

Chapter 9

Some Stimulating Solutions

Andrew Cochrane

*It will have blood; they say, blood will have blood: Stones have
been known to move and trees to speak;*

Shakespeare, *Macbeth*. Act 3. Scene 4.

Introduction

How do Irish passage tomb motifs influence people? What are the politics of spectators engaging with depicted motifs on stone? How might people construct cosmologies, worldviews and beliefs through these entanglements? Can broader understandings be created by including intimate engagements with essences in and of the world? Is it appropriate or indeed useful to regard *all* ‘non-living’ materials as inanimate and passive in contrast to the ‘living’ animate and active aspects of an environment? These questions form the initial stimuli for an investigation of the motifs present on some Irish Neolithic passage tombs. By further considering the dynamic effects that the application of liquids can make to images carved in to stone, I will demonstrate how modern dichotomies and certain assumptions increasingly impede richer expressions of an interpretation of a Neolithic period in Ireland. Rather than viewing the images through a textual representational analogy, I will instead utilise visual cultural, material agency and neurological studies, set within a worldview perspective to paint a picture of the possible ambiguities of life and belief at some locations in Neolithic Ireland.

To fully contextualise my position, I consider how some non-Western people do not immediately regard elements in the world as either being living:non-living, animate:inanimate or person:non-person; there is not a necessary separation between human beings and ‘non-agentic’ others (see Bidney 1953, 157; Hallowell 1975, 143; Latour 1993, 54; 1999, 174; Meskell 2005, 5). Things in the world can be experienced as animate or ‘alive’ in a variety of ways, which

A. Cochrane

School of History and Archaeology, University of Cardiff, Cardiff, Wales, UK

e-mail: cochranea@cardiff.ac.uk

can include social, biological, linguistic and belief systems (see Knappett 2002, 98). Here, I discuss how some people construct cosmologies and worldviews, and how these modes of thought can influence action. The images carved on the stones of Irish passage tombs (such as Knowth Site 1 and Newgrange Site 1, Co. Meath; see Fig. 9.1), and indeed the materials used to create these structures, were not necessarily regarded by some Neolithic people as static, permanent or eternal, as mere decoration without agency or a sense of volition. Rather they may have been experienced as fluid, dynamic and in some instances imbued with personhood and histories of their own. Motifs were invariably not all applied at the same time as one complete and static composition. Instead, there were episodes and sequences of the overlay and underlay of particular images that replaced or substituted existing motifs by imposed motifs (see O'Sullivan 1986; 1996; Eogan 1997; Shee Twohig 2000; Jones 2004; Cochrane 2006). Such an understanding (re)presents the decorated passage tombs stones as paradoxically resonating with permanence in flux. Visions, context, substances and belief layered together often generate ruptures in life that can facilitate new imaginings within the rhythms and sequences of images. Within such a perspective, the Irish passage tomb motifs will present fresh conditions for possibility and diverse understanding. Here, due to restrictions of space, I focus only on the influences of liquids on the final stages of motif placement.¹



Fig. 9.1 The “three-spiral figure”, orthostat C10, Newgrange Site 1, Co. Meath (photo: Ken Williams)

¹ It is entirely possible that liquids played an active role in the creation of the motifs themselves – this remains, however, a topic for another paper.

Visualising Environmental Agency

Within some archaeological and anthropological literature, there is a trend to consider the world from a non-anthropocentric viewpoint. No longer is it taken for granted that material objects are purely passive, functional and practical. Instead, some suggest that non-human objects or entities can sometimes possess agency, that is, inanimate objects can sometimes have personhood, history, dynamism and movement and play an active role in and through human relations. Gell (1998) proposed that we consider agency, intention, causation, result and transformation when engaging with imagery. By amalgamating these viewpoints and by introducing the importance of awe, enchantment, magic and partial cognitive indecipherability in imagery, Gell (1998) was able to propose common properties in a variety of examples including the *Mona Lisa*, New Zealand Maori meeting houses, Kongo 'nail fetishes' and miniature medieval cathedrals. Gell (1998) believed that he was able to move further towards providing the theoretical keys to understanding visual imagery. Material objects are stated to be the equivalent of persons or social agents, as opposed to being polarised or distinct from them. These agents operate within systems of action that 'change' the world rather than encode symbolic propositions about it (Gell 1998, 6). For Gell (1998), this is why agency is primary. Agents are defined as persons or things, which have the ability and intention to 'cause' something 'in the vicinity' or 'in the milieu' to happen (Gell 1998, 7). Gell (1998) distinguishes between primary and secondary agents, with the former being intentional beings (e.g., patrons, 'artists' or originators), and the latter being artefacts through which primary agents render their agency effective. These latter artefacts are described with the term 'index', to remove the appellation 'art' and to imply that they are indexes of agency. These indexes indicate by their existence intentions, actions and efficacy. From this perspective, visual images are 'about', and located in, the milieu of social relations, which are in turn dynamic relations of agency (Gell 1998). Utilising Gell's (1998) proposals, an Irish passage tomb design is equivalent to a person and indexes intention, agency and efficacy. The engraving need not be 'beautiful', although they generally are, nor does it only 'symbolise' or necessarily 'represent', although it can (see also Bloch 1995). Rather the passage tomb design *is*, it instantiates that to which it relates to. Broader understandings of passage tomb motifs can be created when we reconsider what they do, as opposed to what they are.

