for a distance of at least 75m.

A similar sequence was also found on the edge of the late Bronze Age channel of the Velikovaški potok stream at the extreme western edge of the excavated area. The primary late Bronze Age activity in this area was characterised by a 26m wide cobbled surface on the edge of the stream. The surface showed signs of lateral flood damage and was covered by 20 cm layer of alluvium. A Late Bronze Age midden of similar dimensions was deposited on top of the alluvium, respecting position of the former cobbled surface. The material from both burnt stone mounds/middens was dominated by river cobbles, many of which showed signs of fracture or burning, but there was also a large amount of pottery present. The pottery in the midden on the extreme western edge of the site is dominated by large sherds of small and medium sized jars or storage vessels, whilst the pottery from the burnt stone mound at the western edge of the dwelling zone also contained bowls and handled vessels, possibly associated with food serving or drinking. The finds from the latter context, thus, suggest a connection with communal food preparation or feasting.

The eastern edge of the Velike njive settlement on the Grofova njiva site was also marked by a cobbled path and two large pits of possible early Iron Age date, but there is no evidence of a burnt stone mound or midden in this area. However, it should be noted that this eastern boundary was respected in the early Iron Age, when two barrows were erected to the east of the path, sometime after the settlement was abandoned (Tica, *pers comm.*)

A similar situation has been detected on other settlements. At Rogoza, a limited area of midden deposition with a deposit of a bronze ingot in a complete vessel and a stone surface were found on the edge of the palaeochannel that marked the southern edge of the settlement (Strmčnik Gulič 2001, 122; 2005a, 56) (*Figure 11.4*). The northern edge of the settlement was defined by a cobbled path, which also formed the boundary between the late Bronze Age settlement and four late Bronze Age/early Iron Age barrows. These barrows are also probably later than the settlement (Strmčnik Gulič 2001, 122–124). A slightly earlier example can be seen at Obrežje in the Sava valley, where a deposit of large potsherds and burnt stone occurs in a palaeochannel on the edge of a settlement from the end of the middle Bronze Age (Djurić 2005a, 211). A slightly different situation can be seen on the recently excavated middle Bronze Age site at Pince in Prekmurje, where a central zone, containing linear features, is surrounded by a zone of dwelling structures. This is surrounded by a zone of storage/rubbish pits, which are separated from a stream channel or marshy depression by a zone of pottery spreads and individual finds of metalwork

Figure 11.4. The Late Bronze Age settlement at Rogoza (After Stmčnik Gulič 2001, 123, figure 9).

(Kerman, B. *pers. comm.).* Metalwork might also be also occur in the boundaries between individual dwelling units within the domestic zone, as was the case at Dragomelj, where two ingot hoards were discovered in pits between two dwelling units (Turk 2000, 111–114). The late Bronze Age complex at Griblje also provides putative evidence of similar activity at the edge of the river Kolpa floodplain and around seasonal pools. Here surface collection has recovered large quantities of cracked or fire damaged sandstone river cobbles, which suggests that burnt stone mounds similar to that at Velike njive are also present on this site (Mason 2001, 16–17, 24).

There are parallels with the evidence for the presence of burnt stone mounds as liminal features in the late Bronze Age in Britain, e.g. at the Reading Business Park site (Brossler 2001, 133). However it should be noted that the burnt stone mound on this site and the majority of the other known burnt stone mound sites in Britain do not contain large quantities of pottery, marking a sharp contrast with the Velike njive site and other potential midden sites, such as the middle Bronze Age site of Hrast.

It may thus be posited that special attention in the creation of place was paid to areas associated with watercourses and marshy areas close to settlement areas and that further emphasis was placed on the transition zone between dwelling zones and zones of storage or craft activity. Only boundaries in marshy areas or in the immediate vicinity of streams warranted reinforcement through the deposition of material associated with communal consumption, feasting or the deposition of domestic debris. Paths might also be associated with the margins of settlements, both in marshy zones and in areas away from watercourses. Indeed a symbolic connection between paths and streams should also be considered as both represent movement through the landscape. Both are liminal in relation to settlements. The deposition of midden or domestic debris on paths associated with marshy areas and streams near settlements might also serve to mediate the negative aspects of these liminal zones.

The deposition of grain and artefacts associated with grain processing also defines the boundaries of zones of economic activity with watercourses and marshy areas, subject to seasonal flooding directly adjacent to the late Bronze Age settlement in the river meander at Črnomelj. Deposits of burnt grain and pits containing broken querns were located on the very edge of the contemporary palaeochannel (Mason 1999, 34; 2007). These deposits occur in an area where grain could neither be stored, nor grown. It would thus seem that such seasonally flooded areas were seen as liminal and were connected with fertility. This may also be an explanation for the presence of grain, grain processing equipment and equally for material associated with communal consumption. However, a single interpretation of the symbolism attached to these areas should not be attempted. This is borne out by the use or treatment of marginal marshy zones within the wider late Bronze Age lowland landscape.

The symbolism of place was not only applied to the settlement or the realm of the living community. The multiperiod site at Dolge njive was located beside a palaeochannel on the edge of the first terrace of the river Krka floodplain and was subject to seasonally flooding in the late Bronze Age. It produced evidence of three stone platforms connected by a cobbled path or hollow way, the margins of which were further defined by boulders (Mason 2005b, 124) (*Plate 11.4*). Charcoal and burnt human bone was associated the path and two of the platforms, which were subject to repeated resurfacing. These structures are interpreted as a mortuary complex, possibly linked to an as yet undiscovered cremation cemetery, or to deposition of mortuary remains in the river. The three putatively late Bronze Age stone mortuary platforms at the site of Podgorica, 360 m south of the major settlement at Dragomelj, provide a direct connection between mortuary structures, formal burial and marshy areas/streams. A single cremation burial, dated to the 6th century BC, was associated with each of the three platforms beside the palaeochannel of the Pšata stream (Novšak 2005, 223–225). Thus the path and the marshy zone were transitional zones that could also be directly associated with death, as well as with life, as is shown above.

Plate 11.4. The Late Bronze Age hollow way and eastern mortuary platforms under excavation at Dolge njive in 2002 (Photo: Goran Skelac, Archive ZVKDS, OE Novo mesto).

Formal mortuary areas also appear in marshy liminal areas. The late Bronze Age cremation cemetery at Obrežje is a formal cemetery with origins in the last quarter of the 2nd millennium BC that is also located in a similar liminal marshy zone. It comprised 366 graves, which were located on Pleistocene gravel point bars within the marshy valley of the Struga stream, a now defunct tributary of the river Sava (Mason 2005a, 71) (*Figure 11.5*). The marshy areas between the point bars contained discrete spreads of pottery fragments, which are dominated by jar fragments. These deposits are probably connected with feasting as part of the mortuary ritual. The deposits on the edge of settlements and in the vicinity of formal cemeteries are probably both connected with events that integrated or reintegrated the community connected with these places both in death and in life. These events were visibly commemorated by deposition of their physical remains (pottery) in symbolically ambivalent marshy areas and as such served to reinforce boundaries. There is also evidence for metalwork deposition in some rivers, most notably in the river Ljubljanica, where large amounts of Bronze Age and later metalwork have been recovered.

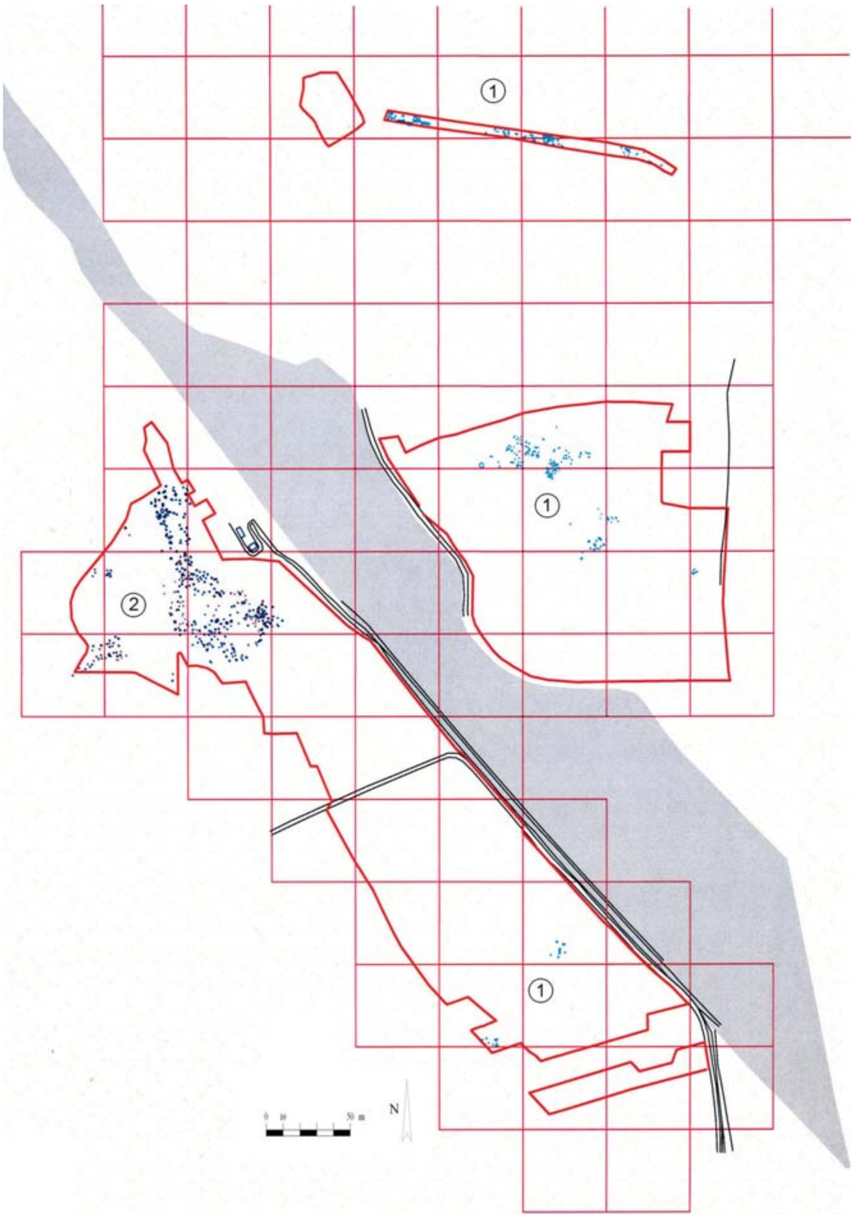

Figure 11.5. The late Bronze Age cemetery and middle Bronze Age settlement complex at Obrežje (Plan: Franci Aš. Ildikó Pintér. Archive ZVKDS, OE Novo mesto).
1. Middle Bronze Age settlement complex; 2. Late Bronze Age flat cremation cemetery.

However, there has been little material recovered elsewhere, principally in the river Sava at Drnovo near on the Krsko polje (Dular 1974, 14) and in the river Kolpa near Metlika (Dular 1985, 90–91).

So far attention has been largely confined to space and place in the lowland areas, which were visually dominated by the surrounding upland areas. These were often the scene of the deposition of metalwork hoards to those of the upland Br D and Ha A hoards in eastern and central Slovenia, which tend to be in inaccessible upland locations, close to potential lines of communication (*Figure 11.6*). It should also be noted that there are very few examples of hoards from wet/marshy locations, which are so familiar from other parts of Europe (Čerče – Turk 1996, 11; Turk 1996, 89–124). A further problem lies in the nature of hoard discovery. Few hoards are complete and the great majority were accidental

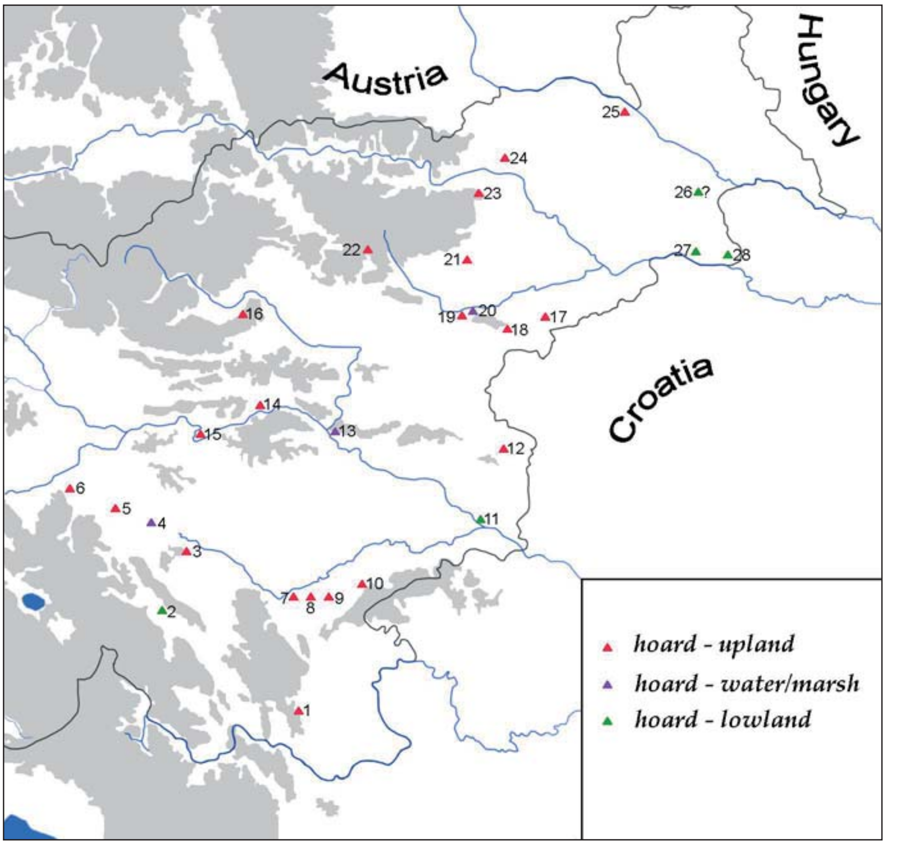

Figure 11.6. Distribution of Late Bronze Age hoards in Central and Eastern Slovenia (After Teržan 1999, 103, figure 1; Dular 1993, 103, figure 1, with additions from Čerce, P., Turk, P. 1996, 28, figure 9).

1. Debeli vrh; 2. Ribnica; 3. Veliki Korinj; 4. Mala Račna; 5. Udje; 6. Tomišelj; 7. Rumanja vas; 8. Jurka vas; 9. Črmošnjice; 10. Gorenji Suhadol; 11. Brežice; 12. Silovec; 13. Zidani most; 14. Zagorje; 15. Gorenji Log pri Litiji; 16. Čreta; 17. Čermožiše; 18. Cerovec; 19. Zbelovska gora; 20. Bela pri Poljčanah; 21. Slovenska Bistrica; 22. Hudinja; 23. Hočko Pohorje; 24. Pekel; 25. Hercegovščak; 26. Podgradje; 27. Pušenci; 28. Grabe-Središče

finds. This means that in practice there is little precise information on find location and hoard structure for the earlier finds. There are, however, two cases of a certain type of hoard, the ingot hoard, being found in liminal contexts within large lowland settlements (see above), but there are no clear cases of hoards being found within the later sites of late Bronze Age upland settlements or early Iron Age hillforts.

The situation is different where isolated finds of metalwork (axes, spears, swords, sickles, knives, awls, bronze vessels and jewellery) are found in both upland and wet/marshy/fluvial locations, spanning the entire late Bronze Age. Br D and Ha A objects have been found on former Neolithic/Eneolithic settlement sites, upland rim sites and prominent isolated features in the landscape, which later became Late Bronze Age upland settlements (Semenič, Veliki Korinj) and in late Bronze Age/early Iron Age hillforts (Črnomelj, Kučar), but the find contexts are not clear (Šinkovec 1996, 125, 129–161) (*Plate 11.5*). Thus it is possible that late Bronze Age/early Iron Age upland settlements and hillforts were deliberately located on hills that had already attracted depositional activity in the Br D or Ha A, or that these objects represent founding or heirloom deposits. Whatever the case, there is a distinct link between mutable metal artefacts as symbols of transition and upland locations.

Plate 11.5. View of the isolated Kučar hill from the late Bronze Age settlement at Griblje during field survey in 2001 (Photo: Phil Mason, Archive ZVKDS, OE Novo mesto).

In summary, it may be seen that marshy areas, associated with river/stream flood plain environments close to settlements and in the wider landscape, were associated with mortuary complexes and areas of ritual activity, in which the connection between fertility and death was emphasised. They were often separated from settlements by paths and watercourses and lay within bounded areas, which were only visible from the immediate vicinity, from the settlement itself. The connection between fertility and life is emphasised in the flood plain, river edge or marshy areas, although some of this apparent storage activity was evidently symbolic in nature, as was the case at Črnomelj. The boundaries of the domestic zone and storage zone, as well as between the storage zone and flood plain edge were suitable points for the deposition of material derived from communal consumption, hence the locations of the burnt stone mounds/pottery deposits at Velike njive, Obrežje, Pince and Rogoza. These serve to mark boundaries between the community and "dangerous" transitional areas, boundaries, which had to be reinforced by communal feasting. The extensive settlements would have been highly visible from a distance within the lowland and from the upland, but the reinforcement of their boundaries with special deposits was only detectable in the immediate vicinity. This is a sharp contrast with the upland locations of hoards in the BR D and Ha A periods, which were likewise highly visible from a distance, but not subject to settlement. The micro-locations of hoard and single find deposits would have been hidden from all but the individuals and/or groups that deposited them, in sharp contrast to boundaries within settlements, which would have been visible to all on a daily basis.

Upland settlement in the Ha B period

The 10th century BC saw the beginnings of a marked change in attitudes to space and place with the appearance of highly visible upland settlements and associated flat cremation cemeteries at the end of the Ha A period and in the Ha B period, that is the first part of the 1st millennium BC (Dular 1993, 104–107; Teržan 1999, 103–105, 107–108). The archaeological record is increasingly dominated by bounded upland settlements, which occupied prominent highly visible features in the landscape, especially prominent hills overlooking, or within river valleys and extensive lowland basins. The sites in the Dolenjska and Bela krajina regions rarely exceed 1 hectare in area and were often enclosed by simple palisades, as at Golšaj in the Krka valley. However the settlements in the Štajerska region are frequently larger. Larger sites also occur in the Krka valley, such as that on the isolated Cvinger hill near Dolenjske Toplice. This site is distinguished by an elaborate timber revetted earth rampart, which encloses an area of 3.40 hectares, including a deep karst sink hole in the centre of the settlement (Dular – Križ 2004, 207–250).

Limited excavation on the above sites has revealed that dwellings were of a post framed type, often located on terraces within the settlement. Unfortunately the limited nature of excavation means that little is actually known about the internal organisation of these settlements. There is no available data on intra-site communications or storage/activity zones, data which is available in abundance for the lowland sites.

The enclosed lowland site of Ormož in the Drava valley began at the end of the Ha A period, but flourished in the Ha B period. It thus has a similar chronological span to that of the upland settlements mentioned above. It was a large settlement with a low earthen rampart or bank, enclosing an area of 1.5 hectares (Teržan 1999, 105). A total of 0.5 hectares has been excavated on this site, but the precise date of the earthen rampart has been obscured by the Late Iron Age refortification of the site. Here the post framed aisled dwellings varied in size and were arranged according to a deliberate plan in blocks with a regular alignment along cobbled paths. Storage/economic activity areas are found in direct association with the domestic units (Teržan 1999, 106, figure 5). Thus, they are interpreted as belonging to the individual domestic units, not placed in a central position to the domestic units, or externalised in a peripheral position, as they are on the open settlements (Strmčnik Gulič 2001, 124–125; Teržan 1999, 105–107). However, this apparent absence of a peripheral or central storage/activity zone may be a result of limited excavation.

There is considerable evidence available for the nature of external boundary definition on late Bronze Age upland settlements, give that all the known examples were enclosed. The rampart at the Cvinger hillfort incorporated domestic debris in the fills, but there is no evidence of the continuance of the practice of midden material deposition on the boundaries of this or any other upland settlement, as formerly took place on the lowland settlements. The erection of a palisade or a rampart created a highly visible marker of place and community, which in itself was a durable and did not require reinforcement with debris from conspicuous food consumption. This certainly continued, given the emphasis on feasting in the early Iron Age, but debris may have been deposited in other contexts or internalised in rampart fills. The very presence of a palisaded upland settlement or one defended by a rampart may have been automatically associated with ceremonial food consumption. These were places where such consumption took place, not places with boundaries that were created by and continually redefined through ceremonial consumption.

The flat cremation cemeteries, associated with the settlement sites, are also often located on hilltops or hill slopes (Križ 1995, 10–11; 1997), but some continue to occupy terrace slope and river valley locations, as at Ljubljana (Puš 1971; 1982). Hollow ways and pottery spreads have also been found on some of these sites, e.g. Kapiteljska njiva in the Krka valley (Križ, *pers. comm.*). The beginning of burial in the flat cemeteries shows a similar pattern to that of settlement of the upland sites, beginning in the Ha A1 period, but intensifying in the Ha B period (Teržan 1999, 111–119). It is also interesting that the upland cemetery locations, unlike the upland settlement locations, are often only visible from the immediate vicinity, complementing the tradition of the partly contemporary cemeteries and mortuary complexes in marshy lowland areas. They also continue the tradition of the ceremonial consumption of food and or drink in a mortuary context that has been noted in the Obrežje mortuary complex. It is probable that both examples of pottery spreads in mortuary contexts date to the Ha B period of the late

Bronze Age, which would suggest that ceremonial food consumption was now primarily associated with mortuary ritual, representing the reinforcement of group solidarity or reintegration in "dangerous" transitional areas (cemeteries), rather than the previous association with group solidarity or reintegration of the living community in settlements.

Early Iron Age Epilogue

The landscape of early Iron Age Dolenjska and Bela krajina was an elite landscape, dominated by hillforts and barrow cemeteries. The early Iron Age elites based on the hillfort centres in central Slovenia participated in a prestige exchange system, which involved different elite groups in the area around the head of the Adriatic, from Istria to the Po plain and ultimately Bologna and the Etruscan heartland (Mason 1996a, 78–85, 90–112, 113–116; Turk 2005, 17–45). However, the definition of space and place was founded on and close concerned with the preceding late Bronze Age landscape, from which it had emerged.

Many early Iron Age hillforts occupy earlier, late Bronze Age upland settlement sites, e.g. Črnomelj and Vinji vrh, but there is also a distinct association of hillforts with finds of middle or late Bronze Age single finds of metalwork. This would suggest that the location of early Iron Age hillforts was also at least partly associated with the occupation of existing symbolic places in the landscape, places that were already associated with the muteable qualities of metalworking through the deposition of single pieces of bronze, e.g. at Dobrnič, at Črnomelj and at Kučar. The association of metalwork or metalworking with transition was a particularly important element in the early Iron Age symbolic system in Dolenjska and Bela krajina (Mason 2008, 97–106)

The hillforts are distinguished by the presence of massive univallate drystone revetted ramparts. The only evidence for earlier, timber phases have proved to date to the Late Bronze Age (Guštin 1978, 100–121; Dular – Križ 2004, 217–221). The rubble and earth rampart fill of the stone ramparts often incorporates numerous potsherds and slag fragments, which suggests that occupation debris was deliberately incorporated in it, along with metalworking debris. This symbolically reinforces the hillfort rampart as a liminal zone (Mason 1996b, 276–277). In this case, it bounds the living community, the symbolism here potentially being connected with regeneration and fertility.

The elaboration of the ramparts and their transformation from the wooden palisade or box rampart of the late Bronze Age to the drystone revetted rampart of the Early Iron Age serves to emphasise this. The apparently immutable nature of the rampart hides the numerous repairs and the communal feasting that must have accompanied them. A layer containing burnt fine ware of a type associated with elite consumption was deliberately incorporated as a foundation deposit beneath a new early Iron Age rampart at Libna (Novaković, *pers. comm.*). Thus the rampart would always symbolise the event. It is a further example of the way in which the hillfort centre and its ramparts came to be increasingly identified with the "proper" location for communal events and the community itself.

The presence of isolated barrows and barrow groups in the wider landscape may also mark lines of communication and would serve to bound paths as liminal areas. Cobbled and paved pathways and barrows of early Iron Age date have been noted in association extensive lowland settlements, often at a considerable distance from the nearest hillfort. Excavated examples include Rogoza near Maribor (Strmčnik Gulič 2001, 122) and Grofova njiva near Velike njive near Krško in Dolenjska (Tica, *pers. comm.*). Field survey has produced a similar example at Griblje in Bela krajina (Mason 2001, 24). It is clear that the lowland settlement sites continued to have symbolic meaning in the early Iron Age, when barrows might be placed on them, or even directly respecting the earlier boundaries. This transformed them into places of the ancestors for the hillfort communities. Thus many Bronze Age upland settlements continued to function as places in the early Iron Age, but the lowland settlements and flat cremation cemeteries were transformed into liminal zones or space in the early Iron Age.

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Bibliography

BROSSLER, A. 2001

Reading Business Park: the results of phases 1 and 2. In: Brück, J. (ed.), *Bronze Age Landscapes: Traditions and Transformations.* 129–138. Oxford.

ČERCE, P. – TURK, P. 1996

Depoji pozne bronaste dobe – najdiščne okoliščine in struktura najdb (Hoards of the Late Bronze Age – The Circumstances of their discovery and the Structure of the Finds). In: Teržan, B. (ed.), *Depojske in posamezne najdbe kovinske najdbe bakrene in bronaste dobe na Slovenskem (Hoards and individual metal finds from the Eneolithic and Bronze Ages in Slovenia).* Katalogi in Monografiji 30, 7–30. Ljubljana.

DJURIĆ, B. 2003a

Obrežje – Draga-Goričko. In: Djurić, B. (ed.), *Zemlja pod vašimi nogami: arheologija na avtocestah Slovenije: vodnik po najdiščih*. 204. Ljubljana.

DJURIĆ, B. 2003b

Velike njive pri Veliki vasi. In: Djurić, B. (ed.), *Zemlja pod vašimi nogami: arheologija na avtocestah Slovenije: vodnik po najdiščih*. 273. Ljubljana.

DULAR, J. 1974

Bronasti jezičastoročajni meči iz Slovenije. *Posavski muzej Brežice* 1, 11–29. Brežice.

DULAR, J. 1985

Topografsko področje XI (Bela krajina). Arheološka topografija Slovenije. Ljubljana.

DULAR, J. 1993

Začetki železnodobne poselitve v osrednji Sloveniji (Der Beginn der eisenzeilichen Besiedlung in Zentralslowenien). *Arheološki vestnik* 44, 101–102. Ljubljana.

DULAR, J. 1999

Ältere, mittlere und jüngere Bronzezeit in Slowenien – Forschungsstand und Probleme(Starejša, srednja in mlajša bronasta doba v Sloveniji – stanje raziskav in probleme). *Arheološki vestnik* 50, 81–96. Ljubljana.

DULAR, J. – KRIŽ, B. 2004

Železnodobno naselje na Cvingerju pri Dolenjskih Toplicah (Die eisenzeitliche Siedlung auf dem Cvinger bei Dolenjske Toplice). *Arheološki vestnik* 55, 207–250. Ljubljana.

DULAR, J. – KRIŽ, B. – SVOLJŠAK, D. – TECCO HVALA, S. 1995

Prazgodovinska višinska naselja v Suhi krajini (Vorgeschichtliche Höhensiedlungen in der Suhectares krajina). *Arheološki vestnik* 46, 89–168.Ljubljana.

DULAR, J. – KRIŽ, B. – PAVLIN, P. – SVOLJŠAK, D. – TECCO HVALA, S. 2000
Prazgodovinska višinska naselja v dolini Krke (Vorgeschichtliche Höhensiedlungen im Krkatal). *Arheološki vestnik* 51, 119–170. Ljubljana.
DULAR, J. – PAVLIN P. – TECCO HVALA, S. 2003
Prazgodovinska višinska naselja v okolici Dol pri Litiji (Vorgeschichtliche Höhensiedlungen in der Umbegung von Dole pri Litiji). *Arheološki vestnik* 54, 159–224. Ljubljana.
DULAR., J. – ŠAVEL, I. – TECCO HVALA, S. 2002
Bronastodobno naselje Oloris pri Dolnjem Lakošu (Bronzezeitliche Siedlung Oliris bei Dolnji Lakoš). Opera Instituti Archaeologici Sloveniae 5. Ljubljana.
GUŠTIN, M. 1978
Gradišča železne dobe v Sloveniji (Typologie der eisenzetlichen Ringwalle in Slowenien). *Arheološki vestnik* 19, 100–121. Ljubljana.
KRIŽ, B. 1995
Novo mesto pred Iliri. Novo mesto.
KRIŽ, B. 1997
Kapiteljska njiva, Novo mesto. Novo mesto.
MASON P. 1996a
The Early Iron Age of Slovenia. British Archaeological Report International Series 643. Oxford.
MASON P. 1996b
Iron, Land and Power: The Social Landscape in the Southeastern Alps in the Late Bronze Age and the Early Iron Age. In: Jerem, E. – Lippert, A. (eds.)*, Internationales Symposium, Die Osthallstattkultur.* 274–282. Archaeolingua, Budapest.
MASON, P. 1999
Črnomelj – Arheološko najdišče. In: Batič, J. *Kulturne poti 1999: vodnik po spomenikih* 33–41. Ljubljana.
MASON, P. 2001
Griblje in problem nižinskih arheoloških kompleksov v Sloveniji. *Varstvo spomenikov* 39, 7–27. Ljubljana.
MASON, P. 2005a
Roman Military fort. In: Djurić, B. (ed.), *The EARTH beneath your feet: the archaeology on the motorways of Slovenia: guide to sites.* 71–76. Ljubljana.
MASON, P. 2005b
Dolge njive near Bela Cerkev. In: Djurić, B. (ed.), *The EARTH beneath your feet: the archaeology on the motorways of Slovenia: guide to sites.* 123–125.Ljubljana.
MASON, P. 2006a
Obrežje – Arheološko najdišče Obrežje. *Varstvo spomenikov 39-41 - Poročila.* 131–132. Ljubljana,
MASON, P. 2006b
Preloka – Arheološko najdišče sv. Trojica. *Varstvo spomenikov 39-41 - Poročila.* 157–158. Ljubljana.
MASON, P. 2006c
Velike njive pri Veliki vasi. *Varstvo spomenikov 39-41 - Poročila.* 230–231.Ljubljana.
MASON, P. 2007
Črnomelj: a complex late prehistoric settlement and its hinterland. In: Blečič, M., Črešnar, M., Hänsel, B., Hellmuth, A., Kaiser, E., Metzner-Nebelsick, C. (eds.), *Scripta praehistorica in honorem Biba Teržan.* 357–368. Situla 44. Ljubljana.

MASON, P. 2008

Places for the Living, Places for the Dead and Places in Between: Hillforts and the Semiotics of the Iron Age Landscape in Central Slovenia. In: Nash, G. – Children, G. (eds.), *The Archaeology of Semiotics and the Social Order of Things.* 97–106. Slovenia. British Archaeological Report International Series 1833. Oxford.

MASON, P. – BRICELJ, M. 2006

Dragatuš – Arheološko najdišče Dragatuš. *Varstvo spomenikov 39-41 - Poročila.* 41–42. Ljubljana.

MASON, P. – OLIĆ, S. 2007a

Poročilo o arheoloških izkopavanjih na najdišču Sela pri Štravberku – Arheološko najdišče Vešče (EŠD: Rkd-07-06-00019). Novo mesto.

MASON, P. – OLIĆ, S. 2007b

Poročilo o arheoloških izkopavanjih na enoti kulturne dediščine Metlika – Arheološko najdišče Kolpski most (EŠD 11091). Novo mesto.

MASON, P. – PINTÉR, I. 2006

Hrast pri Jugorju – Arheološko najdišče Grive. *Varstvo spomenikov 39-41 - Poročila.* 59. Ljubljana.

MASON, P. – PREDAN, P. – MURKO, M.– PINTÉR, I 2006a

Črnomelj – Arheološko območje Čardak. *Varstvo spomenikov 42 - Poročila.* 23–24. Ljubljana.

MASON, P. – PREDAN, P. – MURKO, M. – PINTÉR, I 2006b

Črnomelj – Arheološko območje Čardak. *Varstvo spomenikov 42 - Poročila*. 24–26. Ljubljana.

MASON, P. – VAREŠKO, N. – PINTÉR, I. 2006a

Črnomelj – Arheološko najdišče Starihova loza. *Varstvo spomenikov 39-41 - Poročila.* 31. Ljubljana.

NOVŠAK, M. 2005

Podgorica. In: Djurić, B. (ed.), *The EARTH beneath your feet: the archaeology on the motorways of Slovenia: guide to sites.* 223–225. Ljubljana.

PUŠ, I. 1971

Žarnogrobiščna nekropola na dvorišču SAZU v Ljubljani. Razprave 1.razreda SAZU 7/1. Ljubljana.

PUŠ, I. 1982

Prazgodovinsko žarno grobišče v Ljubljani. Razprave 1.razreda SAZU 13/2. Ljubljana.

SVOLJŠAK, D. 2005

Podsmreka near Višnja gora 2. In: Djurić, B. (ed.), *The EARTH beneath your feet: the archaeology on the motorways of Slovenia: guide to sites.* 229–230.Ljubljana.

STRMČNIK GULIČ, M. 2001

Nova podoba prazgodovinske poselitve na zahodnem obrobju Dravskega polja (Das neue Bild der prähistorischen Besiedlung am östlichen Rand des Draufeldes). *Arheološki vestnik* 52, 115–130. Ljubljana.

STRMČNIK GULIC, M. 2005a

Bronze Age settlement at the foot of the Pohorje mountains. In: Djurić, B. (ed.), *The EARTH beneath your feet: the archaeology on the motorways of Slovenia: guide to sites.* 52–57. Ljubljana.

STRMČNIK GULIC, M. 2005b

Slivnica near Maribor 2. In: Djurić, B. (ed.), *The EARTH beneath your feet: the archaeology on the motorways of Slovenia: guide to sites.* 240–241. Ljubljana.

ŠINKOVEC, I. 1996

Posamezne kovinske najdbe bakrene in bronaste dobe (Individual metal finds from the Eneolithic and Bronze Ages). In: Teržan, B. (ed.), *Depojske in posamezne najdbe kovinske najdbe bakrene in bronaste dobe na Slovenskem (Hoards and individual metal finds from the Eneolithic and Bronze Ages in Slovenia).* 125–163. Katalogi in Monografiji 30. Ljubljana.

TERŽAN, B. 1999

An Outline of the Urnfield Culture Period in Slovenia. *Arheološki vestnik* 50, 97–143. Ljubljana.

TURK, P. 1996

Datacija poznobronastodobnih depojev (The dating of Late Bronze Age Hoards). In: Teržan, B. (ed.), *Depojske in posamezne najdbe kovinske najdbe bakrene in bronaste dobe na Slovenskem (Hoards and individual metal finds from the Eneolithic and Bronze Ages in Slovenia).* 89–124. Katalogi in Monografiji 30. Ljubljana.

TURK, P. 2000

Late Bronze Age Lowland Settlements in Central Slovenia – Hamlets, Villages or Proto-urban Centres. In: Thrane, H. (ed.), *Diachronic Settlement Studies in the Metal Ages: Report on the EFS workshop at Moesgård, Denmark, 14–18 October 2000.* 109–119. Århus.

TURK, P. 2003

Dragomelj. In: Djurić, B. (ed.), *Zemlja pod vašimi nogami: arheologija na avtocestah Slovenije: vodnik po najdiščih.* 126–128. Ljubljana.

12

Experimenting with Prehistoric Spaces (Performance, Experience, Evocation)

DRAGOS GHEORGHIU

Introduction

Space is still one of the most difficult concepts in archaeological research, since it escapes definitions and current scientific approaches. Because archaeology examines space in the material form of place or objects, anthropological world views could not be applied with the existing scientific methods. This limitation was challenged by the first post-processualists (e.g. Tilley 1994) who proposed as an alternative an archaeology of experience, based on the work of phenomenologists such as Heidegger (1993) and Merleau-Ponty (1962) to help to relearn to look (*rapprendre à voir*) at the world.

