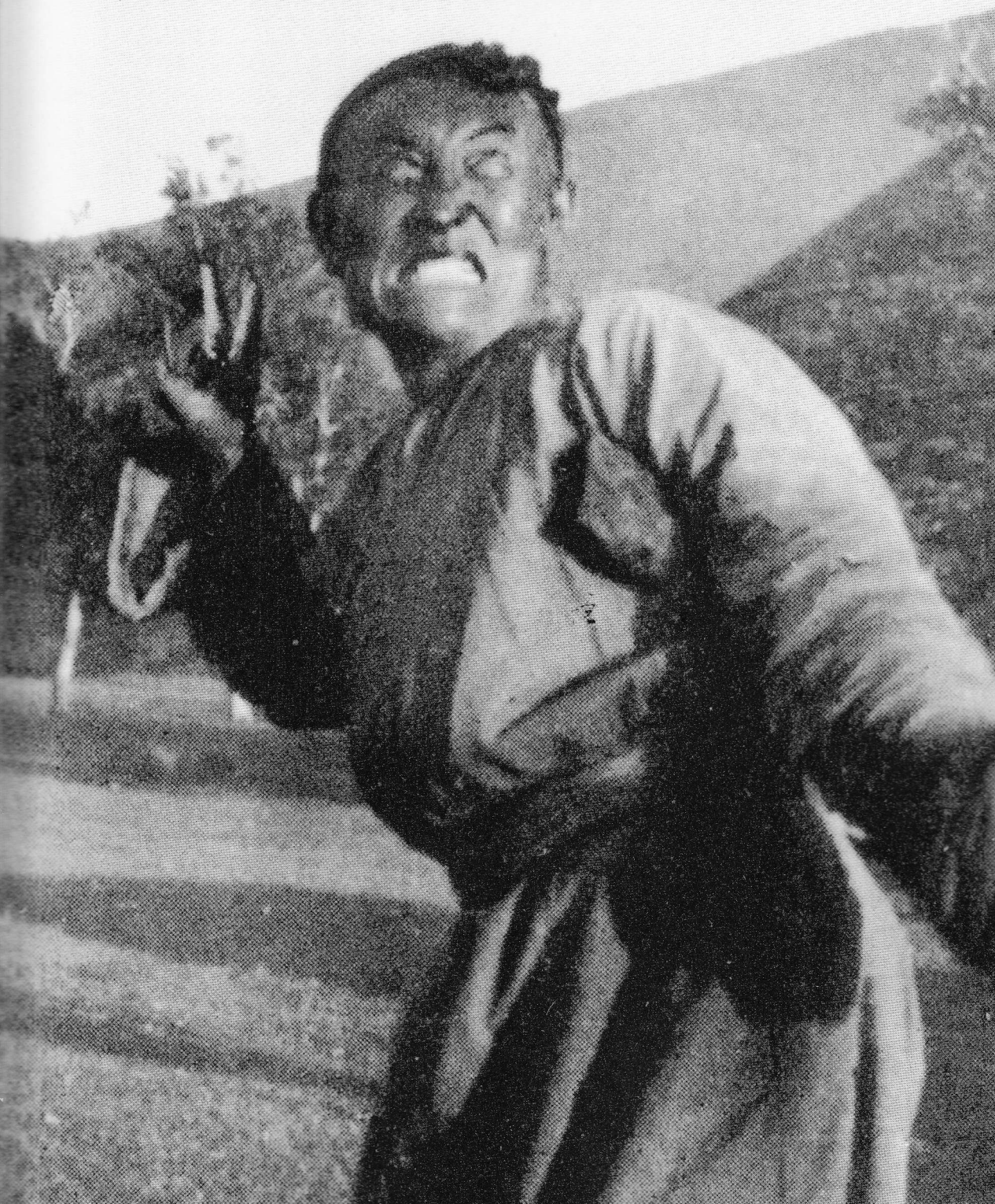


The Archaeology of Shamanism

Edited by Neil Price



Chapter Twelve

The sounds of transformation: Acoustics, monuments and ritual in the British Neolithic

Aaron Watson

So at last they summoned a shaman. And he arrived in his shaman dress and horned hat, warmed his tambourine over the burning embers, then shook it hard. He banged it in an increasing rhythm, himself twirling in the full firelight of the tent, his sacred robes twirling, his lips flecked with foam. After a time, his soul departed on the sound of the drum to the mountain-top in the western heavens where there is no day but continual night, where there is always mist and the moon is but a thin crescent.

And there he communed with the spirits.

Extract from a Siberian folk tale, translated by Riordan (1989: 90)

INTRODUCTION

Sound is an almost universal component of ritual. Across the world, sound and rhythm are frequently combined to structure ceremonies through the orchestration of movement and dance. They can also be an important means of creating connections with the supernatural. This is of particular interest given recent research which suggests that the interiors of many prehistoric monuments in the British Isles may have been conducive to the creation of powerful acoustic experiences. Archaeologists have previously considered whether these megalithic structures, constructed between 4000 and 2000 BC, may have been places where people gained access, or journeyed, to other worlds. This is interesting given that the use of sound to induce altered states of consciousness is often considered integral to shamanistic performance. This is not only the case in those Siberian societies that practise(d) shamanism, but also in other communities across the world where comparable practices have been observed. Given that one of the central roles of shamanism is to manage interactions between the living and the supernatural, could an understanding of such techniques assist in the interpretation of Neolithic and Early Bronze Age structures in the British Isles?

A CATALOGUE OF DEAD MONUMENTS?

Due to the contrasting nature of their evidence, archaeological and ethnographical fieldworkers have tended to emphasise rather different facets of ritual and ceremony. In western Europe, archaeologists have long recognised that a variety of monumental buildings dating to the Neolithic period were foci for ritual. This is suggested by the absence of evidence for the

'domestic' occupation of the dead and specialised artefacts. More traditional interpretation of how the architecture. More traditional classification and discussion of the opportunity to observe living structures, the nature of ceremonial procedures, the vocalisation and movement of the source of detail about the intended to describe the venue, extent, non-interpretative monuments.

SENSING THE WORLD

It is only over the past two decades that there has been a hiatus. There is increasing recognition by attempting to explore the rather more animated and complex ways in which the format of views of participants (Thomas 1996b; Bradley 1998, 2000) which has come to dominate relationships between these structures (1981; Porteous 1990; Rodaway 1999). Yet it is shown that many societies practice ritual practices to some extent (Gell 1995). ethnographers have known all are inherently multisensual. To into the study of the past. Th (1999), touch and texture (Mills 1998; Mills 2000). Here, I w sound.