In reviewing the concept of primary and secondary agency, Gosden (2001, 164–5) argues that such distinctions perpetuate the dualism of animate people and inanimate things. He proposes that such dichotomies can be side-stepped by acknowledging that things '...are active in the manner of objects not in the manner of people...' (Gosden 2001, 165), with an ability to elicit and channelise particular sensory responses or effects, which in turn can influence social action (see also Gosden 2005, 194–7). Indeed, the concept of 'object agency' has recently been described as an oxymoronic catch-phrase (Webmoor and

Witmore forthcoming), which is as Russell suggests a ‘non-statement’ (2007, 73). Elsewhere, to overcome these difficulties, I have proposed that we should instead think of the elements in the world as being mixtures of mixtures. Meaning that there have never been any pure forms and that we should begin with mixtures, rather than end with them (Cochrane 2007). With respect to decorated Irish passage tombs, such an approach facilitates amalgamations of action, rather than distinguishing things as being either an object with agency or a human with agency.

In Gell’s (1998) anthropological imagery nexus, four terms are employed: artist/originator, index, recipient and prototype. These four categories are described as having numerous identities. For instance, the originator can be the maker or the patron; the recipient can be the audience or the buyer; the index can be any artefact from which agency can be abducted; and the prototype can be a simulation (for an idol) or a sitter (for a portrait). Furthermore, any of these four categories can be mixed via relational ties – that is, one part acting on another. Such mixtures are not, however, stable and can invert, rupture and contest at any given moment. These dynamic relationships are deemed by Gell (1998) as essential, although he does concede that they can be unexpected. For example, just as an Irish Neolithic ‘originator’ may index their agency and intention in the production of a passage tomb engraving, so might the stone, through hardness and texture, dictate what would be done with it by the engraver. This is not to suggest that the motifs merely represent the agency or intentionality of a person but rather that the varied elements in the world influence and ricochet off each other. If indeed objects have agency, it is because people experience them as such through two-way processes of mediation. This observation does not perpetuate an object:person divide that is reified via dialectical bonds but rather it expresses the interweaving weft and warp of essences in the world. For such performances to perpetuate they must be contextualised within a supportive belief system; the following briefly details how cosmologies can assist in these particular experiences of being.

Cosmologies and Worldly Engagements

Cosmologies serve to orient persons in their world and inform them in the broadest terms of who they are and their relations to the rest of creation (Bowie 2000, 119). Cosmologies are statements in allegorical form about the overlapping interrelations and experiences of the world and the learned aspects of being (Ridington and Ridington 1975). People inhabit a world in which cosmologies (i.e., a totality), are explicitly and implicitly constructed, interactions created and taboos dictated often under modes of experiential surveillance. Activities that are performed within cosmological frameworks are social constructs of an objectified ideology and recently some scholars have postulated that such beliefs are the result of cognitive fluidity (e.g., Mithen 1996; 1999).