For phenomenologists space is the result of experience (Tuan 1977; Tilley 1994), caused by the movement of the individual (de Certeau 1984). A recent development in this field stressed the importance of the body as a receptor of the spatial experience, and it is suggested that the *thinking through the body* as part of a *cultural phenomenology* which replaces the classical dualism between mind and body (Csordas 1999).

Recently, landscape archaeology has been given a new instrument: *art*. Current studies in archaeology revealed that the "parallel vision" of art could improve the archaeological imagination (Tilley *et al.* 2000; Renfrew [2003] 2006), because it could employ metaphors and therefore offer a more sensitive view of the world. Art, as a representational mode, was tested to work as an instrument of *thinking through the body* (see Hamilakis *et al.* 2001; Hamilakis *et al.* [on-line]), but the attempts to link artistic expression to the reality of, say, archaeological fieldwork or landscape studies still remains an intellectual diversion, with no tangible results.

Since none of the approaches mentioned can satisfactorily work alone, the problem is to see *if* and *how* it is possible to use both perspectives, in an articulate way; using a combination of mind and body as a means of a meaningful anthropological approach.

In my opinion the evocative nature of art which generates spaces "directly lived through [their] associated images and symbols" (Lefebvre 1997, 39), combined with the phenomenological experience of the embodiment, could fuse into an *art-chaeological* synthesis. Using this perspective, this chapter will try to illustrate the use of art-works, geomorphs and anthropological concepts to evoke space.

An *art-chaeological* approach could be the fertile ground for the re-interpretation of the archaeological record when the archaeologist also becomes the performer. Here, he or she is charged with remembering the experience.

My approach will be supported by a series of study-cases describing the experiments undertaken in Vadastra village in southern Romania, which combined archaeological experiment with contemporary experientiality in order to understand the prehistoric space.

Description of the Geographic and Cultural Contexts

Vadastra village is located at the mouth of Vadastritza creek, on the Romanian Plain, close to Olt River, one of the main tributaries of the Danube River. In the past Vadastritza Valley was at the base of a loess terrace and had a large wetland valley which flooded periodically. Today the river flows a new course, gouging a new river bed, some 40m distance from the terrace and the wetland (*Figure 12.1*). Two 20th century levees located in the former wetland and a terrace along this creek shows evidence of Early Neolithic and Early Chalcolithic occupation.

Figure 12.1. The Vadastritza Valley viewed from the west.

Figure 12.2. The terrace Dealul Cismelei (Fountain's Hill) and the valley, seen from the West. In the background and on the right of the image is the modern village.

Within the hydrologic context of the Danube River, Vadastritza Valley seems to have been an intensively populated zone because of several advantages: a minimal flood risk to settlement on the terraces and a rich wetland, ideal for plant cultivation. On the levees I identified evidence of Starčevo occupation, representing short periods of dwelling, specific for the dynamism of the Early Neolithic of the region (Bailey *et al.* 2002). The lower stratigaphy represented the first inhabitation that developed on the wetland zone. Decorated Vadastra II shards show the levees were seasonally occupied during the Chalcolithic habitation phases.

On the terrace Dealul Cismelei (Fountain's Hill), the modern village lies on top of a tell – and an open settlement which was excavated during the 20th century (Christescu 1927–1932; Mateescu 1959). Here, two layers of Early Chalcolithic Vadastra (phases I and II) and one layer of Late Chalcolithic Salcuta were recorded (see Mateescu 1978, 65). At the base of the northern cliff of the Dealul Cismelei terrace and bordering the wetland, numerous springs would have offered a reliable source of fresh water for the tell dwellers (*Figure 12.2*).

The Chalcolithic Vadastra tell settlement appears to have visually dominated both the wetland and the dryland zones; to the south the downward slope from the tell would have allowed extensive views of the plain up to the Danube flooded area, whilst to the northeast the height of the terrace controlled the wetland and the levees. On the wetland side the tell had the natural protection of the cliffs; consequently one can infer that a ditch separated it from the rest of the dryland (as with tell sites – see Comsa 1990).

The deliberate landscape position, providing the [visual] interface between two categories of the land, and with natural and artificial borders (i.e. rites of separation/passage), has analogies with other tell sites such as Radovanu (Late Boian tradition) and Sultana (Gumelnita tradition), and infers the existence of a standardised (i.e. ritualised) relationship between dwelling and the natural environment and, consequently, the existence of a ritualised space.

A ritualised space could also be identified within the household. In the stratigraphy of the Vadastra II layer, a wattle and daub house measuring 7.40 x 3.70m had the inner space divided into two rooms, and separated by a clay threshold. Similarly, the oven had a clay threshold (Mateescu 1978, 66–69), to separate fire [and cooking] from the rest of the dwelling.

One can observe that the strict spatial organisation of the house surface which emerged as soon as the Late Boian, evolved into a very compact dwelling structure during Gumelnita tradition (particularly during the first levels of habitation in a tell). This geometry of the dwelt space has no parallel in any cultural tradition except for maybe the warp weighted loom orthogonal designs and the perimeters of palisades or houses that could have been made with textile fibres fixed on the soil, and resembling a giant loom.

As in many Chalcolithic settlements from this region, a series of Vadastra II houses show clear evidence of intense combustion (Mateescu 1978, 70), a phenomenon that other archaeologists believe to have been intentional and is a trait within the prehistoric Balkans and the Lower Danube areas (Tringham 1992; Stefanovič 1997; 2002; Chapman 1999; Gheorghiu 2006; 2007; Gheorghiu 2008a, b; Cavulli – Gheorghiu 2008. A characteristic of the fired wattle and daub houses in the Vadastra II level is they show no sign of erosion (see Coles 1973, 63; Schaffer 1984, 59–60) or evidence of levelling for new occupation episodes. Furthermore, they show that the fired walls fractured above the soil, thus clearly identifying the built perimeter long after the abandon of the building (see Mateescu 1978, Plate 1).

In Gumelnita phase B, a large number of settlements in the Lower Danube area show traces of combustion at the final level [occupation] of the dwelling (see Dumitrescu 1986; Nania 1967; Mihailescu – Ilie 2004, 75), a phenomenon which I interpret as a ritual of abandoning the region.

The discontinuous nature of space and the rites of passage

This short description assumes that Chalcolithic dwelling in the Lower Danube area was a type of spatial revolution; due to the new relationship with landscape, the new internal organization of the settlements and the new type of architecture; forming a package of traits.

During the Chalcolithic phase fire and water continued to be the two major phenomena which characterised and modelled the prehistoric landscape of the Vadastra region including settlement. In attempting to use the modern mindset to understand the ideas and experience of the space from the 6th millennium BC is problematic. One cannot fully understand the concept of space of people living on the interface between dry and wetland landscapes. It was therefore interesting to understand at least the modes of products using the natural resources that both landscapes had to offer (e.g. clay, wood and plant material). By experimenting with these resources one can envisage the experimentation applied by Vadasta's Chalcolithic ancestors.

To achieve this experience in 2000 I began to research the manufacture of different Chalcolithic clay objects in Vadastra village (see Nash – Gheorghiu, *forthcoming*). In time my scientific approaches of experimentation (such as those promoted by Reynolds 1999, Mathieu 2002, or Jeffrey 2004), shifted to the sensorial experientiality of a *cultural phenomenology* of the past, promoted by from theme experience of the cultural environment in its geomorphological context around (e.g. see Csordas 1999).

When I approached the concept of space within prehistoric settlements using the perspective of phenomenology (i.e. as an interval of movement fragmented by static breaks represented by places; Tuan 1977), I realised that the discontinuous character of the interval was due not only because of the rhetoric of walking (de Certeau 1984, 101–102), but also because of the ritual fragmentation of the built space (e.g. see Chapman 1999).

Except for anthropology, science cannot offer an instrument to understand and explain the movement through space or its discontinuities. Van Gennep ([1909]1960) and later Victor Turner (1975; 1995) demonstrated that the movement of the body during a rite of passage is structured according to three noticeably stages (separation, transition stage [or liminality] and incorporation), and if it is from this ritual perspective that the dwelt space is approached, the discontinuities can be observed and experienced consequently.

The ritual experience of a discontinuous space can be performed, for example, when individuals, in order to enter or leave the settlement, venture across, say, the Vadastritza River valley and its wetland. Their materiality and résistance to the rites of passage across these landscapes act as a transitional stage.

Fire also could be perceived as part of a rite of passage for material objects and human bodies, being the instrument of transformation and a symbol for the transitional stage (see David *et al.* 1988, 366; Gheorghiu – Nash 2007).

Experimenting with space

The major problem concerning the study of different spaces (as well as of ritual and the phenomena related to it) is the difficulty of representing these non physical concepts. Anthropology was confronted with the crisis of representation during 1980s (Tyler 1985; Clifford 1986). Tyler (1985) maintaining that evocation could be interpreted through ethnographic discourse. Archaeology paid little attention to this problem, which only two decades later was approached by a very small group of people (e.g. Hodder 2000).

I believe that evocation is the ideal instrument to be employed to approach an indistinct anthropological concept such as space. Through evocation one can recall the place of a performance, the performance and the space produced by this action only by using a fragment of that reality; this mental operation is possible because the act of evocation is usually a rhetorical process whereby only fragmentary memories concerning the main events survive.

Today, evocation is generally applied in virtual reality to reconstruct the spaces of the past, but the spatial experience resulted from virtual reality is not complete, since it did not involve the experience of the body. This is why I believe that the experience of evocation of the space shall be supported also by a corporeal experience. In this respect the present paper is an attempt to try to illustrate how the embodied evocation could work as an instrument of understanding space.

Taking this a step further a mixture between evocation and sensorial experience was promoted by contemporary art under the form of *performance* and *land-art*, depending on the scale of action. Anthropologists envisaged performance as an essential aspect of ritual (see Grimes 1990, 14; Bell 1992, 37 ff.; Rothenbuhler 1998, 9; Rappaport 1999, 37), Schechner (2003) extending its area of operation to all social forms of manifestation from various cultural models. When a repetitive feature is identified (Rothenbuhler 1998, 20), a performace could be perceived as being a rite of movement, but I challenge the current limitation of the concept to ceremonial aspects (see Grimes 1987, 2) and extend it to that of human drama, i.e. a theatrical and dramatic act executed in space (i.e. Nash 2008).

Today, the theory of performance is quite often applied to a number of archaeological sites as part of an experiential practice of representation (see Gillam on-line and Bender *et al*. 2007), but is acted in an extremely subjective manner. Due to not following the same subjective pathway, I believe that a performance should experience the results of an archaeological experiment, as well as the basic anthropological concepts identified in the archaeological record; in this case the *rite of passage*. The recurring performance of the rite of passage can create a number of types of body memory such as *procedural, situational, intercorporeal, incorporative* and *traumatic* (Fuchs on-line), which could help to experiment the past.

Performance, acting as an instrument of the body's memory, could be undertaken on a number of artificial productions (such as the land-art objects resulted from archaeological experiments or reconstructions of geomorphs). The shapes of these artificial products were very simple and allow the viewer an easy way of memorising according to the Gestalt laws of *figure* and *ground* (Zakia 1997), or *surface regions* and *bounding contours* of objects (Koenderink *et al.* 1992).

Their physical experimentation generates strong mental and kinaesthetic reactions because of the intense colours for, say, water or the contrasting colours of the roads, of the emotions of the crossing of the suspended bidge or of narrow corridors, or the emotion of the involvement in the process of transformation through combustion of, say, a building.

It is known that in visual representations the use of colour generates more *presence* than black-and-white images (Lombard – Ditton 1995; Denny – Atkin on-line), and this quality could develop the power of evocation. I will try to present in a number of study cases how the body experienced this type of art production put in the natural context of the Vadastra landscape.

Case studies

1. A settlement in the wetland (design D. Gheorghiu and C. Chitea; performers D. Frumuseanu and A. Georgescu, August 2007)

Compared with the Early Neolithic habitation on the levees, the Chalcolithic tell on the terrace allowed its inhabitants to have a view from above the wetland, which permitted the control of river and marshland. To evaluate the differences in perception of the environment, I attempted to evoke one of the Early Neolithic settlements situated on a round levee under the shape of a 150 m diameter spiral, made of textile band (*Figure 12.3*). All the performers who were *inside* the spiral were not able to understand its shape (*Figure 12.4*) unless they climbed the terrace. As being one of the performers, I realized the difficulty of understanding the visual logic of a geometric space, unless it is perceived from *outside*.

Figure 12.3. Spiral landscape art evoking the contours of a dispersed settlement in the wetland.

Figure 12.4. Fragment of the settlement's contour as perceived by the performer in the wetland.

2. The paleo valley (design D. Gheorghiu; performer: D. Frumuseanu, August 2007)

After being desiccated, the river valley at the base of the tell became almost indistinguishable for the observer, because of the vegetation and processes of deposition. Similarly, the levees within the wetland lost their shape and melted in the vegetation of the landscape. The first land-art exercise was to revive the river employing a very long and narrow piece of textile painted in blue. This material was stretched by the performer along the [palaeo-] river valley (*Figure 12.5*). This vivid coloured stripe acted as a contour or demarcation between lived space and wild space.

Despite the artificiality of the colour and the material support, the evocation was very powerful, no matter where the observer was positioned (either on the terrace or on the bottom or the dry river valley)

Figure 12.5. Filling with colour the palaeo valley.

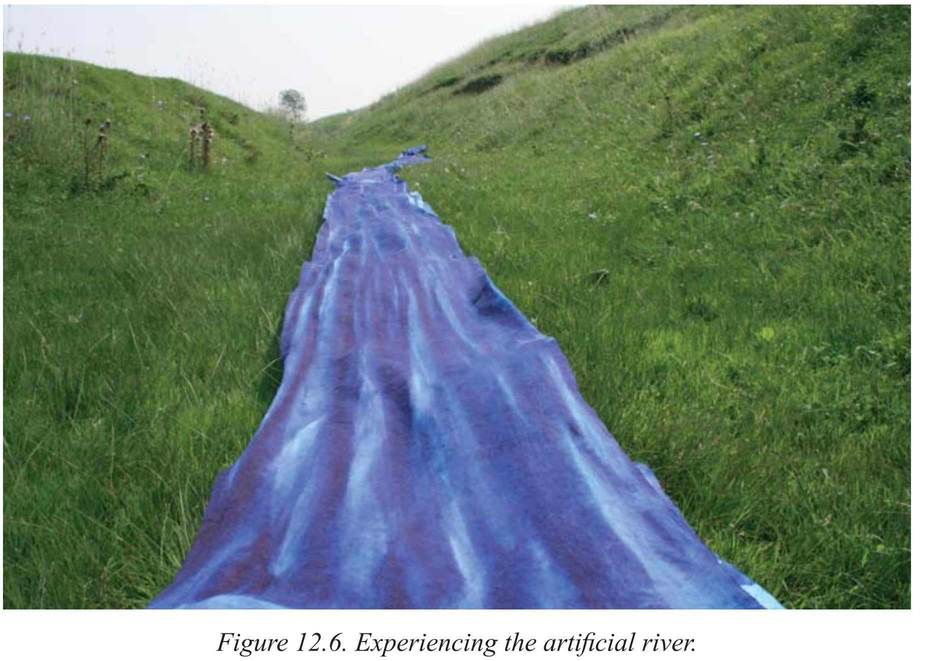

Figure 12.6. Experiencing the artificial river.

Figure 12.7. The evocation of the ditch with water surrounding the palisade of the tell-settlement. Part of the palisade was evoked also with textiles.

Figure 12.8. The mobile bridge positioned across the Vadastriza river.

(*Figure 12.6*) it offered a similar kinaesthetic experience as if walking along an actual river. Seen from the terrace, the coloured ribbon evoked the reflection of the blue sky on the water surface. A long time after the performance all participants were able to recall the shape, colour and walk along the art object.

This experiment was further enhanced, the rationale to evoke the ditch with water, which separated the tell settlement from the rest of the landscape (*Figure 12.7*), and to make visible the old roads which run along the foot of the terrace.

In the series of experiments, space was perceived and experimented as the result of a performance. This happened due to the relationship between a geomorph and an artefact.

3. The suspended bridge
(design and performance: Adrian Serbanescu and Ion Anghel, August 2006)

One of the land-art-objects whose existence was the mobile bridge across the river valley and the perimeter ditch (*Figure 12.8*). For me it represented an important ritual moment since it embodied the rite of passge and created the *situational* corporal memory of the performer. The passage via a narrow path of the bridge prepares the mind and the body of the performer to the sensorial experience of liminality and of incorporation within the interior space of the palisade.

4. Tell-settlement (design and performance: D. Gheorghiu and villagers, July–August 2003–2007)

Clearly the most interesting and complex ritual object is the settlement, which defines itself as a sum of rites of separation and incorporation stressing on the idea of *inside* and *outside* experience.

The reconstruction of the settlement was undertaken using rigourous techniques involving experimental archaeology, ethnoarchaeology and the examination of Chalcolithic architectural figurines. The height of the vertical structures could only be estimated as they were not preserved in the archaeological record (*Figure 12.9*).

Figure 12.9. The North-Eastern corner of the reconstructed settlement. One can see the ditch, the palisade and the surface and semisubterranean houses.

Throughout the process of drawing the perimeter of the settlement, I was confronted again with the experience of *inside* and *outside* and realized that the geometric shape of the settlement was most likely understood after being experienced at a small scale. Probably the role of miniature architectural figurines was to form a sort of tri-dimensional image of the settlement as being perceived from *outside*, which was enlarged afterwards at the full scale of the settlement.

To trace the lines of the ditch and of the perimeter with a palisade of an early level of settlement, as well as the position of the houses inside this very strict geometric perimeter, I used fibre threads to create a frame of parallel lines in the same way a loom is warped (*Figure 12.10*).

A second stage in the process of drawing the settlement's plan included the positioning of the passages; materialised as interruptions of the continuity of the lines (*Figure 12.11*).

One of the direct results of this experiment was the awarness of the mode of planning and building the first level(s) of habitation, which had *all* the houses and their protective perimeter located at the same time on a geometric grid. For a performer approaching the settlement, the ditch and the palisade are the first images of separation and a spatial experience of passage; from a natural world to an artificial one.

Because the height of the palisade did not allow the perception of the spatial organisation of the interior, the passage through the narrow gate of the entrance becomes a type of every day experience. Following the stepping across the ditch, several passages through gates and narrow corridors between

Figure 12.10. The fiber frame for tracing the foundation trench of a wattle and daub house.

Figure 12.11. The entrance of the house which interrupts the foundation trench.

buildings directed and restricted the movement of the performer according to left::right (see Needham 1973), front::behind and north::south (see Tuan 1977, 40 ff.) symmetry.

The low winter sun, the river and the northern wind oriented the settlement and the houses and were incorporated into the *procedural, situational, intercorporeal, incorporative* and *traumatic* memory of my body (and mind).

5. The wattle and daub house
(design and performance: D. Gheorghiu and villagers, July–August 2003–2005)

Experiments showed that building a house is a process which could be wholly embodied. The rhythmic movement to chop up the timber with a stone axe is entrenched in the *procedural* memory and is recalled when the performer approaches a tree, strikes wooden nails into the roof, or digs the foundation trenches with a timber stake.

Another kind of embodiment was the result of the physicality of moving along the straight frame of the houses (*Figure 12.12*).

The obvious separation created between interior and exterior infers to the door and window a direct ritual experience (*Figure 12.13*). The sight through the window creates the situative and procedural memory of the lived space and allows the interior space to be lighted and to breathe (*Figure 12.14*).

Last but not least, the fire contained into the oven is one of the most indelible experiences of the dwelt space. The oven is essential to the inner dwelt space, since it is the place which generates light and warmth and it is used for food preparation. Its shape, similar to that of the house, with roof, wall apertures and threshold (which separates the fire inside from the outside space of the room), infers it could have been perceived as a domestic space seen from afar. The fire inside the oven could have been the symbol of the living space inside the house as well as the ritual sacrifice through combustion of the household. Using this kind of oven for a long time could create a déjà vu attitude during the intentional firing of the house (*Figure 12.15*).

Figure 12.12. The geometrical structure of the interior of a tell settlement.

Figure 12.13. The window and the door seen from inside the house.

Figure 12.14. The environment as perceived from inside the house.

6. Combustion of the house (design D. Gheorghiu, performance D. Gheorghiu, R. Dumitrescu, F. Cavulli, M. Stroe, S. Stroe, D. Manea, S. Ungureanu, and villagers, August 2006)

In contrast with other experiments of house combustion and the exclusivity of fire (Nielsen 1966; Coles 1973, 64 ff; Bankoff – Winter 1979; Schafer 1984), the experiments undertaken in Vadastra village were focussed to study individual and social experiences (Gheorghiu 2007b).

Figure 12.15. Working at the loom at the oven's light.

The house to be fired intentionally was copied from the remains of a structure excavated by Mateescu (1978) in a [Chalcolithic] Vadastra II layer. The reconstructed house was filled with many objects including those made from ceramics and wood (*Figure 12.16*). Being the third built house by the experimentation team, and inhabited during a summer campaign, the kinesthetic experimentation of its spaces created in time an incorporate memory.

Figure 12.16. Firing the wattle and daub house.

For all the builders and pyrotechnicians, as well as for the passive spectators of the event, the physical transformation of the interior space into a ceramic layer (i.e. an exterior surface), meant the emotional participation in a rite of passage, created a traumatic and intercorporeal memory to all spectators. When fire erupted through the door, spectators congregated in front of the house. During initial burning the audience perceived the house as a huge oven (*Figure 12.17*). However, when the structure started to collapse, I noticed a moment of collective emotion. This was especially true for some of the spectators who were villagers. They had become accustomed to grand pyrotechnic shows such as the firing of the fields. This space of collective emotion formed a *communitas* (see Turner 1969, 96; Turner 1974, 202) as the result of the psychological unity of the different strands of society involved. This action demonstrates that the rites of passage and consequently, their spaces take up their power from their *collective* experimentation as social dramas (see Turner 1982, 69; Bell 1997, 120).

Figure 12.17. The interior of the house as an oven.

Figure 12.18. The surface of the walls before firing.

Figure 12.19. The surface of a [collapsed] fired wall.

Combustion imposed specific proxemics materialized in distances of observation, distances of action and new material textures. After being fired, the greysh clay of the walls (*Figure 12.18*) transformed into ceramic fragments, whose majority fragmented into small pieces of red colour [my visual experience] (*Figure 12.19*). Our incorporative memory was confronted at this moment with new tactile maps consisting of sensorial discontinuities between unfired and fired materials.

The final stage of experimentation was that of the post-dwelt space, i.e. the last stage of the rite of passage for the combustion of the house. After the fracturing of the fired walls, a visible perimeter of the built space was preserved on top of the soil; visible through the arrangement of timber post-holes, fragments of timber and visible lines showing the foundation trenches. This clear evidence of space (actually place) kept the fire-debris within the initial perimeter of the house (*Figure 12.20*).

One can define this post-dwelt space (i.e. the place) as being liminal, since it is situated between interior and exterior and between dwelt and deserted, between a past phase of dwelling and a future one.

Figure 12.20. The fired house after abandon.

A provisional conclusion: the dilemma of writing and interpreting space

What I have attempted to express when discussing the experimentation of space is that anthropological experience creates difficulties when transmitting the experience to the text. Because the six case studies presented above describe in a vague manner how one can approach space through a matrix of scientific experiment and the experientiality of the body, I started to write the final chapter as a description in deep of the personal experience, relying on the fact that:

> "[t]he anthropological emphasis on participation and observation often includes first-person narratives of personal experiences as a component of final published accounts (…). Into this basic methodology, I incorporate Wilhelm Dilthey's emphasis on *Erlebnis*, what has been "lived through." By this Dilthey means that phenomenological narrative accounts ought to enhance for readers a sense of "lived throughed-ness" with respect to the landscape represented through the first hand experiences of the researcher; thus, readers are better situated within or effectively

experience the landscape narrated through inclusion of the firsthand experience of the researcher (…). Dilthey emphasized that writing in this manner enhances "sharing lived experiences" – what Turner and Bruner term "putting experience into circulation" "(Johnson 2003, 159, n. 3).

Following Dilthey's advice I tried to put on paper the lived performance and I realised after a series of failures the impossibility of the transmission of the embodied experience of space through writing. This concluding chapter was written several times using different literary techniques (metaphorical, allegoric, descriptive/narrative), without being able to express in my deep corporeal and mental experiences.

I think that the prime conclusion of this chapter is that space cannot be clearly represented as text.

To escape the impasse of the impossibility of communication through writing as the only technique I found that I would have to evoke space as a Kaleidoscope image which would contain all the icons recalled from the memories of my body, and leave the reader to imagine the sensorial experience; thus:

Figure 12.21. A plethora of images (graphic design: Mihai Fulga).

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Bibliography

BAILEY, D. W. – ANDREESCU, R. – HOWARD, A. J. – MACKLIN, M. G. – MILLS, S. 2002
Alluvial landscapes in the temperate Balkan Neolithic: transition to tells. *Antiquity* 76, 349–55.

BANKOFF, F. – WINTER, F. 1979
A House-burning in Serbia. *Archaeology* 32, 8–14.

BELL, C. 1997
Ritual: Perspectives and dimensions. New York: Oxford University Press.

BELL, C. 1992
Ritual theory. Ritual practice, New York: Oxford University Press.

BENDER, B. – HAMILTON, S. – TILLEY, C. 2007
Stone Worlds: *narrative and reflexivity in landscape archaeology. Left Coast Press, California.*

CAVULLI, F. – GHEORGHIU, D. 2008 (*forthcoming*)
Looking for a methodology for burning wattle and daub house structures. Apreliminary report on an archaeological experiment. *Journal of Experimental Pyrotechnologies* 1, 37–43.

DE CERTEAU, M. 1984
The Practice of everyday life. Brekeley: University of California Press.

CHAPMAN, J. 1999
Deliberate house-burning in the prehistory of Central and Eastern Europe. In: Gustafsson, A. – Karlsson, H. (eds.), *Glyfer och arkeologiska rum – en vanbok till Jarl Nordbladh*. 113–126. Gotarc Series A. Vol. 3.

CHRISTESCU, V. 1927–1932
Les stations préhistoriques de Vădastra. *Dacia* III–IV, 167–225.

CLIFFORD, J. 1986
On ethnographic allegory. In: Clifford, J. – Marcus, G. E. (eds.), *Writing culture. The Poetics and politics of ethnography*. 98–121. Berkley: University of California Press.

COLES, J. 1973
Archaeology by experiment. New York: Charles Scribner's Sons.

COMSA, E. 1990
Complexul Neolitic de la Radovanu. *Cultura si civilizatie la Dunarea de Jos* VIII, Calarasi.

CSORDAS, T. 1999
Embodiment and cultural phenomenology. In: Weiss, G. – Haber, H. (eds.), *Perspectives on embodiment*. New York: Routledge.

DAVID, N. – STERNER, J. – GAVUA, K., 1988
Why pots are decorated, *Current Anthropology* 29 (3), 365–389.

DENNY, J. – ATKIN, D.
Does "Being There" Improve Memory: The Impact of Presence on Recall, http://www.temple.edu/ispr/prev_conferences/proceedings/2006/Denny%20and%20Atkin.pdf

DILTHEY, W. 1976
Selected Writings. ed. H. P. Rickman, Cambridge: Cambridge University Press.

DUMITRESCU, V. 1986
Stratigrafia asezarli-tell de pe ostrovelul de la Cascioarele. *Cultura si civilzatie la Dumarea de Jos* 2, 73–81.

FUCHS, T.
«The Memory of the Body», http://www.klinikum.uni-heidelberg.de/fileadmin/zpm/psychatrie/ppp2004/manuskript/fuchs.pdf

GHEORGHIU, D. 2007a
Compactness and void: Addition and subtraction as fundamental operations in South East European Clay Cultures. In: Frère-Sautot, M-C. (ed.), *Des Trous. Structures en creux pré- et protohistoriques*. Dijon et Baume-les-Messieurs, Monique Mergoil Editions.
GHEORGHIU, D. 2007b
A Fire Cult in South European Chalcolithic Traditions? On the Relationship between Ritual Contexts and the Instrumentality of Fire. In: Malone, C. – Barrowclough, D. (eds.), *Cult in Context*, Oxford: Oxbow.
GHEORGHIU, D. 2006
The Formation of tells in the Lower Danube wetlands in the Late Neolithic and Chalcolithic. *Journal of Wetland Archaeology* 6, 3–18.
GHEORGHIU, D. 2008a
Prehistoric Mandalas: The Semiosis of landscape and the emergence of stratified society in the South-Eastern European Chalcolithic. In: Nash, G. H. – Children, G. (eds.), *The Archaeology of Semiotics and the Social Order of Things*. Oxford: Archaeopress.
GHEORGHIU, D. 2008b
Cultural landscapes in the Lower Danube area. Experimenting tell - settlements. *Documenta Praehistorica* 35, 167–178.
GHEORGHIU, D. *forthcoming*
Built to be fired: The Building and combustion of Chalcolithic dwellings in the Lower Danube and East Carpathian areas. In: Nikolova, L. (ed.), *Circumpontica*. Oxford: Archaeopress.
GHEORGHIU, D. – NASH, G. H. 2007 (eds.)
The Archaeology of Fire: Understand Fire as Material Culture. Budapest: Archaeolingua.
GRIMES, R. 1990
Ritual criticism: Case studies in its practice, Essays on its theory. Columbia: University of South Carolina Press.
GRIMES, R. 1987
Procession. In: Eliade, M. (ed.), *The Encyclopedia of Religions*. vol. XII. New York, MacMillan.
GILLAM, R.
Site and ritual. http://humanitieslab.stanford.edu/ArchaeologyPerformance/98
HAMILAKIS, Y. – PLUCIENNIK, M. – TARLOW, S. 2001
Academic Performances, Artistic Presentations. *Assemblage* 6. http://ads.ahds.ac.uk/catalogue/adsdata/assemblage/html/index.html
HAMILAKIS, Y. – PLUCIENNIK, M. – TARLOW, S. 2001 (eds.)
Thinking through the body: archaeologies of corporeality. London: Kluwer Academic Press.
HEIDEGGER, M. 1993
Basic writings. New York: Harper Collins.
HODDER, I. 2000 (ed.)
Towards reflexive method in archaeology: the example at Çatalhöyűk.Cambridge, BIAA Monograph 28.
JEFFREY, D. 2004
Experiential and experimental archaeology with examples in iron processing, *IAMS* 24, 13–16. http://www.ucl.ac.uk/iams/jour_24/Iams2004.pdf

JOHNSON, N. B. 2003
Mountain, temple, and the design of movement: Thirteenth-century Japanese-Zen Buddhist landscapes. In: Conan, M. (ed.), *Landscape design and the experience of motion*. 158–186. Dumbarton Oaks Research Library and Collection, vol. 24, Washington D.C.
KOENDERINK, J. J. – VAN DOORN, A. J. – KAPPERS, A. M. 1992
Surface perception in pictures. *Perception & Psychophysics* 52(5), 487–96.
LEFEBVRE, H. 1997
The Production of space. Oxford: Blackwell.
LOMBARD, M. – DITTON, T. 1997
At the heart of it all: The concept of presence. *Journal of Computer Mediated Communication* 3(2).
MATEESCU, C. 1978
Contribution to the study of Neolithic dwellings in Romania A dwelling of the second phase of the Vadastra culture. *Dacia* NS XXII, 65–71.
MATEESCU, C. 1959
Sapaturi arheologice la Vadastra. *Materiale si cercetari arheologice* VI, 107–115.
MATHIEU, J. R. 2002
Introduction: Experimental archaeology. Replicating past objects, behaviors and processes. In: Mathieu, J. R. (ed.), *Experimental archaeology. Replicating past objects, behaviors and processes*. 1–12. Oxford: Archaeopress BAR 1035.
MERLEAU-PONTY, M. 1962
The Phenomenology of Perception. trans. Colin Smith, London: Routledge & Kegan Paul.
MIHAILESCU, G – ILIE, A. 2004
Tellul Gumelnitean de la Geangoiesti (Com Dragomiresti, Jud. Dambovita). *Ialomita* 4, 71–80.
NANIA, I. 1967
Locuitorii gumelniteni in lumina cercetarilor de la Teiu. *Studii si Articole de Istorie* 9, 7–23.
NASH, G. H. 2008
Norther Hunter/fisher/gatherer European rock-art and Spanish Levantine rock paintings: A study in performance, cosmology and belief. Trondheim: NTNU.
NASH, G. H. – GHEORGHIU, D. *forthcoming*
Experimental construction/ deconstruction and pyrotechnology: Seven years in Vadastra, Southern Romania. *Current Archaeology*.
NEEDHAM, R. 1973 (ed.)
Right and left. Essays on dual symbolic classification, Chicago: Chicago University Press.
NIELSEN, N. 1966
Experiment. *Stalk* 13–23.
RAPPAPORT, R. A. 1999
Ritual and religion in the making of humanity. Cambridge: Cambridge University Press.
RENFREW, C. [2003] 2006
Figuring it out. What are we? Where do we come from? The parallel visions of artists and archaeologists. London: Thames and Hudson.
REYNOLDS, P. J. 1999
The Nature of experiment in archaeology. In: Harding, A. F. (ed.), *Experiment and design. Archaeological studies in honour of John Coles*. 156–162.Oxford: Oxbow Books.
ROTHENBUHLER, E. 1998
Ritual communication: From everyday conversation to mediated ceremony. London: Sage.

SCHAFER, G. D. 1984
Neolithic building technology in Calabria, Italy. Ph.D. thesis. State University of New York at Binghamton.

SCHECHNER, R. 2003
Performance theory. London: Routledge.

STEVANOVIČ, M. 2000
Burned Houses in the Neolithic of South-eastern Europe. In: Gheorghiu, D. (ed.*), Fire in Archaeology*. 55–62. BAR IS 1098.

STEVANOVIČ, M. 1997
The Age of clay. The Social dynamics of house construction. *Journal of Anthropological Archaeology* 16, 334–395.

TILLEY, C. 1994
A Phenomenology of landscape. Places, paths and monuments. Oxford: Berg.

TILLEY, C. – HAMILTON, S. – BENDER, B. 2000
Art and the re-presentation of the past. *Journal of the Royal Anthropological Institute* (N.S.) 6, 35–62.

TRINGHAM, R. 1992
Households with faces: The Challenge of gender in prehistoric architectural remains. In: Gero, J. – Conkey, M. (eds.), *Engendering archaeology. Women in Prehistory.* 93–131. Oxford: Blackwell.

TUAN, Y. F. 1977
Space and Place. The Perspective of experience. Minneapolis: University of Minnesota Press.

TURNER, V. W. 1995
The Ritual Process: Structure and Anti-Structure. New York: Aldine de Gruyter.

TURNER, V. 1982
From Ritual to Theatre: The Human Seriousness of Play. New York, PAJ Publications (Division of Performing Arts Journal, Inc.).

TURNER, V. W. 1975
Ritual as communication and potency: A Ndembu case study. In: Hill, C. E. (ed.), *Symbols and society: Essays on belief system in action*. 58–81. Athens: University of Georgia Press.

TURNER, V. 1974
Dramas, fields and metaphors. Ithaca, Cornell University Press.

TURNER, V. 1969
The Ritual process: Structure and anti-structure. New York: Aldine.

TYLER, S. A. 1985
Ethnography, intertextuality, and the end of description. *American Journal of Semiotics*. 83–98.

VAN GENNEP, A. [1909]1960
The rites of passage. London: Routledge.

ZAKIA, R. D. 1997
Perception and imaging. Boston: Focal Press.

13

The Neolithic Greater Cursus and Nearby Long Barrows in the Pre-Stonehenge Landscape: Settings, Orientations and Inter-relationships

G. TERENCE MEADEN

Introduction

In Britain there exist a hundred known earthwork sites called cursuses (Loveday 2006). Constructed between 5,400 and 5,000 years ago, some were in use for hundreds of years, but their origins and purposes have been problematic since the first cursus, near Stonehenge, was identified nearly three centuries ago in 1723 by William Stukeley (1740).