Sound has long been recognised as a key component of the experience the world (Gibson 1999). However, it is only recently that prehistory. In western Europe, have received some attention (Lund 1981; Megaw 1999, 2000). It has even been shown that the acoustic environment than those who use the distinction between literary and (Rodaway 1994: 83). There are world, as emphasised in Carpen

'domestic' occupation of these places, as well as frequent associations with the remains of the dead and specialised artefacts. Until recently, however, fieldwork has tended to underplay the interpretation of how these places might have been used in favour of describing their architecture. More traditional approaches have entailed precision survey, schematic depiction, classification and discussions of typological origin. In contrast, ethnographers have the opportunity to observe living societies and are able to describe the often elaborate and theatrical nature of ceremonial procedures, frequently emphasising the roles of different actors, their dress, vocalisation and movements. In the most part, therefore, ethnographers have provided a rich source of detail about the *variety* of ritual experience, while archaeologists have traditionally tended to *describe* the venues where they believed rituals took place in prehistory. To a large extent, non-interpretative archaeology has left us, quite literally, with a catalogue of dead monuments.

SENSING THE WORLD

It is only over the past two decades that prehistorians have begun to seriously question this hiatus. There is increasing recognition that it is insufficient to only describe the past, and that by attempting to explore the ways in which people might have *experienced* the world we write a rather more animated and challenging prehistory. Such fresh approaches have considered the ways in which the format of monumental architecture might have affected the movements and views of participants (Thomas 1993a, 1999; Barrett 1994), and also reconsidered the relationships between these structures and the wider landscape (Tilley 1994, 1996; Richards 1996a, 1996b; Bradley 1998, 2000). In addition, it has been acknowledged that the visual primacy which has come to dominate modern perception in the western world (Tuan 1979; Pocock 1981; Porteous 1990; Rodaway 1994) has influenced our 'views' of the past. Indeed, it has been shown that many societies place emphasis upon other senses: scent and smell are integral to ritual practices to some (Classen *et al.* 1994), while sound is important to others (e.g. Carpenter 1973; Gell 1995). Yet it is only recently that archaeologists have begun to address what ethnographers have known all along – that human activities, especially in the sphere of ritual, are inherently *multisensual*. To redress this balance, the senses are increasingly being reintegrated into the study of the past. There have been new approaches to colour symbolism (Gage *et al.* 1999), touch and texture (MacGregor 1999), and a growing concern with how multisensual encounters with monuments can be reconstructed and communicated (Pollard and Gillings 1998; Mills 2000). Here, I will focus upon a particular aspect of experience – the world of sound.

Sound has long been recognised as an integral component of the ways in which people experience the world (Gibson 1966; Schafer 1977; Pocock 1989, 1993; Rodaway 1994). However, it is only recently that archaeologists have begun to consider the role of sound in prehistory. In western Europe, the acoustic properties of caves containing Palaeolithic imagery have received some attention (Dams 1984; Reznikoff and Dauvois 1988; see also Scarre 1989), while artefacts interpreted as sound-producing devices have been recorded in the archaeological record (Lund 1981; Megaw 1960, 1968, 1984; Purser 1997). Research has now begun to examine the acoustics of megalithic monuments (Devereux and Jahn 1996; Watson and Keating 1999, 2000). It has even been suggested that oral societies are more receptive to sound in their environment than those who use the written word, although this might be better defined as a distinction between literary and *aural* societies, as this specifically emphasises the use of the ear (Rodaway 1994: 83). There are instances of non-literary communities favouring the audible world, as emphasised in Carpenter's (1973) study of the Inuit. These people, however, occupy

arctic regions where there are often few visual landmarks. In prehistoric Britain, the circumstances are likely to have been rather different. Far from being a world devoid of visual foci, it has been suggested that the landscape was perceived as a series of *places* which were imbued with meanings (Tilley 1994). In the early post-glacial period such locales might have been predominantly natural, such as streams, mountains, caves and conspicuous geological outcrops. Through time, altered places would have increasingly featured – artificial forest clearings, occupation sites, and in the Neolithic, monuments. While we should not underestimate their visual qualities, encounters with all of these places would have been inherently *multisensual* experiences. In particular, the sound of a place can constitute a significant part of its identity (Schafer 1977; Pocock 1989). Environmental sounds have been found to significantly influence the ways in which a society responds to the world, whether in terms of navigation, mimicry, memory, language or music (Chatwin 1987; Feld 1982, 1996; Rundstrom 1990; Gell 1995; Kawada 1996).

However, the ways in which the auditory universe is understood will vary not only between cultures, but also in relation to the sensory abilities of individuals (Rodaway 1994). In this respect, how might we begin to interpret the role of sound in prehistoric Britain? I would like to emphasise some very general principles. For instance, encounters with sound are very different from encounters with the visual world. Every hearing individual is at the centre of auditory space. While the eye focuses, pinpoints and locates each object in physical space, the ear favours sound from any direction (Carpenter 1973: 35). In many ways, sound is rather more transient than the visible world. It is 'non-continuous, fragmentary in space, and episodic in time' (Porteous 1990: 51). Sound is a sensation, and belongs to the realm of 'activity' rather than 'artefact' (Schafer 1993: 31). Sound brings the world to life. It can appear to fill spaces, create atmospheres, and have an intense emotive power (Tuan 1974; Pocock 1988; Seeger 1994: 696–8).

Sound, in combination with rhythm, frequently provides a means by which ritual discourse can be structured (Jackson 1968). Vocalisation, song and dance can all be repetitive means of specialised communication that discourage dissent (Bloch 1974). The use and control of sound not only separates an audience from performers or participants, but also promotes the endurance of ritual procedures by minimising the opportunity for aural interruption (Schafer 1993: 36). At the same time, sound is invisible, and its behaviour is not readily explained without the hindsight of modern scientific procedures. These elements combine to create the special and magical qualities of sound. While interpretations of the auditory universe may vary between cultures, it is the structured and specialised use of *sound itself* that is an almost universal component of ritual. Indeed, ceremony can involve some of the loudest noises a society can produce (Needham 1967; Huntington and Metcalf 1991).