Boyer (1994; 1996), for instance, argues that this cognitive fluidity enables humans to create events and situations that defy the laws of physics such as talking trees and moving stones. Whilst they allow for objects in the world a sense of agency or personhood, Mithen's (1996; 1999) and Boyer's (1994; 1996) cognitive domain or evolutionary psychology arguments are, however, entrenched in a modernist episteme founded on scientific realism (Sahlins 1977; Rose and Rose 2000, especially chapter 15). Such cognitive ontologies separate the human mind from the body in the world (Clark 1997, 83–84; see also this volume). The body is reduced to an information delivery system for received data to be later processed by the mind, rather than engaging with the cognition itself. Instead it might be better to envisage processing loops, not residing in a domain space in the mind, within the skull, but instead fluidly penetrating both the human body and its environment (Clark 1997, 69). In emphasising this point, Clark (1997, 75) considers a scenario in which a person has to remember to buy alcohol for a party. To jog their memory, the protagonist places an empty beer can on the front doormat. Later when attempting to leave the house, they trip over it and recall their mission, thereby exploiting some aspect of the world (Clark 1997, 75). Other examples of how essences in the world can directly affect performance include road speed bumps (often termed 'sleeping policemen'), which influence the decision to reduce car velocity and keys that not only unlock the door to a property, but also force the handler to lock the door behind them in order to gain entry, such as the Berlin Key (Latour 1999, 186; 2000, 20; see also Knappett 2002, 99).² Another example can include beliefs in *Feng Shui* (meaning 'wind-water'), which is the Chinese practice of arrangement of objects and space to achieve harmony within an environment. In both these interactions, the varied elements in the world can determine the required social action, such as maintaining security obligations or where to position furniture and produce entangled webs in which social relations can move along. From such a perspective, the structural stones with motifs in Irish passage tombs, with differing colours and textures, may therefore also have *actively* created social interconnections within dynamic and sensuous mixtures.

Cosmology is part of an interactive system of meaningful, and sometimes meaningless, experience conducted in the context of a person's mind, body, soul and environment (which are not necessarily separate) that is both personally and socially informed (Bloch 1995; Hollan 2000). Cosmology and its associated images become animated and validated through the neuro-cognitive and embodied mechanisms that are responsible for the interpretations of reality experienced by each agent. Cosmologies may be imagined or expressed through a society's visual media which permit persons to intimately engage in their own version or interpretation of a reality. It has been suggested that people rarely

² Clark terms this trick of using the environment to prompt actions 'indirect emergence' (1997, 75).

create new cosmological beliefs and practices, but rather accept and participate in the trans-generational worldviews that they inherit from their society (Ortiz 1952, 135; see discussions in Russell 2004). Such a proposition does not, however, account for or explain social innovation or variation, be it intentional or through repeated acts never being identical (Rappaport 1999). Similarly, James (1995, 70) asserted that all experience is a process, no point of view ever being the *last* one.

Cosmological ideas are often emotionally reinforced and sanctioned through myth and specialised acts (although these formats can have other roles), and members who ignore the demands of the worldviews often suffer negative emotions or actions from particular agents (Overing and Passes 2000). The prime values of Ojibwa ontology are an excellent anthropological example of this (Hallowell 1955). Within this North American Indian culture, great stress is placed upon sharing what one has with others. Hoarding or any manifestation of greed is considered to violate a basic mythological and moral code and is subject to a punitive sanction. Hallowell (1975, 173) recalled how his friend and informant Chief Berens once fell ill and could not explain it. The Chief did, however, later recall overlooking one man when he had passed around an alcoholic beverage. He believed the man was offended and had cursed him. Hallowell (1975) describes this situation as demonstrating the extreme sensitivity of persons to the principles of sharing in Ojibwa worldviews. The Murngin of Australia also illustrates this point; the social context of their worldview justifies an enforcing social behaviour, with obligations and prohibitions being expressed in mythology and supported by seasonal cleansing acts (Warner 1958, 396). As such, a Murngin need not violate another person in any physical manner in order to be punished. By failing to adhere to the worldview rules of conduct, the well-being of the society is threatened and therefore the offending agent must be sanctioned (a contemporary example would be the USA Patriot Act). These brief examples serve to demonstrate how some elements of the world can *actively* create consequences for a person's existence through social experience and mediation.

Metamorphosis, Experience and Orientation

Some anthropological evidence suggests that not all societies make *permanent* polarised distinctions between particular states of being (see above). For instance, the grammatical structure of the North American Ojibwa language often utilises conflicting references. Thus the substantives for some, but not all, elements are regarded as animate, such as stones, trees, most materials, thunder and rain. Most Ojibwa do not appear to construct animate:inanimate dichotomies, or be consciously aware of these abstract notions (Hallowell 1975, 146). For the Ojibwa, although most can make distinctions between person:object, animate:inanimate and so on, the difference is that they mostly view all the elements as having the same ontological status (Hallowell 1975, 147). Such cosmologies and beliefs allow the Ojibwa to recognise fluid animacy and

personhood *a priori* in all elements of the world under certain circumstances. The crucial test is experience – if a person can offer testimony to an event, be it when awake, in a trance or dream (they make no distinctions here either), then it is accepted by others. As such Hallowell was given accounts of particular stones that chased people around a tent, opened their ‘mouths’ or talked (1975, 148–9). Perplexed by this information, Hallowell asked an old Ojibwa man whether *all* stones about them were alive, apparently the old man reflected a long while then replied, ‘No! but some are!’ (1975, 147).