A cursus is an elongated tract of open ground that is more-or-less rectangular in shape, with long parallel sides demarcated by perimeter ditches and low banks. When executed on chalkland – as in Wessex and Yorkshire – a cursus was a very major undertaking for the community.

The cursus near Stonehenge in Wiltshire is one of the largest and most impressive, extending 2.8km and averaging 100–110m wide but reducing to 60m at the terminals. It is called the Greater Cursus or sometimes the Stonehenge Cursus and was built on chalkland some five centuries before the stones of Stonehenge were raised. The world's longest cursus is in Dorset, 25km south-south-west of Stonehenge. It is 10km long and around 80m wide. Based on palaeoclimatic modeling the directions of these and most other cursuses run from a westerly quarter to the east, which is the same as Britain's prevailing winds. A second, smaller cursus near Stonehenge is called the Lesser Cursus.

Excavation tells us little about their purpose, because cursuses are practically devoid of meaningful finds. At best, a few sherds, bone and charcoal give clues as to date. This leads one to wonder whether cursuses were intended to be empty. Loveday (2006, 11) has written: "The word enigma could have been coined for cursus monuments. Alone amongst the many seemingly empty sites of British prehistory the size, form and layout of cursuses defy logical hypothesising."

In this paper the problem is tackled by a fresh approach involving interdisciplinary research that combines archaeology and religion.

Long barrows and the Greater Cursus

There are no less than 16 earthen long barrows located near the fourth-millennium Greater Cursus. In addition to this cluster is a seventeenth long mound that lies close to the transverse eastern terminal and parallel to it, 40m beyond. Previous work at trying to elucidate the cursus problem in the pre-Stonehenge landscape has included constructing viewsheds using a GIS approach that includes long barrows (Exon *et al*. 2000; Wheatley 1995). However, nothing significant was learnt, and the positions of the long barrows remained as simple dots on the map of the landscape.

Despite this, long barrows have a property that has been overlooked until now. They have an inbuilt self-orientation, being built by people who have a concept to orientate a monument in a particular way, and this may unlock the key to the problem. The map (*Figure 13.1*) clarifies this because now it is possible to bring alignments into a new analysis.

Study into the orientation of the long barrows may offer an insight into their relationship with the cursus. The map (*Figure 13.1*) illustrates an analysis of their alignments.

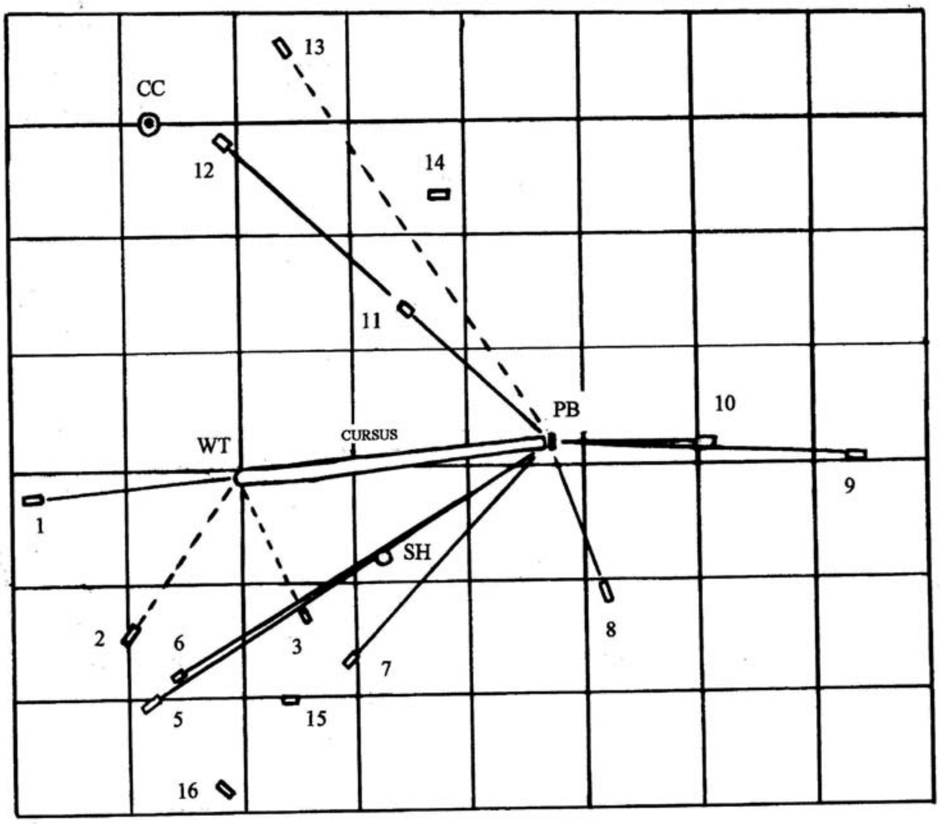

Figure 13.1. The Greater Cursus and its long barrows [1] to [16] near the site of future Stonehenge (SH). The scale is drawn as kilometre squares, WT is the Western Terminal of the cursus, PB marks the Prospect Barrow close to the eastern terminal, and CC is the Neolithic causewayed enclosure known as Robin Hood's Ball. Long barrow [4] is off the map, 3.2km south of barrow [5].

We find that 12 of the 16 long barrows, whatever their distance, are aligned upon one or other end of the cursus. This means that they were built after the cursus had been constructed, or were built at the same time as the cursus and in conjunction with it. An additional, seventeenth, barrow (Amesbury 42), located east of the eastern terminal of the cursus, may be a pseudo-terminal or 'prospect barrow' (PB). The remaining three barrows out of the 16 could pre-date the cursus (The primary long barrows are listed in *Tables 13.1* and *13.2*).

The suggested prospect barrow Amesbury 42 is orientated roughly north-south and is parallel to the eastern terminal of the cursus. Approximately 40m east of the eastern terminal, the barrow was built on a ridge 2m higher in altitude, *which allows it to be seen from afar in all directions*. This device is useful because the nearby cursus terminal is partly shielded by this same ridge from observers viewing from the east and south-east.

Three of the long barrows are aligned on the *western terminal* (WT) of the cursus. One of them ([1] Winterbourne Stoke 53), being axially aligned with the length of the cursus, is simultaneously orientated on the *eastern end*. A fourth [4], destroyed, long barrow may also been orientated similarly. Another nine long barrows [5] to [13] are directed at the combination of eastern terminal (ET) with Prospect Barrow (PB).

N° Exon Name	***NGR***	**Length**	***Self-orientation***	***Distance (km)***	**Bearing**	***PB or ET***
1 **14** Winterbourne Stoke 53	09174280	32m	E (~ 87 deg.)	1.9km	87 ±1	WT, ET & PB are all visible 04SE100
2 **32** Winterbourne Stoke 1	10004151	74m	NNE/NE (36 deg.)	1.7km	34.5 ± 0.5	WT not visible; PB is visible 14SW125
3 **34** Amesbury 14	11544176	31m	SSE (154 deg.)	1.3km	154 ±1	WT not vis; ET/ PB both visible 14SW127
4 **16** Woodford 2[1]	10083771	21m	~S-N	5.1km	194	WT, ET, PB are not visible 13NW100

Table 13.1. Western Terminal. Alignments of long barrows whose axes or self-orientations point to *the west terminal of the cursus (western terminal is at SU109 429). The number beneath each name is from Wiltshire's Sites and Monuments Records (SMR). PB = Prospect Barrow. The numbers in* **bold** *identify the barrows as numbered by Exon* et al. *2000.*

N° Exon Name	***NGR(SU)***	**Length**	***Self-orientation***	***Distance (km)***	**Bearing**	***PB or ET***
1 **14** W'b'rne Stoke 53	0917 4280	32	E (c. 87 deg.)	4.7	87	PB and ET are visible 04SE100
5 **38** W'b'rne Stoke 71	1010 4090	c.50	NE/ ENE (c. 58)	1.72km	58	PB and ET are visible 14SW10W
6 **33** Wilsford 34	1041 4118	36	NE/ ENE (c. 56)	1.55km	59	PB and ET are visible 14SW126
7 **35** Wilsford 13 (Norm)	1189 4130	20	NE (44)	2.7km	44	PB and ET are visible 14SW128
8 **1272** Amesbury 140	1418 4194	20	SSE (c. 160)	1.3km	162	PB is visible 14SW60M
9 **28** Bulford 1	1636 4305	41	E. (273)	2.6km	272	PB is visible 14SE103
10 **27** Durrington 63–65	1513 4317	74	E-W (n/d)	1.4km	271	PB is visible 14SE102
11 **29** Durrington 24	1247 4440	44	SE (135)	1.75km	133	PB + ET and WT are visible 14SW100
12 **25** Figheldean 31	1089 4588	45	SE (135)	3.9km	133	PB is visible 14NW108
13 **23** Netheravon 6	1143 4667	34	'SSE' [Grinsell]	4.2km	145	PB and ET are not visible 14NW103

Table 13.2. Eastern Terminal. Alignments of long barrows whose axes or self-orientations point to *the combination of the prominent long barrow (PB) Amesbury 42, at SU 1374 4320 with the East Terminal (ET) close by at SU 1370 4320. The orientations of both are not quite N-S but skewed to 174 deg. E of N.*

The great barrow known as [2] Winterbourne Stoke 1 points to the western end of the cursus, as does [3] Amesbury 14. Nonetheless, from neither barrow can the western end be seen, although the far-away eastern end is visible.

[1] A possible fourth long barrow is number 4 but, being now destroyed, its approximate north-south orientation is imprecisely known.

This leaves only three long barrows out of the 16 unaccounted. The reason may be that they pre-date the existence of the cursus. They are [14] Figheldean 27 – Knighton Barrow (E-W), [15] Wilsford 30 (E-W), and [16] Wilsford 41 (Lake Barrow, SE-NW).

Note that two long barrows ([11] Durrington 24 and [12] Figheldean 31) which are north of the cursus on much higher ground are aligned on the Prospect Barrow at an azimuth corresponding to midsummer sunset when viewed from the latter.

The Lesser Cursus

The Lesser Cursus has no barrows aligned on it. It seems it was decommissioned and filled with rammed chalk fairly soon after its construction (Richards 1990). This may have coincided with a decision to construct the impressive Greater Cursus. The Lesser Cursus is orientated WSW to ENE, and is 58 to 59m wide. Its original length probably exceeded 200m but it was lengthened to 400m during its short time of use. It has an important role in this analysis because of its dimensions and orientation (see below).

Discussion

Several suggestions for the origins of cursuses have been proposed. They are summarised by Barclay *et al*. (2003), Barclay – Harding (1999) and Loveday (2006).

- A race course (proposed in the 18th century for the Greater Cursus near Stonehenge, the only cursus then known)
- Formalising an old pathway between Rivers Till and Avon. (This special case was suggested by J. Richards only for the Greater Cursus)
- Processional ways, either inside (Atkinson 1955, 9, re. Dorset Cursus) or along the outside
- Empty path preserving an ancient route (Johnston 1999, 39–46, for the Dorset Cursus)
- A physical barrier separating regions of different significance
- Phenomenological framework (for special case of Dorset Cursus linked to initiation rites and “themes of death and the regeneration of life” (Tilley, 1994, 200)
- Providing an alignment on some other feature or celestial rising or setting
- The proximity to a sacred river, aimed at deciding the nature of interior events (Barclay – Hey 1999 with respect to riverside locations, e.g. the Thames)
- A symbolic river (metaphorically linking river flow with processions, Barclay – Hey 1999, 67–76)
- The actual construction of the monument being a means in itself at fulfilling some social or ideological need (Barclay – Harding 1999, 6)
- Earth Mother cult centre (Loveday 2006)
- A temenos (Loveday 2006)

Some only apply to special situations, while others can combine to partly explain particular cases. Several cursuses cross streams or rivers which would interfere at times with ceremonial marching.

Is it possible that sites for each cursus were not the result of solely human decisions, but that landscape positioning resulted from some form of event that lay beyond human control? This might explain these anomalies and others too. Suppose there was a motif – maybe linked to mystical reasoning – that drove people to build a cursus. Loveday (2006, 137–142) dispatches any influence, often used by archaeo-astronomers as regards potential astronomy, with commonsense: “The heavens are a bran tub from which orientations can always be plucked – if the rising and setting points of the sun and moon are too constrained, there are myriad stars in the northern and southern vaults. Caution is therefore vital." Generally, he concludes there is no justification for supposing that any cursus was laid out with regard to celestial or astral motions. Instead, Loveday (2006, 143 *et seq*.) arrives at the more likely crux of the matter: sacred landscapes and cult centres. The author agrees that demarcation of sacred space, with possible associations of imagined supernatural power in some fashion, may be the key to interpreting cursuses all along.

The shape of a typical cursus approximates to a long narrow rectangle defined by shallow ditches and low banks. True entrances, by which are meant uncut causeways, are few. Some cursuses appear to have no way of entry, as at the 700-m long cursus at Springfield/Chelmer in Essex (Buckley *et al.* 2001). Could the shape provide a clue, by implying that the cursus demarcates a length of sacred land from which entry was generally prohibited? Does it indicate some principle of exclusion, or some principle of enclosure? Might the bounded space have been viewed as a sacred space or *temenos*?

As for the Greater Cursus, it was introduced into a landscape where a causewayed enclosure (Robin Hood's Ball) and a series of long barrows were present, and that long barrows aligned to the cursus were added later; and moreover, as the Stonehenge sarsen site developed, the cursus continued to hold cultural, social or religious respect for up to 1200–1500 years because Bronze Age round barrows heeded its location too (two inside it, and 20 ranged along outside). Note the physical oddity that the cursus widens and narrows and then dips into a low-lying area that today is damp and muddy for half the year – something hardly desirable for a planned processional way if that is how it was during the Neolithic.

Renfrew (1973) and Loveday (1999, 56–57) viewed the cursus at Dorchester-on-Thames with its complexity of Neolithic constructions as a ritual centre. Renfrew concluded that cursuses seem to be "ritual centres which seemingly lacked the social importance of the contemporary causewayed enclosures or later henges." Moreover, we know that to build some cursuses (the Drayton, Dorset and Stonehenge Greater cursuses for example) at least some woodland areas had to be cleared. As to puzzling irregularities that occur along one ditch of some cursuses as compared with the other long ditch, Atkinson *et al.* (in discussing the Dorset Cursus) attributed this to irregular offsetting from a more carefully surveyed first ditch (1951). Loveday (2006, 152) explained why this cannot apply to the cursus at Dorchester-on-Thames. Directional anomalies occur once on its northern side and twice on the southern side, but not in conjunction with one another. The result is directional change "towards its centre by several degrees" but as it is a reorientation that "is not synchronous on opposing sides" it is not a "misdirection following interrupted construction" (Loveday 2006, 152)

Tracks in the landscape

Cursuses are not as regular as first appears. Under scrutiny, most display architectural/geometrical irregularities. Sometimes there are sudden deviations from their straightness and parallelism, and these effects can be cumulative, leading to acute changed orientations over big distances. Summarized below is basic information on cursuses for which explanations need to be sought, what I term as the twelve idiosyncrasies of cursus paths (see below).

1. Although many cursuses are straight-sided, others are not, and have puzzling bends.
2. Some are straight along one side, yet oddly irregular along the other (e.g. Dorset Cursus)
3. Some widen, then narrow steadily further on (e.g. Stonehenge Cursus, Benson Cursus).
4. Some are long and evenly curving (Thornborough Cursus follows a smooth arc).
5. Some curve oddly in places, as if "to avoid natural features in the landscape" (Dorset Cursus, the words of Loveday (1999) referring to Tilley (1994))

6. Two have prominent dog-leg bends: (i) descending from Gussage Down (Dorset Cursus) going north-east and (ii) when descending part of Rudston A going from south to north.
7. Some traverse running-water courses (Dorset Cursus, Drayton, Rudston A, Rudston C).
8. At least one has been described as ‘broken’ or ‘double’ (Drayton Cursus).
9. The majority appear to be orientated from a westerly quarter towards the east, chiefly from W to E, or WSW to ENE, or SW to NE.
10. “All short cursuses are straight” (Barclay – Harding 1999, 2). As a general tendency this is true enough but requires qualification.
11. “Often the longest cursuses are also the broadest” (Hedges – Buckley 1981, 1).
12. Very rarely, as at Stanwell/Heathrow and at Scorton (both ~20m wide), they are long and narrow

A legitimate theory of cursuses should explain simultaneously all these major, particular, and peculiar features of cursuses. Such a theory is now offered.

A considered hypothesis

How did it come about that many communities throughout the Neolithic core areas of southern Britain felt a need to have a cursus of their own – even if many crossed difficult ground and several crossed water? The following hypothesis draws together some ideas based on the palaeoclimate of the period.

Firstly, the diagnostic shapes of cursuses are indistinguishable in form – together with occasionally bizarre irregularities – from the shapes and imperfections of typical tornado tracks. Tornadoes are powerful whirlwinds associated with severe storm conditions. The twelve criteria, as listed above for Britain’s cursuses, are fully explained. The suggestion is that cursuses were prepared as memorial sites from tornado tracks, created in an epoch when early farming communities possibly believed in a Sky Father and Earth Mother (which is a mythology recorded from modern ethnographic sources as part of their fertility religion).

Figure 13.2. Tornado track through the Hampshire village of Boarhunt, 28th November 2006. Site investigation and map by Anthony Gilbert, Tornado and Storm Research Organisation: its length 600m, width 60–75m. Travel was from SW to NE, the direction most favoured by cursuses.

The above image is an aerial photograph with a track superposed. This was drawn by a meteorologist specialising in tornado studies (Mr. Anthony Gilbert, Tornado and Storm Research Organisation, UK; see also Meaden 1985; Elsom *et al*. 2001). It is the tornado track recorded on the 28th November 2006 at the village of Boarhunt, Hampshire, 60km east-south-east of Stonehenge. Compare this figure with *Figure 13.1*, the Stonehenge Greater Cursus. The travel was from SW to NE, the direction most favoured by cursuses. This is a tornado scar whose lines enclose areas of damage, and in doing so duplicate the shape of a typical cursus.

Might Neolithic communities have marvelled at the sight of a spiralling tornado tearing through their landscape, blowing over trees and damaging others, twisting and snapping their limbs [cf. *Figure 13.3*]? Might a cursus be built out of devotion, fear and joy – the result of seeing the tornado spout descend to the fields and forest of the labouring farmers? Could the cursus be a collective memorial to the day and place when part of the sky came down to earth?

Figure 13.3. Tornadoes carve a track through field and forest of varying length, width, straightness and curvature. They are not uncommon in Britain, but rare in any one place.

Tornado worship is attested in recent centuries for the Florida Indians and for the Cuban Indians (Eliade 1958; Ortiz 1947). The worship of natural phenomena in non-western societies is not uncommon (e.g. Frazer 1911–1918). Therefore, was there a degree of tornado worship in Neolithic Britain?

When tornadoes strike, they carve a track through field and forest that can be long or short with varying straightness, curvature and widths. Crucially, the nature of the damage tracks account for all twelve idiosyncrasies of cursuses listed above.

In short, the tornado hypothesis links a mythological Earth Mother landscape with the action of a mythological Sky God in the form of a Storm God. Ortiz (1947, 123) – along with Frazer (1911–1918 *et seq.*), Eliade (1958) and others – concludes, “One can say that in all continents whirlwinds, spouts, tornadoes, typhoons and hurricanes have been personified as supernatural powerful entities, like gods, demons or malign spirits.”

For North America and Cuba (Ortiz 1947; Eliade 1958) anthropologists have learnt that native Indians *feared and worshipped* the storm god because of its storm power combined with the spectacle of a phallic spout that descends from the cloud to encounter earth (Ortiz 1947, 43). “The tornado is like an immense serpent-shape that leaves the sky and descends undulating to the ground”; and that in most or all Amerindian myths an Earth Mother was omnipresent. The vision or imagery is that of the Sky God mating with the earth of the Earth Mother. *It is the universal myth of the Marriage of the Gods – found worldwide in historically-recorded cultures including Indo-European religions.* For Neolithic Britain, the hypothesis is that people honoured the meeting of the fertility deities along the tornado track by marking the zone of consummation as the cursus path. Hence, the bigger cursuses could have attracted pilgrims as discussed by Renfrew (1973) and Loveday (2006).

Tornadoes are not uncommon in Britain, but rare at any one place. An average exceeding 50 a year is reported for all Britain. Most British tornadoes track from a westerly quarter to an easterly quarter – the same trend as for cursuses (Meaden 1985). In fact, wind-direction roses and cursus-direction roses (*Figure 13.4*) are so similar that one cannot tell them apart. Seeing that tornado funnels tear down thousands of trees when cutting through woodland, one can appreciate that the labour of cursus building is greatly diminished if performed along a tornado track. Michael Allen among others has established what the part-forested landscape looked like. I therefore give reference to Allen (1995) in Cleal, Walker – Montagu (1995).

Importantly, the tornado theory is open to factual analysis and scientific comparisons. Consider a case-study of a tornado path 8km north-east of Stonehenge (*Figures 13.5* and *13.6*). This tornado cut

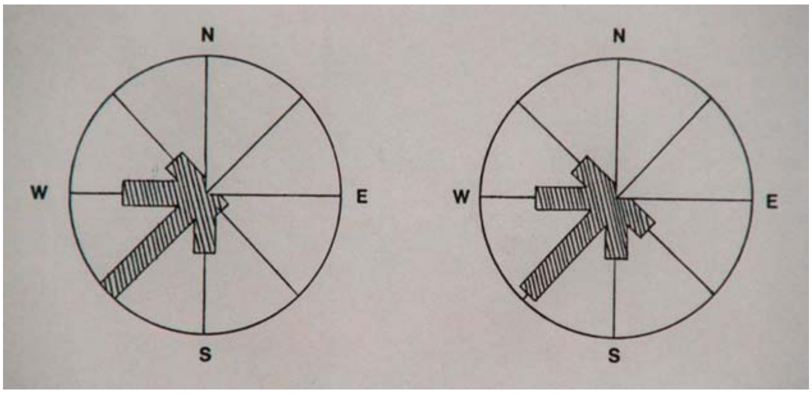

Figure 13.4. Comparing directions for tornado tracks (left) and cursus paths (right).

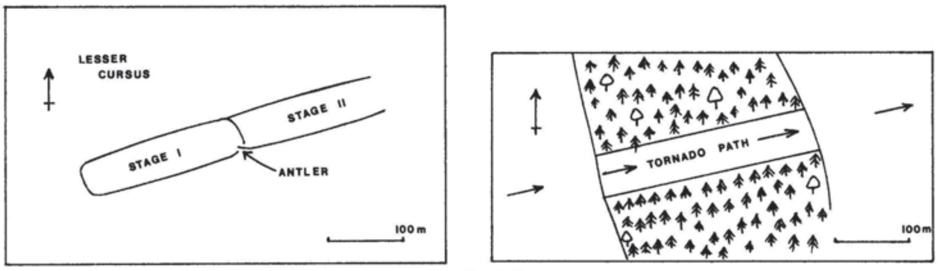

Figure 13.5. On 30th May 1979 a tornado cut a 50m wide path through a plantation on Ablington Down, Figheldean, 8km from Stonehenge. The track is similar in orientation, width and length to the Lesser Cursus (Richards 1990, 73).

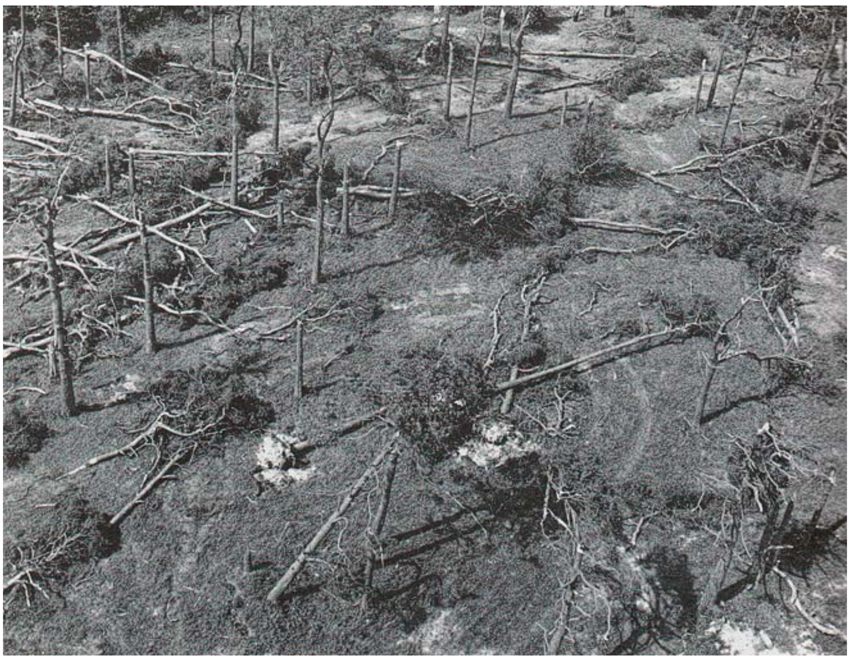

*Figure 13.6. Detail of the tornado track on Ablington Down, near Stonehenge, 30 May 1979 (*Salisbury Journal*).*

through a plantation in Figheldean on 30th May 1979 leaving a track 50m wide with ends that were squared off by the points of entry and exit into the plantation (as reported in the *Salisbury Journal*). Beyond this there was a long non-damage interval as the tornado crossed fields until touching the tops of another clump of trees. Might a similar event have happened in the fourth millennium, prior to the Lesser Cursus being constructed?

Of major interest is the nature of the sides of the tornado track, sharp on the right-hand side and often less clear on the left. The faster that a tornado moves, the more extensive is the damage on its right side in contrast to the left side, because the speed of forward motion is added to the rotational velocity of the vortex on the right, but subtracted on the left (Meaden 1985). For the Boarhunt event, if the tornado was travelling at a likely 60km/h, then to judge by the resulting damage the rotational velocity was around 160km/h (Meaden *et al*. 2007). This would reduce the winds on the left of the tornado track, along the direction of travel, to 100km/h which is marginal for causing tree damage, as compared with 220km/h for the right-hand side. This allows one to assess by inspection in which direction the tornado was passing. The same would have applied to a Neolithic tornado whose track was to be memorialized as a future cursus. With this in mind, inspections of cursus paths suggest that the tornado and hence the cursus must be SW to NE for the Dorset Cursus (Atkinson 1955) and from N to S for Rudston A (Dymond 1966). Atkinson reports that the Dorset Cursus was regular on its eastern side and occasionally uneven along the western side. Sites with similar disparity include the Drayton Cursus (Oxfordshire) and the Springfield Cursus (Essex). Another feature is that just as present-day tornadoes strike buildings, so could tornadoes in the Neolithic have hit pre-existing structures. This may have happened for the Dorset Cursus relative to the long barrow Pentridge IV, and at Neolithic sites at Dorchester-on-Thames.

Next, consider dog-leg bends. The Dorset Cursus and Rudston A Cursus, each has a crooked section that needs explaining (see Loveday 2006, 159). These two cursus constructions (one in the north of England, the other in the south) have the same peculiarity typical of tornadoes that crossed a ridge and then veered to the left on continuing downhill until correcting itself by turning right.

Why does Rudston have four cursuses? One may suppose that over the course of centuries the region was visited by four tornadoes. At the other extreme, Mid-Neolithic Avebury may have had none. Its megalithic avenues are unlikely to relate to the cursus phenomenon. Thus Johnston (1999, 46): "A cursus is distinct from an avenue which is furnished with a start and a finish – a beginning and an end – having entrances and exits. Cursuses are closed spaces, and could be 'empty of human processions'."

Tree-throw evidence is pertinent to this inquiry. When a big tree falls, the roots take a mass of soil sideways and into the air leaving a hole. Barclay *et al*. (2003, 60–67) studied the stratification of numerous tree-throw hollows when excavating the Drayton Cursus where the Neolithic trees were chiefly oak and alder. The authors concluded (p.66) that "the environment prior to the construction of the cursus is presumed to have been substantially wooded" and noted "there is a correlation between the present-day directional frequency of strong winds at Oxford and the direction of tree falls at Drayton." i.e. from SSW or SW. *All in all, the most satisfactory explanation is that the winds of a tornado blew the trees down* as a single, longitudinal, event in the latter half of the fourth millennium.

There is evidence of tree-throw holes at the Springfield Cursus (Essex) where the southern ditch deviates to align with a pit that is probably a tree throw. A similar pit is enclosed inside the eastern terminal at Springfield (Hedges – Buckley 1981) and also suspected for Barford in Warwickshire and Aston-on-Trent, Derbyshire.

Brown (1997; 2001) has considered the evidence for forest clearings in Mesolithic and Neolithic Britain as sometimes arising from wind-throw incidents. For instance, Brown (1997, 141) cites McPhail – Goldberg (1990) whose excavation in the Nene Valley revealed 35 Neolithic tree-throw pits that held artefacts and revealed evidence of burning, showing how these tree-throw hollows were subsequently exploited. Brown (2001) discusses examples where Neolithic monument construction, or possibly ritually-useful spaces, followed what may have been opportunistic finds of partly-formed natural clearances. Other examples may be Rollright (Lambrick 1988), Mount Sandel (Woodman

1985) and Rams Hill (Bradley – Ellison 1975). A tornado track falls within this scheme because of similar possibilities.

Conclusions

Detailed consideration of the long barrows of the pre-Stonehenge landscape exposed orientation relationships between them and the Greater Cursus. The directions of these cursuses run from south-west to north-east or from west to east, the same as Britain's prevailing winds and most frequent storm tracks. Indeed, the longitudinal areas defined by cursus banks resemble tornado tracks in many ways. By studying these exceptional monuments in conjunction with the mythology and symbology of a Mother Earth /Sky Father religion, the author proposes that cursuses could have been sacred areas intended to memorialize the ground tracks made by tornado spouts and created by a devout people anxious for the well-being of their uncertain world. The suggestion has the merit of explaining all the many known forms and oddities that have been documented for cursus paths. At the same time the problem of the human effort needed for tree clearance is solved because the amount of labour is reduced. The tornado fells or snaps the trees, and the devotees clear the ground.

The monuments served as visible statements regarding ancestral land rights, use and tenure – the people's claims indisputable and seen to be part of natural order. Tilley (1994) proposed that the Wessex downs could be regarded as having a symbolic, mystical and ancestral significance which may have begun in Mesolithic times, and that some Neolithic monuments (like long barrows) could have been planned into a pre-existing sequence – or as Harding – Lee (1987) frankly claimed: " [new] sites were constructed with their neighbours in mind".

Such traditions and procedures augment a society's sense of history and affinity for the ancestral past besides providing for social, spiritual and ceremonial functions. By ritualising the landscape and forging a close relationship between people and monuments, the ancient Britons created a memorable native tradition having affinities with what we already know for the well-researched Native Americans, Africans and Australians who revered the landscape as sacred and 'ritual'. Edmonds (1999, 68–69) writes of British Neolithic peoples: "Their lives had long been animated by a concern with the fertility of nature and of people, the cycles and histories of the land and their ties with others ... It is against such a background that we should consider the foundation and development of tombs".

Although we can never be sure for Britain (there are no survivors to interview, in contrast to the native peoples of North America), we may cite Tilley (1994, 67) who, after discussing general anthropological knowledge of recently-primitive moderns, writes "… what is clear from all these accounts … is the symbolic, ancestral and temporal significance of the landscape … landscape is intimately related to myth … it is peopled by ancestral and spiritual entities".

This research has united landscape archaeology with the research disciplines of meteorology and mythology, and led to the proposition that Storm-God worship may have been part of the religious fabric of the peoples of Neolithic Britain – as known for sure for Amerindians. Moreover, the numerous long barrows of the pre-Stonehenge landscape form an intimate link with the building of the Greater Cursus. Lastly, it does seem that the laborious task of cursus construction required an extraordinary experience or belief system to inaugurate it – one that was linked in some way with the Earth-Sky religion of the Neolithic farmers.

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Bibliography

ALLEN, M. 1995
Landscape before Stonehenge. In: Walker, C. – Montague (eds.), *Stonehenge in its landscape*. 41–62. English Heritage: London.

ATKINSON, R. J. C. 1955
The Dorset Cursus. *Antiquity* 29, 4–9.

ATKINSON, R. J. C. – PIGGOTT, C. M. – SANDARS, N. K. 1951
Excavations at Dorchester, Oxon. Dept. of Antiquities, Ashmolean Museum, Oxford.

BARCLAY, A. – HARDING, J. 1999 (eds.)
Pathways and Ceremonies – The cursus monuments of Britain and Ireland. Neolithic Studies Group Seminar Papers 4. Oxbow: Oxford.

BARCLAY, A. – HEY, G. 1999
Cattle, cursus monuments and the river: the development of ritual and domestic landscapes in the Upper Thames Valley. In: Barclay, A. – Harding, J. (eds.), *Pathways and Ceremonies.* 67–77. Neolithic Studies Group Seminar Papers 4. Oxbow: Oxford.

BARCLAY, A. – LAMBRICK, G. – MOORE, J. – ROBINSON, M. 2003
Lines in the Landscape. Oxbow: Oxford.

BRADLEY, R. – ELLISON, A. 1975
Rams Hill. British Arch. Report, No. 19. Oxford.

BROWN, A. G. 1997
Clearances and clearings: Deforestation in Mesolithic/Neolithic Britain. *Oxford Journal of Archaeology* 16 (2), 133–146.

BROWN, A. G. 2001
Floodplain vegetation history: Clearings as potential ritual spaces? In: *Plants in Neolithic Britain and beyond*. 49–62. Neolithic studies group Seminar Papers 5, Oxbow: Oxford.

BUCKLEY, D. – HEDGES, J. – BROWN, N. 2001
Excavations at the Neolithic cursus, Springfield, Essex, 1979–85. *Proc. Prehistoric Soc*. 67, 101–162.

CLEAL, R. M. J. – WALKER, K. E. – MONTAGUE, R. 1995
Stonehenge in its landscape. English Heritage: London.

DYMOND, D. P. 1966
Ritual monuments at Rudston, E. Yorkshire. *Proc. Prehistoric Soc*. 32, 86–95

EDMONDS, M. 1999
Ancestral geographies of the Neolithic: Landscapes, Monuments, Memory. Routledge: London.

ELIADE, M. 1958
Patterns in comparative religion. Sheen and Ward: Chicago.