WORLDS OF SOUND

Some of the most intriguing possibilities for the use of sound in prehistory concern passage graves, a distinctive series of predominantly Neolithic monuments constructed across the west and north of the British Isles. Well-known examples include Newgrange and Knowth in Ireland, Bryn Celli Ddu and Barclodiad-y-Gawres in Wales, and Quanterness and Maeshowe in northern Scotland, but there are many others. Their layout can be diverse, yet all possess a narrow and restricted passage that leads from the outside world to a rather more spacious internal chamber. In many instances, it was here that the remains of the dead were placed (e.g. Renfrew 1979; O'Kelly 1982; Eogan 1986; Davidson and Henshall 1989, 1991). Burial need not have been their only role (Fleming 1973). Human remains are absent at some sites, while at

others there is evidence to suggest the presence of material as well as deposits.

Indeed, the distinctive chambers were repeatedly situated within a wider space characterised as ancestral, understood as settings for shrines where people venerated substantial quantities of skulls. Quanterness, for instance, has a floor while the floor of the main chamber were burnt (Renfrew 1979).

Performances within the chambers could only have accommodated ways the central chamber was a claustrophobic passageway, a subtle transition that could be interpreted (1992). There have also been alternative dimensions, including could take place (Dronfield passage graves in Ireland show states of consciousness (Brace 1995b). Concentric circular vision experiences or signify

These interpretations are where the transition between Round, a passage grave in northern severely distorting those sound world. The one part of the entrance, a 'forecourt' area of visual transition from daylight *itself* reinforces a division between unrecognisable sounds which of the place, reinforcing the covering mound of clay at Maeshowe Scotland, permits little sound emerge through the passage entrance.

The construction of large chambers upon the auditory universe underestimated. Neolithic construction of sound was artificially bounded before. Schafer has even proposed to enclose space as to enshrine sound, acoustic separation between suggesting that a rather different expressed. Inside these buildings natural world, creating a silent construct entirely new worlds

others there is evidence to suggest that activity was episodic, and may have included the removal of material as well as deposition.

Indeed, the distinctive architecture of these monuments would seem to suggest that the chambers were *repeatedly* visited. Thus mortuary rites at these monuments were not only situated within a wider social context, but also permitted access to what might have been characterised as ancestral remains (see Barrett 1988). In this sense, passage graves might be understood as settings for rituals which involved the living as well as the dead, perhaps as shrines where people venerated mythical ancestors (Whittle 1996: 247). The presence of substantial quantities of skeletal material at some sites need not negate these possibilities. At Quanterness, for instance, human remains were predominantly confined to the side chambers, while the floor of the main chamber remained a comparatively open space within which fires were burnt (Renfrew 1979: 158).

Performances within these buildings may have been diverse, yet their confined interiors could only have accommodated a relatively small number of people at any one time. In many ways the central chamber was a liminal place, physically separated from the outside world by a claustrophobic passageway. This necessitated participants to undergo a potentially uncomfortable transition that could be interpreted as a metaphor for a journey between worlds (Richards 1992). There have also been suggestions that passage graves were a nexus between many alternative dimensions, including places where communication between the living and the dead could take place (Dronfield 1996). The abstract rock art motifs carved upon a number of passage graves in Ireland share similarities with entoptic imagery experienced during altered states of consciousness (Bradley 1989a; Lewis-Williams and Dowson 1993; Dronfield 1995a, 1995b). Concentric circular motifs in Irish passage graves, for instance, might represent tunnel vision experiences or signify points of entry into the next world (Dronfield 1996: 54).

These interpretations are entirely consistent with the acoustic properties of these buildings, where the transition between inside and outside is strongly emphasised. Tests at Camster Round, a passage grave in north-east Scotland, showed that the covering cairn acted as a filter, severely distorting those sounds which emerged from the central chamber into the outside world. The one part of the exterior where sounds emerge most clearly is around the passage entrance, a 'forecourt' area distinguished by dry stone walling (Figure 12.1). In addition to the visual transition from daylight to darkness, and from open to confined, the behaviour of *sound itself* reinforces a division between participants within and an audience outside. The vague and unrecognisable sounds which emerged may even have served to emphasise the power and magic of the place, reinforcing the potency of those permitted access (Watson and Keating 1999). A covering mound of clay at Maeshowe, a passage grave in Orkney off the northern coast of Scotland, permits little sound to dissipate from the interior, although distorted sounds can emerge through the passage entrance (Richards 1993: 151).

The construction of large stone-built monuments would have had an unprecedented impact upon the auditory universe in the Neolithic and the significance of this cannot be underestimated. Neolithic communities were constructing places within which the propagation of sound was artificially bounded and controlled to a greater extent than had ever been possible before. Schafer has even proposed that most ancient buildings were constructed not so much to enclose space as to enshrine sound (1993: 36–7). Monuments like passage graves established an acoustic separation between the sounds of the environment and the sounds of people, suggesting that a rather different relationship between people and the environment was being expressed. Inside these buildings it was possible to largely shut out the sounds and sights of the natural world, creating a silent and dark space. Against this artificial silence it was possible to construct entirely new *worlds of sound*. Using vocalisation and simple musical instruments, it