This proposal has recently been appraised by Ingold (2000, 97) who suggests that some objects are just thought of as more in a *condition of being* than others and they reach this state through an ongoing process of metamorphosis, orientation, renewal or refreshment (see also Hallowell 1975, 158). In essence, life is a task that needs to be worked at, in order to achieve a generation or state of being (Ingold 2000, 98). Therefore it is entirely possible that the engraved motifs on passage tombs, that we might regard as static or inert, were regarded by some Neolithic people as active with a sense of movement, if *experienced* as such within particular belief systems. I further suggest that these experiences would have been periodically enhanced, refreshed and stimulated by the application of liquids. How these engagements were thought about will be explored below.

Irish Passage Tombs

There are multiple ways of thinking about and seeing the world in which one lives. I believe that these various and sometimes conflicting perspectives were played out with and often central to the design and execution of passage tombs, their settings and their associated motifs. I will now briefly introduce two passage tomb sites (Knowth Site 1 and Newgrange Site 1) from the Boyne Valley, Co. Meath and their relationships to the motifs, the river and landscape (see Fig. 9.2).

The Irish passage tombs originated in the fourth millennium BC (e.g., the Mound of the Hostages, Tara, Co. Meath) and continued to be constructed until the early third millennium BC (Grogan 1991; Sheridan 2003; O’Sullivan 2005). Some passage tombs distinguish themselves from other classes of Irish megalithic tomb by incorporating the eponymous passage (e.g., Newgrange Site 1) and engraved imagery (Eogan 1986), while others do not have passages (e.g., Knockmany, Co. Tyrone). The visual imagery is non-representational and consists of geometric and other abstract motifs. In the Boyne Valley, the motifs occur on the kerbstones and the interior structural stones of the passage tombs, rendering it the richest area of megalithic motifs in western Europe (Shee Twohig 1981; Eogan 1986; O’Sullivan 1993). Such a wealth of visual imagery suggests that, contrary to Herity’s arguments, the motifs were not a ‘by-product’ (1974, 107) or surplus extra designed to passively decorate the world. I propose that their importance was integral to the worldviews that helped create the monuments and subsequent encounters with them (Cochrane 2005, 250).

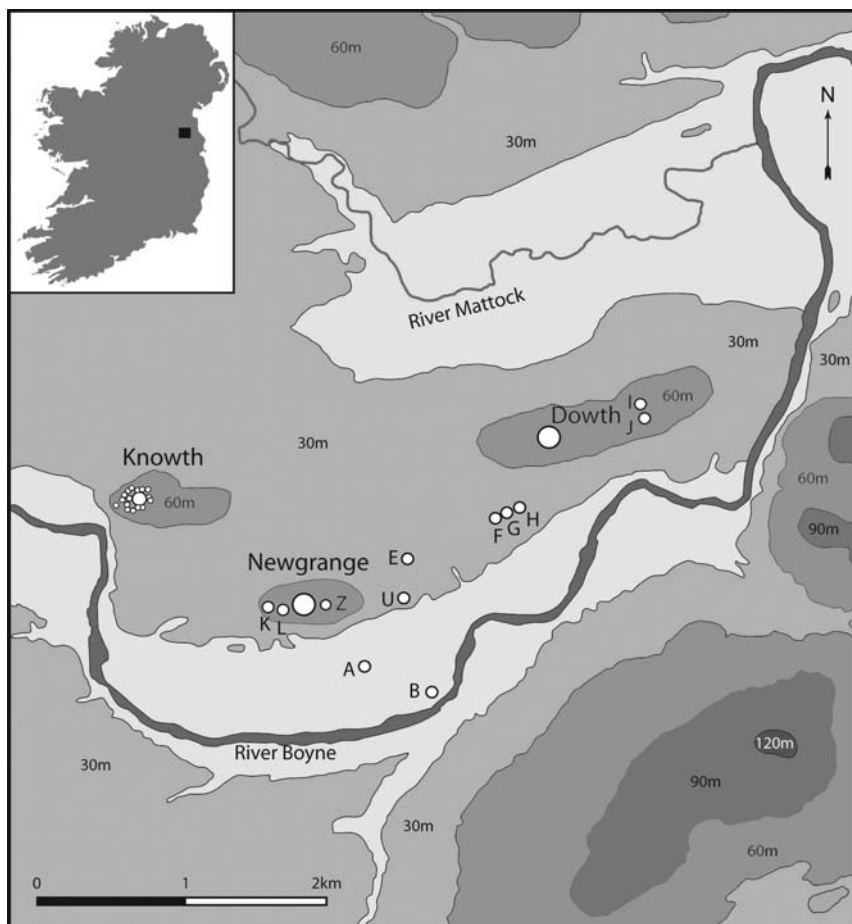


Fig. 9.2 The Boyne Valley passage tombs discussed in this chapter in their ‘island’ settings, Co. Meath, Ireland (adapted from Eogan 1986, 13)

The passage tombs and their motifs will not be regarded as static, but rather ‘animate’, fluid and prone to transformations.