ELSOM, D. M. – MEADEN, G. T. – REYNOLDS, D. J. – ROWE, M. W. – WEBB, J. D. C. 2001
Advances in tornado and storm research in the UK and Europe: The role of the Tornado and Storm Research Organisation. *Atmos. Research* 56, 19–29.
EXON, S. – GAFFNEY, V. – WOODWARD, A. – YORNSTON, R. 2000
Stonehenge Landscapes: Journeys through real-and-imagined worlds. Archaeopress: Oxford.
FRAZER, J. G. 1911–1918
The Golden Bough. London
HARDING, J. – LEE, G. E. 1987
Henge monuments and related sites of Great Britain: Air photographic evidence and catalogue. British Archaeological Reports Series, 175, Oxford.
HEDGES, J. D. – BUCKLEY, D. G. 1981
Springfield Cursus and the Cursus Problem. Occasional Paper 1. Essex County Council, Chelmsford
JOHNSTON, R. 1999
An empty path? Processions, memories and the Dorset Cursus. In: Barclay, A. – Harding, J. (eds.), *Pathways and ceremonies – The cursus monuments of Britain and Ireland.* 39–48. Neolithic Studies Group Seminar Papers 4. Oxbow: Oxford.
LAMBRICK, G. 1988
The Rollright Stones. HBMCE Report 6, English Heritage.
LOVEDAY, R. 1999
Dorchester-on-Thames – Ritual complex or ritual landscape. In: Barclay, A. – Harding, J. (eds.), *Pathways and Ceremonies – The cursus monuments of Britain and Ireland.* 49–63. Neolithic Studies Group Seminar Papers 4. Oxbow: Oxford.
LOVEDAY, R. 2006
Inscribed across the landscape: The cursus enigma. Tempus: Stroud.
MCPHAIL, R. I. – GOLDBERG, P. 1990
The micromorphology of tree subsoil hollows: their significance to soil science and archaeology**.** In: Douglas, L. A. (ed.), *Soil Micromorphology*. 425–29. Oxford University Press: Oxford.
MEADEN, G. T. 1985
A study of tornadoes in Britain, with assessments of the general tornado risk potential and the specific risk potential at particular regional sites. Prepared at the request of HM Nuclear Installations Inspectorate, Health and Safety Executive.
MEADEN, G. T. – KOCHEV, S. – KOLENDOWICZ, L. – KOSA-KISS, A. – MARCINONIENE, I. – SIOUTAS, M. – TOOMING, H. – TYRRELL, J. 2007
Comparisons between the theoretical versions of the Beaufort Scale, the T-Scale and the Fujita Scale. *Atmos. Research* 83, 446–49.
ORTIZ, F. 1947
El Huracan. Mexico City.
PRYOR, F. – FRENCH, C. – CROWTHER, D. – GURNEY, D. – SIMPSON, G. – TAYLOR, M. 1985
The Fenland Project, Archaeology and environment in the Lower Welland Valley 1. *East Anglian Archaeology Report* 27, vol. 1, 279–95.
RENFREW, C. 1973
Monuments, mobilization and social organization in Neolithic Wessex. In: Renfrew, C. (ed.), *The explanation of culture change: models in prehistory*. 539–58. Duckworth: London.
RICHARDS, J. 1990
The Stonehenge Environs Project. Hist. Build. Monuments Comm. Archaeol. Report No. 16. English Heritage: London.

STUKELEY, W., 1740
Stonehenge. London.
TILLEY, C. 1994
A Phenomenology of Landscape – Places, Paths and Monuments. Berg: Oxford.
WHEATLEY, D. 1995
Cumulative viewshed analysis: A GIS-based method for investigating intervisibility, and its archaeological applications. In: Lock, G. – Stančič, Z. (eds.), *Archaeology and Geographical Information Systems*. 171–86. Taylor and Francis: London.
WOODMAN, P. C. 1985
Excavations at Mount Sandel, Co. Derry 1973–77. HMSO: Belfast.

14

Power in Place: The Case of Superimposition of Rock-Art Images at Pià d'Ort, Valcamonica

CRAIG ALEXANDER

Introduction

Place – as distinct from space – can be argued, following Agnew (1987), to have three characteristics: location, locale (materiality) and sense of place. Rock-art is intimately involved in the creation of place – it is both a form of *in situ* materiality and very often a contributor to the creation of a sense of place. Within these rock-art-defined places we may also find what one might term "places within places" – rocks or rock panels that have been singled out for more attention than others by the prehistoric carvers. We also find superimposition of petroglyphs, one over another. In Valcamonica this event is, in fact, relatively common. Was the underlying image invisible to the carver of the later glyph? Or was there, rather, a conscious choice to overwrite what was already there? Was the power of place being appropriated by the later carver?

We often encounter superimposition elsewhere in the archaeological record, particularly with respect to architecture. In this context the motive seems to have been a conscious appropriation of power or expression of resistance to an established power. Think of the numerous Christian churches in the UK built on earlier sites – York Minster on a Roman site or the church within a Neolithic henge at Knowlton in Dorset. Further afield, consider the building of a kiva – an underground room with various functions, at least some of which are/were ceremonial – in the middle of the priests' quarters at Pecos Pueblo in New Mexico during the 1680 Pueblo Revolt against Spain.

The destruction or marring of existing images is also quite common. Examples of the defacing of existing images in a context of wielding ideological or political power abound – from the destruction of images of Akhenaten after his death to the removal of the noses of all the statues in Brescia in the Middle Ages and on to the destruction of religious images during the English Revolution. Not only is this an act of destruction but it can also be seen as a deliberate alteration of the materiality of place: a form of assertion of control.

Might, then, the superimposition of rock-art images be seen more generally as a form of manifestation of power over place? This paper offers some exploratory analyses of this idea.

The nature of power

Before we start we should define our terms – what exactly is "power"? To quote from the online Merriam-Webster dictionary (2008), power is, amongst other things, the:

"ability to act or produce an effect"

and

"possession of control, authority, or influence over others"

and

"political control or influence".

Self-evidently the agent (in the usual sense – see, e.g. Dobres – Robb 2000) carving a petroglyph over an existing image is exerting an ability to change what is there on the rock and to assert the primacy of his or her image over that already there. This is not an especially theoretical paper but one might draw upon the semiotic concepts of Peirce (Jones 2007; Peirce 1991) to think of the petroglyphs as indexical of action/agency.

A further theoretical consideration is suggested by Barfield – Chippindale (1997): any attempt to gain understanding of the carvers' motives and world views needs to focus on common occurrences rather than unusual images. Within Valcamonica rock-art research there has been a tendency to focus on larger panels and more distinctive images. The Pià d'Ort sites are – to the extent that they are yet famous – probably most well-known for their unusual engravings, most particularly an image of a supposed Iron Age foundry but also an image of purported sodomy and an archer. However, as Barfield and Chippindale noted, it is the most frequently occurring images and assemblages of images that have the most potential to yield insight.

The sites

My focus is, rather, empirical and, in the spirit of Barfield and Chippindale homes in on the most commonly occurring superimpositions. My current research focuses on the landscape context of the rock-art of Valcamonica and so it is from that valley that I will draw my examples for analysis. In particular, I am going to talk about the sites of Pià d'Ort, on the west side of the valley and reachable on foot from Pescarzo di Capo di Ponte in about 30 minutes. The site (see *Figures 14.1* and *14.2*) – actually four sub-sites – has been intensively analysed and fully published (Sansoni – Gavaldo 1995) by teams led by Professor Umberto Sansoni. Whilst I have visited the Le Crus sub-site on many occasions for my own work I rely in this paper on the lists of superimpositions and tabulations of data on the images published by Sansoni and Gavaldo.

Before laying out my analyses and results I should note that Chris Chippindale has, in his doctoral dissertation (Chippindale 1989), pointed out the difficulty of telling which image is earlier and which

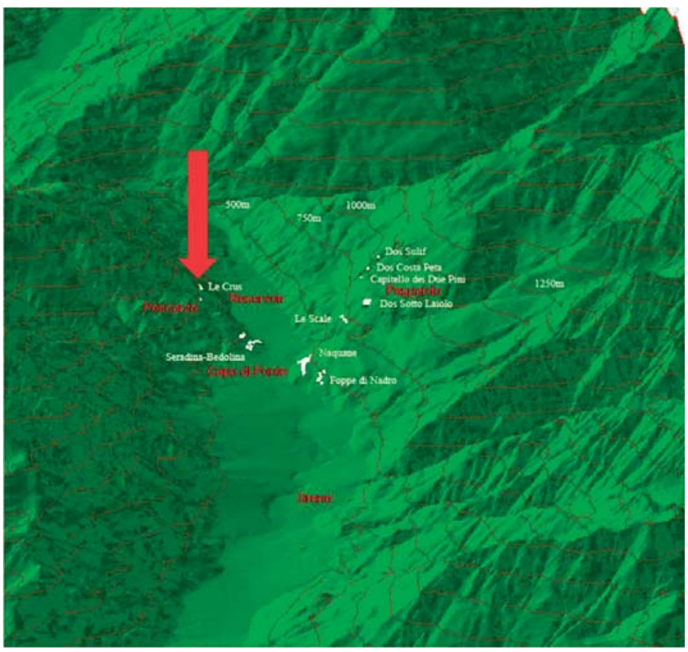

Figure 14.1. Location of Pià d'Ort sites. Source: Author.

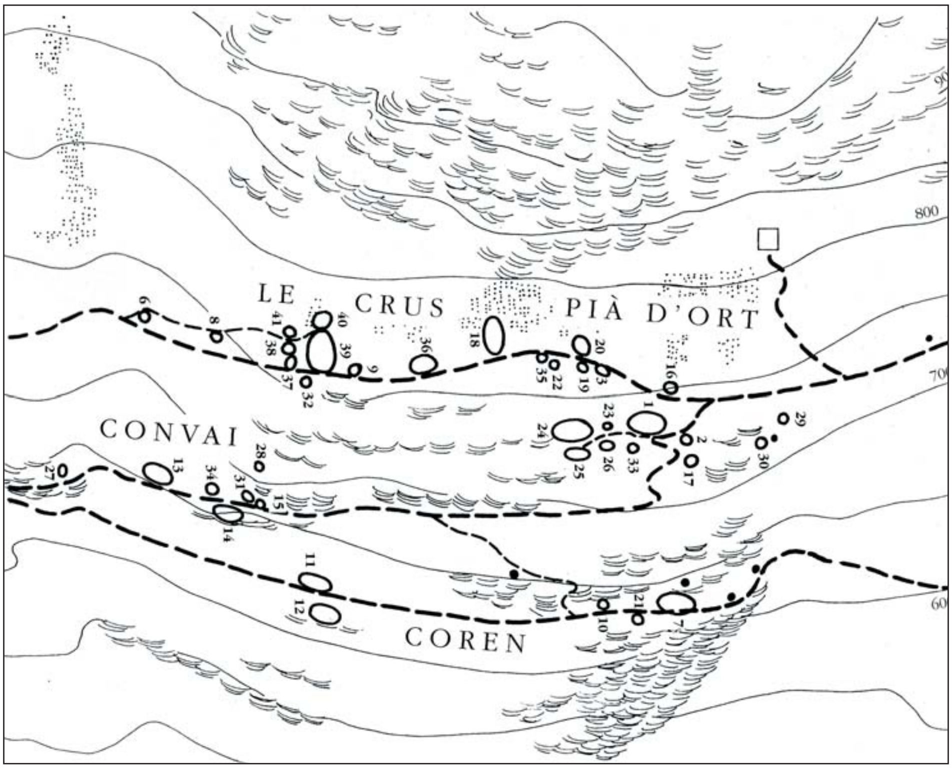

Figure 14.2. Sub-sites at Pià d'Ort. Source: Sansoni – Gavaldo (1995).

later in contexts of superimposition. While this should cause us to treat with due caution any findings that arise one can, perhaps, be confident that Sansoni's team were consistent in their approach to superimposition. Furthermore, one can at the very least assert that the overlapping images are related spatially – even if one cannot tell which came first they still overlap and one can ask whether there are patterns of significance in these overlaps. One further caveat is that it is possible that Sansoni's team were to some extent guided in their decision as to which image lay over which by their beliefs about the chronology of the images. Whilst this is possible, there are grounds for the belief that the problem is not too serious in that several apparently "contemporary" images are asserted to be superimposed and a preliminary analysis of the relations of transitivity amongst Sansoni's superimposition relationships suggests that his team did not take into account all the logical implications of their assessments: for example, at least one Phase IV F/iniziale image is said to overlay a (presumably later) Phase IV F image. The analysis of superimposition thus appears to be relatively independent of the typological scheme.

The Pià d'Ort sites command exceptional views of the valley, sitting atop a very steep slope up from the valley bottom (see *Figure 14.3*). There are 3,130 recorded petroglyphs spread across the four sub-sites – see *Table 14.1* – distributed across 41 decorated rocks.

Figure 14.3. View from Le Crus. Source: Author.

	Le Crus	Pià d'Ort	Convai	Coren	Total
Anthropomorphs	303	169	115	104	690
Zoomorphs	138	130	39	73	380
Objects	492	116	3	1	612
Symbols	494	362	333	259	1448
Total	1427	777	489	437	3130

Table 14.1. Numbers of figures. Source: Author's analysis of data in Sansoni – Gavaldo (1995).

The broad categories are taken from Sansoni's work. Anthropomorphs are further broken out into armed figures on foot, praying figures (oranti), horseback figures, busts/torsos, other figures and incomplete figures. Zoomorphs are horses, dogs, deer, goats, other quadrupeds, snakes and birds. Objects are weapons, huts and elements of so-called topographical representations (see *Figure 14.4*). Symbols is, as one might expect, something of a catch-all category, including everything from the famous Camunian Rose to cupmarks.

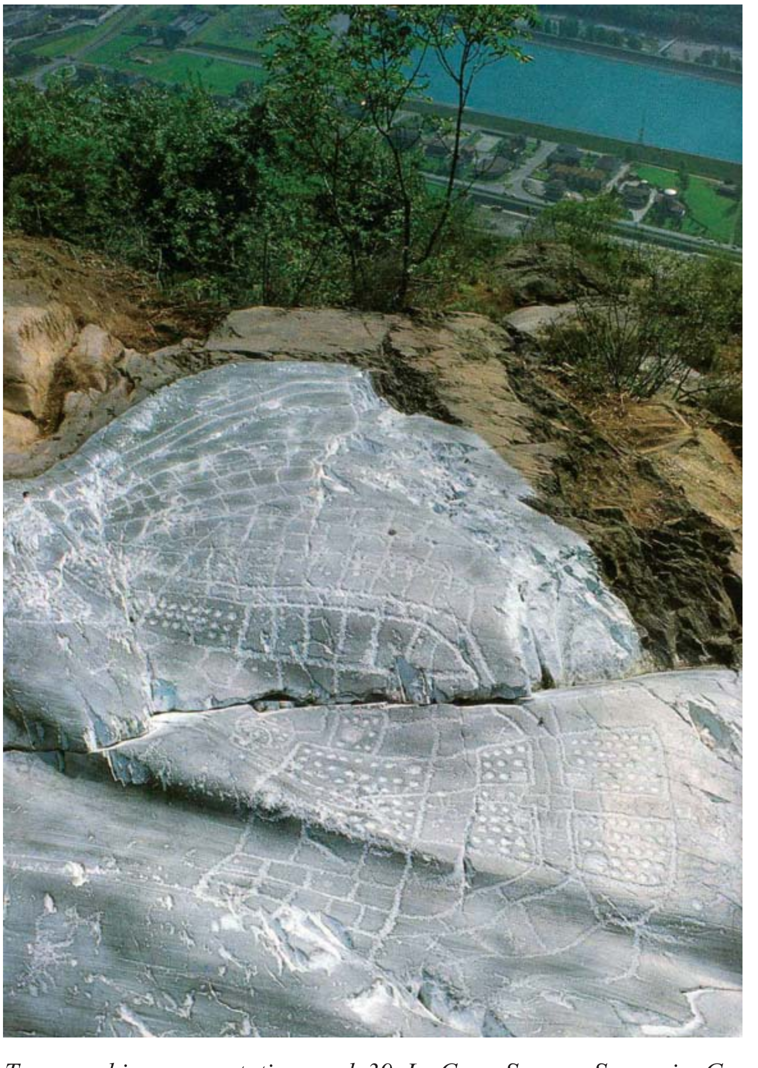

Figure 14.4. Topographic representation, rock 39, Le Crus. Source: Sansoni – Gavaldo (1995).

The symbolic repertoire does vary from sub-site to sub-site but overall seems moderately similar. *Figures 14.5* and *14.6* show the distribution of petroglyph types by site: Anthropomorphs are typically about 20% of the total at each site although the proportions of the other forms do vary somewhat more, with Convai and Coren showing an almost total lack of the object type.

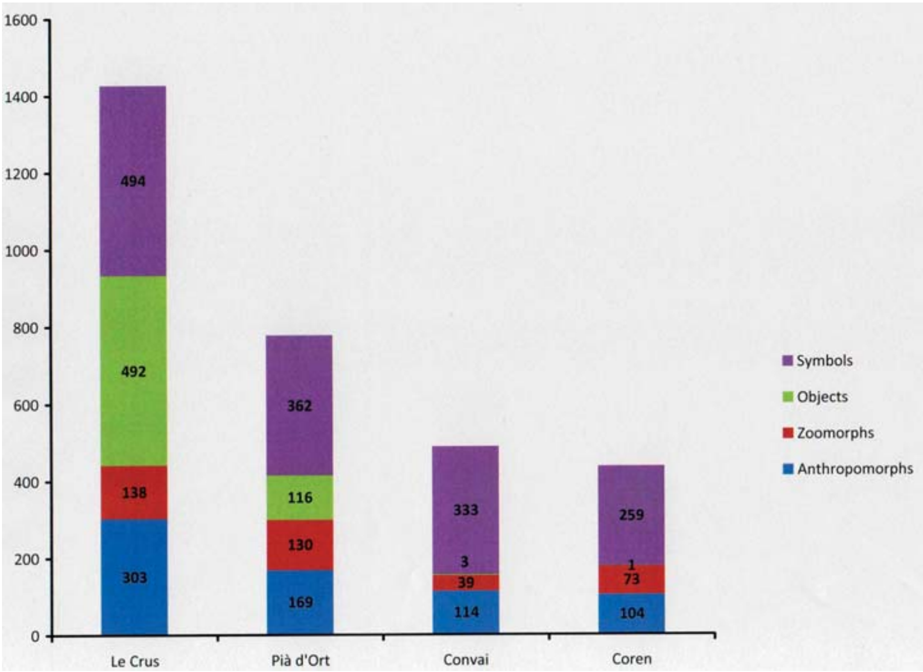

Figure 14.5. Number of petroglyphs by type by sub-site.
Source: Author's analysis of data in Sansoni – Gavaldo (1995).

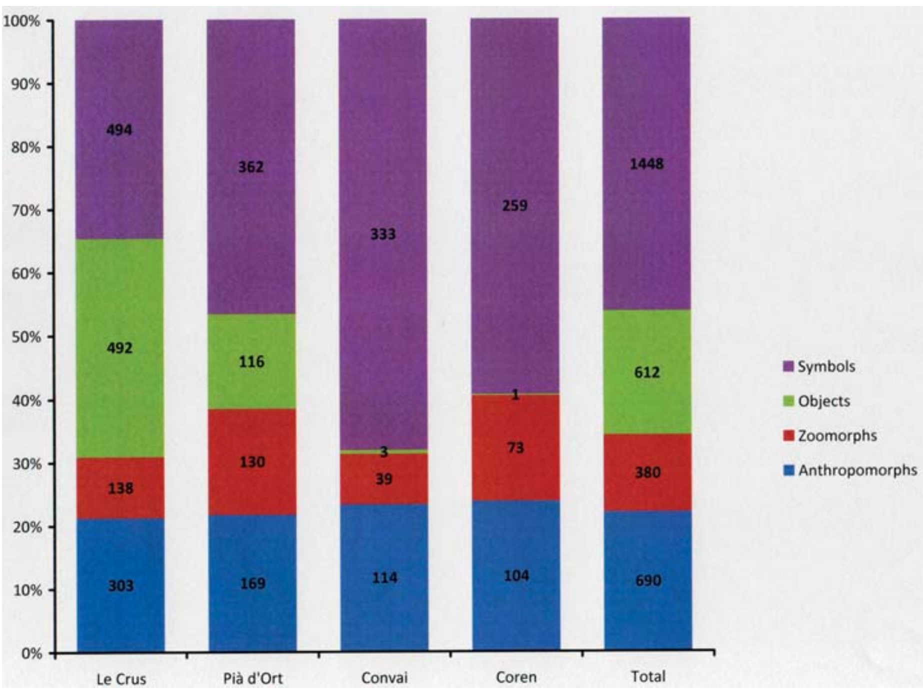

Figure 14.6. Distribution of petroglyph types by sub-site.
Source: Author's analysis of data in Sansoni – Gavaldo (1995).

Superimpositions

Table 14.2 shows the images at each site that lie over an existing image. In total there are 224 petroglyphs superimposed over existing images – about 7% of the total.

	Le Crus	Pià d'Ort	Convai	Coren	Total
Anthropomorphs	32	29	9	19	89
Zoomorphs	6	4	2	3	15
Objects	33	22	2	0	57
Symbols	24	29	5	5	63
Total	95	84	18	27	224

Table 14.2. Overlying images. Source: Author's analysis of data in Sansoni – Gavaldo (1995).

Table 14.3 shows how the proportion of overlying images varies by site – the Convai site has a apparently interestingly high proportion of superimposition amongst the object class (67%) until one notes that there are only 3 object representations at the site! The base is obviously too small to draw strong conclusions in this case. Where the base number of figures is higher – as with Anthropomorphs, Zoomorphs and Symbols, we still see variation but not nearly as dramatic.

	Le Crus	Pià d'Ort	Convai	Coren	Total
Anthropomorphs	11%	17%	8%	18%	13%
Zoomorphs	4%	3%	5%	4%	4%
Objects	7%	19%	67%	0%	9%
Symbols	5%	8%	2%	2%	4%
Total	7%	11%	4%	6%	7%

Table 14.3. Fraction of each image type superimposed on another image.
Source: Author's analysis of data in Sansoni – Gavaldo (1995).

However, these fractions do not point us in a particularly interesting direction – what matters, surely, is how frequent the superimpositions are relative to what one would expect from chance alone? If half the images are anthropomorphs then we should expect 25% of all superimpositions to be of anthropomorphs on other anthropomorphs and fully 75% of all superimpositions to involve anthropomorphs as either the over- or underlying image. Thus to understand whether the patterns we see are meaningful we must compare them to chance.

In *Table 14.4* I present the fractions of superimpositions we would expect if chance alone dictated the placement of images. These numbers are simply the normalised products of the marginal totals in the table of image types.[1] This procedure is familiar from the creation of the "expected" frequencies in a chi-squared test (see, e.g. Shennan 1997). The high number of symbols accounts for the expectation

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1 It should be noted that this is not the only way that we could have proceeded. An alternative would be to consider the images visible at each stage in the panel's history and then look at an explicitly spatial measure of image positioning. This approach was not taken in the current paper because many of the images are hard to date precisely.

that they be involved in 71% of total superimpositions whilst anthropomorphs should be involved in only about 39% of cases, being relatively rare. *Table 14.5* shows the actual state of affairs and *Table 14.6* the ratios of actual to expected.

We see immediately that the superimposition of anthropomorphs on both anthropomorphs and zoomorphs occurs much more frequently that we would expect by chance alone as does that of objects on anthropomorphs. These, then, account for 45% of all superimpositions and will be the main focus of my further study in this paper.

	Anthropomorphs	Zoomorphs	Objects	Symbols
Anthropomorphs	5%	3%	4%	10%
Zoomorphs	3%	1%	2%	6%
Objects	4%	2%	4%	9%
Symbols	10%	6%	9%	21%

Table 14.4. Expected superimpositions. Source: Author.

	Anthropomorphs	Zoomorphs	Objects	Symbols
Anthropomorphs	17%	12%	6%	5%
Zoomorphs	2%	1%	1%	3%
Objects	16%	4%	4%	2%
Symbols	9%	8%	5%	6%

Table 14.5. Actual superimpositions.
Source: Author's analysis of data in Sansoni – Gavaldo (1995).

Ratios	Anthropomorphs	Zoomorphs	Objects	Symbols
Anthropomorphs	3.6	4.3	1.3	0.5
Zoomorphs	0.7	0.9	0.4	0.5
Objects	3.6	1.9	0.9	0.2
Symbols	0.9	1.4	0.5	0.3

Table 14.6. Ratio of observed to expected superimpositions. Source: Author.

Investigation of superimposition and panel size

First, however, I wish to address a question relating to the idea of "place within place" – the choice of particular rocks for more extensive engraving. We thus ask the question of whether larger/more heavily inscribed rocks/panels attract a greater degree of superimposition: one might imagine the more heavily inscribed surfaces to be places of particular potency or visibility. To address this question I look at the fraction of images featuring superimposition rock by rock and sub-site by sub-site. *Table 14.7* presents this information.

Sub-Site	Number of Superimpositions	Total Rock Images	Percentage Superimposition
Convai			
13	7	222	3%
14	8	191	4%
15	0	8	0%
27	1	4	25%
28	0	23	0%
31	1	29	3%
34	1	12	8%
Coren			
7	20	253	8%
10	0	6	0%
11	3	68	4%
12	4	101	4%
21	0	9	0%
Le Crus			
4	0	2	0%
5	0	4	0%
6	0	2	0%
8	0	4	0%
9	1	40	3%
18	1	147	1%
32	0	8	0%
36	20	275	7%
37	5	49	10%
38	1	21	5%
39	67	672	10%
40	0	198	0%
41	0	5	0%
Pià d'Ort			
1	15	115	13%
2	0	26	0%
3	6	69	9%
16	0	16	0%
17	0	16	0%
19	2	19	11%
20	9	91	10%
22	1	25	4%
23	0	3	0%
24	50	238	21%
25	0	83	0%
26	1	15	7%
29	0	12	0%
30	0	14	0%
33	0	14	0%
35	0	21	0%

Table 14.7. Extent of superimposition by rock. Source: Author's analysis of data in Sansoni – Gavaldo (1995).

Considering each sub-site in turn we see that there is, generally, a tendency for the more heavily inscribed rocks to attract more superimposition. *Figures 14.7–10* show the data in scatterplot form.

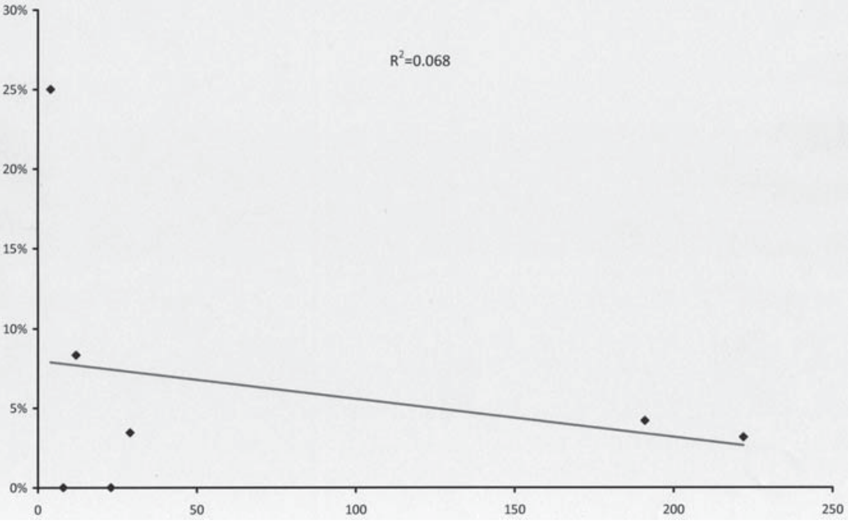

Figure 14.7. Number of images vs. % Superimposed at Convai.
Source: Author's analysis of data in Sansoni – Gavaldo (1995).

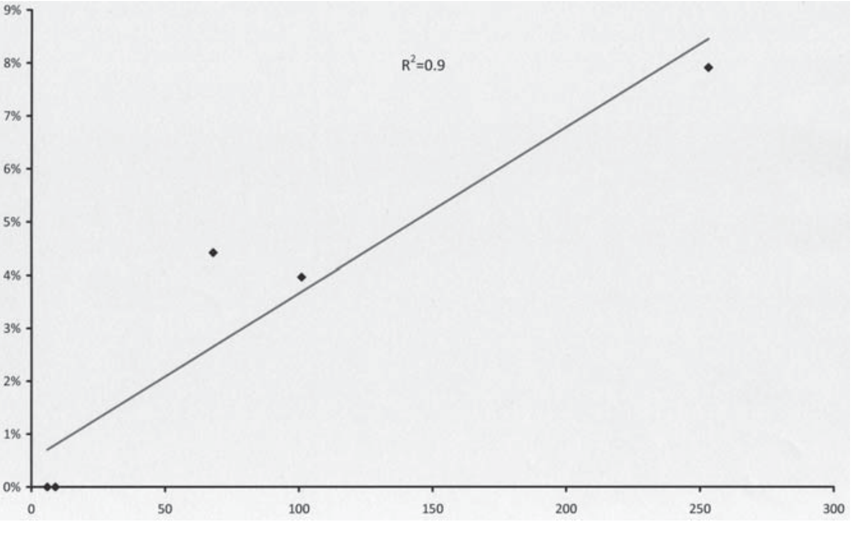

Figure 14.8. Number of images vs. % superimposed at Coren.
Source: Author's analysis of data in Sansoni – Gavaldo (1995).

The same analysis undertaken across all sub-sites together confirms a weak positive relationship – panels/rocks with more images attract more superimposition than do those with fewer images. Further, although this is not illustrated here, the greater extent of superimposition is not driven solely by lack of space on the larger panels – my visits to the site confirm that there is often room available. *Figure 14.11* displays the scatterplot and *Table 14.8* the regression line[2]. The correlation/slope – the same thing in a

2 The F-statistic for the overall significance of the regression and the t-statistic for the significance of the "Number of Images" variable are both significant at the 5% level – indeed, in a univariate model such as this the F-statistic is simply the square of the t-statistic and its significance level is identical. The number of degrees of freedom is acceptably large and, whilst the overall fraction of variance explained is not high – at 10.6% – the overall model is statistically significant.

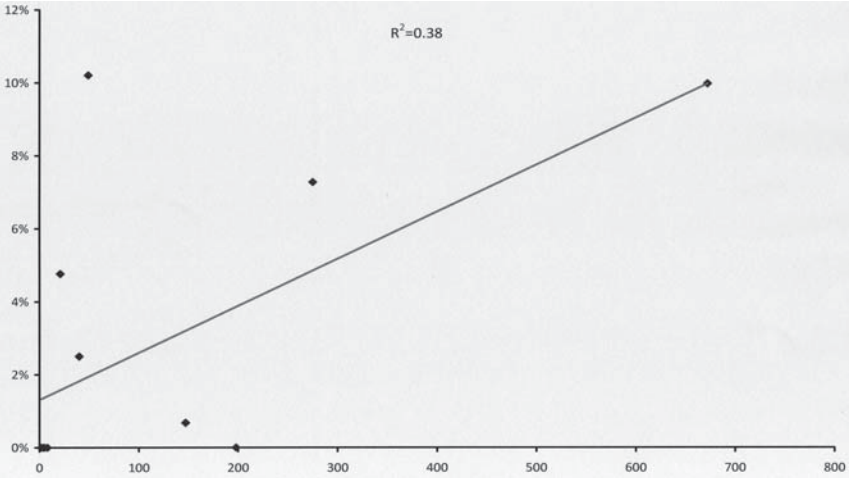

Figure 14.9. Number of images vs. % superimposed at Le Crus.
Source: Author's analysis of data in Sansoni – Gavaldo (1995).

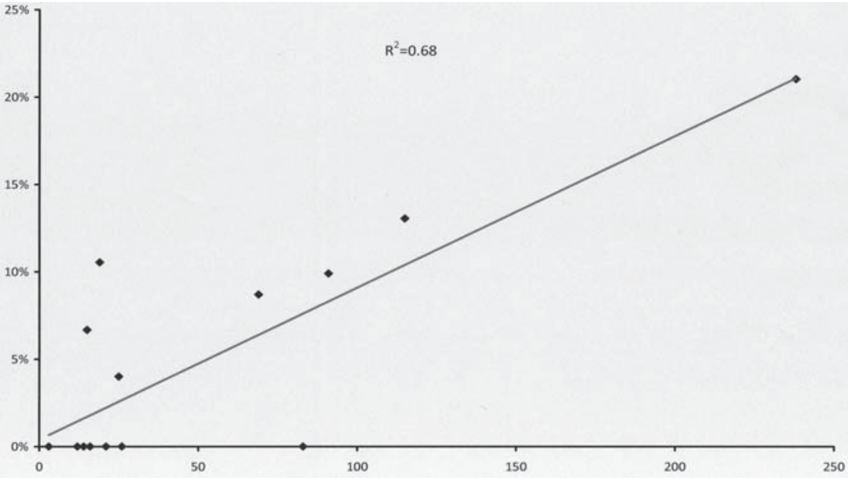

Figure 14.10. Number of images vs. % superimposed at Pià d'Ort.
Source: Author's analysis of data in Sansoni – Gavaldo (1995).

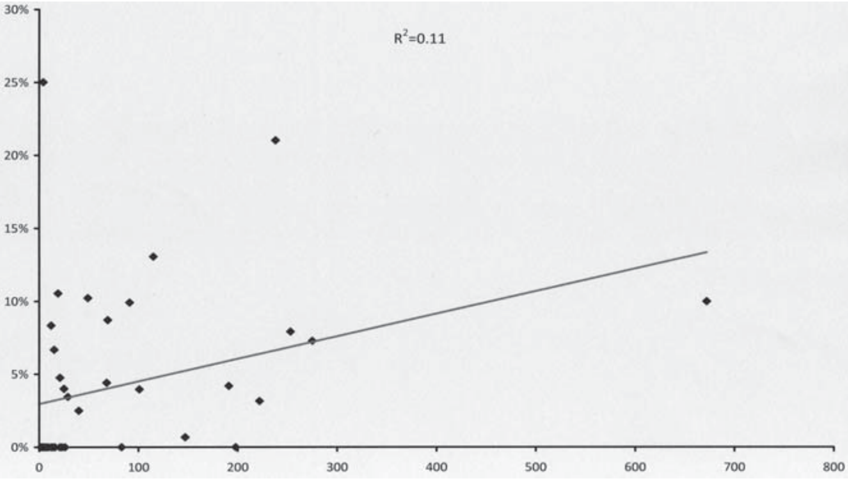

Figure 14.11. Number of images vs. % superimposed across all sub-sites.
Source: Author's analysis of data in Sansoni – Gavaldo (1995).

simple (univariate) regression – is seen to be statistically significant at conventional levels. Whilst the presence of Rock 39 – with close to 700 engravings – appears to have some leverage its deletion actually has minimal impact on the results.

Regression Statistics					
Multiple R	0.325885998				
R Square	0.106201684				
Adjusted R Square	0.083283778				
Standard Error	0.056068225				
Observations	41				
ANOVA					
	df	SS	MS	F	Significance F
Regression	1	0.01456767	0.014568	4.634005	0.037589933
Residual	39	0.122602187	0.003144		
Total	40	0.137169856			
Coefficient Values					
	Coefficients	Standard Error	t Stat	*P-value*	
Intercept	0.029603551	0.010322563	2.867849	0.006635	
Images	0.00015414	7.1604E-05	2.152674	0.03759	

Table 14.8. Regression results across all sites. Source: Author.

Investigation of anthropomorph on anthropomorph superimposition

Anthropomorph on anthropomorph superimpositions are the commonest – accounting for about 1 in 6 of all occurrences at Pià d'Ort. Recalling that there are several types of anthropomorph – with armed (or warrior) figures being the most common it is worth looking in more detail at the exact nature of the superimpositions. *Table 14.9* displays this data.

	Armed	Bust	Horseman	Oranti	Others	Total
Armed	24	1	1		2	28
Bust	3		1			4
Horseman						0
Oranti						0
Others	4				3	7
Total	31	1	2	0	5	39

Table 14.9. Details of anthropomorph on anthropomorph superimpositions.
Source: Author's analysis of data in Sansoni – Gavaldo (1995).

We immediately see that warrior on warrior superimpositions account for almost two thirds of the total. A comparison to the distribution resulting from chance has been undertaken but is not presented, largely as the number of occurrences of most types of superimposition is very low and thus it is hard to draw strong conclusions. At least impressionistically the shares of each possible combination of types are not far out of line with chance – warrior figures predominate in the Pià d'Ort image anthropomorph corpus.

The next question to address is whether the superimpositions occurred soon after the overdrawn figure was created. If not, it is possible that the image had deteriorated to the extent that the later carver did not really notice it when choosing a canvas. At this point we enter the rather muddy waters of Valcamonica image chronology (see, e.g., (Anati 1975; Fossati 1992)). *Figure 14.12* from the Pià d'Ort monograph (Sansoni – Gavaldo 1995) summarises the state of play a decade ago – changes since have been only marginal. Most of the images are Iron Age and Sansoni divides this period into 8 sub-periods. His schema broadly echoes that of Anati whilst having slightly different sub-phase lengths from De Marinis (1988) and Fossati (1992).