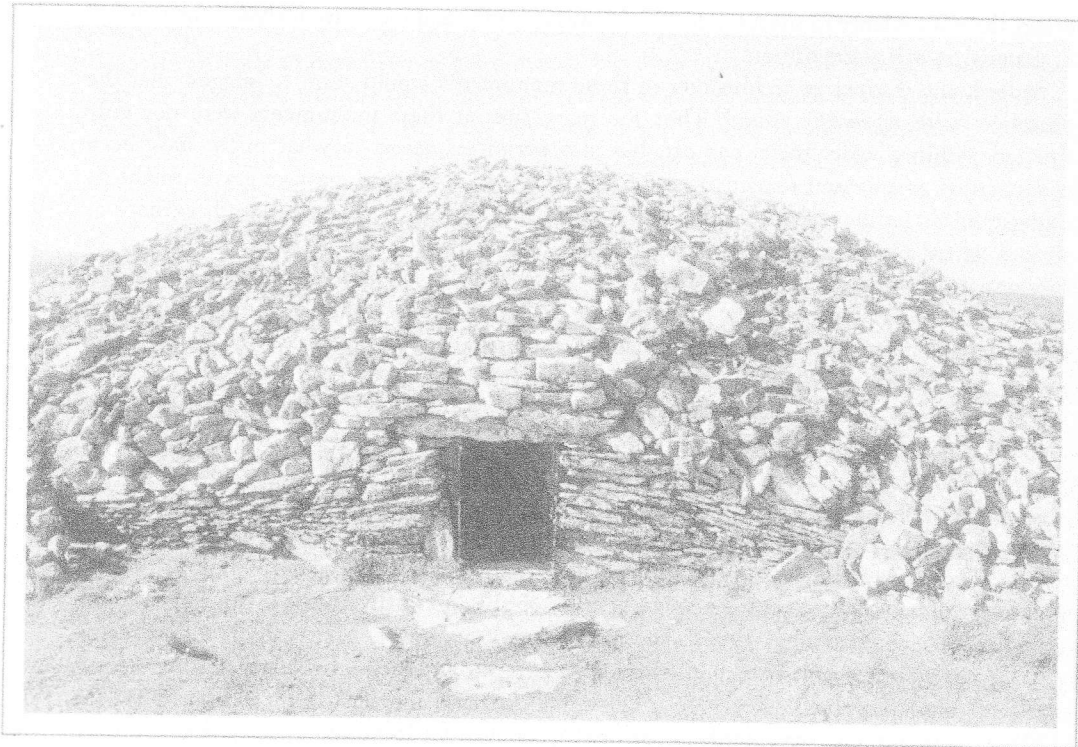


Figure 12.1 The passage entrance and façade at Camster Round.

would have been possible to generate sounds that were of a volume and intensity which far exceeded the majority of sounds in the natural world. Yet these sounds did not extend far beyond the confines of the monuments, and could not have been recreated anywhere else in the surrounding landscape. Within monuments it was possible to compose an entirely new auditory universe from the architecture of sound itself.

SOUND AND RITUAL – AN EXAMPLE FROM SIBERIA

Intriguingly, many of these elements – separation, controlled use of sound, trans-dimensional journeying, contact with the dead – are often integral to shamanism as it is frequently defined (Eliade 1964; Lewis 1971; Vitebsky 1995). Could shamanistic procedures in any way therefore broaden our comprehension of the ways in which megalithic monuments might have been used? To illustrate some of the possibilities, I will reference extracts from the classic portrait of shamanistic ritual among the Chukchee of Siberia by Waldemar Bogoras (quoted from Lessa and Vogt 1979, 302–7). Such ethnographic accounts should not be uncritically applied in the interpretation of prehistoric remains, especially given the chronological and cultural distance between these living communities and the distant past. In any case, this is by no means intended as either a direct or literal comparison. The Chukchee shamans performed within rather ephemeral structures, while I will focus upon the large Neolithic stone-built passage grave of Maeshowe (see Davidson and Henshall 1989). This monument was chosen because it has been restored to its prehistoric condition in a manner which would only have a negligible effect upon the behaviour of sound (see Figs. 12.2 and 12.3). What I hope to illustrate is how such



Figure 12.2 Maeshowe passage



Figure 12.3 An elevation and plan

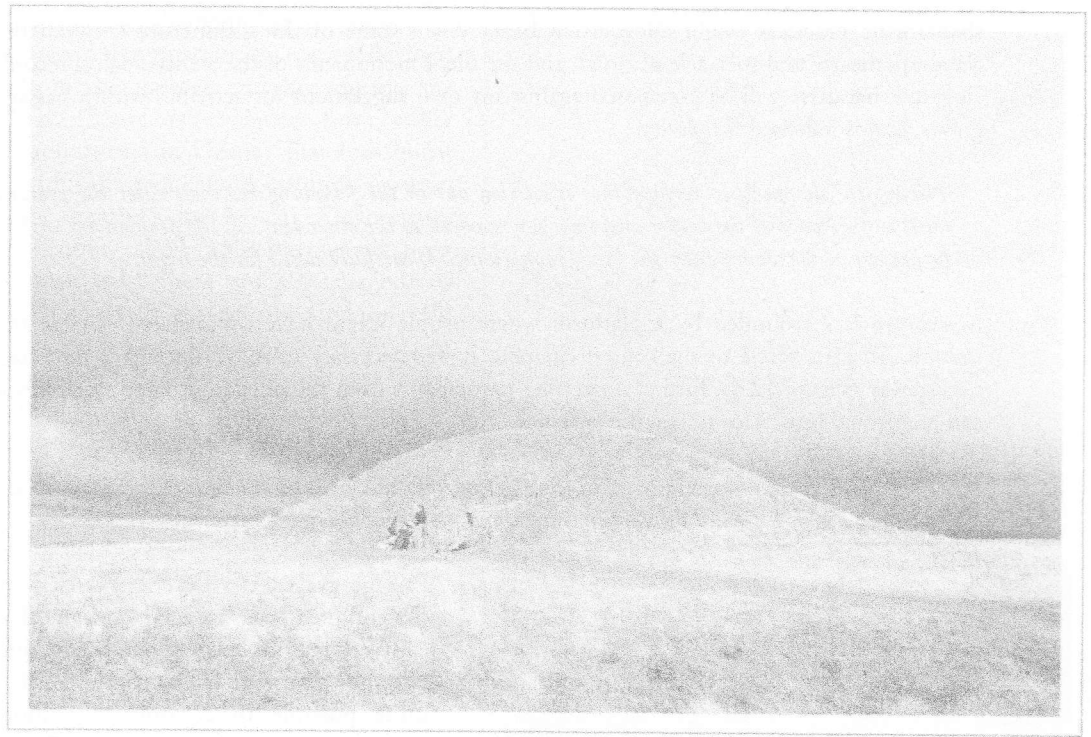


Figure 12.2 Maeshowe passage grave.