Knowth Site 1 is a large mound measuring 80m by 95m and outlined by 127 kerbstones, with two internal passage tombs (the eastern and western tombs) and it is surrounded by at least 17 smaller passage tombs (Eogan 1986). The eastern tomb is cruciform and has a passage 35m long and the western is undifferentiated and angled with a passage 32m long. The entrances to both passages are diametrically opposed to each other and appear to be aligned on the equinoxes (Eogan 1986, 178). It is on the kerb and interiors of Knowth Site 1 that a large quantity of motifs are found (more than 300 decorated stones have been discovered). Other visual stimuli that may have supported possible worldviews include the incorporation of white quartz and dark granodiorite in the structure,

additional spreads of quartz and oval stone settings in front of the eastern and western passages, stone basins and standing stones (Eogan 1986, 47, 48). The initial construction phases are estimated as being between 3200 and 2900 BC (Eogan 1991). Newgrange Site 1 passage tomb is associated with three smaller passage tombs (M. O'Kelly 1982). The construction dates range between 3295 and 2925 cal. BC (Grogan 1991, 126). The main passage tomb consists of a kerbed (97 stones) ovoid mound (c. 85.3 m diameter) containing a cruciform internal tomb structure and passage measuring c. 19 m long. Notable features of Newgrange Site 1 currently include a quartz façade and the roof-box, possibly positioned to permit the illumination of the rear chamber by the midwinter sun and communication with entities, such as the dead, 'ancestors' or local spirits (Lynch 1973, 152; M. O'Kelly 1982, 8; Sheridan 1985/6, 28).

The river Boyne is a prominent feature in the environment and is characterised by its bend as it flows eastwards below Slane, making a right-angled turn to the south. The rock against which the river is turned forms the western end of a ridge of Carboniferous shales, that lies at a height of approximately 61 m above sea level, and continues east for three miles, supporting the three passage tombs, Knowth Site 1, Newgrange Site 1 and Dowth and their associated smaller tombs and features (C. O'Kelly 1971). The next turn of the river swings east, flowing parallel with the ridge and then northwards, thereby completing the Bend of the Boyne (Mitchell 1997). The Boyne River meets the Mattock river to the north, which itself originates in the Louth massif (Stout 2002), completing the feeling of an island setting. I propose that the early Neolithic people thought of or characterised the Bend of the Boyne as an 'island' (see also Powell 1938, 243; Cooney 1987, 84; 2000, 153), with cosmological significance and experience. These locations may have been thought of as where the sky, land and river conjoin; possibly creating an *axis mundi* worldview perspective at places that could be regarded as liminal (van Gennep 1960; Cochrane 2005); that is a place where certain performances can operate (Pearson and Shanks 2001, 53).

In the Boyne region, the land is punctuated by rivers, shallow areas and fords. These fords are important as they can either create aids for river crossings or barriers for river travel and as such may have been a central component of daily life (Stout 2002, 11). These rivers or 'riverscapes' may have been seen and thought of as being alive, regenerative, diverse, dangerous, contoured and imbued with cosmological significance and ambiguity. These fluid worldviews may have helped create senses of identity, temporality, place and history (see also Wilde 1849, 2–3; Cooney 2003, 323, 325). The siting of passage tombs near these waterways may also have altered the experiences of them in to places that carried connotations of journeys, transformation and death (Richards 1996), and different places, such as the sea and the mountains. Rivers can be physically felt and entered into, whilst also capable of causing injury, sickness and death (Buxton 1973, 363). Indeed, for the Saami of Finland, rivers are symbolically for the dead, as they are able to decompose, rot and putrefy life (Bradley 2000, 27); Eliade termed these types of rivers 'Waters of Death' (1964, 355). Journeys on rivers may have therefore been associated with acts of personal

transformation (either alive or dead), in rites of passage (Fowler and Cummings 2003, 2). Rivers can be incorporated in to a three-tiered *axis mundi* worldview, although they are not always associated with the earth. For instance, the Mandari of southern Sudan, believe that both water and rivers are from the Sky or 'Spirit-of-the-above', as it is thought that all water was once rain (Buxton 1973, 364). Interestingly in a more modern context, a recurrent feature in English and German folklore is that the souls yet to be born, or unborn children, exist first in fountains, springs, lakes and flowing water (van Gennep 1960, 52). Indeed, rivers are often temporal, being prone to metamorphosis by shrinking and swelling at particular times of the year.