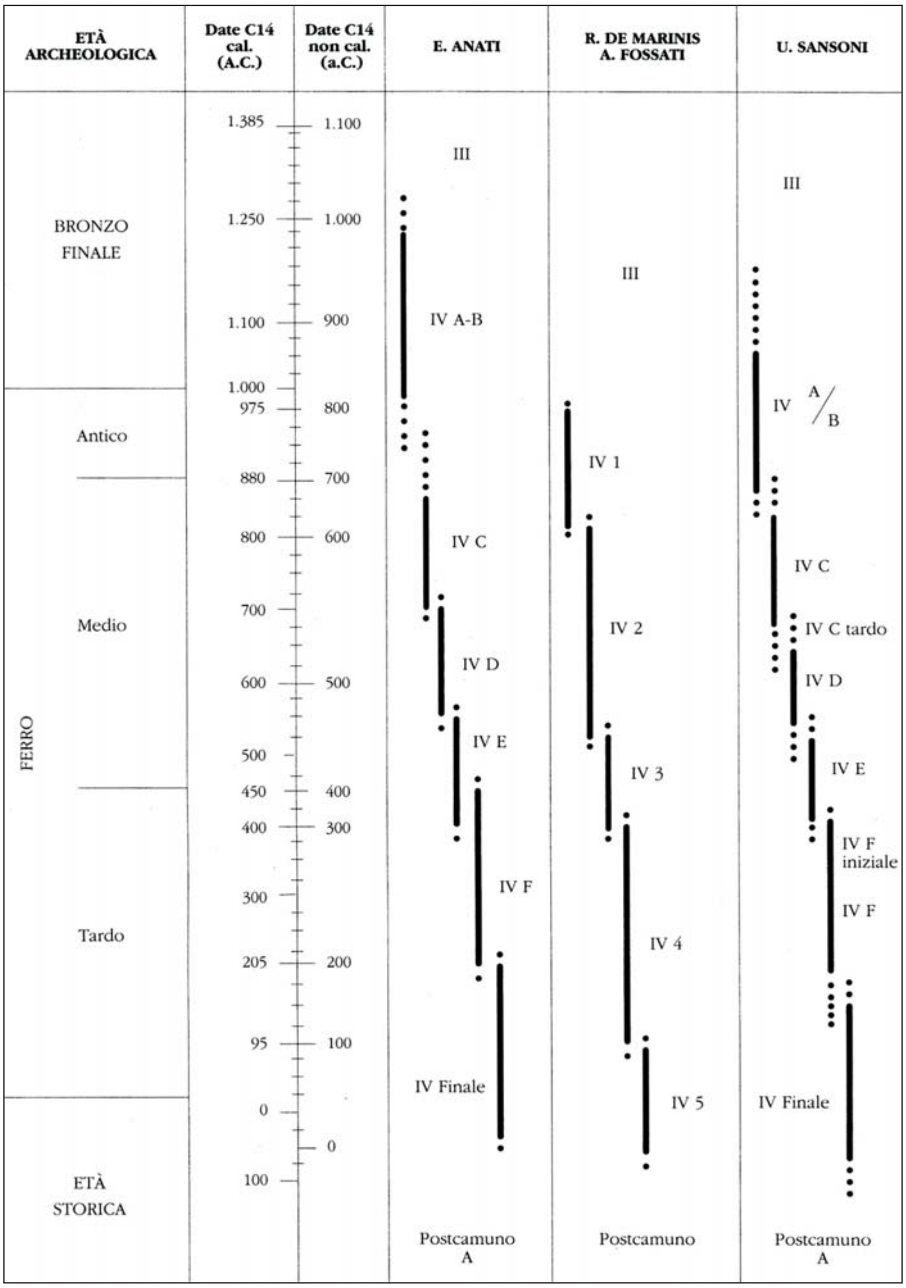

Figure 14.12. Chronologies. Source: Sansoni – Gavaldo (1995).

As I am working from Sansoni's data I have chosen to use his chronology, being fully aware of the variations amongst authors referred to above (Anati 1975; Fossati 1992; Sansoni – Gavaldo 1995). Each period has been assigned a "central date" to represent it in absolute terms – for example the IV E period is represented by the year 475 BCE. These "central dates" are obviously not exact but still allow us to look at the approximate distribution of time between the carving of the underlying image and its superimposition with another.

Of the total of 224 superimpositions we have dates – as given by Sansoni – for both the upper and lower image in 78 cases (see *Figure 14.13*). In 81 cases we have a date for the lower image but not the upper and in 31 cases we have the opposite situation. In 34 cases there is no date for either the upper or the lower image.

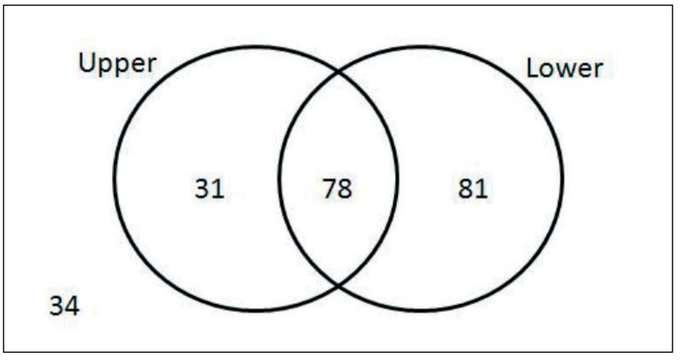

Figure 14.13. Datable superimpositions. Source: Author's analysis of data in Sansoni – Gavaldo (1995).

For the 39 anthropomorph on anthropomorph superimpositions we have dates for both figures in 37 cases – the warriors and similar have been the focus of much emphasis amongst those working to establish stylistic chronologies.

Analysis of these 37 dates suggests that images were overwritten either very soon after creation – in 11 cases within the same stylistic period – or after an interval of several hundred years. The results are summarised in *Figure 14.14* – the x-axis is measured in years.

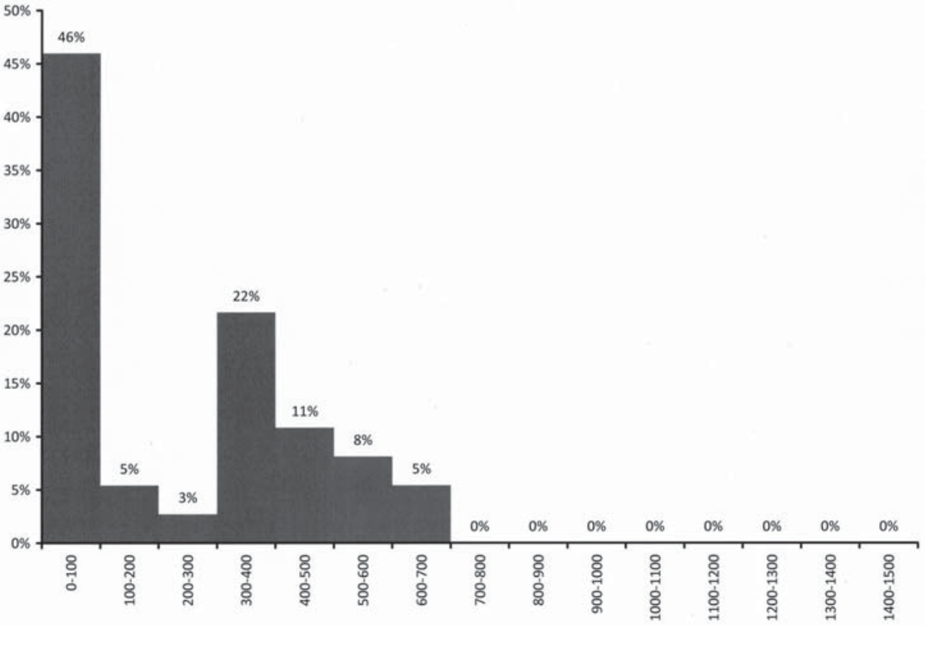

Figure 14.14. Distribution of interval before superimposition: anthropomorph on anthropomorph. Source: Author's analysis of data in Sansoni – Gavaldo (1995).

Investigation of anthropomorph on zoomorph superimposition

We have 26 cases of anthropomorphs superimposed on zoomorphs. As with anthropomorphs on anthropomorphs we can look at the types of image in greater detail – see *Table 14.10.* As in the case above I looked at the deviation from the pattern expected as a result of random superimposition. Once again, numbers are small and so no firm conclusions can be drawn and the results may well be due to chance alone.

	Deer	Dog	Goat	Horse	Other quadrupeds	Serpents
Armed	2	4		4	7	1
Bust					1	
Horseman	1					
Others	1	1	1		3	

Table 14.10. Details of anthropomorph on zoomorph superimpositions.
Source: Author's analysis of data in Sansoni – Gavaldo (1995).

Were these superimpositions undertaken at a similar time-distance from the original carving as those discussed above? *Figure 14.15* summarises the analysis.

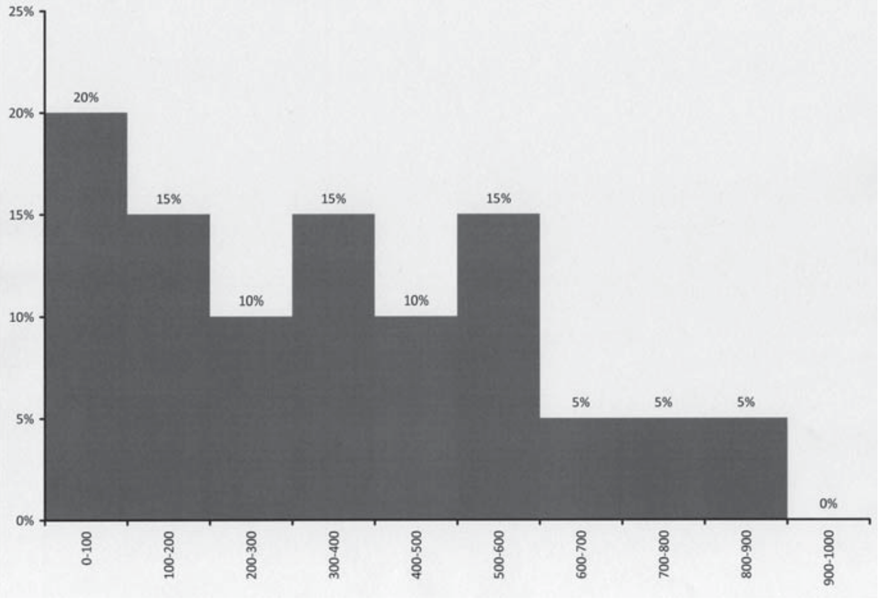

Figure 14.15. Distribution of interval before superimposition: anthropomorph on anthropomorph.
Source: Author's analysis of data in Sansoni – Gavaldo (1995).

Here the results seem more akin to a uniform distribution across time – perhaps indicating greater randomness in the superimposition. It is instructive to compare the distribution in *Figure 14.15* directly with that of *Figure 14.14* – see *Figure 14.16*. There seem to be real differences between the time pattern of superimpositions on other anthropomorphs and zoomorphs respectively with the former being quite distinctly bimodal with a strong emphasis on superimposition quite soon after creation – often within 100 years when the image was almost certainly still quite visible.

It would be interesting to compare the distribution of time intervals before superimposition between those cases where anthropomorphs are on top – fully 62 of the 78 cases where we can establish dates –

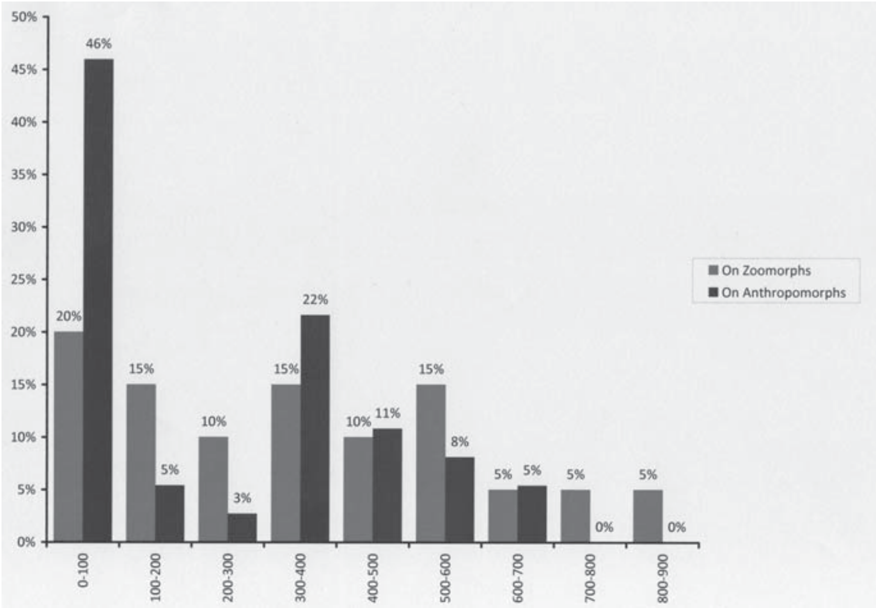

Figure 14.16. Comparison of distributions. Source: Author's analysis of data in Sansoni – Gavaldo (1995).

with that of other types of overlying image. Whilst I have done this I am concerned by the very small number of non-anthropomorph cases: just 16.

Similarly, it would be interesting to see how quickly anthropomorphs were superimposed on object or symbol petroglyphs. However we can date only 4 of the cases involving object representations and just one of those involving symbols. For obvious reasons these analyses are not presented here. However, we can sensibly consider the distribution of all datable anthropomorph-on-top superimpositions: 62 in total. This information is shown in *Figure 14.17*. We observe a bimodality similar to that seen in the case of anthropomorph on anthropomorph superimposition.

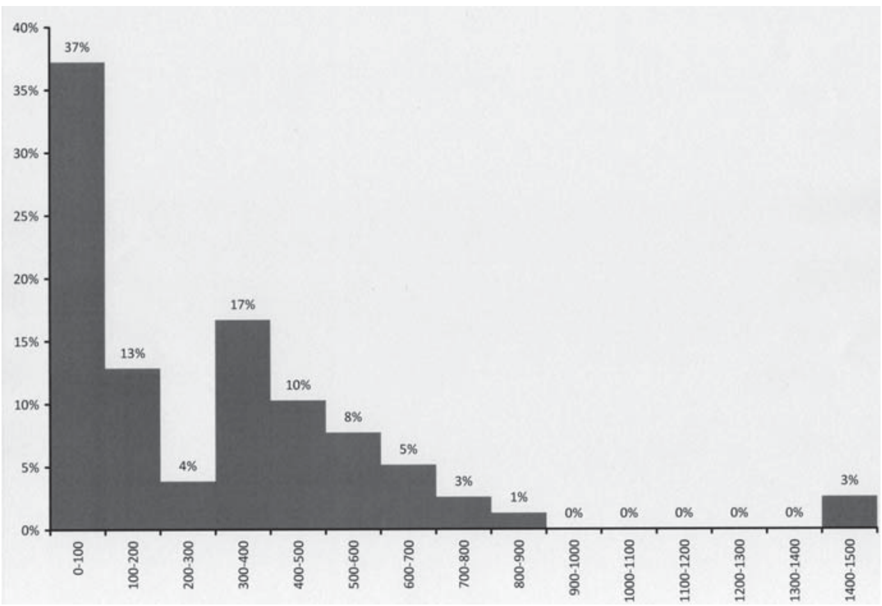

Figure 14.17. Distribution of interval before superimposition: anthropomorph on anthropomorph. Source: Author's analysis of data in Sansoni – Gavaldo (1995).

Investigation of object on anthropomorph superimposition

Cases where objects overlie anthropomorphs account for fully 35 of the 224 superimpositions recorded at Pià d'Ort. *Table 14.11* presents the detailed breakout of these cases.

	Armed	Bust	Horseman	Oranti	Others
Hut	8	1		1	2
Topographics	15				6
Weapons			1		1

Table 14.11. Detail of object on anthropomorph superimpositions.
Source: Author's analysis of data in Sansoni – Gavaldo (1995).

Again, small numbers prevent us saying much about whether this pattern is significantly non-random. One interesting feature is that, whilst topographics are 83% of all object petroglyphs their representation in the set of superimpositions is somewhat less than expected. This could be the result of the unit of analysis: a topographic representation is typically broken into many fields and pathways and so appears as many petroglyphs but, by its nature, it occupies a bounded space on the rock surface, forming a connected network of related entities. So, whilst we appear to have many topographics they may not actually overlap that many other figures, depending on the density of figures on the rock surface chosen by the carver of the topographic representation.

We see that almost two-thirds of these superimpositions involve topographics over anthropomorphs. Unfortunately Sansoni chooses not to date the topographic images. More recent scholarship (Turconi 1997) puts the stylistically similar Bedolina map – located within 5 km – in the 8th century BCE which equates to Sansoni's period IV C. The figures overlain by the Pià d'Ort topographics are all dated to periods IV A-B (9 cases) and IV B (12 cases). The "central dates" of these periods are 175-225 years before that of period IV C. It thus seems that the act of superimposition occurred quite some time after the initial carvings. All of these superimpositions occurred at the Le Crus sub-site and all but 5 of them on rock 39 – where there is a large and complex topographic representation seen in *Figure 14.4* above.

Concluding thoughts

What, then, have we learned from these analyses? Superimposition in Valcamonica rock-art is quite common but, as yet, relatively little studied beyond the enumeration of its occurrences. I have attempted to exploit this numerical data to see if we can understand the reasons for these expressions of past agency.

We have, I believe, learned four things, three of which point towards a possible manifestation of power in some but not all superimpositions. Firstly, superimposition tends to occur more often on the more heavily inscribed – and typically larger – rocks. These rocks will have been more visible and perhaps better known: one might see them as "places within places". Appropriation of parts of the surface of such rocks may well have represented an assertion of real or desired power over a place of communal importance. Similar thoughts have been expressed by Fossati (2002) in a (non-quantitative) appraisal of superimposition on statue-menhirs and boulders in Alpine Italy.

Secondly, anthropomorphs are superimposed on other anthropomorphs much, much more often that chance alone would lead one to expect. Representations of humans are being singled out for attention – alteration, appropriation or perhaps even desecration?

Thirdly, superimposition of anthropomorph on anthropomorph seems to occur more rapidly than other forms of superimposition: often apparently within a century. This is interesting as we are looking here at the representation of the human body – an avatar of the carver, perhaps. Was the second carver deliberately appropriating the power of an earlier image? Was the underlying carving that of a rival or an ancestor? Fossati's idea that these warrior carvings represent part of an initiation rite (his most recent exposition of this idea in English can be found in the BBC Radio4 documentary "The Drawings on the Wall)[3] is perhaps interesting in this context – could there be family lineages represented on the rocks of Valcamonica?

Fourthly, the longer time intervals involved in some of the anthropomorph on anthropomorph and many of the other forms of superimposition suggest that, perhaps, those underlying images may have been less visible to the later carver and so there may be have been less consciousness of appropriation. Conversely, the short time intervals between many anthropomorph on anthropomorph superimpositions suggest deliberate over-carving. We still have little understanding of how quickly the initially highly visible carvings fade over time but several hundred years may well be enough time to dim them.

In conclusion, rock-art contributes to the creation of places and of "places within places" – certain rocks/panels attract more images and these in turn attract more superimpositions atop the existing images. Within these places certain types of images have been singled out for superimposition: superimpositions involving anthropomorphs are much more common than one would expect through chance alone. Furthermore, these superimpositions often occurred quite soon after the underlying image had been created so it was almost certainly visible to the later carver. Such superimpositions seem clearly to be expressions of power in place – power over other images and power over place itself.

Acknowledgments

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Bibliography

AGNEW, J. 1987
The United States in the World Economy. Cambridge, UK, Cambridge University Press.

ANATI, E. 1975
Evoluzione e stile nell'arte rupestre Camuna. Capo di Ponte (BS), Italy, Edizioni del Centro.

BARFIELD, L. – CHIPPINDALE, C. 1997
Meaning in the Later Prehistoric Rock-Engravings of Mont Bégo, Alpes-Maritimes, France. *Proceedings of the Prehistoric Society* 63**,** 103-128.

CHIPPINDALE, C. 1989
The later prehistoric rock-engravings of Val Fontanalba, Mont Bégo, Tende, Alpes-Maritimes, France. *Department of Archaeology.* Cambridge, University of Cambridge.

DE MARINIS, R. 1988
Le popolazioni alpine di stirpa retica. In: AA.VV. (ed.), *Italia, omnium terrarum alumna.* Milano, Credito Italiano.

DOBRES, M. A. – ROBB, J. E. E. 2000
Agency in Archaeology. London, UK, Routledge.

[3] The Master of Paspardo. *The Drawings on the Wall*. UK, BBC Radio 4, written and presented by George Nash.

FOSSATI, A. 1992
L'età del Ferro nelle incisioni rupestri della Valcamonica. In: AA.VV. (ed.), *Immagini di una aristocrazia dell'età del Ferro nell'arte rupestre camuna.* Milano, Italy, Comune di Milano.
FOSSATI, A. 2002
Landscape representations on boulders and menhirs in the Valcamonica-Valtellina area, Alpine Italy. In: Nash, G. – Chippindale, C. (eds.), *European landscapes of rock-art.* London, UK, Routledge.
JONES, A. 2007
Memory and Material Culture. New York, NY, USA, Cambridge University Press.
PEIRCE, C. S. 1991
Peirce on Signs: Writings on Semiotic by Charles Sanders Peirce (ed. James Hoopes). Chapel Hill, NC, USA, University of North Carolina Press.
SANSONI, U. – GAVALDO, S. 1995
*L'Arte rupestre del Pià d'Ort - la vicenda di un santuario preistorico Alpino.*Capo di Ponte, Italy, Edizioni del Centro.
SHENNAN, S. 1997
Quantifying Archaeology. Edinburgh, Scotland, Edinburgh University Press.
TURCONI, C. 1997
La mappa di Bedolina nel quadro dell'arte rupestre della Valcamonica. *Notizie Archeologiche Bergomense* 5**,** 85-113.
VARIOUS 2008
Merriam-Webster Online Dictionary.

15

Real Space and Picture Space in Atlantic Prehistoric Rock Art

MICHAEL EASTHAM

Cup shaped marks ground or pecked into bed rock surfaces are a world wide phenomenon but assemblages of cupmarks and cups surrounded by concentric engraved rings and accompanied in some places by other motifs, are more limited in distribution. Eoin MacWhite was amongst the first to point out that there are concentrations of cup and cup-and-ring marked stones in a band along the Atlantic coast of Europe from Orkney in the north to southern Portugal in the south and to raise the question as to what this concentration should mean (Mac White 1951) (*Figure 15.1*).

The assumption has to be made that a communication of importance was intended by the assemblages. Utilitarian considerations are precluded as the labour of pecking away at the rock and polishing the indentations so formed in its surfaces was not trivial. It would take some time even though the mark's eroded surfaces now give them an appearance of crudity. Their enigmatic quality makes any answer to what they might be intended to communicate difficult to attempt, however. What follows is therefore directed to discussion of the representation of space in cup and cup-and-ring mark assemblages in the expectation that it will illuminate possible answers to the bigger question.

The visual characteristics of the marks

The marks are elusive. They appear and disappear on the rock surfaces as the sun and moon move. They become hidden and are only readily recognizable when accumulated earth and vegetation is removed by agriculture, or they are cleared by fires, or simply by the annual dieback (*Figure 15.2*). Fewer people are in the places where they are to be found in winter when the sun is low in the sky or on summer nights when the moon is low and good shadows are cast. In consequence, they are nothing if not enigmatic. A farmer with grazing land near the coast in Kirkudbright had been brought up on the land and had worked it himself for some years before he realized that in addition to an exposure with cup and cup-and-ring marks recorded by the surveyors of the Ordnance Survey nearby, there were others in the fields that he visited every day closer to the steading.

The cups are hemispherical and usually show some signs of having been formed percussively though often some rotary polishing is also visible. Where there are rings the cup is in the centre. The cup-and-ring in *Figure 15.2* is in a group of cupmarks five centimeters in diameter or smaller on black limestone pavement at Ragwen Point, Carmarthenshire. The single seven-centimeter diameter ring is insufficiently clearly defined for absolute certainty that the mark is anthropogenic but its position, together with the regularity of the cup, make it probable. There is a complex of at least four megalithic ritual structures called Morfa Bychan down the slope, amongst scree to the east of the pavement. It is the presence in the rock surface of pear-shaped marks that could be partially eroded out marine animal fossils that creates doubt. Where they are not on the line of a crack, solution holes in limestone, like dolines, are usually flat bottomed.

In an assemblage of marks on a hard igneous rock surface above Fentans in Gallicia, the presence of at least ten rings makes the decision easier. Though only four of the rings were really visible in the lighting conditions when the photograph in *Figure 15.3* was taken, the multiplicity of rings ensures

Figure 15.1. Map of sites.

Figure 15.2. Cupmark with single ring.
Ragwen Point, Marros, Carmarthenshire.

Figure 15.3. Cupmark with at least ten rings, Féntans, Pontevedra, Gallicia.

that shadows will be cast whatever the direction or height of the illumination. The rings are frequently, though not always broken. In *Figure 15.3* it is in two distinct ways: a single engraved line on one side, multiple lines on the other. Elsewhere a natural fissure, which originates in the cup, breaks the rings and meanders off across the surface of the stone. Other markings on the surfaces of stone, spirals lacking central cups, rectangles and more amorphous shapes are often subsumed into the category but there is no reason to suppose that even if they were made at the same time as the cup-and-ring marks, they have the same significance.

Figure 15.4. Horseshoe rock, Lordenshaw, Northumberland.

Other shapes adjacent to or surrounding cupmarks like those on the Horseshoe Rock Lordenshaw in *Figure 15.4* enhance the probability, that irrespective of whether they are anthropogenic or the result of geomorphic processes, they have acquired intention. The intention clearly differs from that behind the creation of either a cupmark or a cup-and-ring mark. They have to refer to something different.

The time span in which Atlantic cup-and-ring assemblages were created

The chronology of the use of any human artifact is an important part of its definition. The chronology must be coherent or the possibility increases that the artifact changed its significance. Dates from the terminal Palaeolithic (Anati 1964), to the late Iron age, (Wainwright 1963) were attributed as a result of examination of site locations by the application of what were then well tried archaeological techniques in the years after the second world war. Anati was picking up on some work done as an aside by the Abbe Henri Breuil. He had attempted to fit cup-and-ring markings onto the developmental sequence he had perceived in the depictions of human beings recorded in French and Spanish caves occupied during the late Pleistocene (Breuil 1921; 1934).

In the 1970s surveys of the locations and associations of sites led to the belief that they were the product of a more restricted period. The location and the details of the design of some of cup and cup-and-ring assemblages seemed to place their manufacture firmly in the Bronze Age (Morris 1977; 1989; Peña Santos 1976). Discovering the relationship of one site to its neighbours and working out their intervisibility began to show that uniformities perceptible in the juxtapositions of motifs might be comparable and indicated a unity in the purpose of groups of people over a limited time span. In Mid Argyll and Tayside in Scotland, Bailden and Ilkley Moors in Northern England and Rianxo and Campo Lamiero in Gallicia exposures with multiple motifs in complex arrangements were intervisible and formed interlinked systems. The less complex sites were thought to be inter visible with each other over shorter distances and the two types of system were thought to be separate and often at different heights in the land profile (Bradley 1997; Gaffney *et al*. 1995)

The question whether the stones with cup or cup-and-ring marks incorporated in monuments were stones with existing marks or whether the marks were cut after placement, is clearly relevant. The stones capping the terminal chambers of the *Allée couverte* at Gavrinis, an island in the gulf of Morbihan and Table des Marchands, nearby on a peninsula at Locmariaquer, were undoubtedly reused after they were carved. None of the designs on any of the stones at either site are precisely cup or cup-and-ring marks however though they have been used to explain them. The designs on a standing stone like Long Meg above the Eden Valley in Cumbria are another matter. In addition to several spirals without cups there are at least two indistinct cup-and-ring marks. The surface of the red sandstone is eroded and the cups are not now very deep. Recent writers argue that the relationship between megalithic ritual monuments, cupmarks and cup-and-ring marks implies that some were made during the Neolithic as early as the 4^{th} millennium cal. BC though not perhaps during the Mesolithic as Breuil suggested. (Beckensall 2001; Darvill *et al*. 2003; 2005; Waddington 2007 [quoting Armitt 1988; 1992]).

As abstract shapes, cup or cup-and-ring marks would have had to communicate something to a widespread group of people with common understanding. Therefore, the people making and using them would necessarily have formed a relatively close knit community. The low level of redundancy of reference to any conceptual reality implies common understanding. Without this, what was signified would not have been understood. Common understanding demands constant contact. The area is too big for the contact to be based on any kind of inter-tribal marital arrangements and the only obvious route was across the sea. The contact would have been between mariners capable of navigating the rough coastal waters of Europe's Atlantic seaboard.

To be able to communicate with abstract mark assemblages, there must have been robust vessels capable of repeated coastal journeys. There is sufficient evidence in the presence of similarly cut blue stones at both the Carn Menin dolorite exposure in the Preselis and in parts of Stonehenge datable to between two and three thousand BC to show that late Neolithic people on the Atlantic fringe of Europe were capable of repeated transport of heavy loads two hundred kilometres or so. Much of this must have been by water. Adventurous hunter gatherers and raiders looking for plentiful resources or more congenial surroundings have made considerable passages for a very long time, certainly more than forty thousand years (Gibert *et al*. 1995; Stringer *et al*. 2000). Stonehenge implies that robust vessels were available five thousand years ago.

Not only is the existence of robust sea going vessels implicit in the distribution of the cup and the cup-and-ring marked rocks; trade is also necessary. Building, provisioning and sending family members to navigate vessels capable of regular journeys requires settled communities who have something to gain from ensuring a return voyage. It means people who need to trade. There is some alternative evidence of trade along the western European coast up to five or six millennia ago. Polished Neolithic axe heads of especially beautiful and resilient stone were certainly moved over considerable distances from their point of origin and manufacture (Giot *et al*. 1998; Zilhão 1993). However a vessel does not cross the Bay of Biscay with a cargo of axes in order to give them away to some unknown and distant person. There is a strong presumption that regular trade in other commodities must have taken place or the marks would not have been so widely distributed but its nature is not clear.

If extensive trading relationships cannot be shown to have been established before metals and metal ores began to be transported then the Neolithic dates for cup or cup-and-ring marks must be questionable but there is a strong presumption that they were.

The end of the period in which cup or cup-and-ring marks had significance is equally difficult to establish. Discovery of cup-and-ring marked stones incorporated into the souterrains of proto-Pictish buildings at Ardestie, Carlungie, Letham Grange, Pitcur, and Tealing all in Angus indicate that cup-and-ring marked stones had significance long after the bronze-age but it does not imply that they retained their original significance. Finds discovered during excavation of the souterrains at Ardestie and Carlungie included several pieces of iron. Besides numerous shards of pots deemed to be of local Iron Age manufacture at both sites, five shards, parts of a Roman lagena or bulbous amphora were found at Carlungie and a bung from another at Ardestie (Wainwright 1963). Whether or not the cup-and-ring marks were actually made during the Iron Age must remain in doubt. What cannot be doubted is that they survived in some form of use but their preservation in secret underground passages suggests that it might not be exactly the same use as when they were first cut. Nevertheless, the marked stones found in the Carse of Angus and between the carse and the sea show that cup-and-ring marks possessed meaning over at least three thousand years as well as over a large maritime area.

The significance of cup-and-ring mark assemblages

The significance of the individual motifs at Atlantic rock art sites has been assessed in two distinct ways. The two ways are chiefly remarkable in that nothing that either supports or dismisses the basis of the speculation engendering them has so far been adduced. The motifs have been compared to the plans of known structures such as round houses and henge monuments (Zuchner 1989). The other suggestion is that they replicate entoptic images generated during trance or toxin induced states. (Lewis-Williams – Dowson 1993) Though both are interesting speculations, pronouncements on them lack any form of verification. Cup-and-ring marks do resemble the plans of circular built structures. They also resemble the tunnels that the stressed mind propels us down usually with leaden feet and a monster chasing behind in our most terrifying nightmares.

Explanations can also be found in the discussion of similar marks in the ethnographic record from societies that had no written language until recently. In accounts from non European informants in Australia the act of battering into a rock and releasing spurts of its substance has significance. Cupmarks attest to the presence of someone at some time in the past at Wardaman ritual sites in Northern Australia. Several Wardaman informants have asserted that at Yingalarri and other nearby sites they are a little more than rather laborious signatures. They indicate that the spirit imprisoned in the rock by the act of painting has been released in the presence of the anonymous mark maker (Yidumduma, *pers.com.*; Flood 1997; David 2002). The information that is released to the aboriginal man or woman making the marks comes from painted images on the wall above. Since we cannot know, unless some garbled folk tale has survived, what individual actions accompanied the cutting of Atlantic cup-and-ring mark assemblages and anything painted or made of perishable materials associated with them has disappeared the mark itself has become the major element in the communication and is likely to have been over the time span of their use.

Cup and cup-and-ring marks are communications that involve both space and time, they are relatively permanent and are fixed in one position but are not time factored communications. There is no time line so the marks cannot represent a time modulated vocal or narrative communication. The *Sagragnis Maqi Cunatami* Ogham stone at St Dogmaels, Pembrokeshire and the Phaistos disk both have one but the Caerfai cupmarks from Pembrokeshire and the Coto do Rapadoiro cup-and-ring marks from Gallicia do not (*Figure 15.5*). Ogham is written up the arris of the dressed St Dogmaels stone. Symbols were stamped into the Phaistos disk from Crete in a spiral. In no cupmarked stone is there the same kind of dispersed repetition of motifs along a time line. The motifs must represent something visible, albeit in a very abstract way.

Visible things occupy space and therefore if the cup-and-ring marked surfaces represent things there must be a representation of space within and around them. Visual perception is the business of distinguishing between object and ground, between recession and relief, between solid space and void space. Depictions represent these perceptions. With such enigmatic depictions as cup-and-ring marks however it is difficult to be certain what projections and other means of spatial representation are being used. It is a reasonable assumption, however, that the draughtsmen who were making the marks were abstracting on the basis of a precedent and that contemporaries living nearby would have developed the projections and other pictorial devices they needed from the same source.

Figure 15.5. Caerfai St Davids, Pembrokeshire, Coto do Rapadoiro, Féntans, Gallicia. Sagragnis Stone, St Dogmaels, Pembrokeshire and Phaistos Disk (cast).

The Representation of Space in Upper Palaeolithic Parietal images

The depiction of a small horse in Ekain, a cave in Guipuzkoa, northern Spain was painted with some sixty other representations of animals approximately 10 thousand years before any of the Atlantic images were cut (*Figure 15.6*). It was projected onto the concave back surface of a hemispherical cavity with a convenient standing position at the focus of the cavity. The depiction provides a convincing representation of a mare in a group of mares of tarpon type poised with its weight evenly distributed on all four feet and alert ready to thrust off down hill if a danger that has been sensed, actually materializes. New Forest ponies moving as groups of mares and foals behave like this today.

The drawing is a slightly modified elevation. The black outline separates the shape depicting the animal from the ground on which it is depicted. The ground, the limit of vision, is an indeterminate distance beyond. Within the outline another dark line places the cheek and jaw slightly in front of the part of the surface representing the neck. Down the neck the line representing the underside overrides the lines representing one of the front legs and is overridden by those representing the other. Down

Figure 15.6. Black Horse, Ekain, Cestona Guipuzkoa.

further under the belly the same thing happens with the rear legs and haunches. The overlapping shapes create something like a stack of cards with an uncertain but limited depth between each card.

The horse not only looks like a mare it looks like a pregnant mare, but this perception is deceptive. When projecting an image of a rotund object onto a plane surface, the dimensions of shapes that are oblique to the line of sight have to be extended if their perceptible measurement is to be accurate. In Palaeolithic depictions the result is that the drawing is not a true elevation of the thing depicted. A measurement close to one taken across the surface of the object is depicted. The measurement foreshortened by its angle to the line of sight is not.