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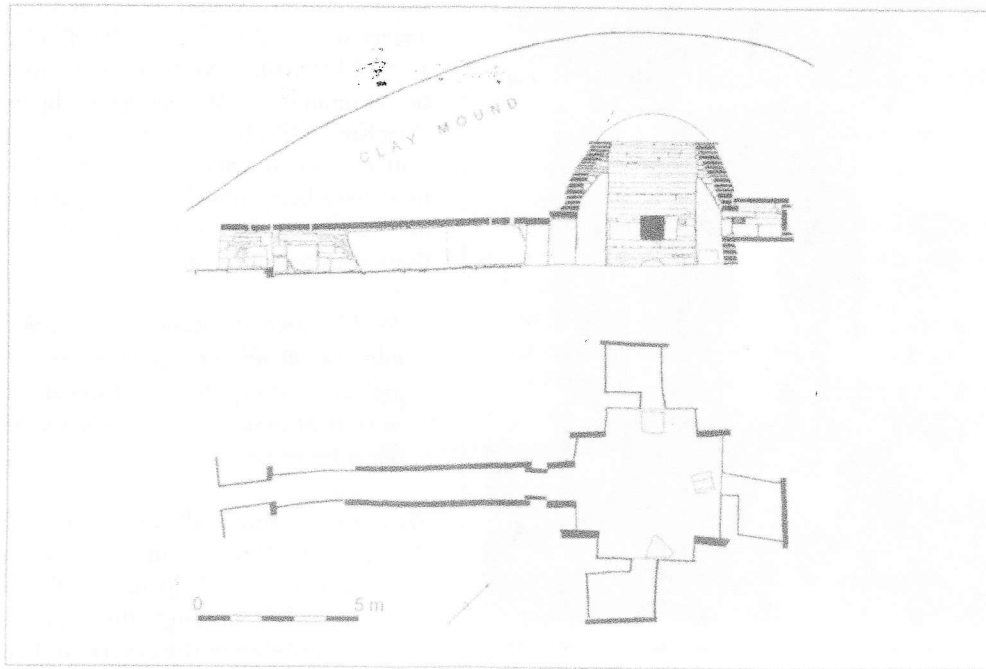


Figure 12.3 An elevation and plan of Maeshowe (after RCAHMS 1946, 308).

shamanistic practices might allow us to break down some of the disjuncture between the elaborate theatre and spectacle of ritual, and the silent monuments of the archaeological record. Bogoras's narrative will be juxtaposed against my own suggestions for activities within passage graves, and is italicised for clarity:

The typical shamanistic performance is carried out in the following manner. After the evening meal is finished and the kettles and trays are removed to the outer tent, all the people who wish to be present at the séance enter the inner room, which is carefully closed for the night.

Maeshowe is surrounded by a platform where people might have congregated outside the mound. To gain access to the central chamber it was necessary to move through a restricted passageway (Figure 12.4), further separating participants from the outside. A large stone block can be pivoted into place to seal the entrance.

[T]he inner room is especially small, and its narrow space causes much inconvenience to the audience, which is packed together in a tight and most uncomfortable manner.

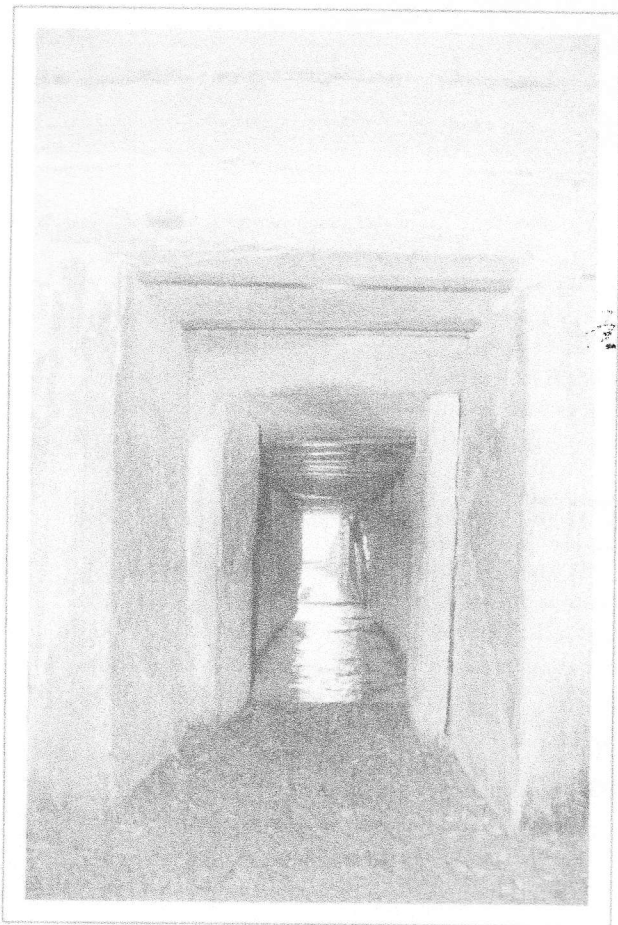


Figure 12.4 Looking out along the passage from the chamber inside Maeshowe.

Passage graves can be characterised by the confined space of their interiors. For this very reason, entry of the public into Maeshowe now has to be regulated. It is quite possible to accommodate more than 20 people in the chamber (Figure 12.5), but with increasing numbers movement becomes awkward. It would also have been difficult to see or touch images scratched into the walls (Bradley *et al.* 2001), or to view the midwinter sunset upon which the passage is aligned (MacKie 1997). It seems that here, as in similar monuments elsewhere, there must have been some kind of separation between those permitted within, and those who remained outside.

In olden times, shamans used no stimulants; but at present they often smoke a pipeful of strong tobacco without admixture of wood, which certainly works like a strong narcotic.

We cannot be sure of the extent to which the users of Maeshowe utilised psychoactive substances to help induce altered states of mind, although this was not beyond possibility in the context of later Neolithic Europe (Sherratt 1991). There are additional issues, however. The inter-

ior of the chamber has natural illumination, except from the passage entrance day. There is evidence of monuments in Orkney within monuments. A block in the central chamber at (Renfrew 1979: 158) has been noted, and there are also of fire at Quoyness and (Davidson and Henshall 1989) only do fires emit light, but that would have rapidly as these confined and poor places. It is feasible that materials could have been induce effects upon conscious least powerful odours. Even such chemical infusions exchange of oxygen might ultimately had an effect upon people confined to the chamber.

At last the light is put out, the shaman begins to operate. He beats his drum and sings his introductory first in a low voice; then his voice increases in volume, and the small closed-up room is filled with clamour. The narrow walls reflect the directions.

If no light was refracted from the walls, Prolonged sensory deprivation of the mind (see Zuckerman 1956) will be further explored in the future, however, would not be absorbed in this case at Maeshowe, where the unbroken surface from which the sounds in the cavity are heard quite differently.

Moreover, the shaman uses his mouth, now turning it at the corners for minutes, all this noise being squeezed together in a most peculiar source of the sounds; and, as the sounds seem to shift from corner to corner at all.

ior of the chamber has no source of natural illumination, except a faint light from the passage entrance during the day. There is evidence from other monuments in Orkney that fires burnt within monuments. A burnt area within the central chamber at Quanterness (Renfrew 1979: 158) has already been noted, and there are also suggestions of fire at Quoyness and Cuween Hill (Davidson and Henshall 1989: 59). Not only do fires emit light, but also fumes that would have rapidly accumulated in these confined and poorly ventilated places. It is feasible that particular materials could have been combusted to induce effects upon consciousness, or at least powerful odours. Even without such chemical infusions, the poor exchange of oxygen might itself have ultimately had an effect upon a group of people confined to the chamber.