I described above the possible performances of the River Boyne as I am interested in accounting for the role that water flow may have played in altering the viewer's engagement or experience with the passage tombs. I will review how these solutions may have assisted in developing snapshots of an interpretation of reality on the surface of the stones. I follow an approach adopted by Ego (2001), who considered how some visual images on San rock art in southern Africa are influenced by liquids. In this model, the images metamorphose from a static state, to an animated form via the flow of water. The San regards rain as an entity and in its various incarnations, it has the power to transform images and precipitate experience. This chapter will investigate how this approach resonates with the evidence from Irish passage tombs and whether we can consider these data as playing an active and animated role via liquidation and sequence.

The Visual Impact of Patterns

Some previous interpretations of Irish passage tomb motifs have unfortunately lacked consideration of the visual impact of the images themselves. Traditional explanations have incorporated value judgements on the motifs' 'quality' of execution, design and aesthetic 'appeal' (e.g., Herity 1974; Shee Twohig 1981). I propose that most attempts at ascertaining complex Irish Neolithic aesthetic values from a contemporary Western perspective are, however, of limited value.³ Instead, I consider how neurobiology can allow some universal cross-cultural generalisations to be made.⁴ For instance, studies demonstrate that certain types of pattern can cause visual discomfort, optical illusions, headache

³ The trend is to create a framework for artistic study that demonstrates relationships between the image and its social meanings (Layton 1991). This orthodox art historical application, however, informs little of indigenous and pre-Renaissance European contexts and more of Western notions of universal human 'culture specific' and 'period specific' aesthetics (Gell 1998, 3; Cochrane and Russell 2007).

⁴ Such universals are viable as although the contexts, environments, political, social and economic features are undoubtedly different today then from the Neolithic, the world is still seen and created via the same neurobiological structures (see Zeki 1999; Hoffman 2000; Bailey 2005, 25; Cochrane 2006).

and dizziness. During the late twentieth century, there was a movement of what became termed 'op art', due to its optical effects. Works were produced consisting of coloured or monochrome patterns of curved or straight lines, grids and dots, which resulted in the viewer experiencing discomfort, optical distortions and systematic errors that misrepresent the outside environment to our brains. The trend was rather short-lived, yet it expedited research on the functioning of vision when exposed to extremely intense stimuli (Wade 1990; 1998; Wade and Swanston 2001).

When a spectator is subjected to 'dense' optical patterns, the neuro-visual system malfunctions. The extreme intensity of the pattern of lines overloads the contrast/orientation neurons of the primary visual cortex (termed areas V1, V2, V3, V3A, V4 and V5), causing them to 'leak' and cross-stimulate neighbouring neurons (Wilkins et al. 1984). This is termed the 'contextual effect', whereby the primary cortical neurons can be distorted when identical stimuli are detected by neighbouring neural columns. If viewed for sufficiently long periods, this effect will cause optical illusions, headache and dizziness. Furthermore, it can result in migraine and epileptic seizures in photosensitive sufferers (Wilkins et al. 1984). That images in the environment can so directly affect other elements or persons reinforces the possibility for fluid and transformative networks of relations within Irish Neolithic contexts.

Since some Irish passage tombs motifs resemble simple dense patterns, I will briefly discuss a number of observations and implications. The present preservation of the Irish motifs in their eroded form unfortunately precludes their use as a means of inducing 'op-art' optical effects, although it is possible that when freshly cut, there would have been sufficient contrast between line and space to create such effects. These effects may have been magnified if the engraving were used in conjunction with high contrast pigments. Based on red/brown lozenges being reported on a corbel over C10 in Cairn T at Loughcrew, Co. Meath, it has been argued that the motifs at the passage tombs in Ireland were originally painted and that environmental conditions in Ireland have not permitted survival (Breuil and Macalister 1921, 4; cf. Shee Twohig 1973). Interestingly, the passage tombs at Carrowkeel, County Sligo do not contain engraved motifs and Eogan (1986, 148) has suggested that this is a result of the limestone being too hard to engrave and that they may have been painted instead.⁵ It is worth noting that in the Iberian Peninsula where it is relatively arid, painting does survive alongside engraved stone; as demonstrated by the black and red motifs painted on Orthostat C1, Forno dos Mouros, La Coruña, Spain and Orthostat C5, Antelas, Viseu, Portugal (Shee-Twohig 1981; Bueno Ramirez and Balbin Behramann 1996; Sanches 2006). Recently, it has been suggested that paint was possibly used to create a spiral motif on stone 11 of the Castlerigg stone circle in Cumbria, England, and that its