The space involved in the depiction of the horse and other animals is not confined to the contrived space of the projection. Though not as good an emulation of topographical features of the land outside as some other caves, the voids of Ekain can readily be seen to resemble adjacent land surfaces (*Figure 15.7*). The position of the salmon fits well with upstream movement of the fish in the Urola above Cestona. The big panel of horses and bison is in a position that emulates the junction of the Sastarrain and Galcibar valleys. Most of the rest of the images are in the chamber representing the valley down to the valley of the Urola almost exactly a kilometer from the junction. Only an emulation of the upper parts of the Sastarrain valley is missing: blocked by the calcite flow that has spread down from it into what is now the back of the cave. Not only is the space in which the images are placed the real space within the cave, the distances which separates them along the walls of the cave represent in scaled down form the real distances that separated them in the world outside. The result is that the cave emulates the external topography at a scale of 1:66.66 and the animals placed within it are drawn to an entirely different scale of about 1:2 or they would appear too small and too distant as the viewer walks past them.

'The magnitude of a distance is certified by the resolution of the intervening space into magnitudes of exactly known measure' *['mensure scientialiter note']* (Pecham 1278). Put more simply than exact translation from medieval Latin allows, if there is nothing with which to compare the size of something seen, then it might be any size. Though the proposition was unlikely to have been stated as precisely in either Palaeolithic Spain or Pharaonic Egypt as it was in Medieval Latin and Arabic texts, it was clearly understood. The horses in *Le Nef* of Lascaux that are depicted in *Figure 15.8* are half the size of the black cow superimposed on top of them. In the absence of any other checks on size this means that the horse, when seen outside the cave by someone whose eye height was the same as the withers of both animals, was a little more than twice as far away from the viewer as the cow. *Figure 15.9* gives rounded calculated measurements that are close to what the Lascaux draughtsmen were attempting.

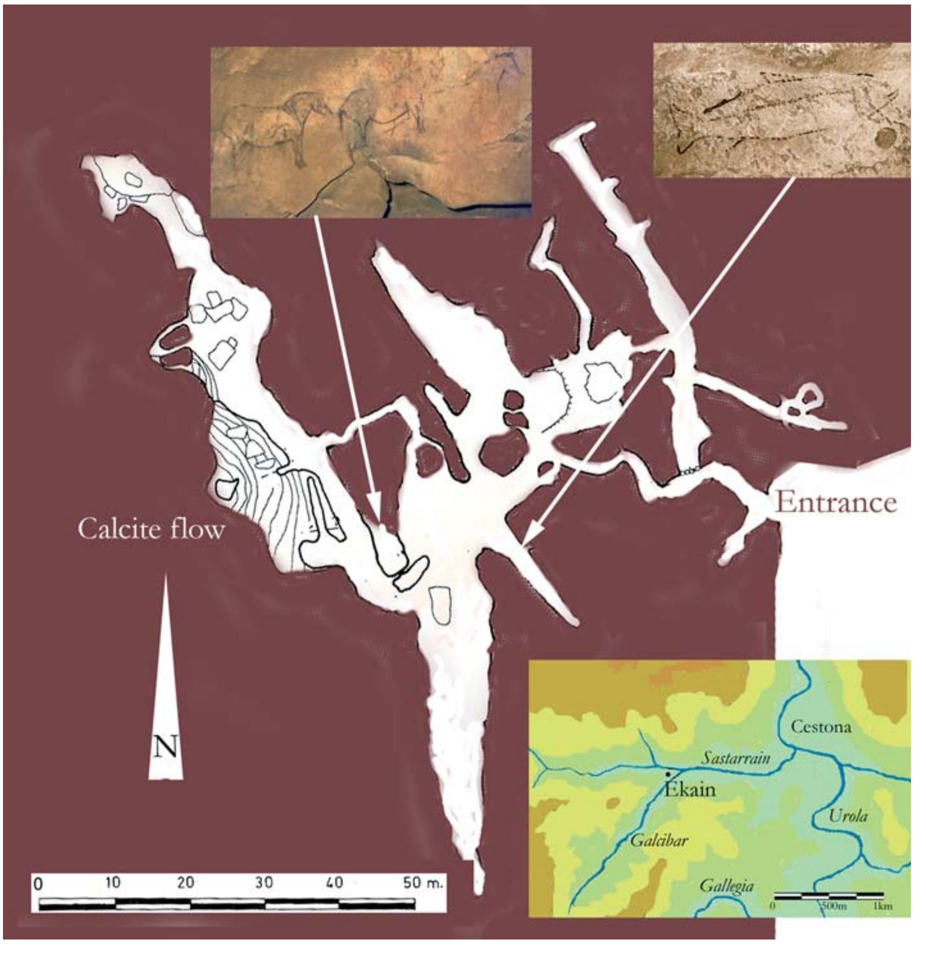

Figure 15.7. Ekain - Cave and Location plans.

Figure 15.8. Large black cow Aurochs and horses, Le Nef*, Lascaux.*

The different sizes of the animals on the cave wall can also mean that the two animals were expected to be viewed from different distances. In *Figure 15.10* the horses are being seen as the same size by the two viewers, the angles of viewing are equal. *Le Nef* is some 5m wide at the widest point in the section where the Black Cow is painted. At cave floor level and for some hundred and thirty centimeters above it, the width is little more than ninety centimeters. This means that the only position where the viewer

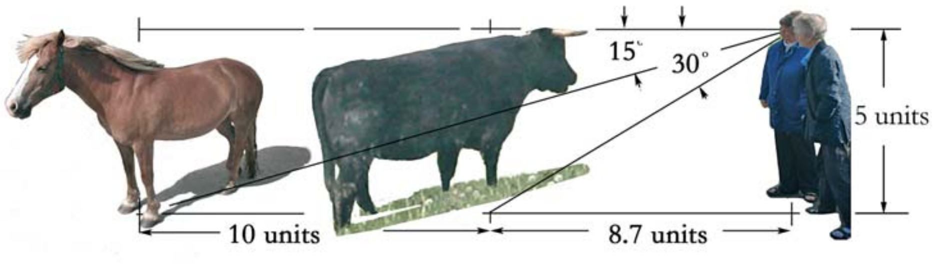

Figure 15.9. The apparent size of a horse will be half that of the black cow when there is more than there is distance between it and the viewer that there is between the viewer and the cow.

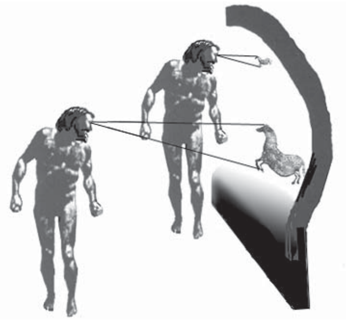

Figure 15.10. Different sizes of horse on the cave wall will appear the same size when viewed from different distances.

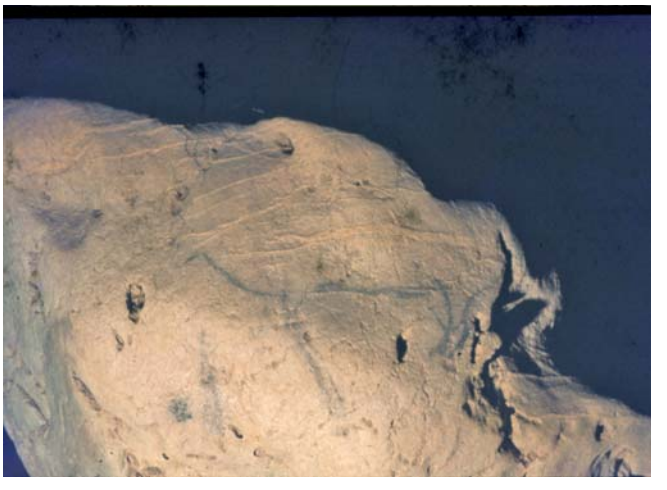

Figure 15.11. Ekain, Bison projected onto a curved plane of projection.

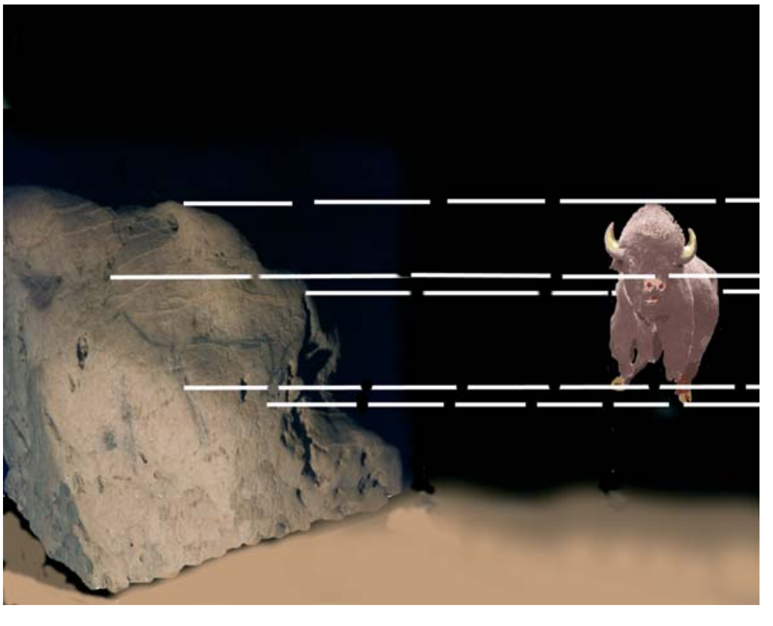

Figure 15.12. Ekain, The projection of the Bison with parallel sight lines.

can stand is about 2.5m from the painted surface. Both the horses and the cow on the cave wall are viewed from the same position and therefore the horse is the most distant.

The projection of a visual perception in a cave is seldom onto a surface that is flat and may, as in the bull bison in Ekain, be onto a surface that is convex in some places and concave in others (*Figure 15.11*). The curvature in the surface of the plane of projection has to be accounted for in the depiction. The plane is not only the curved surface of the rock that emulates the masses of the animal depicted, outside the outline it is also the limit of vision (*Figure 15.12*). All the sight lines to the depiction are parallel, if the plane of projection were flat they would be orthogonal to it and the drawing would be an elevation. As it is the distances across the surface of the plane of projection are all closer to the real distances scaled, than they would be if the drawing were an elevation on a plane surface.

In the Guipuzkoan cave of Ekain we see a method of representing space, a type of projection, that remained in use by Palaeolithic draughtsmen for more than twenty thousand years and was developed at least thirty thousand years before any cup-and-ring mark can have been made.

The Representation of Space in Egyptian Parietal Images

The paintings in Nakht's tomb, tomb 52 at Gurna on the far side of the Nile from Luxor, are roughly contemporary or slightly later than the Atlantic cupmark assemblages (*Figure 15.13*). They are also historical rather than prehistoric records of the projections used in that there are hieroglyphic narratives and explanatory texts. These increase the quantity of redundant information available to the communication and assist with checks on suppositions. They also assist understanding of the processes of depiction that were available to the Atlantic draughtsmen had they needed to use them.

Figure 15.13. Location and orientation of Nakht's tomb.

Nakht's tomb is cut at right angles to the contours of the slope in front of the peak Sheik Abd ‘l Qurna but the painted chamber is skewed so that it aligns with the valley rather than the face of the peak at that point. The course of the Nile is roughly north east and may have been slightly more east of north east when the tomb was cut so it is clearly the orientation of the valley rather than the river or the immediate slope of the mountain that is emulated. Tomb 52 is a more or less complete realization of the elements in other tombs up and down the Nile valley simply arranged.

Nakht was a priest of the temple of Amun at Karnak and a scribe. His job as a priest and scribe was to promote and assess the volume of agricultural product in the locality. He was also expected to determine the appropriate proportion of the food grown to take as taxation. Part was intended for the support of the mechanism of state: the Pharaoh, his officials, their servants and soldiers. A proportion of the less perishable foods, such as wheat and other grains, he took to store in the vast temple complex as insurance against crop failure in the future

The group of men winnowing corn is on the wall of the painted chamber that faces the viewer towards the Nile (*Figure 15.14*). The other motifs on the same wall are all of aspects of Nakht's role during life. In the panels facing towards the western side of the valley Nakht's afterlife is depicted. In the panel illustrated in *Figure 15.15* he is wildfowling from a papyrus boat on one side, bringing down duck,

Figure 15.14. Nakht's tomb – winnowing – the eastern side.

Figure 15.15. Nakht's tomb – wildfowling – the western side.

red headed Pochard, with a throwing stick. On the other he is spearing fish. Elsewhere on the western wall he is pursuing other pleasurable activities (*Figure 15.15*). The ceiling is painted with a canopy of stars, night, the intermediate place between life and afterlife

Depictions of men and animals, vegetation and artifacts are all projected orthogonally as a number of superimposed and overlapping shapes. But in order to project anything with a curved surface onto the plane surface of the wall without distorting the proportion between its various visible dimensions a projection that unfolds various angled surfaces is employed. In this it is like 'The Butterfly Map Projection' published by Bernard J. S. Cahill, an architect, in 1919 or the projection called Dymaxion by R. Buckminster Fuller another architect, published in 1946 and modified in 1964 (Fuller – Marks 1963).

In both the Butterfly Projection and the second Dymaxion projection the 8 and the 19 triangular plates respectively can fit together to form an approximation of a globe. Unfolded, in the way shown, the land masses of the world retain proportional integrity. Unfolded in another way the oceans are the right shape and size. The ancient Egyptian version of this type of projection lacks any evidence of the shapes of the planes of projection. Only the several degrees of angular rotation against a single vertical axis are visible. In *Figure 15.16* the ploughman's head is in side view, the chest in front view and so on down to the feet, one of which is a mirror projection. There are two left ones since both big toes and no little toes are depicted. It is an illogical rotation around the axis but it allows the maximum length of both feet to be clearly depicted.

Measurements were of immense importance to the draughtsman working within the Egyptian bureaucracy. The north eastern end of the Nakht's painted chamber can never have been completed. In *Figure 15.18* part of it can be seen to represent token offerings being made to Nakht and Tawy, his wife. A grid is just visible in the areas of the wigs and shows through where paint has fallen away in front of their faces. Protective glass placed some distance in front of the painting makes it impossible to measure

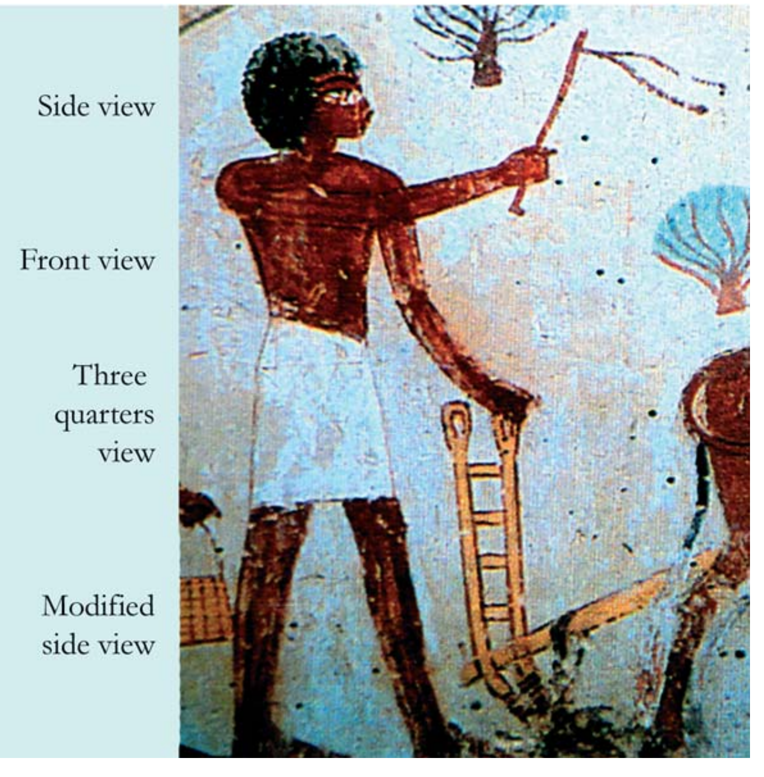

Figure 15.16. Ploughman's projection.

grid size exactly but calculating from the photograph and published measurements of the width of the chamber the grid was based on a five centimeter square. It is an under-painting snapped onto the plaster with a paint saturated taut string, and it was used in laying out the design.

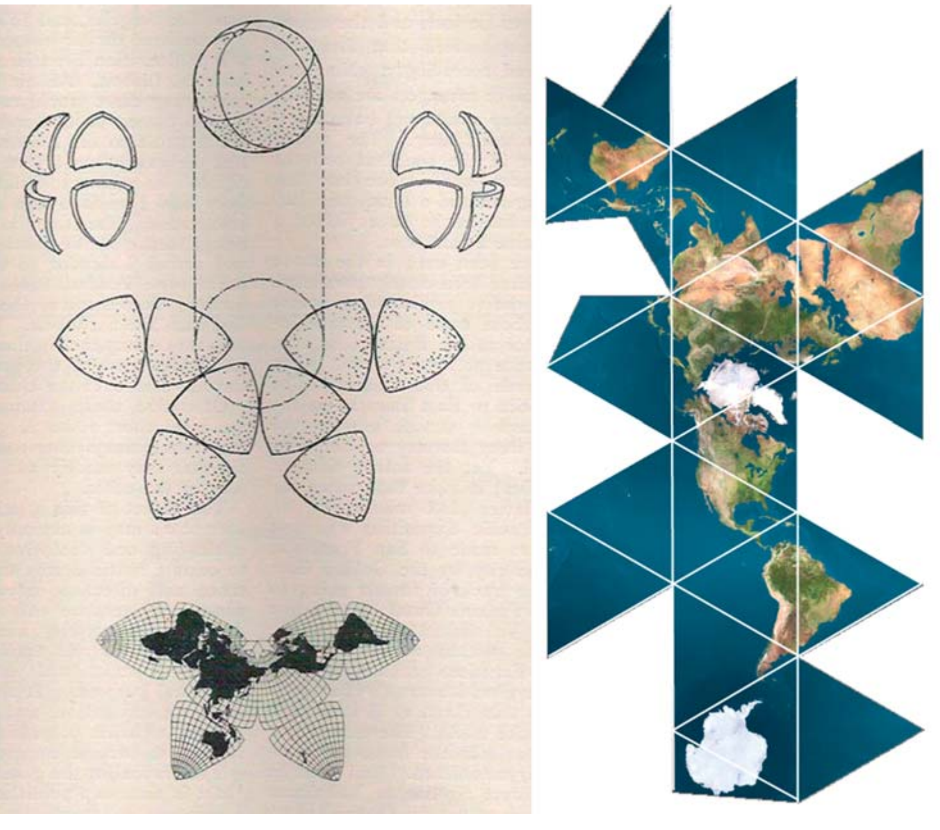

Figure 15.17. Butterfly and Dymaxion projections.

Figure 15.18. Nakht, Tawy and 5cm grid.

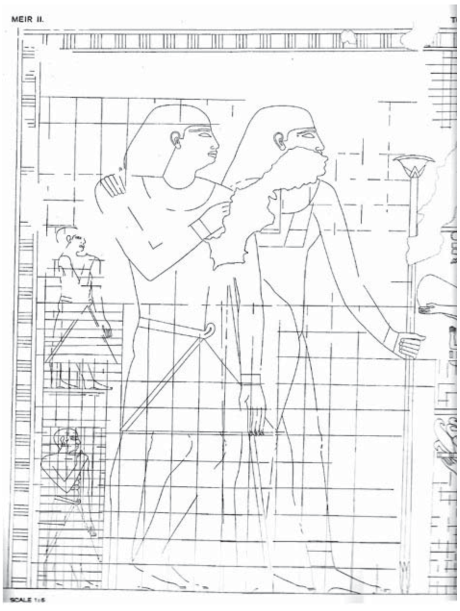

Figure 15.19. Unkh-hotep, a 6th Dynasty Nomarch at Meir near Assyut and 7.5cm grid. After Blackman 1915.

In another incomplete tomb further down the Nile more of the grid is visible (*Figure 15.19*). There is restriction on photography in this tomb and the drawing by Aylward M. Blackman published in 1915 appears to be the only adequate record. The grid is a little larger than the grid in the Nakht tomb. The sides of the large squares are 7.5cm and the two small grid-squares a third that size. By counting grid squares it can be shown that Unkh-hotep was slightly shorter than either Nakht or indeed the two attendants standing behind him. The standing Unkh-hotep measures no more than 18.7 squares and the standing height of Nakht that can be calculated from the grid around his seated depiction in *Figure 15.18* and another incomplete painting in the panel adjacent, measured 19.2 squares. On the smaller grid alongside Unkh-hotep, one standing attendant measures 19 squares and the other 18.9. The depiction of Unkh-Hotep is about 140 centimeters tall and Nakht slightly more than 2/3 that height at around 95 centimeters so unless Unk-hotep was actually a very small man both men are depicted under life size. Pharaohs, and the gods and goddesses with whom the Pharaohs commune, are depicted life size or much larger but then normally the real space across which they are viewed is of sufficient dimensions to require it.

Space in Atlantic cup and cup-and-ring mark assemblages

The representation of space in the Palaeolithic and Egyptian parietal images discussed so far has five aspects. The first is that the surface of the support is always both the plane of projection and the limit of vision. Secondly, except where there is an actual relief or cavity that can be utilized to describe the rotundity of the thing depicted, the marks are so placed as to describe the component masses as overlapping shapes. The third is that the dimensions across the surfaces of the object to be depicted are carefully assessed, scaled and projected onto the surface in parallel projections, as an elevation or occasionally as a plan. The fourth is that the real space, in which the events depicted were originally viewed and which inevitably takes some time to transverse, is condensed into the dimensions of the viewing space in the chamber where the images are painted or engraved. The fifth is that where there is space between things taking part in the event to be depicted, the space is represented by diminution of the relative size of the thing furthest from the viewer in such a way that a thing, that is twice as far from the viewer as the nearest thing, is represented as approximately half the size.

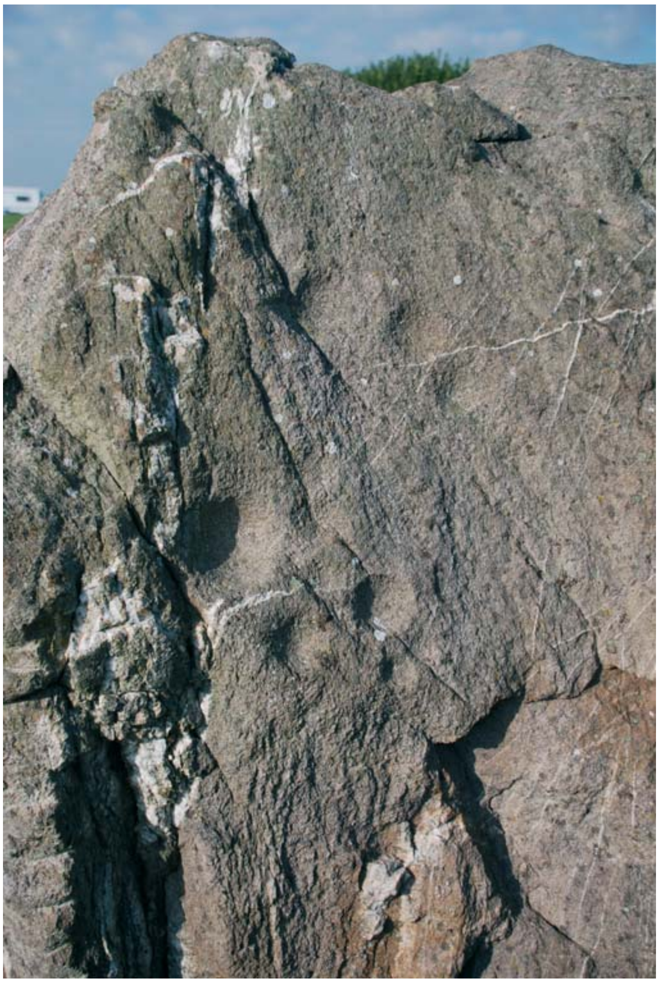

Figure 15.20. Cupmarks, Caerfai, Pembrokeshire.

Since the Atlantic style in prehistoric rock art is roughly contemporaneous with the Egyptian style and evolved in areas close to places where Palaeolithic cave paintings and engravings are to be found there is every reason for it to have similar characteristics.

Caerfai is a small assemblage of the simplest of marks, hemispherical cups around five centimeters in diameter (*Figure 15.20*). It has recently been lifted out of its original position, where it was flat and covered with hillwash. The mechanical equipment used damaged the underside but left the upper surface with the cupmarks unscathed. Its vertical relocation is very close to but not identical with its original site but its original orientation is lost. The position increases its visibility of the stone in all directions but reduces the visibility of the cupmarks. They are in shadow for all but a few hours after sun or full moonrise and remain invisible to most people passing them. When the stone was exposed in its original position before it was dug up and was flat on the ground the direct light from either sun or moon would have thrown the marks into relief at any time when the sky was clear.

The site where the stone was discovered permits only a limited middle distance and distant view of the sea, a bit of rough grass to the cliff edge and a very limited prospect in all the landward directions. The marks do not obviously correspond in disposition to any marine hazards or to the Dale peninsula and string of islands of various sizes out to the west towards Grassholm and the Smalls that lie right across the southern horizon, so they must represent something nearer at hand. The ground beneath the sea was exposed during the last ice age but was submerged shortly after. There are soundings 13m below spring tide low water close inshore deepening to a maximum 37m at 5 nautical miles south across St Brides bay with a rise and fall of up to 6m. This is not deep but it is deep enough to ensure that the ground has been covered by water during most of the last ten thousand years. If the cupmarks depict or describe anything it must be something within c. 200m or so. Apart from the spring whose overflow required the digging of a drainage channel that resulted in the discovery of the marked stone and the small cluster of domestic and agricultural buildings around it there is nothing else obvious to mark.

There is greater diversity in the motifs at the southern end of the Atlantic range than there is at the northern and very much greater diversity in many places throughout than there is at Caerfai or West Wales generally. Stan Beckensall has made a collection of the main types of marks in Britain (*Figure 15.21*). A similar collection has been made by Fernando Javier Costas Goberna for north-western Iberia (*Figure 15.22*). Beckensall suggests that in Britain there are 41 main types of motif on rock surfaces with a further 39 variations and compounds though his publications include reference to one or two more he does not depict. He has done no recording on the Isle of Man but recent work there has found recognizable motifs on rock surfaces alongside cupmarks (Darvill *et al*. 2005). In northwest Iberia Fernando Javier Costas Goberna adds at least 21 types of mark to Beckensall's list (Costas Goberna *et al*. 1999). Galician arrangements of marks have more motifs that are recognisable representations than those recorded by Beckensall. The difference might be thought to be one of intention but with

Figure 15.21. Stan Beckensall's drawings of main and variant motifs from Britain (1999, 14)

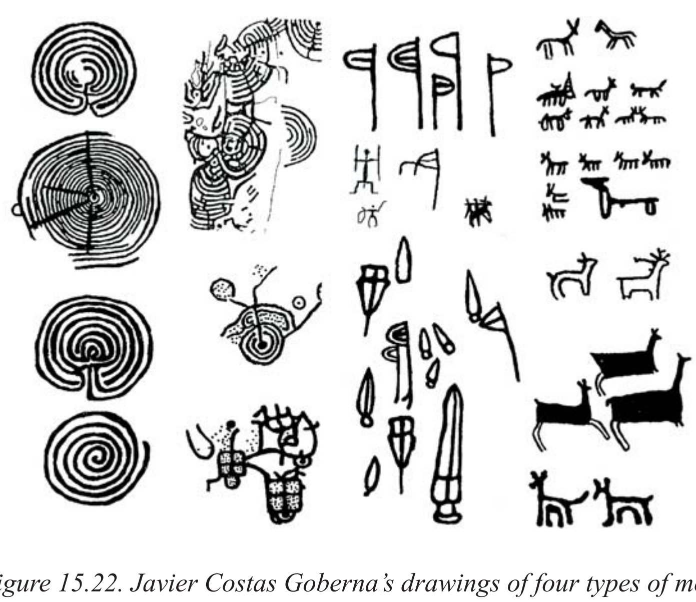

Figure 15.22. Javier Costas Goberna's drawings of four types of motifs from Gallicia (1999: 20, 42, 47, 52 and 53).

the exploration of the Palaeolithic and the Egyptian depictions in mind resolves as a matter of spatial representation that is probably inevitable due to the nature of the materials worked.

In the motifs from neither Britain nor Galicia is there any suggestion that they were projections onto axially rotated surface like the Egyptian projection. There is every indication that they were the simplest of parallel projections. They were plans or elevations, with the sight lines all orthogonal to the projection plane. The validity of this observation is particularly apparent at the sites above Féntans.

Pedra das Ferraduras, Fentáns, a couple of kilometers from the little town of Campo Lameiro in Galicia, is a site where the distribution and types of marks has attracted considerable attention (Anati 1964; Peña Santos *et al*. 1993; Vazquez Rozas 1995; Bradley 1997; Nash *et al.* 2004). The cupmarks and two variant cup-and-ring marks are all on a horizontal surface and separated from the inclined part marked with other motifs by the fissure in the rock that can be seen as a darker line than the shadows cast by nearby trees in *Figure 15.23*.

Figure 15.23. Pedra das Ferraduras, Fentáns, Campo Lameiro Gallicia from above.

The marks incised into the upper rock surface are projected orthogonally and are plans, without any overlap to create relief. As in cave and tomb pictures the rock surface is not just the plane of projection it is also the limit of vision. There is no obvious attempt in the motifs to contrive any recession by overlap. The shape and dimensions of the two types of paired cupmarks correspond to the dimensions of the slots of red deer stags and hinds, about 6 and 8cm long respectively, and it seems very unlikely that they represent anything else.

The motifs on the sloping face are less abstract but are harder to photograph as the tree shadows impinge when the sun is low enough to cast the marks into relief. *Figure 15.24* is therefore from a tracing. A tracing flattens two distinct planes of projection into a single plane. The shapes on the top of the rock are projected in plan and on the sides in elevation. The upper ones are certainly orthogonal to the surface but it is difficult to tell, owing to the erosion of the surface and consequent lack of precision in the length and breadth of the engraved marks, whether the parallel projections onto the sides are horizontal and therefore oblique to the inclined surface, as they are in the drawing in *Figure 15.25*, or are orthogonal there as well. The tracing, *Figure 15.24* has inevitably drawn them as though they are orthogonal and could therefore have disturbed the shapes that were intended. However, the shapes are sufficiently low down on the surface of the rock for an orthogonal projection to be the intended view.

There is some overlap of shapes on the inclined surface and there are depictions whose relative 'magnitude is of exactly known measure' so the projection contrives a restricted space between the

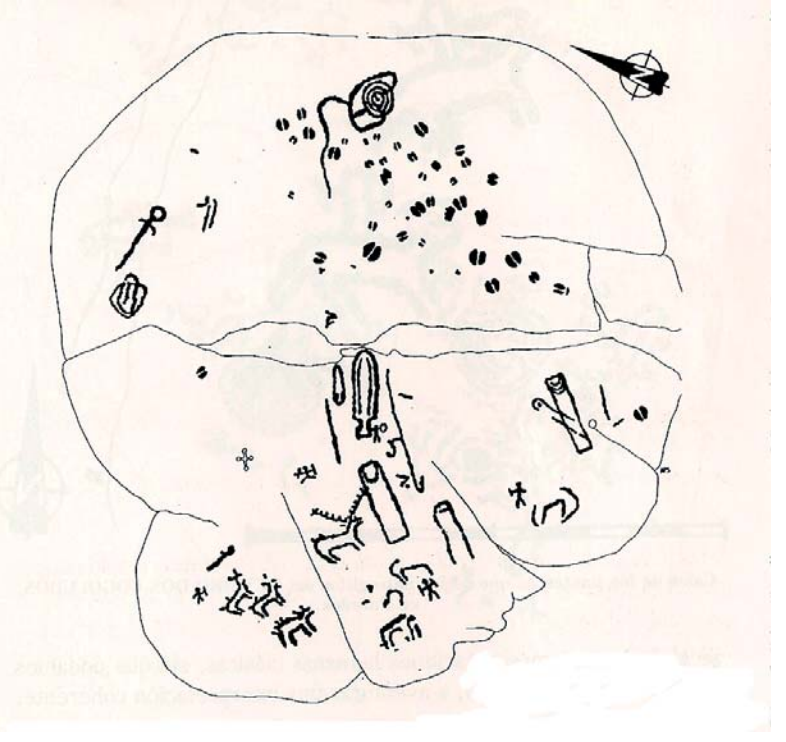

Figure 15.24. Pedra das Ferraduras, Fentáns, Campo Lameiro – reproduced from a tracing by Antonio Peña Santos.

Figure 15.25. Drawing of two parallel projections of hinds at Pedra das Ferraduras.

foremost of the overlapping shapes and the limit of vision behind the smallest of the shapes whose size can be assessed relative to it. The disposition of shapes on the rock surface does not imply as Anati thought that there are several different styles from four chronologically distinct and socially different periods.(Anati 1964) The motifs on the rock surface may have been added to over time but only to amplify what was there before, not to replace it.

Pedra das Ferraduras is one of a cluster of marked rocks in the trees round the edge of an open arena of rough grazing some two hectares in extent. The marked stones are irregularly spaced, in the largest gap there is a spring and there is a heap of stones that could have been a cairn or some other intentional structure in the middle of the arena. In *Figure 15.26* the arena is behind the village of Fentáns to the right of centre and looks like a low ridge. The hills to the left of centre curve round behind the position from which the photograph was taken making a much larger arena open to the south east. There are some

Figure 15.26. Fentáns from the south-west.

thirty more sites with engraved stones on this circle of hills between the three and 400m contours and close to the spring line. A river in a narrow gorge over 100m deep cuts off this arena to the south east. There are no engraved rock surfaces recorded in its southern bluff and few suitable rock exposures.

At Lordenshaw, to the south of Rothbury and the river Coquet in Northumberland, a slab of rock has the words 'Rock Map' punched into it by someone who became convinced that it was an appropriate name and a cast iron sign warning that it is in the care of the Ministry of Public Building and Works placed by someone else who disapproved of what had been done. The worked rock surface is smaller than the one at Pedra das Ferraduras but has many more cups, cups and rings, and linear extensions from cups on it. The range of motifs is less than is common in Galicia. There would never have been a near vertical surface capable of carrying elevations as well as the horizontal surface pecked with plans.

The Group viewing Lordenshaw in *Figure 15.27* is, mostly out of sight. It was crowded into the best position for viewing the motifs. Aron Mazel, standing looking contemplative, was showing the group

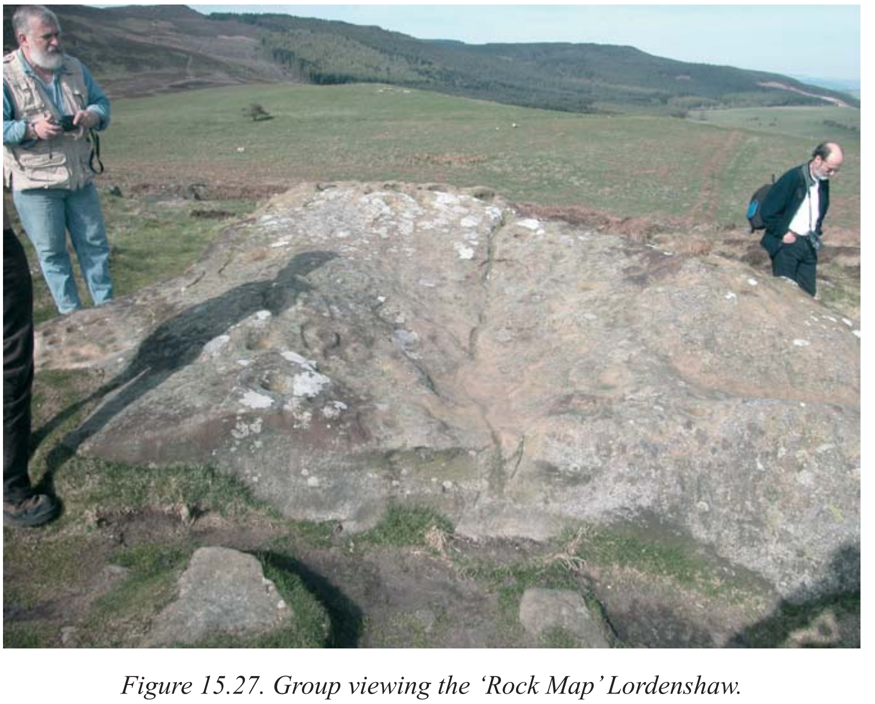

Figure 15.27. Group viewing the 'Rock Map' Lordenshaw.