At last the light is put out and the shaman begins to operate. He beats the drum and sings his introductory tunes, at first in a low voice; then gradually his voice increases in volume, and soon it fills the small closed-up room with its violent clamour. The narrow walls resound in all directions.

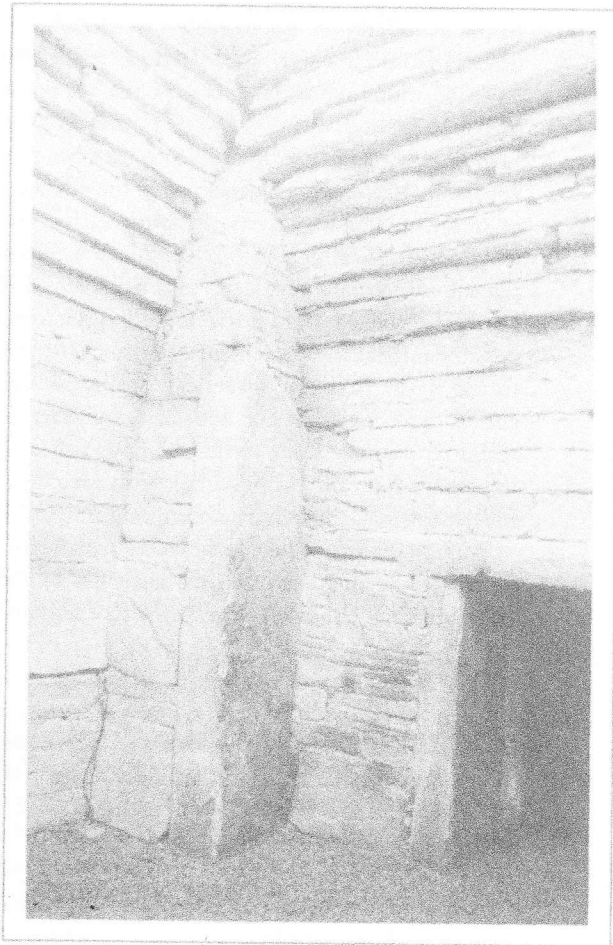


Figure 12.5 The chamber inside Maeshowe.

If no light was refracted from the entrance, the interior of Maeshowe would be in total darkness. Prolonged sensory deprivation in this kind of environment could itself have had effects upon the mind (see Zuckerman 1969; Suedfeld 1980: 28–72; Dronfield 1995b), a possibility which will be further explored in the future. Sounds introduced into this stone-lined environment, however, would not be absorbed by the walls, but reflected and echoed. This is particularly the case at Maeshowe, where the precise joining of the dry-stone walling creates a virtually unbroken surface from which sound can reflect. For this reason, sounds within this resonant cavity are heard quite differently, appearing fuller and louder.

Moreover, the shaman uses his drum for modifying his voice, now placing it directly before his mouth, now turning it at an oblique angle, and all the time beating it violently. After a few minutes, all this noise begins to work strangely on the listeners, who are crouching down, squeezed together in a most uncomfortable position. They begin to lose the power to locate the source of the sounds; and, almost without any effort of imagination, the song and the drum seem to shift from corner to corner, or even to move about without having any definite place at all.

In the semi-darkness of a passage grave chamber, it is understandable that sounds might become directionless. However, a very similar effect was noted during acoustic tests within these enclosed monuments. Standing waves are acoustic phenomena caused by the reflection of prolonged sound waves between the walls of buildings, producing audible zones of low and high intensity sound. Their presence has been recorded at a variety of ancient sites by Devereux and Jahn (1996), who suggested that the effect could be evoked by chanting. The actual effects of inducing standing waves are both varied and striking, and have been recorded in detail (Watson and Keating 1999: 330). When a standing wave first becomes apparent the nature of the sound becomes expansive, and is perceived to behave in rather unusual ways. Sounds can become detached from their source and move around the chamber, and it even becomes possible to hear the movement of people within the monument caused by slight modifications to the waves. Standing waves can also seriously distort speech to the extent that it becomes almost unrecognisable, and at some frequencies can appear to 'possess' participants, as the sound seems to originate from within the body of the listener – a sensation which could be distinctly uncomfortable and unnerving. With practice, it might even be possible to control the movements of such sounds within monuments like Maeshowe.

Among the Chukchee, spirit voices are sometimes portrayed by the shaman through ventriloquism, while Bogoras guessed that some of their rather more physical manifestations were conveyed by the shaman with the help of human assistants:

The 'separate voices' of their calling come from all sides of the room, changing their place to the complete illusion of their listeners. Some voices are at first faint, as if coming from afar; as they gradually approach, they increase in volume, and at last they rush into the room, pass through it and out, decreasing, and dying away in the remote distance. Other voices come from above, pass through the room and seem to go underground, where they are heard as if from the depths of the earth.

It is not possible to account for ventriloquism in prehistory, but we can say that the passage grave would have provided an ideal environment to create auditory illusions. One very powerful sound was created at Maeshowe by loudly banging a drum whilst moving along the passage towards the chamber (Watson and Keating 2000). In darkness, listeners might not see the player or the drum, but they hear inexplicable changes in the nature of the percussion, and a dramatic increase in volume until it is almost deafening in intensity. Even in a modern context, an audience in the chamber commented upon the extraordinary and powerful qualities of this sound. Many different acoustic effects can be conveyed depending upon the position of the listener in relation to the monument. It was noted during experiments at Camster Round that drumming inside the chamber was heard to be rising up from beneath the ground from some places around the external perimeter. Intriguingly, drumming within Camster Round could be heard within the chambers of Camster Long nearby, but *not* across the open ground which separates these cairns (Watson and Keating 1999: 330). Likewise, sounds could have transferred between the separate chambers within the Orcadian sites of Huntersquoy and Taversoe Tuick, each of which is accessed along independent passageways (Watson and Keating 2000). It is also possible that sounds could have been introduced into these monuments from the *outside*. An open slot above the passage at Newgrange could have been used for oral communication with the interior (Lynch 1973), irrespective of whether it was occupied. At Maeshowe, the blocking stone does not seal the passage entirely, allowing for a similar possibility. Equally, distorted sounds emerging from the passage entrances might have taken on a magical quality. It has been suggested that passages leading into comparable monuments in Scandinavia may have been a

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SOUND AND TRANCE

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means by which the souls of the dead could exit from the chambers (Gräslund 1994). In this sense, not only would the slots present at Newgrange and a small number of Orcadian passage graves permit the dead to depart when the entrances were blocked to human access, but they encouraged any emerging sounds to be understood as a manifestation of the spirits themselves.