⁵ It should be noted that engraved motifs have recently been discovered on a limestone roof-lintel of Tomb 51 (*Listoghil*), Carrowmore, Co. Sligo (Curran-Mulligan 1994, 14–15). The presence of these designs in an area previously thought not to contain motifs does not, however, diminish the plausibility of Eogan's (1986, 148) assertions.

complete disappearance since 1995 is due to natural weather conditions (Díaz-Andreu et al. 2006, 1585). Although there is no current evidence to suggest that the motifs in Ireland were painted, traces of pigment have recently been found by taking infra-red photographs of a number of decorated surfaces in the main chamber at Maeshowe, Orkney, which were previously thought to be unpainted (Bradley et al. 2000). If this new technique is applied to the Irish evidence, pigments may be found. As such, I propose that Irish passage tomb motifs did induce visual experiences, but without sufficient pigment evidence, it is unlikely that they created 'contextual effect' optical distortions on their own. For this to happen, we need to consider alternative neuro-biological encounters.

The visual images currently on Irish passage tombs are not produced via the application of pigment or paint; although it is possible that they were originally decorated or enhanced with colour. It is noteworthy that the importance of colour to past societies has only just begun to be discussed in depth, with scholars now proposing that colour impacts upon most conceptual systems and worldviews (e.g., Lynch 1998; Jones and Bradley 1999); Taçon 1999; Jones and MacGregor 2002). As with the engraving, the possible paintwork that might have adorned the stones may not have been applied to all motifs at the same time, since there may have been episodes of superimposition and more fluid sequences. If the stones were painted, we can argue that the erosion of pigment over time by the elements could have altered experiences of the sites as unchanging and timeless stone reflections into a simulation of life that time transforms (see also Cochrane 2006). These painted images may have been periodically re-applied and slightly distorted each time by different persons or agents. This would result in specific forms having two phases, erasure and metamorphosis, and in both of them the image becomes animated. The evidence from some Iberian tombs suggests that the primary colours used were black, white and red. These colours are interesting as they fit well with Turner's (1967) study of the Ndembu of north-western Zambia and their initiation rites and worldview belief systems, in which the colours black, white and red represent cosmological rivers and bodily products. Turner notes that the Ndembu sense these three colours as '...rivers of power flowing from a common source. . . permeating the whole world of sensory phenomena with their specific qualities. . .' (1967, 68). For the Ndembu, the colours provide stimuli for their interpretations of reality, while standing for some bodily performances, such as hunger, fear, aggression, submissiveness and excretory drives (Turner 1967, 89–90). Buxton's (1973, 382) account of the Mandari of the southern Sudan also suggested that the colours black, white and red are used to influence perception and created contested states that reverse a given order. The colours black and white particularly affect this reversal process, for instance black has a primary 'death' association, but in a rain context it is regarded as life-bringing, though at the same time it retains an inversed characteristic that embodies death through being a rain-storm, a killer or destroyer (Buxton 1973, 385). Tilley's investigation of some Middle Neolithic passage tombs in Southern Scandinavia, argued that the use of red ochre, white bones, the black of clay and flint for

axe blades and the various colours of the stones used in the tomb construction, presented cosmological mixings of 'blood' with the 'semen-milk' of the 'ancestors' (1996, 316, 322). If the application of paint did occur at Irish passage tombs, it may have been considered in a similar way. Yet at the moment this is just conjecture and I am therefore more concerned with how one could animate images without paint; the next most obvious option to me seems water. Water as a liquid is an interesting element that requires further consideration within a Neolithic setting. In particular we should examine the ways rain and river water, both of which are abundant in Ireland, frames certain passage tomb settings and continues to influence our experiences with monuments today.