Figure 15.28. The surface of 'Rock Map', Lordenshaw (after Beckensall 2001, 4).

the location of the most important sites. The relationship between the length of the shadow of the April morning sun and the height of the people to the right shows that the rock surface is slightly tilted and is approximately equidistant from someone viewing it on either side of the position that was occupied by the camera. Since all but a very few of the British cup and cup-and-ring marked surfaces and many if not most of the Iberian surfaces are horizontal, the picture space is above the motifs and is limited by the height of the viewer. He or she either has to walk across the surface in order to assess the shapes projected orthogonally on to it correctly or, as at Lordenshaw, to stand in an appropriate position.

By contrast with Lordenshaw, on the Fentáns panels there are numerous recognizable shapes. All the quadrupeds need not necessarily be deer but there can be little doubt that the majority are. A stag is about 2.5m overall, a mature hind a little less and a calf less still. These measurements applied to the engravings on the horizontal surface at Pedra das Ferraduras imply that the cup-and-ring marks represent something that is around 2.5m in diameter. The dimension is too large to represent people from above and too small to represent the banks and ditches of a defended enclosure oreven a round house.

No such constraint on dimensions arises with the range of motifs engraved on the surfaces at Lordenshaw. As can be seen from Beckensall's exactly detailed drawing none of them are recognizable. None can be compared with known measures. Without something whose size is known the thing represented by the two cups and rings could be several things. It could be a small structure such as a cairn 50 or 60m away or the plan of a hut. It could be a large structure like the multivallate hillfort. There is one 500m away but the fort depicted would need to be situated at some distance, perhaps on the top of the Simonside Hills visible in the background of the photograph. The density of cup-and-ring marks on the surface would not be a bar to an interpretation of this kind. In the Egyptian projections, distances across a void were not drawn to the same scale as the dimensions of a solid. However one factor is a bar. There is no reason to suppose that the cup-and-ring motif refers to the same thing everywhere.

If a cup-and-ring depicted some specific thing that was 2.5m in diameter at Fentáns then viewed from the same distance it ought to be something of a similar size at Lordenshaw There is no reason to suppose that a cup-and-ring mark that is similar both in size and appearance to one that can be calculated as representing something 2.5m in diameter at Fentans should take on an entirely different reference and represent something two hundred and fifty or even 25m in diameter elsewhere The symbolism of a sign that has been selected wholly by social convention can change with remarkable rapidity. Etymological dictionaries contain hundreds of words that have completely changed their meanings within two or three hundred years. The reference of a depiction is more stable . There was little or no change in the parietal art of the upper Palaeolithic in twenty thousand years and apart from a blip in the Amarna period, Egyptian parietal art was constant for three thousand year.

Züchner(1989) has argued that cup-and-ring marks represented built structures. Lewis-Williams – Dowson (1988) proposed the idea that they represented the kind of tunnel into which the distressed mind plunges. It could be that both were partially wrong and partially right. Geoffrey Wainwright and Tim Darvill have recently suggested in public lectures that the cupmarked features they have studied in the Preselis in Pembrokeshire are associated with good, pure, healthy, even health giving, water sources. They developed their discussion out of entirely different grounds from those explored here, but on the basis of this analysis of picture space their idea is possible. Mariners trading between Atlantic coastal communities and the herdsmen of the early agricultural communities whose products the mariners distributed would have had one need in common. They would have had to find good water sources that were not already appropriated by a resident group, when they were moving in unfamiliar surroundings.

Notes

Most of the photographs are either by myself or by my wife, Anne Eastham. The exceptions are those of Ekain, which are from transparencies taken by Jesus Altuna and used with his permission, and the Nave in Lascaux, which is from an early commercial transparency that long ago lost any identification data it may have had.

Bibliography

ANATI, E. 1964
The rock carvings of ‘Pedra das Ferraduras’ at Féntans, Pontevedra. In: Ripoll Perello, E. (ed.), *Micelánia en Homaje al Abate Henri Breuil*. 123–35. Barcelona, Instituto de Prehistoria y Arqueologia. referred to by the author on site in 1999.

ARMITT, I. 1988
Excavations at Loch Olabhat, North Uist. Edinburgh, University of Edinburgh Department of Archaeology Project Paper 10.

ARMITT, I. 1992
The Hebridean Neolithic. In: Sharples, N. – Sheridan, A. (eds.), *Vessels for the Ancestors, Essays on the Neolithic of Britain and Ireland.* Edinburgh, Edinburgh University Press.

BECKENSALL, S. 2001
British Prehistoric Rock Art. Stroud, Tempus.

BLACKMAN, A. M. 1915
The Rock Tombs of Meir, II The tomb chapel of Senbi's son Ukh-hotep(B, No.2). London, Egypt Exploration Fund.
BRADLEY, R. 1997
Rock Art and the Prehistory of Atlantic Europe. London, Routledge.
BREUIL, H. 1921
Roches gravées de la Pénisule Iberique. *Mémoires présentées au Congrès de l'Association Française pour l'avancement des sciences.* 1–23.
BREUIL, H. 1934
Presidential Address. *Proceedings of the Prehistoric Society of East Anglia* 7, 289–322.
COSTAS GOBERNA, F. J. – HIDALGO CUÑARRO J. M. – PEÑA SANTOS, A. DE LA 1999
Arte Rupestre no sur da Ría de Vigo. Instituto de Estudios Vigueses.
DARVILL, T. – O'CONNOR, B. 2005
The Cronk yn How Stone and the Rock Art of the Isle of Man. *Proceedings of the Prehistoric Society*. 283–332.
DARVILL, T. – WAINWRIGHT, G. 2003
A cup marked stone from Dan y Garn Mynachlog-Ddu, Pembrokeshire and the Pre-historic Rock Art from Wales. *Proceedings of the Prehistoric Society*. 253–264.
DAVID, B. 2002
Landscapes, Rock-Art and the Dreaming. New York and London, Leicester University Press.
FULLER, R. B. – MARKS, R. W. 1973
The Dymaxion world of Buckminster Fuller. New York Anchor Books.
FLOOD, J. 1997
Rock Art of the Dreamtime. Sydney and London, Angus Robertson.
GAFFNEY, V. – STANČIČ, Z. – WATSON, H. 1995
Moving from catchments to cognition: tentative steps towards a larger archaeological context. *Scottish Archaeological Review* 9/10, 41–64.
GIBERT, J. – SÁNCHEZ, F. – GIBERT, L. – RIBOT, F. 1995 (eds.)
The Hominids and their environment during the Lower and Middle Pleistocene of Eurasia. Orce, Museo de Prehistoria y Paleontologia.
GIOT, P-R. – L'HELGOUAC'H, J. – MONNIER, J-L. R.1998
Préhistoire de la Bretagne. Rennes Éditions Ouest-France.
LEWIS-WILLIAMS, D. – DOWSON, T. 1988
The Signs of All Times. *Current Anthropology* 29(2), 201–245.
LEWIS-WILLIAMS, D. – DOWSON, T. 1993
On vision and power in the Neolithic; evidence from the decorated monuments. *Current Anthropology* 34, 55–65.
MORRIS, R. 1977
The Prehistoric Rock Art of Argyll. Poole Dolphin Press.
MORRIS, R. 1989
The Prehistoric Rock Art of Great Britain: a survey of all sites bearing motifs more complex than simple cup marks. *Proceedings of the Prehistoric Society* 55, 45–88.
MAC WHITE, E. 1951
Estudios sobre las relaciones Atlánticas de la peninsulaHispánica en la Edad delBronce. Madrid, Seminario de histoire primitive del hombre.

NASH, G. – NASH, L. – CHIPPINDALE, C. 2004
Walking through Landscape. In: Nash, G. – Chippindale, Ch. (eds.), *The Figured Landscapes of Rock Art.* 351–371. Cambridge, University Press.
PECHAM, J. 1278
Perspectiva Communis. Reprinted in: Lindberg, D. C. 1970, *John Pecham and the Science of Optics.* Milwaukee and London, The University of Wisconsin Press.
PEÑA SANTOS, A. DE LA 1976
Asociaciones entre antropomorfos y circulares o espirales: datos para una iconografia do los grabados rupestres Gallegos. *Gallaecia* 2, 96–116.
PEÑA SANTOS, A. DE LA – COSTAS GOBERNA, F. J. – REY GARCIA, J. M. 1993
El Arte Rupestre en Campo Lameiro. Xunta de Galicia.
STRINGER, C. B. – BARTON, R. N. E. – FINLAYSON, J. C. 2000
Neanderthals on the Edge. Oxford, Oxbow Books.
VAZQUEZ ROZAS, P. 1995
Los petrogrifos gallegos: selección de su emplaziamiento en las rocas grabados. *Actas del XXII Congreso Nacional de Arqueologia, Vigo,* Vol. 1, 69–76.
WADDINGTON, C. 2007
Neolithic Rock Art in the British Isles: Retrospect and Prospect. In: Mazel A. – Nash, G. – Waddington, C. (eds.), *Art as Metaphor; The Prehistoric Rock Art of Britain*. 49–68. Archaeopress.
WAINWRIGHT, F. 1963
The Souterrains of Southern Pictland. London, Routledge & Kegan Paul.
ZILHÃO J. 1993
The spread of agro-pastoral economies across Mediterranean Europe: a view from the far west. *Journal of Mediterranean Archaeology* 6, 5–63.
ZUCHNER, C. 1989
Haiser, Felder und Wage in der galischen Felsbildkunst. *Madrider Mitteilungen* 30, 55–75.

16

Revisiting Pandora's Hope. Anthropology and Archaeology Approaches to Place and Integrating Difference into Deliberative Democracy in an Age of 'Global Risk Society'

STEPHANIE KOERNER – LORNA SINGLETON

Introduction

Until recently, few are likely to have been receptive to ideas that anthropological and archaeological approaches to landscape could help develop fresh perspectives on such policy challenges as:

(1) sustainable development under pressures of climate change, of techno-science hazard, and of competitors in today's global knowledge-based' political economies
(2) re-framing 'risk issues' and 'ethical issues' to address jointly social and environmental problems
(3) facilitating greater 'upstream' public participation in science and technology policy processes.

The situation may be changing. Robert Layton – Peter Ucko (1999) began the edited volume on the anthropology and archaeology of landscape by noting how widespread use of the term 'landscape' had become. The expressions 'place' and 'creating localities' are widely used too, especially in literatures on globalisation and change in the dynamics of pedagogical institutions and public affairs (Harvey 1989; Giddens 1990; Fardon 1995; Prazniak – Dirlik 2001). Under the subsection heading "*taking sides* in a trope," in *Counter Works. Managing the Diversity of Knowledge*, Richard Fardon says:

> "I think it is a matter of varied conjuncture of unequally empowered processes and imaginings that are localized conceptually as figures against the ground of global space that is both traversed and simultaneously classified, possessed and defended exhaustively…. [I]t is a matter…of the complexity of agency recognised in particular places…. If we give ourselves some elbow room with respect to the present these preoccupations with space and locality… and with how things occur in spaces and how they seem, appear symptomatic of the same condition" (Fardon 1995, 2).

Most recently, the expressions 'landscape', 'place' and 'creating localities' are being used in areas of specialisation emerging on the interstices of 'pure' and 'applied' research, especially by researchers concerned to develop critical and constructive approaches to "jointly social and environmental problems" (Wescoat 2005). In this chapter we illustrate something of the relevance of these approaches for fresh perspectives on the above listed policy challenges (1, 2 and 3). Emphasis falls upon materials from research on science and technology policy in Europe. Because policy challenges vary according to social and ecological landscapes, they must be illustrated through concrete instantiations; and the EU has been one of the most actively committed regions in responding to their implications (Felt – Wynne 2007).

In Part 2 we contextualise our aim in relation to contrasting visions of globalisation, and to what can be called new versions of 'two cultures': (a) one of 'framework relativism' and/or post-modern theory (cf, Galison 1996; Hall 2005) located largely on academic contexts, and (b) the other being formed by radical changes that are taking place in science, with regards to scale, normative roles and conceptions of objectivity (Koerner 2007). We also highlight the deeper historical backgrounds of some of the most problematic ways in which 'crises over representations' arising on interstices of these cultures, as well as of the 'global' and the 'local' are being addressed. Part 3 concerns light that Ulrich Beck's work *Risk Society. Towards a New Modernity* (1992) can throw upon barriers impeding effective and democratic science and technology policy processes. Part 4 illustrates examples of beliefs and practices forming these barriers. Part 5 shows why strongly reflective landscape approaches can help with developing fresh perspectives on science and technology policy challenges. We conclude with some suggestions about how such an approach can help to integrate differences (and/or disagreement) into democratically deliberating science and technology's social ends and accountabilities.

2. Contextualising 'Crises over Representation'

There are many reasons why interest in anthropology and archaeology's bearing upon science policy processes is such a recent development (Strathern 2000). One has been the impact of dualist characterisations of 'science' and 'values' on relationships between the humanities and social sciences, and physical sciences. A very immediate reason is the widespread expectation, on the part of government and commercial policy authorities, that super computer technologies provide a 'sound scientific basis' for adjudicating:

(a) investments in technological innovation (research and development, R – D),
(b) 'risk issues',
(c) the relationships between 'science- society.'

A corollary of this expectation has been the range of roles (many with backgrounds in colonial administration) that 'applied' mainly science research has been assigned in mediating relationships between 'science and society' by:

(a) providing information to physical sciences on human activities which perturb natural processes,
(b) formulating and 'testing' hypotheses about the social and economic consequences of these perturbations,
(c) designing programmes for educating global publics into better understanding and appreciation of scientific knowledge and prescriptions (cf. Leach *et al.* 2005; Wynne 1994).

A further reason has been the remarkable parting of the ways of what is useful to call new versions of two cultures: (a) one centering on the above outlined increasing normative roles of science and technology, and its expectations of 'applied' social science and super computer technologies, (b) the other associated with 'pure research', and centering on apparently antithetical 'framework relativist' paradigms for the tasks of theory in fields ranging from the philosophy of science, the history of the philosophy of science, the sociology of scientific knowledge to anthropology and archaeology. This parting of ways is a central theme of our chapter and we consider it in more detail below in relating to wider contradictory trends of globalisation. But here it is worthwhile to note that one of the reasons for the quite recent awareness of the problem has been (despite huge critique of historical 'meta-narratives') the very considerable persistence of a paradox with images of science and modernity. To this day these may paradoxically be both the most and the least historicised of all models in the humanities and social sciences. The most historicised, because science (and especially technology) is seen by many as the most transformative force in modern times (if not human history, in general) and the least historicised because these models actually eclipse the contextual contingencies of historical change.

Today, the humanities and social sciences are at a crossroads in the dynamics of pedagogical institutions and public affairs. Concerns with the contingencies of hitherto 'excluded pasts' are not restricted to areas of specialisation in anthropology and archaeology concerning 'peoples' once said to be 'without history' (cf. Wolf 1982; Fabian 1983; Buchli – Lucas 2001). Science and modernity's unquiet pasts nowadays concern many researchers interested bringing insights of anthropology and archaeology to bear upon questions about the social ends and ethical responsibilities of instrumental employments of technological innovations. Writing on the relevance of inquiries into deeper historical backgrounds of contemporary social and environmental problems, Stephen Toulmin warned against 'myths of a clean slate':

> "The terms in which we make sense of the past, and the ways in which our view of the past affects our posture in dealing with the future. The beliefs that shape our historical foresight represent (as German philosophers put it) our *Erwartungshorizonten*, or horizons of expectations. Those horizons mark the limits to the field of action in which, at the moment, we see it as possible or feasible to change human affairs, and to decide which of our most cherished practical goals can be realized in fact" (Toulmin 1990, 1).

Fortunately the last decades have seen remarkable developments with regards to methodologies as well as case study materials, which illuminate the hitherto unimaginable contingencies of the history of science. Decisive contributions to these developments have been made by shifts in foci, away from abstractions towards inquiries into concrete historical localities – away from conceptions of science as a timeless ideal towards inquiries into the dynamics of 'places' (eg, Knorr-Cetina *et al.* 1981; Biagiolli 1999; Schatzki *et al.* 2001; Beck 1992; Fardon 1995; Irwin – Wynne 1996). Many abstractions, once seen as essential – space, time, rationality, experiment, facts and objectivity – are no longer envisaged as timeless substances or states. Instead of debating generalisations about whether science and modernity marks a triumph or a tragedy, researchers are inquiring into the specific localities where sciences emerged and mutated as they became enmeshed in new practices and normative ideals (Galison 1987, 1996; Rheinberger 1997; Daston 2000). Instead of envisaging science as a timeless normative ideal, orientations are shifting:

(a) from treatments of science as something 'given' to concerns with the diversity of forms scientific cultures have taken,
(b) from what was largely 'intellectual history' – a history of ideas – towards inquiries into the 'language games' and 'family resemblances' of techniques, practices, instruments, cycles of credibility, and so on (c.f. Wittgenstein 1958),
(c) from presuppositions about consensus determined by some form of necessity (and about change being in need of explanation) towards questions about how anything like agreement is achieved.

All of these developments have analogues in strongly reflective anthropological and archaeological approaches to the dynamics of 'place' and inform our contribution's aims.

2.1. Contradictory Images of Globalisation

Especially since the collapse of major Cold War institutions there has been a flood of literatures on globalisation and multi-culturalism. Today few images are more widespread than those of globalisation that stress: "intensification of global interconnectedness – a world full of movement, linkages, persistent cultural interaction and exchange (Inda – Rosaldo 2002).Click on world-making connections. Your screen fills with global flows.... For some we live in a time where no units or scales count for much but the globe." Many images are celebratory and structured around characterizations of (a) modernity as an era of nation-state thinking – homogeneity, ethnic absolutism, racism, indigenism, essentialism versus (b) post-modern future of transnationalism, hybridity, global flows of practically everything, and the univeralisation of liberal democracy through the expansion of techno-science knowledge based political economies (Benhabib 1996; Friedman 2001). Discrepant experiences of globalisation are treated as if they were restricted to particular places – especially to 'backward' local traditions (Heatherton 2001). These images proliferate in tandem with the expansion of global tourism industries, and the expanding range of regulated, evaluative and highly technology dependent procedures required to modify and maximise 'global' relationships between places (proximities) (Urry 1990, 1995).

Not all the images are celebratory. There is a large humanities and social science literature, which calls into question the ways in which expressions like 'culture' and 'multi-culturalism' render invisible to the ethical faculties of some the moral and existential struggles of people, who are being exposed to increased ecological risk, levels of exploitations by unsustainable economic development projects, poverty and subjection to dislocation, social exclusion, and exposure to political violence. In the views of some powerful competitors in expanding knowledge based political economies 'risk-taking' is indispensable for using science to put the future at the service of the present (Bernstein 1996). In consequence many highly developed government and commercial institutions to try to anticipate what cannot be anticipated, and forget that "the first law of risk society" goes: catastrophic risk follows the poor and socially vulnerable (Beck 1992).

Places – proximities – bear underscoring. Globalisation traverses national borders, transforms authority and fortifies new social boundaries of 'otherness'. The sun never sets on metropolitan centres shimmering inequality. Super-modern urban castles and subway 'homes' of thousands of beggars have the same geographical co-ordinates. In many places, 'cultural heritage conservation' clashes both with its destruction, and claims to the necessity of techno-science based development. It bear noting that some of the most sophisticated frameworks for archaeologies of landscape have been developed by researchers working in places where there are direct and powerful connections between domestic and international conflicts and the state of tourism, cultural heritage preservation and human rights violations (Silver 2007). Such frameworks for inquiring into widespread processes through the "prism of the local" (Miller 1995), bring light to globalisation's deepening jointly social and ecological problems. These include the embeddedness of controversies over 'heritage issues in deepening inequalities with regards to exposure to ecological hazard (climate change and nuclear, chemical and biological industries hazard), unsustainable development and political conflict – including conflicts resulting in grave human rights violations (Koerner – Singleton 2008). A number of strongly reflective studies of the expanding tourism industry's contradictory landscapes show that side-by-side with global tourists and travelers within many of those 'empty meeting places' or 'non-places' of modernity such as the airport lounge, the coach station, the railway terminus, the motorway service stations, docks and so on are countless global exiles (MacCannell 1992; Augé 1995). Such exiles are fleeing from famine, war, torture, persecution and genocide, as economic and social inequalities and consequential displacements of population have magnified in recent years and have forced mobility upon many (Urry 1995; Friedman 2001).

These studies are making possible conditions for critically engaging images that (to borrow Walter Benjamin's 1940 terms) can result in rending the barbarity of many globalising processes invisible. They can alert us and portrayals local communities as occupying a midway point between the 'traditional' and 'modern' can and have eclipsed struggles to resist being turned into a tourist industry resource. By denying the coevalness (Fabian 1983) of the global and the local, such portrayals envisage the global and local as differing not in scale but in kind, and eclipse the possibility that the latter can independently develop strongly reflective perspectives of their own on contemporary global problems.

2.2. Consequences of Widening Gaps between 'Two Cultures'

A number of recent directions that archaeologies of landscape (or place) have taken are likely to be useful for illuminating barriers to effective and democratic science and technology policy processes. We stress in this chapter features of James L. Wescoat's (2007) landscape approach to "heritage conservation" and "conciliation of jointly social and environmental problems," including that it:

(a) extends beyond monuments and sites to the rich topographic sense of place,
(b) focuses on human-environmental relationships
(c) encompasses multiple historical layers
(d) operates on multiple geographical scales
(e) helps to illuminate diverse people – place connections.

We will consider in more detail how these and other features shared by a number of reflective approaches can help with addressing challenges listed at the onset (1, 2 and 3). These include means to illuminate situations where we cannot say, without further inquiry, whether any of the suggestions made about policy's social ends and accountabilities should be excluded from consideration. Since, much of the importance of these means relates to their very direct bearing upon widening gaps between new versions of 'two cultures', we consider these in what follows first.

2.2.1. 'Framework Relativist' Paradigms for 'Pure Research'

Nowadays disunity (or 'framework relativist) paradigms for the tasks of theory (summarised by such expressions as realist [natural and social] and [cultural] constructivist) enjoy normative roles in humanities and social science departments of major universities. The most influentially opposed approaches diverge on such issued as:

(a) objects or domains of study
(b) methods for 'explaining' or 'interpreting' (a)
(c) researchers' relations to the *contents* of (a) and (b)
(d) socio-historical *contexts* of (a), (b) and (c)

> Lorraine Daston's (2000) has thrown light on major contrasts and shared presuppositions.
> Realists picture scientific objects as discoveries of unexplored territory waiting to be mapped. Scientific objects may, like dark objects as invisible planets, take centuries of theoretical and empirical effort to find, or to be accessible only by means of the most powerful instruments, but in their essence they are as enduring as the…solid, obvious, sharply outlined, in-the-way things of quotidian experience: the walls that obstruct, the rain that falls, the projectile that hits, the stone that stubs…. In contrast to quotidian objects, scientific objects are hard-won (Daston 2000, 2).

Strongly realist (natural and social) envisage both quotidian and scientific activities and objects as ultimately reducible to principles governing yet 'unexplored territory,' and are happy to talk about a history of scientific discovery, but not about the historical contingency of scientific activities and objects. In strongly realist programmes, reduction refers to (a) an approach to understanding the nature of complex things by reducing them to the interactions of their parts, or to simpler or more fundamental things and (b) a philosophical position that a complex system is reducible to the sum of its parts (whether these systems are composed of objects, phenomena, explanations, theories, beliefs, desires or meanings) (Hempel – Oppenheim 1948; Popper [1959] 2002). Emphasis falls upon causal explanation, and the importance of discovering causal mechanisms that satisfy requirements of reductions: *methodological*, that the ideal strategy is to reduce things studied to the smallest number (often also size), *theoretical*, that all theories can or should be absorbed into a unified theory, and *ontological*, that reality is treated as composed of a minimal number of kinds of entities (or substances) – with monists centering on a single substance and dualists believing that everything is reducible to two – such as nature and society (convention).

Cultural constructionists are opposed to what they believe realists mean by scientific discoveries. They refer to inquiries into the historical contingency of science. But constructions distance themselves from questions, for instance, about the importance of these inquiries for critical reflection upon changes taking place in science, for instance, in scale, normative roles, and conceptions of objectivity that we consider shortly. Constructivists do stress contingency. But the value of this emphasis is diminished by contradictory presuppositions that history somehow makes things not real. In consequence, constructionist frameworks share with realists many reductionist presuppositions.

Elimination (or eliminativism) represents standard expressions for talking about realist (natural or social) theories about knowledge, and reduction approaches to explanation (Dennett 1978; Rey 1988; Churchland – Churchland 1988). But recent projects in anthropology and archaeology to address problems generated by nature – culture and related dichotomies indicate there are constructionist versions too (Descola – Pálssen 1996). What bears underscoring here is that, in both realist and constructionist views, everyday peoples' common-sense understandings of the mind are false (or folk psychology) and the entities they believe to compose these (such as the soul, beliefs, desires, and so on) can be reduced to more fundamental substances. Much opposition between realism and constructivist frameworks revolves around their eliminative positions on what they take to be their opponents most cherished beliefs (Latour 2004). So, realists are eliminative about constructionists' topics, arguing that these are reducible to principles of brain science, biology, social interests, and so on. And constructionists are eliminative about realists' 'nature' and society,' claiming not only that these are historical but also that they are somehow not real.

Two points bear stressing. One is that (as is often the case where paradigms that initially engendered 'crises over representations' become part of normative arrangements) today's influentially opposed programmes share salient features. Much debate over reality and construction, and the individual and social systems is not only shadowed by 'nature' and 'culture' and 'modern – pre-modern' dichotomies (Daston 2000). Their shared assumptions include the far more formidable dualist characterisations of 'facts – values,' 'essences – appearances' and, especially of what is 'agreed upon and mutually intelligible' versus 'disagreement and mutual unintelligibility'.

Second, until recently disputes over the relative merits of opposing realist and constructionist paradigms figured amongst landscape archaeology's most central concerns. For instance, in their introduction to an edited volume on the field, Layton – Ucko (1999) noted that "one approach equates landscape with an environment that has an existence independent of those who live in it, as the following definition illustrates: 'In general, the physical environment describes the characteristics of a landscape (e.g. climate, geography) which have not been marked by human impact' [Crystal 1990, 412]). A second approach, one which might be described roughly as social realist stresses the roles of pictorial representations (especially maps and landscape painting) of landscape in legitimating social inequality (Daniels – Cosgrove 1988). Third there are postmodern perspectives that argue that "there is no environment, only landscape" (Layton – Ucko 1999, 3).

Researchers engaged in serious reflection on the embeddedness of heritage issues in deepening social inequalities are calling the normative status of framework relativism into question. There are difficulties with the disregard of anything like a 'transcendental ethics' and 'truth' the part of both exponents of conceptions of democracy grounded in universalising 'neo-liberal' market economy values and 'post-modern' critics. Many 'post-modern' themes are being adopted and selectively employed precisely by the sorts of agencies, which much critical theory was intended to challenge. Crucially, for those exposed to existential threats "in the context of state terror and mystification, clinging to the primacy of the concept of truth can be a powerful and necessary form of resistance" (Hardt – Negri 2000, 155; Hall 2005). This highlights dangers of interpreting disagreements on heritage conservation as well as techno-science policy as evidence for 'mutually unintelligible world views' even 'alternative realities'. At issue are presuppositions about what is real and what is intelligible and about disagreement being unintelligible, irrational and so on – presuppositions that interpret difference as defect.

2.2.2. Aspects of the Expanding Governance Roles of Science and Technology

The last decades have seen remarkable change has taken place in the (a) scale, (b) normative roles, and (c) conceptions of objectivity of science. The increased involvement of academics in policy processes, together with the scales on which (to borrow Peter Galison 1996 and Ian Hacking's 1983) 'big science' 'represents and intervenes' renders presuppositions about 'pure' from 'applied research' highly questionable. This is especially true for research structured around 'risk issues'. Techno-science risk taking is assumed to be a necessity by many powerful competitors in today's information political economies (Bernstein 1996). At the same time, the normative significance of risk management (climate, nuclear, chemical, biological) now has truly 'global' ramifications (Felt – Wynne 2007). The end of the Cold War opened possibilities for expanding transnational techno-science based political economies. It also rendered obsolete many hitherto powerful nation-state based governance institutions. Science was of major importance to these institutions, and today it plays numerous governance roles in their stead. A controversial development is the range of roles science plays not only in advising policy, but in shaping what the main policy issues are (Jasanoff 1990; Wynne 1994; Novotny 2000).

This development is not restricted to science and technology. For instance, John Carman's book on *Archaeology and Heritage* (2002) and Cornelius Holtorf's article, 'Is archaeology a scarce resource?' (2001) highlight the impacts on archaeological heritage management. Holtorf (2001, 287) says that the major tenets of 'world archaeological heritage management' are: (a) archaeological sites and objects are authentic, (b) archaeological sites and objects are irreplaceable and non-renewable (c) archaeological sites and objects are in danger of being destroyed, and (d) professional archaeologists save archaeological sites and objects from further destruction on behalf of future generations.

In the case of Europe, linkages between techno-science risk management and governance began to develop strong roots in the immediate post-war decades, in relation to concerns (to borrow Stephen Toulmin's 1990 terms) to start 'from scratch.' Notions of a shared scientific culture have played important roles in adjudicating conflict in processes of consolidating the European Union. Yet this history of employments of science as means to keep social conflict at bay also has problematic manifestations. These include perceptions of technological risk taking and management as of both economic and of social governance importance, especially under conditions of privatisation. An example is the statement in the recent European Commission Report: "Europe and its citizens should realize that their way of life is under threat but also that the path to prosperity through research and innovation is open if large scale action is taken now by their leaders before it is too late" (Aho 2006). Other examples include associations being forged between 'science and citizenship' (Leach *et al.* 2005). Further examples include places where debates over citizenship are split in highly contradictory ways between issues of science and technology, 'green identities' and cultural heritage (Heatherton 2001).

There are strong connections between views expressed in the above mentioned report (Aho 2006), the ways in which 'risk issues' and 'ethical issues' (ecological and social problems) are framed, and changes taking place in conceptions of objectivity. These connections help us to understand how it is possible for some to envisage risk science as divided between 'risk management' and social issues, 'expert knowledge' and 'public beliefs'. Daston – Galison (2007) summarise this change in conceptions of objectivity in terms of a replacement of 'ontic' and 'mechanical' notions by 'a-perspectival' conceptions of objectivity. The capacities for a-perspectival objectivity that many government and commercial policy agencies attribute to super computer technologies differ to the ontic conceptions of objectivity of Plato and Galileo, and the mechanical conceptions of Newton and Kepler. Technologies attributed with 'a-perspectival objectivity,' Daston – Galison (2007) say, are believed to excel in:

(a) reducing to scientific experiments hitherto unimaginable scales and complexities of materials
(b) absolute impartiality (views from no where)
(c) unmatched public communication.

2.3. Problematic 'Settlements of 'Crises over Represention' in Deeper Historical Perspectives

Much interdisciplinary debate concerns problems with conventional characterisations of 'pure' and 'applied research'. Work in fields centring on 'risk issues' – social and environmental – indicates that being familiar with academic debates over opposed 'framework relativist' paradigms does not offer much help (or is quite risky to draw upon) in situations where authoritative 'settlements' on the part of agencies, using computer technologies to adjudicate 'crises over representations', hinge upon:

(a) translating challenges of contingency and indeterminacy into supposedly determinate 'risk' measurements, and trust into matters of expert competence,
(b) preoccupations with ideas that the only effective solutions to social and ecological problems are those which start from scratch (Toulmin 1990),
(c) eclipsing the logic and rationality of local public grounds of truth.

Such 'settlements' are not unique or part of anything like the sorts of unilinear continuum of 'standard accounts' of the Scientific Revolution and Birth of Modernity. The scope of our aims precludes a detailed discussion. But features of one paradigmatic case bears mentioning. The case marks something of the beginnings of essentialist paradigms for the tasks of theory, western conceptions of objectivity, use of the concept of 'landscape' to argue about 'truth versus mere appearance', and highly problematic images of 'publics'. Writing in the midst of jointly ecological, social and moral crises, Plato (427–347 BC) began the seventh book of the *Republic (res* – things, *publici* – public) with a powerful image of place as mere appearance. Socrates guides his interlocutor on a journey into a cave – into the world as seen from a paradigmatic philosopher's perspective.

> Do you see, Socrates asks his interlocutor, men passing along the walls carrying all sorts of vessels, and standards, and figures made of wood and stone and various materials, which appear on the wall? Some of them are talking, others silent. You have shown me a strange image, and they are strange prisoners…. Behind them lies the source of lights which they cannot see. They are concerned only with the shadowy images that this light throws upon the wall, and they seek to fathom their interrelations [on this basis]. "But now look! [Socrates calls his companion's] attention to one of them succeeding in shattering his fetters, and turning around to see the sun…. He is the philosopher; the sun however, is the source of the truth of all candidates for becoming an episteme (science), which alone seizes not upon illusions and shadows, but upon true being. (Plato, the parable of the cave, *Politics*, VII, 510–515b 1999).

In this image things, places, and relationships experienced by everyday people are 'mere appearance' and the 'state of emergency' of the condition necessitates the reduction of issues of trust (especially in 'this-worldly-things) to the 'philosopher-king's' expertise. Aristotle famously framed contrasts between his own and Plato's paradigms for the requirements for scientific objecthood in his *Metaphysics* (1941) in terms of the question: If something can be said to be subject to change, what is the essence of that something? (1) the unchanging aspect, (2) the changing aspect, and (3) both, that is, the interaction of changing and unchanging aspects? For foundationalists (like Socrates and Plato), the answer must be (1), and the others have to be reducible to it. Scientific objects must exhibit regularities that are universal and demonstrable by chain of necessary causes, specifying not only what is the case (by sufficient conditions) but is by necessity. For probabalists (like Aristotle), things 'always or for the most part' can satisfy requirements of science if they can be described as (probable) instantiations of essential states or substances (*Metaphysics* 1027a20–27, c.f. Daston 2000).

But perhaps the most remarkable role Plato gave to his image of everyday peoples' 'mere appearances' was in his claim about myth, social order, and expert competence. Arguing in the *Republic* for the need to start from scratch in establishing order amongst things (*res*) public (*publici*) under conditions of 'state of emergency,' Plato says that "we must begin… by a censorship over mythmakers,… who manipulate publics whose fears of contingency makes them susceptible to deceit, … and then invent a "new mythology" (a "golden lie") to lead them to right behaviour." There are going to be readers who will complain: "Do we have to go back to the Greeks?" (Latour 1999). A general response might be that much relevance of landscape archaeologies might lie in the ways in which go against the grain of traditions rooted in Plato's images. A more immediate response is that deeper historical backgrounds of problematic 'settlements' of 'crises over representations' offer insights of difficult barriers to promoting sustainable development, re-framing 'risk issues' and ethical issues' and facilitating 'upstream' public participation in science policy.

3. 'Contested Landscapes' and 'Risk Society'.