SOUND AND TRANCE

I used Bogoras's account of Chukchee shamanism to try and recreate a sense of theatre and spectacle that might have accompanied the use of a monument like Maeshowe. Yet it has long been recognised that shamanistic techniques extend beyond display and illusion and into the realm of altered states of mind (Eliade 1964; Lewis 1971; 1996: 105–21). Indeed, it is frequently through the medium of trance that communication with the spirit world becomes possible. Altered consciousness can be induced in many different ways, ranging from the ingestion of chemical stimulants, controlled breathing or fasting. Sound, and percussion in particular, is not only a common element of shamanistic practice (e.g. Potapov 1978; Sommarström 1989; Vitebsky 1995), but might itself contribute to the inducement of alternative states of mind (Neher 1962; Needham 1967). In some cases such states might be induced by repetitive drumbeats, but it is also likely that the *nature* of some sounds, especially those with low frequencies, might influence transcendental experience (Tuzin 1984).

INFRASOUND

Experiments at Maeshowe suggested that under certain circumstances, people inside the monument could be subjected to high amplitude infrasonic frequencies. These extreme sounds are not created by musical instruments themselves, but rather by the interaction between propagating sound waves *and the structure of the monument itself*. This is known as Helmholtz Resonance, and the potential for passage graves to act in this way has been described in detail (Watson and Keating 1999: 331–4). The critical element is that the movement of certain sound waves through the confined passage and open chamber can set up a resonant frequency which is powerfully amplified to levels far in excess of the original source. Two points are of particular importance here. First, a primary way that this effect can be generated is by using percussive instruments. Second, the resonant frequency of Maeshowe was found to be beneath the threshold of human hearing (2 Hertz), but could still have had a physiological or psychological influence upon people. Even in the modern world, low frequency sounds have been known to induce effects upon people that have been described in terms of supernatural phenomena (Tandy and Lawrence 1998).

The preliminary results of tests conducted at Maeshowe with the assistance of David Keating suggest that high levels of infrasound could be generated under certain conditions. The displacement of air resulting from movement through the interior, and particularly along the passage, generated a 2 hertz response at 120 decibels (dB). Controlled breathing elicited a similar response at over 105 dB. Interestingly, a single drum played consistently at 2 beats per second (the frequency necessary to incite resonance) registered at a little over 110 dB. With different kinds of drum and more people, it should be possible to exceed 120 dB. Although reactions to infrasound can vary between individuals (Nussbaum and Reinis 1985), a 2 Hertz frequency has been associated with a series of physiological symptoms. At the powerful amplitudes which have been recorded inside Maeshowe, these range from pressure in the middle ear and slight headaches above 100 dB, to extreme vibration and imbalance over 125 dB (Evans 1976). Volunteers exposed to short bursts of infrasound created by drumming within the

passage grave of Camster Round did report some unusual sensations, including dizziness, feelings of ascent, and modifications to breathing patterns and pulse (Watson and Keating 1999: 333). Irrespective of these effects, it has been shown that loud repetitive drumming can itself have an impact upon listeners (Walter and Walter 1949: 82; Neher 1961). Further tests are required to examine the possible contribution of infrasound to ritual procedures inside Maeshowe. While the use of percussion to assist the onset of altered states of consciousness is a known shamanistic technique, it is feasible that Helmholtz Resonance itself might have only have acted in *combination* with a whole variety of other acoustic phenomena to affect listeners. Infrasound need not have been deliberately evoked in prehistory, but its presence would only have served to enhance the special or magical qualities of these monuments.

DISCUSSION: THE SENSES AND TRANSFORMATION

We might not be able to interpret the specific meanings that were attributed to the events within passage graves in prehistory, but we can speculate about how such experiences would have been set apart from the everyday. While it has been acknowledged that the sanctity of monuments may in part have been derived from the symbolic representation of cosmological and social principles of order (Richards 1993: 148; Thomas 1993b; Parker Pearson and Richards 1994), the multisensual nature of these experiences has tended to be underemphasised. The passage from one dimension to another may have been expressed through the *convergence* of unfamiliar sights, smells, tastes, textures and sounds. The process of entering these monuments effectively separated participants from the outside world. This not only involved a significant transition from daylight to darkness (Bradley 1989b), but also required entrants to *move* in unconventional ways in order to progress through the confined entrance (Thomas 1990: 175). In the low light, the senses are heightened, and the journey to the chamber juxtaposes a succession of intense *sensations*: a cramped posture, darkness, the texture of stone, changes in temperature, strange scents and exotic sounds. Irrespective of individual differences in sensory perception, or their precise interpretation, most people would recognise the unusual character of the event because of the manner in which such stimuli were combined in ways which transcended the usual range of experience. Using certain vocal frequencies, for instance, it is possible to induce enormous stones to appear to shake and become alive (Watson and Keating 2000: 261). Nor were such qualities entirely confined to passage graves. A pilot test to examine the acoustics of Stonehenge has suggested that the inside of this monument was also conducive to some distinctive effects. Rather like passage graves, it is the way in which a participant encounters a succession of experiences which might have been particularly important. Again, this transformation is mediated through controlled movement (a narrow aperture in the outer sarsen circle), the stone textures, colours and shapes, and the containment of sound within the interior. While we cannot be certain whether all of these buildings were initially designed with the generation of such specific effects in mind, it seems likely that these phenomena would have been an almost unavoidable aspect of their use.

'SO AT LAST THEY SUMMONED A SHAMAN'?

Neolithic megalithic monuments seem to have been venues within which people could engage with their environment in rather exceptional ways. Perhaps these were places where boundaries could be dissolved – boundaries that ordinarily governed space and time, and which separated the living from the supernatural. Such events are likely to have engaged people through all of their senses, constructing new worlds from unfamiliar sounds and sensations. Indeed, it may

have been carefully arranged realms. While we cannot define as shamans were people might have been people required knowledge, and what name we might boundaries to mediate between

CONCLUSION

In this chapter I have made an attempt to explore some of the senses in ceremonial ritual into silent, empty rather more reflexive approach passage graves have been facilities for the disposal of to other dimensions. Rather that could have been understood other worlds were actually than actors. Could there manage the potentially elaborate these people the prehistoric literature? There remain passage graves might not only be supernatural, but also could community could directly from ethnography to present individuals within their own within a series of cross-cultural explore ritual, and the use comparisons may ultimately day, perhaps it is our own preconceptions and journey

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have been carefully arranged transformations in experience which marked a passage into other realms. While we cannot definitively demonstrate that individuals whom anthropologists would define as shamans were present in Britain over 4,000 years ago, it does seem feasible that there might have been people who managed such elaborate events, specialists who possessed the required knowledge, and who could orchestrate the theatre and the spectacle. Irrespective of what name we might choose to give them, it was these individuals who transcended the boundaries to mediate between the everyday and the ancestral, or spirit worlds, of the Neolithic.

CONCLUSION

In this chapter I have made careful use of ethnographic evidence to emphasise the importance of the senses in ceremony, and to illustrate how we could begin to reintegrate the theatre of ritual into silent, empty monuments. To support the suggestion that we may be able to take a rather more reflexive approach to monuments, the results from acoustic tests performed at passage graves have been presented. The results suggest that these buildings were not simply facilities for the disposal of the dead, and were far more than symbolic or metaphorical gateways to other dimensions. Rather, their structures permitted the creation of extraordinary experiences that could have been understood as the *physical manifestation* of these powers – venues where other worlds were actually brought into being. Such interpretations emphasise *sensations* rather than actors. Could there have been individuals who possessed the knowledge and ability to manage the potentially elaborate, protracted and striking ceremonies within monuments? Were these people the prehistoric equivalent of the shamans that we encounter in the ethnographic literature? There remain many possibilities to be explored. For instance, places like passage graves might not only have provided settings for ritual specialists to mediate with the supernatural, but also constituted environments within which a broader section of the community could directly encounter such forces. While it is tempting to transplant the shaman from ethnography to prehistory, this would not only disregard the specific context of these individuals within their own societies, but might bind our understanding of the Neolithic within a series of cross-cultural generalisations. Archaeologists have a unique potential to explore ritual, and the use of monuments, over tremendously long periods of time, and such comparisons may ultimately only serve to limit interpretations of the past. At the end of the day, perhaps it is our *own* quest which lies closest to that of the shaman – to break down preconceptions and journey to the limits of the available evidence.

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Chapter Thirteen

An ideology of Cremation in early Anglo-Saxon Britain

Howard Williams

INTRODUCTION

Over the last two centuries religious beliefs and rituals have changed. Christianity during the sixteenth century saw works dedicated to identifying pagan practices (Griffith 1996; Jolly 1996; and Higham 1997). Paganism of Northumbrian monks and ceremonies at sanctuaries and ceremonies (1997). A range of other sources (Glosecki 1988, 1989; Jolly 1992). However, the only cremation in metalwork and pottery (Hawkes *et al.* 1965; Myres 1992), while certain excavations (Blair 1995; Hope-Taylor 1992) Anglo-Saxon paganism to the seventh centuries AD. Objects with amuletic functions (Meaney 1992) use of cremation or the presence of pagan practices and some studies have attempted to identify pagan furniture (Dickinson 1993a).

Despite these many approaches, sometimes openly critical of the evidence from sources derived from the Anglo-Saxon archaeological evidence, local and regional variability

Chapter Twelve

The sounds of transformation: Acoustics, monuments and ritual in the British Neolithic

Aaron Watson

So at last they summoned a shaman. And he arrived in his shaman dress and horned hat, warmed his tambourine over the burning embers, then shook it hard. He banged it in an increasing rhythm, himself twirling in the full firelight of the tent, his sacred robes twirling, his lips flecked with foam. After a time, his soul departed on the sound of the drum to the mountain-top in the western heavens where there is no day but continual night, where there is always mist and the moon is but a thin crescent.

And there he communed with the spirits.

Extract from a Siberian folk tale, translated by Riordan (1989: 90)

INTRODUCTION

Sound is an almost universal component of ritual. Across the world, sound and rhythm are frequently combined to structure ceremonies through the orchestration of movement and dance. They can also be an important means of creating connections with the supernatural. This is of particular interest given recent research which suggests that the interiors of many prehistoric monuments in the British Isles may have been conducive to the creation of powerful acoustic experiences. Archaeologists have previously considered whether these megalithic structures, constructed between 4000 and 2000 BC, may have been places where people gained access, or journeyed, to other worlds. This is interesting given that the use of sound to induce altered states of consciousness is often considered integral to shamanistic performance. This is not only the case in those Siberian societies that practise(d) shamanism, but also in other communities across the world where comparable practices have been observed. Given that one of the central roles of shamanism is to manage interactions between the living and the supernatural, could an understanding of such techniques assist in the interpretation of Neolithic and Early Bronze Age structures in the British Isles?

A CATALOGUE OF DEAD MONUMENTS?

Due to the contrasting nature of their evidence, archaeological and ethnographical fieldworkers have tended to emphasise rather different facets of ritual and ceremony. In western Europe, archaeologists have long recognised that a variety of monumental buildings dating to the Neolithic period were foci for ritual. This is suggested by the absence of evidence for the

'domestic' occupation of dead and specialised artefacts. More traditional interpretation of how the architecture. More traditional classification and discussion of opportunity to observe living nature of ceremonial process of vocalisation and movement source of detail about the tended to *describe* the very extent, non-interpretative monuments.

SENSING THE WORLD

It is only over the past century hiatus. There is increasing by attempting to explore rather more animated and ways in which the format views of participants (The ships between these structures 1996b; Bradley 1998, 2001 which has come to dominate 1981; Porteous 1990; Rodwell shown that many societies ritual practices to some extent 1973; Gell, 1995). Yet it is ethnographers have known are inherently *multisensual* into the study of the past (1999), touch and texture encounters with monuments 1998; Mills 2000). Here, sound.

Sound has long been experience the world (Gell 1995). However, it is only recently prehistory. In western Europe have received some attention while artefacts interpreted record (Lund 1981; Megaw 1999, 2000). It has even been environment than those with distinction between literary (Rodaway 1994: 83). The world, as emphasised in C