The publication of Ulrich Beck's work *Risk Society. Towards a New Modernity* (1992) and *Risk, Environment and Modernity. Towards a New Ecology* (Lash *et al.* 1996) opened space for changing the roles of the humanities and social sciences in addressing challenges outlined at the onset. We highlight themes that relate most directly to the contributions reflective landscape archaeologies can make to sustainable development and re-framing participation in science and technology policy processes. For Ulrich Beck (1992) what is being globalised is 'risk society' and 'reflexive modernisation.' In Beck's account, 'risk society' developed out of ecological and social consequences of instrumental employments of science and technology, which now exceed the available means of control and protection: "the latency phase of risk threats is coming to an end. The invisible hazards are becoming visible. Damage to and destruction of nature no longer occur outside our personal experience in the sphere of chemical, physical or biological chains of effects; instead they strike more and more clearly our eyes, ears and noses" (Beck 1992, 55). Beck's observations bear upon problems with apparently antithetical realist (natural and social) and cultural constructionist paradigms mentioned earlier. Bruno Latour has noted that in these approaches.

> When the first speaks of naturalized phenomena, then societies, subjects, and all forms of discourse vanish. When the second speaks of fields of power, then science, technology, texts, and the contents of activities disappear. When the third speaks of truth effects, then to believe in the real existence of brain neurons or power plays would betray enormous naiveté. Each of these

forms of criticism is powerful in itself but impossible to combine with the other two (Latour 1993, 5–6).

The crucial problem for Latour (1993, 6), is that "the ozone hole is too social and too narrated to be truly natural; the strategy of industrial firms and heads of state is too full of chemical reactions to be reduced to power and interest; the discourse of the ecosphere is too real and to social to boil down to meaning effects." The networks that form 'risk society' are "simultaneously real, like nature, narrated, like discourse, and collective, like society".

The subtitle of Beck's *Risk Society* (1992) is *Towards a New Modernity*. In Beck's account of 'reflexive modernisation,' the more modern society becomes, the more knowledge it creates about its dynamics and conflicts. He says that this opens new contexts for decisions and action. Individuals are released from structures, and they must redefine their actions under conditions of insecurity in terms of 'reflexive modernity.' This would seem to promise much for addressing the challenges that concern this paper. But other courses developments are taking are generating further barriers to critical and constructive 'reflectivity.' One is that 'reflexive' (unintended) preoccupation with 'bads' rather than 'goods' (or benefits) promotes images of 'living one's own life in a runaway world' (Beck 2001), which engender beliefs in the supposed necessity of the very sorts of practices, which impede critical reflection and further privatise ethics and globalise indifference (cf. Arendt 1958). Further, 'reflexive society' revolves around dichotomies of individual – society, modern – pre-modern, scientific knowledge – public customary beliefs, and 'facts' – 'values.' Together, these difficulties:

(a) eclipse the normativity of scientific knowledge,
(b) the rationality and logic of every day people's activities and grounds of truth,
(c) appreciate that long before 'reflexive modernity' everyday people have engaged in much critical reflection upon risk taking and risk managing policies, and created sophisticated local means to sustain aspirations and accountabilities (Wynne 1996; Prazniak – Dirlik 2001; Koerner 2005).

4. Challenges of Conciliating Jointly Social and Ecological Problems

The relevance of critical and constructive landscape archaeologies for addressing challenges of democratising science and technology policy is difficult to overstate. Researchers have long stressed the relevance of deeper historical perspectives on ecological problems. Carole Crumley (1993) introduced the term 'historical ecology' and explained:

> The practice of globally relevant archaeology, ethnohistory, ethnography and related disciplines can be termed historical ecology.... Historical ecology traces the ongoing dialectical relations between human acts and acts of nature, made manifest in the landscape.... Past and present human use of the earth must be understood in order to frame effective environmental policies for the future; this necessitates deft integration of both environmental and cultural information at a variety of temporal and spatial scales.... Collectively, ethnography, ethnohistory and archaeology in conjunction with history, geography and environmental sciences...offer the multifaceted laboratory for historical ecology (Crumley 1993, 9).

In these lights 'historical ecology' shares important features with reflective landscape archaeologies that that stress the historiality of place. These features include their relevance for addressing what Wescoat (2007) calls "jointly social and environmental problems," and for appreciating that conventional dichotomies of 'facts' versus 'values' are themselves value judgements. Not only does calling some issues 'risks' and others 'ethics' have normative implications, the very distinction is a normative one.

Whilst such observations may be familiar enough in academic contexts (and virtually self-evident in many everyday situations), a widespread assumption of many expert agencies is that computer technologies possess capacities that set them apart with regards to: (a) being able to reduce to wholly objective facts hitherto unimaginable scales and complexities of materials, (b) on absolute impartial grounds and with (c) unmatched scopes for public communication. These assumptions play essential roles in three forms of reduction, which form difficult barriers to effectively and democratically address jointly social and ecological challenges, namely, reductions:

(a) of extraordinary diversity of social and physical uncertainties (climate change, nuclear, chemical and biological hazard) to supposedly determinate 'risk' measures,
(b) of trust to monetary 'cost-benefit' models, and of public concerns to the question: "Is it safe?"
(c) of problematic expert-public relationships to new versions of 'public deficit of understanding science' models.

In what follows we consider these problems in more detail, before illustrating the relevance of reflective landscape approaches to their implications.

4.1. Risk as a Normative Issue

There is nowadays considerable appreciation on the part of EU member states that sustainable development is not restricted to purely environmental issues, in the sense of approaches that "equate landscape with an environment existing independent of those who live in it" (cf. Layton – Ucko 1999). Policy makers are alert to pressures of human impacts on climate change, and of competition amongst global knowledge-based political economies. But this gets overshadowed by presuppositions associated with policies that are decided by super computer technologies for reducing extremely complex social and ecological processes to risk calculations, namely, that:

(a) innovation occurs in a linear progression from 'pure research' and resolving disagreements amongst experts to application outside of the 'laboratory'
(b) 'establishing the facts' involves no prior normative commitments
(c) innovation-oriented R – D can be considered wholly independently from normative social ends and understandings of risk (Felt – Wynne 2007).

These clearly normative presuppositions paradoxically motivate notions that 'ethical issues' can be separated from risk calculations. *Table 1* illustrates the range of sources of uncertainty at stake.

Table 1. Reduction to 'Risk'.

Risk	a situation where one presumably knows the causes, consequences, probabilities of possible harmful events and their associated magnitudes (kinds and levels of damage).
Uncertainty	where one knows the types and scales of possible harms, but not their causes or consequence probabilities. Under conditions of uncertainty, the term 'risk assessment' is actually not applicable.
Indeterminacy	a situation where one is dealing with processes that are not conceivable as predictable outcomes from what are assumed to be the 'same' initial conditions.
Ignorance	a situation where one does not know causes, consequences or even if one is asking the right questions.

Ambiguity a situation where a variety of divergent – but equally reasonable framing assumptions (about definitions of objects of research, questions, approaches, variables) precludes the imposition of any single scheme of outcomes.

An immediately evident problem is that these reductions eclipse emergent complexity (a fundamental feature of the complex systems that concern climate change, nuclear, chemical and biological sciences). Uncertainty, indeterminacy and ignorance are crucial issues with nonlinear emergent complexity (e.g. Kauffman 1995). The relevance of the problem has been shown by numerous situations. These include situations where policies were guided by experts' calculations of the duration of high radiation levels after a nuclear energy plant explosion, and led to major social and ecological crises (Wynne 1996). These crises resulted not only from failures to take into consideration emergent complexity relating to such contextual factors as local climates, soils, and plant and animal populations, but also from economic consequences of policy decisions and social problems generated by experts' disregards of local communities' awareness and concerns with emergent complexity (Wynne 1996). These situations highlight the relevance of landscape approaches that stress the need of joint attention to social and ecological problems (Wescoat 2007). In these approaches, and Beck's (1992) approach to 'risk society':

(a) physical risks are always created and affected in social systems.
(b) the magnitude of the physical risks is therefore a direct function of the quality of social relations and ecological processes.
(c) the primary risk, even for the most technically intense activities (indeed perhaps most especially for them) is therefore that of social dependency upon institutions and caters to who may be – and arguably are increasingly – alien, obscure and inaccessible to most people affected by the risks in question (Beck 1992; Lash – Wynne 1992).

4.2. Framing Publics

Attention to these jointly social and ecological problems goes against the grain of presuppositions that publics' only concern is: "Is it safe?" This relates to problems posed by how narrowly many local, national and international science and technology policy agencies frame 'risk issues' and 'ethical issues'. The all too frequent assumption is that super computer based 'cost – benefit' analyses provide adequate means to open up the ways in which public issues are framed. Problems with this assumption include the ways in which they:

(a) define risk as something of universal meaning, which can be quantified into universal units of risk probabilities and magnitudes that supposedly have monetary equivalents
(b) treat risk as tradable with benefits according to monetary equivalents
(a) marginalise and/or ignoring concerns that are not reducible along such lines.

Consequences are illustrated by Raiffa's (1985) approach to "risk management decisions" about the "rationality of conducting a rescue" of trapped survivors in a coal mining accident, which can be expected to involve risking rescuers. This approach attempts to incorporate anticipated regrets, guilt, satisfaction, pride and so on. But it treats these as decontextualised abstract states (indeed as impediments to 'objectivity') completely neglecting the rationality and logic of the reasons miners expect managers to endorse a rescue, whatever the results of formal calculations of cost and benefits may indicate (Wynne 1997). If managers were seen in an actual crises of this sort to be calculating costs they would be understood as acting in ways wholly inappropriate for the mutual obligations and loyalties on which the very 'forms of life' of which mining communities hinge. This does not mean that managers cannot or do not act in accord with these models. But it bears noting that cost-benefit models cannot explain this either, since they would ignore the historical contexts of managers' decisions and, most importantly, their relationships to the miners.

That these are not 'mere' social problems but can and have resulted in objective technological disasters with implications for human existential and moral catastrophe has been all to clearly shown by Bhopal. Chernoble, BSE and more recent examples.

4.3. Challenges of Promoting Greater 'Upstream' Policy Participation

One of the starting points for a recent Report of the Expert Group on Science and Governance to the EU Science, Economy and Society Directorate (*Taking European Knowledge Society Seriously*) (Felt – Wynne 2007) was the directorate's diagnosis of a "growing uneasiness which affects the relations between science and society". The idea that new approaches are needed in ways of governing science in order to regain public trust is nowadays a central EU policy preoccupation. In this view, lack of public trust is envisaged as a crucial obstacle to the success of science policies. The report identified a marked tension between:

(a) the value of policy makers' appreciation of problems with relations between science and publics,
(b) policy makers' resistance to changing deeply entrenched modes of envisaging the social ends of science innovation and public participation.

Today it is a mainstream EU commitment to cultivate two-way 'public engagement with science.' 'Deficit models' are said to be a thing of the past. But new versions continue to emerge, including versions that reduce both sources of 'public unease' and causes of failed 'risk management' policies to presupposed public deficits of: (a) trust, (b) being able to grasp processes (c) objectivity about science and value, (d) understanding of benefits, and (e) ability to deal with contingency. For those who envisage publics in these ways, it is impossible to appreciate that fear of uncertainty is not a prerogative unique to publics. Thus, it is unlikely to be the primary source of skeptical public reactions to risk and innovation policies (Wynne 2006). The public usually takes for granted that things are not as predictable as scientific knowledge experts claim them to be, but is skeptical about their claims to certainty. Many public concerns are motivated by experiences with problematic social behaviors of quite a number of policy institutions. These behaviors include these institutions' modes of representing public perceptions and beliefs and communicative styles towards publics (Koerner 2007; Felt – Wynne 2007).

5. Conflict and Conciliation in Reflective Landscape Perspectives

The relevance of reflective archaeologies of place for addressing the challenges these problems pose for effective and democratic science policy is difficult to overstate. We saw that 'historical ecology' (Crumley 1993) and Wescoat's reflective landscape approach share a number of features bearing upon these problems. Their attention to deeper historical backgrounds of "jointly social and environmental problems" (Wescoat 2007) is relevant for addressing the widening gaps between the normative status in academic settings of realist (natural and social) and cultural constructionist framework relativist paradigms, which we considered in Part 3, and the ways in which 'risk issues' are separated from 'ethical issues' by the beliefs and practices prevailing in the 'applied' settings, which we considered in Part 4. Further "historical ecology" (Crumley 1993) and Wescoat's approach indicate that conventional dichotomies of 'risk issues' versus 'ethical issues' and 'facts' versus 'values' are themselves value judgements. But it is open to question whether "historical ecology's" approach to "trac[ing] the ongoing dialectical relations between human acts and acts of nature" can offer much help in creating space democratically debating jointly social and ecological problems – including problems with the ways 'risk issues' and 'ethical issues' are framed, and with relationships between experts and publics. The advantages of Wescoat's (2007) approach are not restricted to (a) contextualising monuments and sites on multiple geographical scales of human-environmental relationships. It also concerns the multiple historical layers, which make plurality of coeval people – place connections possible.

Addressing policy challenges of sustainable development, reframing 'risk issues' and 'ethical issues' and facilitating greater 'upstream' public participation in policy processes requires means to illuminate deeper historical backgrounds jointly social and ecological problems, as well as (in some cases) backgrounds of the sorts of highly problematic settlements of 'crises over representations' we considered earlier, which hinge upon reducing trust to expertise, notions of a 'clean slate', and marginalising the logic and rationality of plurality of public grounds of truth. Interestingly, Wescoat stresses integrating contemporary with deeper historical perspectives, including deeper historical perspectives on expert agencies' roles in conflict and conciliation in the particular regions at issue.

Archaeology has considerable methodological tools and a wealth of materials on the diversity of human – environmental relationships which can enhance the level of detail of research on the historiality of place, including research relevant for fresh approaches to democratising science and technology policy processes. Here is space only to mention a few examples (Koerner – Gassón 2000; Koerner 2007). One is the model Paul Halstead and John O'Shea (1989) developed to characterize the diversity of human ecologies in terms of relationships between the spatio-temporal structure of resources and environmental perturbations, and the strategies people develop for using these resources and buffering the effects of perturbations. Halstead – O'Shea (1989) distinguishes four types of strategies: (a) diversification – to counteract scarcity of one resource through recourse to others, (b) mobility – to even out spatial discrepancies in resource availability by moving between areas of localized resource abundance, (c) storage – to even out temporal discrepancies in resources availability by 'saving it for later', (d) exchange relationships – to payoff temporal variability in resources availability against spatial variability in resource abundance.

Another example is the group of hypotheses developed by Mary Helms (1979, 1993) concerning symbolism associated with "skilled crafting and long-distance acquisition". For Helms, these are broad groups of practices. Skilled crafting can refer to such diverse activities as hunting, architecture, cultivating plants, tending animals, and oratory. Long-distance acquisition can refer to equally diverse activities, including, pilgrimage, acquisition of rare raw materials, as well as obtaining valuable skills and forms of knowledge. Many highly socially and symbolically salient practices involve both. In light of this chapter's concerns with anthropology and archaeology's relevance to contemporary social and environmental problems, it is worthwhile suggesting that Helm's insights of symbolic dimensions of skilled crafting and long distance acquisition may illuminate some of the cosmological values experts and publics invest in science. Especially pertinent may be Helm's hypotheses concerning:

(a) A generalised model of cosmology in which "the here-and-now of an organied morally informed "cultured" social entity …. is surrounded…by an outside cosmological realm which is believed to contain all manner of visible, invisible and exceptional qualities, energies, beings, and resources, some harmful, some helpful…. We are well acquainted with the characteristics of some of these outside realms as they have been explored…by…shamans, priest, diviners, curers, midwives" (Helms 1993, 7) and scientists?

(b) The comparability of crafting and long-distance acquisition, with regards to their being activities motivated by comparable beliefs about how they channel cosmological energy for human use by giving it tangible form.
(c) The comparability of forms of symbolism associated with the valuables themselves, the activities required to create and/or acquire them, the practitioners.
(d) Roles that values invested in skilled crafting and long distance acquisition play in anchoring societies' most salient customs to one another and to some shared conception of truth and morality.
(e) The historical contingency of values associated with skilled crafting and long distance acquisition.

Our final example of methodological tools of anthropology and archaeology, which could enhance the level of detail of archaeologies of place in ways that might bear very directly upon challenges of democratising science and technology policy processes comes from Maurice Godelier's work, *The Mental and the Material* (1986). This is his approach to "paradoxes of paradigms for legitimacy." For Godelier, the power to dominate is composed of two indissoluble elements: the exertion of and/or threat to exert violence and consent. In all too many cases radically unequal forces permit the dominant to demand consent, or put more accurately, obedience. But this does not explain how it is possible for the installation and maintenance of remarkable existential, political and cultural inequalities, which hinge upon acquiescence, the acceptance if not the cooperation of the dominated (Godelier 1986, 156–159). Godelier explores a wide range of ethnographically, historically and archaeologically documented cases. Many compare interestingly with Helm's (1993) hypotheses about social and symbolic roles of skilled crafting and long distance acquisition.

Together these materials motivate Godelier's hypothesis that: for relations his domination and exploitations to be formed in a lasting fashion, they must be presented as an exchange, and an exchange in services. More specifically they must be represented as an exchange of services, which differ in value not quantitatively but qualitatively. That is, the value of the services of the dominant and those of the subordinates must be represented as differing fundamentally in kind. While the services of subordinates are represented as quantities of everyday activities and goods, the services of the dominant are presented as sustaining the "invisible forces controlling the reproduction" of universals (Godelier 1986, 158), either by necesessity and/or for the 'common good'. Godelier's account suggests that this is why debt is such a paradoxically central motif of ideological images of supposed reciprocal exchange relationships between the dominant and subordinate. If the services rendered by the dominant are of a qualitatively greater value, the services rendered by subordinates puts them in a kind of debt, which nothing they can do can settle.

6. Social Ends, Accountability, Deliberative Democracy

Wescoat (2007) begins his chapter on "conflict, conservation and conciliation" in the recent volume, *Cultural Heritage and Human Rights* (2007) with a passage from Rajamon Gandi's *Revenge and Reconciliation: Understanding South Asian History* (1999, 410): "A word finally, on Dehli…. Can Dehli's accumulated offences be washed away? ... Every caring act – of fellowship, considerateness, nursing, apology, forgiveness, greening, or flowering – perhaps heals something of Dehli's torment... and…speaks to all of South Asia." Wescoat's chapter is about planting trees and conserving water at the newly designated World Heritage Site of Champaner-Pavagodh, Gurarat, which was shaken by violent conflict in 2002, and it is about landscape approaches to cultural and ecological conservation and social conciliation. Wescoat's approach draws no dualist distinctions between ecological and social problems, risk issues and ethical issues, and/or expert knowledge and public concerns. It highlights the plurality of conflicting conceptions of the social ends and accountabilities at stake in the complex situation where he carries out his research. Whilst he lists the range of these conflicts from the least to the most tractable at the beginning of the chapter, he later lists possible contexts for conciliation in the reverse order:

(a) conflict amongst professional agencies (or 'experts')
(b) conflict resolution amongst community stakeholders
(c) harmonisation of heritage conservation and economic interests
(d) prevention of intentional destruction
(e) places of violence and sanctuary, as heritage.

Wescoat's approach compares interestingly with that of John Dewey in *The Public and Its Problems* (1927), a work that bears very directly upon the barriers to effectively addressing the challenges concerning our contribution. The most immediate occasion of Dewey's work was Walter Lippman's question: "What is the public?" (*The Phantom Public*, 1925). According to Lippman, citizenship hinged upon public understanding of science, and the failure of citizens to acquire understanding of science (not 'merely' to be amazed by achievements) resulted in there being "nothing left for the foundations of a representative regime" – that is a democracy. For Lippman, the government should adopt two policies: (a) seek advice on policy of scientific expertise; and (b) use 'psychological' and 'level of education data' on 'ordinary citizens' as the basis of measure to educate and convince them about the benefits and/or necessity of policy decisions already being implemented. Dewey disagreed with Lippman. For Dewey (1927), the public are not irrational or ignorant but 'eclipsed' and the challenge of the 'public and its problems' is finding ways for relations of the state and publics to 'emerge' – to be made explicit. For Dewey, the reason why publics are invisible and/or inaudible to some policy makers is that the latter are unable to place themselves into the frame of questioning in interaction with others. It is impossible for us to genuinely hear what others are saying, if we are imposing our own projections of those others into our supposed 'listening' relationships. So, while the correct notes may be played, the music somehow fails to appear, and it does not take specialist musicians to notice the difference.

Similarly, much of the efficacy of Wescoat's landscape approach hinges on the ways in which it enables us to place ourselves in the frame of questioning in interaction with others. For Wescoat, not just experts but everyone involved in the situation can work as a designer of heritage and ecological conservations' social ends and accountabilities.

Over the last decade much political theory and philosophy has come to focus on themes of 'deliberative democracy' (c.f. Habermas 2003). "Deliberative democracy defends an ideal of equality as political efficacy" (Bohman 2003, 85). This ideal hinges precisely upon equal valuation of highly discrepant perspectives on what counts as crucial matters of public concern, on what human beings can aspire to, and in what sort of world. However, in views of many powerful global elites, 'difference' ('ethnic, linguistic, religious, cultural) is antithetical (even the primary obstacle) is a defect – an obstacle to universalisation of democracy through instrumental use of science as means to put the future at the service of the present (Bernstein 1996). For some the solution lies in new cosmopolitan treatments of disagreements as 'incommensurate conceptual schemes', 'world views' even 'alternative realities'. One of the problems with such views suggested by the various themes of our chapter and by Wescoat's landscape archaeology, is that wars are not fought over 'alternative realities', but different experiences of what matters in the world we occupy together. Further, such views impede effective and democratic deliberation of such questions as those listed below, which leave disagreements intact (cf. Bohman 2003):

Why are so many resources being invested in these heritage sites and monuments? And/or Why are some many resources being invested in these technologies? Why not others? Who needs them, and what human purposes are driving them? Under what conditions will they be enacted; and who sets those conditions? Who is controlling them? Who benefits from them? Can they be trusted? Whose aspirations do they promote, and whose hopes do they stifle?

Our title draws inspiration from Bruno Latour's book, *Pandora's Hope* (1999). This makes it appropriate to suggest that much hope for landscape archaeology's approaches to jointly social and ecological problems may be due to "a common world not being something we can come to recognize, as though it had always been here. A common world, if there is going to be one, is something we have to build, tooth and nail together" (Latour 2004, 32). Open debate is not at all a failure, but a sign that efforts to democratise policy processes are being realised in practice.

References

AHO, E. – CORNU, J. – GEORGHIOU, L. – SUBIRA, A. 2005
Creating an Innovative Europe. Europe Commission Report of the Independent Expert Group on R – D and Innovation. Luxembourg: European Commission, EUR.

AUGÉ, M. 1995
Non-Places. London: Verso.

ARENDT, H. 1989 [1958]
The Human Condition. Chicago:University of Chicago Press.

ARISTOTLE (384–322 BC) 1984
The Complete Works of Aristotle. Princeton: Princeton University Press.

BECK, U. 1992
Risk Society: Towards a New Modernity, London: Sage Publications.

BECK, U. 2001
Living Your Own Life in a Runaway World. In: Huttons, W. – Giddens, A. (eds.), *On the Edge*. 164–174. London: Vintage.

BENHABIB, S. 1996
Democracy and Difference: Contesting the Boundaries of the Political. Princeton: Princeton University Press.

BENJAMIN, W. 1994 [1940]
Theses on the Philosophy of History. In: Arendt, H. (ed.), *Illuminations: works of Benjamin*. 245–255. London: Fontana Press.

BERNSTEIN, P. 1996
Against the Gods: the remarkable story of risk. New York: Wiley.

BOHMAN, J. 2003
Reflexive Public Deliberation. Democracy and the limits of pluralism. *Philosophy and Social Criticism* 29/1, 85–105

BUCHLI, V. – LUCAS, G. 2001 (eds.)
Archaeologies of the Contemporary Past. London: Routledge.

CARMAN, J. 2002
Archaeology and Heritage: an introduction, Leicester University Press, London.

COSGROVE, D – DANIELS, S. 1988
The Iconography of Landscape: essays on the symbolic representation, design and use of past environments. Cambridge: Cambridge University Press.
CRUMLEY, C. L. 1993 (ed.)
Historical Ecology: Cultural Knowledge and Changing Landscapes. Cambridge: Cambridge University Press.
CHURCHLAND, P. M. – CHURCHLAND, P. S. 1998
Intertheoretic Reduction: A Neuroscientist's Field Guide. In: *On the Contrary Critical Essays, 1987–1997.* 65–79. Cambridge: MIT Press.
DASTON, L. 2000 (ed.)
Biographies of Scientific Objects. Chicago: University Chicago Press.
DASTON, L. – GALISON, P. 2007
Objectivity. London: Zone Books.
DENNETT, D. 1978
The Intentional Stance. Cambridge: MIT Press.
DESCOLA, P. – G. PÁLSSEN 1996 (eds.)
Nature and Society. Anthropological Perspectives. London: Routledge.
DEWEY, J. 1927
The Public and Its Problems. New York: Holt.
FABIAN, J. 1983
Time and the Other: how anthropology creates its object. New York: Columbia University Press.
FARDON, R. 1995.
Counterworks. Managing the diversity of knowledge. London: Routledge.
FELT, U. – WYNNE, B. 2007 (eds.)
Taking European Knowledge Society Seriously. Brussels: European Commission of the Directorate-General for Research, Economy and Society.
FRIEDMAN, J. 2001
Indigenous struggles and the discreet charm of the bourgeosie. In: Prazniak, R. – Dirlik, A. (eds.), *Politics and Place in an Age of Globalization.* 53–70.Lanham, MD: Rowman and Littlefield Publishers.
GALISON, P. 1987
How Experiments End. Chicago: University of Chicago Press.
GALISON, P. – HEVLY, B. 1992
Big Science: the growth of large-scale research. Stanford: Stanford University Press.
GALISON, P. 1996
Computer simulations and the trading zone. In: Galison, P. – Stump, D. J. (eds.), *The Disunity of Science: Boundaries, Contexts, and Power*. 119–157.Stanford: Stanford University Press.
GIDDENS, A. 1990
The Consequences of Modernity. Stanford: Stanford University Press.
GODELIER, M. 1986
The Mental and the Material. London: Verso.
HABERMAS, J. 2003
Truth and Justification, B. Fulner (ed. and translation). Cambridge: Polity Press.
HACKING, I. 1983
Representing and Intervening. Introductory topics in the philsophy of science. Cambridge: Cambridge University Press.

HALL, M. 2005
Situational Ethics and Engaged Practice: the case of archaeology in Africa In: Meskel, L. – Pels, P. (eds.), *Embedding Ethics*. 169–194. Oxford: Berg.
HALSTEAD, P. – O'SHEA, J. 1989
Bad Year Economics: Cultural Responses to Risk and Uncertainty, Cambridge University Press, Cambridge.
HARDT, M. – NEGRI, A. 2000
Empire. Cambridge: Cambridge University Press.
HARVEY, D. 1989
The Condition of Postmodernity. Oxford: Blackwell Publishers.
HASTORF, K. 1993
Hunger and the Hardness of Facts. *Man* (NS) 28, 727–39.
HELMS, M. 1993
Craft and the Kingly Ideal. Art, Trade, and Power, University of Texas Press, Austin.
HEMPEL, C.G. – OPPENHEIM, P. 1948
"Studies in the Logic of Explanation." *Philosophy of Science* XV, 135–75.
HEATHERTON, T. 2001
Ecology, Alterity and Resistance in Sardinia. *Social Anthropology* 9, 289–306.
HOLTORF, C. 2001
Is the Past a Non-renewable Resource? In: Bintliff, J. (ed.), *A Companion to Archaeology*. 286–298. Blackwell, Oxford.
INDA, J. X. – ROSALDO, R. 2002 (eds.)
The Anthropology of Globalization: a reader. Oxford: Blackwell Publishers.
JASANOFF, S. 1990
The Fifth Branch: science advisors as policy makers. Cambridge: Harvard University Press.
KAUFFMAN, S. 1995
At Home in the Universe. The search for laws of self-organisation and complexity. Oxford: Oxford University Press.
KNORR-CETINA, K. – CICOUREL, A.V. 1981 (eds.)
Advances in Social Theory and Method: toward an integration of micro- and macro-sociologies. London: Routledge and Kegan Paul.
KOERNER, S. 2005
Exile Research, Ethics and the End of the End of Art. In: Wiesinger-Stock, S. *et al.* (eds.), *Vom Weggehen, Zum Exile von Kunst and Wissenschaft*. 442–464. Vienna: Mandelbaum.
KOERNER, S. 2007
Habitus Unbound. Archaeologies of Plurality of Public Grounds of Truth. In: Thomas, J. – Oliveira Jorge, V. (eds.), *Overcoming the Modern Invention of Culture*. 97–121. Porto: ADECAP.
KOERNER, S. – GASSÓN, R. 2000
Historical Ecology and New Directions in Environmental Archaeology: examples from Neolithic Scandinavia (3500–3100 BC) and Pre-Columbian Venezuela (AD 1900–1400). In: Alberella, U. (ed.), *Environmental Archaeology. Meaning and Purpose*. 177–210. Netherlands: Kluwer Academic Publishers.
KOERNER, S. – SINGLETON, L. 2008
The Unquiet Past. Or the Indeterminacy of a Common World. In: Silbermann, N. (ed.), *The Future of Heritage*. Ghent: Ename Centre for Heritage Study and Conservation.

LASH, S. – SZERZYNSKI, B. – WYNNE, B.1996 (eds.)
Risk, Environment and Modernity. Towards a New Ecology. London: Sage.

LATOUR, B. 1993
We Have Never Been Modern. Cambridge, MA: Harvard University Press.

LATOUR, B. 2004
Whose cosmos, which cosmopolis? *Common Knowledge* 10/3, 450–462.

LAYTON, R. – UCKO, P. 1999
The Archaeology and Anthropology of Landscape. London: Routledge.

LEACH, M. – SCOONES, – WYNNE, B. 2005
Science and Citizens. London: Zed books.

LIPPMAN, W. 1925
The Phantom Public. Harcourt and Brace.

MACCANNELL, D. 1992
Empty Meeting Grounds. New York: Routledge.

MESKLE, L. – PELS, P. 2005 (eds.)
Embedding Ethics. Oxford: Berg.

MILLER, D. 1995 (ed.)
Worlds Apart: modernity through the prism of the local. London: Routledge.

NOVOTNY, H. 2000
Transgressive Competence. The narrative of expertise. *European Journal of Social Theory* 3/1, 5–21.

PLATO (427–347 BC) 1999
Ethics, the Politics, Religion and the Soul, G. Fine (ed.), Oxford: Oxford University Press

POPPER, K. [1959] 2002
The Logic of Scientific Discovery (second English edition). New York: Routledge Classics.

PRAZNIAK, R. – DIRLIK, A. 2001 (eds.)
Politics and Place in an Age of Globalization. Lanham, MD: Rowman and Littlefield Publishers.

RAIFFA, H. 1985
Back from Prospect Theory to Utility Theory. In: Thompsen, M. – Wierzbicki, A. – Grauer, M. (eds.), *Plural Rationalities and Interactive Decisions.* Berlin: Springer.

REY, G. 1988
A Question about Consciousness. In: Otto, H. – Tuedio, J. (eds.), *Perspectives on Mind*. 5–24. Dorderecht: Reidel.

RHEINBERGER, H.-J. 1997
Toward a History of Epistemic Things: Synthesizing proteins in the test Tube. Stanford, Calif.: Stanford University Press.

SCHATZKI, T. – KNORR-CETINA, K. – VON SAVIGNY, E. 2001 (eds.)
The Practice Turn in Contemporary Theory. London: Routledge.

SILVER, C. 2007
Tourism, Cultural Heritage, and Human Rights in Indonesia: The Challenges of an Emerging Democratic Society, in Indonesia. In: Silvermin, H. – Fairchild Ruggels, D. (eds.), *Cultural Heritage and Human Rights*. 78–91. London: Springer.

SILVERMAN, H. – FAIRCHILD RUGGELS, D. 2007 (eds.)
Cultural Heritage and Human Rights. London: Springer.

STRATHERN, M. 2000
Audit Cultures: anthropological studies in accountability, athics and the academy. London: Routledge.

TOULMIN, S. 1990
Cosmopolis. The hidden agenda of modernity. Chicago: University of Chicago.
URRY, J. 1990
The Tourist Gaze: leisure and travel in contemporary societies. London: Sage.
URRY, J. 1995
Consuming Places. London: Routledge.
WESCOAT, J. L. 2007
The Indo-Islamic Garden: Conflict, Conservation, and Conciliation in Gujarat, India. In: Silvermin, H. – Fairchild Ruggels, D. (eds.), *Cultural Heritage and Human Rights*. 53–77. London: Springer.
WOLF, E. 1982
Europe and the People without History. Berkeley: University of California Press.
WYNNE, B. 1994
Scientific Knowledge and the Global Environment. In: Redclift, M. – Benton, T. (eds.), *Social Theory and the Global Environment*. 169–189. London: Routledge.
WYNNE, B. 1996
Misunderstood Misunderstandings: Social Identities and Public Uptake of Science. In: Irwin, A. – Wynne, B. (eds.), *Misunderstanding science: the public reconstruction of science and technology.* 19–45. Cambridge: Cambridge University Press.
WYNNE, B. 2006
Public Engagement as a Means of Restoring Public Mistrust in Science. *Community Genetics* 10.

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Robert G. Bednarik is permanent Convener and Editor of the International Federation of Rock Art Organizations (IFRAO), specializes in the origins of human constructs of reality and human cognition, their surviving externalizations in the form of palaeoart, and in replicative archaeology of many types. Nearly one half of his over 1,000 publications (in 32 languages) appeared in refereed scientific journals, and he has appeared in fifteen film documentaries. Bednarik was not formally uneducated and believes education is a hindrance to understanding.

Herman Bender is an independent researcher with a background in professional geology. Herman is an amateur astronomer (46 years) and approved historical consultant and he has published in the fields of archeoastronomy, petrofrom research, applied geophysics and cultural landscape studies. Over the past two decades he has presented programs on his work and research at various colleges and institutes including University of Wisconsin campuses, Princeton University, Marquette University, Alverno and Cardinal Stritch Colleges and the Goethe Institute of Chicago. Through ASHCO (**A**merica **S**epten **H**istory **CO**mpany), the *Hanwakan Centre for Prehistoric Astronomy, Cosmology and Cultural Landscape Studies, Inc.*, Herman provides cultural landscape and environmental surveys for comprehensive land planning purposes and preservation. Much of his work is related to Native American traditions, land claims, repatriation issues and cultural identities. He continues to write as an editor/contributor to the Hanwakan Centre *Journal* and is a member of the Editorial Advisory and Board for *Time & Mind, The Journal of Archaeology, Consciousness & Culture* to which he also contributes articles.

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Robin Dods has undertaken fieldwork in regions of Africa, West Asia and North America. However, in North America her main interest has been in areas of conifer forests and most specifically the northern boreal. Her published research combines aspects of archaeology and anthropology and centre on various issues of landscape constructs as indicators of cultural realities. Some of this work has focused on the use of pyrotechnology for the shaping of landscapes, specifically forest landscapes. Currently she is writing the Canadian edition of a cultural anthropology textbook and seeking to investigate early historic fire landscapes described in 18th Century Hudson Bay Company documents. She teaches courses in anthropology and archaeology at the University of British Columbia Okanagan.

Henry C. Dosedla was born 1945 in Prague, Czechia, and educated in Vienna where he studied prehistory, social anthropology and fine arts; gaining a Ph.D. in 1970. After 5 years of fieldwork in the highlands of Papua-New Guinea he was responsible for the creation of the German Museum of Agriculture in Stuttgart which he managed until 1985 when he became president of the German Art Forum. Main areas of research include agrarian history and archaic technology, folk biology and ecological anthropology, prehistoric arts and crafts.

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Alf Krauliz was born 1946 in Vienna, Austria, where he undertook a Ph.D. in geology and soil research. After many years of working in cultural management he was appointed president of the annual *Danubian Festival*. He later founded the annual *Summer Academy* as well as the *Center of Interdisciplinary Studies and Research*, both located at Motten, Lower Austria. Alf's main topics of research are the geology and prehistory of the northern fringe zone between Austria and Czechia.

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