Seeing Through Sensitive Stones

Rain water marks the rhythm of the passing seasons and the blossoming of berries and fruits, with every society in north-western Europe experiencing meteorological fluctuations. With respect to some of the attributes of water, be it from the sky or the river, we should note that associations with life and liquid can transcend time, space and society – the politics of liquids. Life depends upon liquid; this is universal. From the concept of water being essential to life and the fountain of youth, to semen, milk, blood, bile and saliva and the like, a principle in some societies is that liquid means life while loss of liquid means death. Discussions with Ian Russell led me to the work of the artist Kiki Smith (e.g., *Untitled* 1987–90), who has recently explored some of these themes, presenting a series of twelve silvered glass water bottles (52.1 cm × 29.2 cm in diameter) each named with different bodily fluids, such as blood, semen, bile, tears and diarrhoea, to express some of the physical substitutes for the intangibles of certain beliefs. Contemporary Irish examples of beliefs operating in a similar manner include the wetting of the Blarney Stone, Cork, with saliva via the mouth as a process of bodily activation (i.e., the generation of eloquence or having the gift of the 'gab'). In another example, the Mandari of southern Sudan make associations between life, fertility, women and water, and these are demonstrated by the euphemism for pregnancy, which is termed *sipi i pele* 'water in the belly', while the word for semen is *kula yunusi* 'making water which promotes conception' (Buxton 1973, 369). A modern structural approach to this might suggest that 'wet' and 'dry' as an oppositional pair mean 'life' and 'death'. Therefore, liquids are living, whereas drying is dying. This may be an element to cremation activities, which was the predominant rite at Irish passage tombs (Herity 1974; Eogan 1984; 1986).⁶ Although, I stress that such a simplistic dichotomy is not a universal state of affairs; for instance, for some in modern

⁶ It has been noted that as many of the tomb sites are on acid soils, there may be a taphonomic bias against the preservation of inhumed remains (Cooney 1992, 130).

Western society the loss of semen is directly equated with the generation of life rather than its loss.

Yet in removing such dichotomies, we can imagine how more intimate entanglements were woven. The burning of human remains may have facilitated collective activities that involved groups of people engaging in public performances, perhaps at night, lighting up the environment. These fires may have been thought of as alive, being both gentle and comforting, but also unruly and dangerous, especially when roaring in the wind at night (Tringham 2005, 107). The fires would have enhanced sensational performances, with the colours of the flames and embers continually changing and providing an ephemeral focus. When in contact with organic and non-organic materials, dependent on degrees of heat, fires universally produce colours that include black, white and red (Borić 2002, 26), which may have linked or transcended associations with water, fire, life, death, regeneration, cleansing and transformation. Such effects may have dramatised the telling of tales and myths. The smoke may have brought tears to the eyes, with the smell impregnating the hair and clothes. The heat itself from the fire may have warmed the skin and fuelled passions via the 'sexual excitement' that fire can bring (Tringham 2005, 107).

Burning the dead can be seen to expedite the 'drying' process, the final removal of the liquid of life (Bloch 1998, 79). Interestingly, a parallel is seen with fruits, as they age they lose liquid and wrinkle. Might old age be thought of in the same terms? Certainly for the Mandari of southern Sudan, the human body is regarded as being both moist and dry at different stages of life (Buxton 1973, 363). An interesting modern example of liquid activation is derived from the Mangang ceremony in Malaysia, in which they pour Tapai, an alcoholic beverage, onto standing menhirs, to appease and refresh the spirits within (Phelan 1994). For some of the aborigines in the Kimberley region of Australia, the *Wandjina* belief system allows people to accept that some rocks represent clouds, whose power is renewed via the applications of liquids (mostly paint) (Vinnicombe and Mowaljarlai 1995, 234). In a prehistoric context, Schefer has remarked on the Palaeolithic engravings of Foz Côa in Portugal, that water not only preserves the figures but it *feeds* them periodically – it keeps them *alive* (1999, 100). Coles (2004, 204) comments that some Bronze Age images at Bro Utmark, Sweden were placed in locations that are often wet in order to make their viewing more dramatic. The notion of bathing images and keeping them alive through dynamic flows will be further discussed below.

If the stones were painted we could see how the erosion of the painted images could mark the passing of time, with the periodic bathing process by rain creating a gradual destruction and movement of the image – the antithesis of rain perpetuating life. This might generate relationships in which there are 'biographical perspectives' for the spectator, thus imbuing the stones with volition and 'life cycle rhythms' (see Gell 1992). Such actions or properties may have created a sense of history for the motifs and stones (Ingold 2007). The physical aspects of applying the paints, of touching the stones and motifs may

have created tactile understandings, which vision alone cannot provide (Benjamin 1940, 233).⁷ These embodied acts would incorporate the pores and skin and may have assisted in developing dynamic experiences of the motifs (see Knappe 2006, 240). Without paint we can think of the water not destroying but rather distorting, enhancing or ‘enchanted’ the image and creating or simulating animated qualities, producing alternative auras, possibly as a form of process, which acts to captivate a viewer (see Benjamin 1940; Gell 1998; 1999b).⁸ Such displays may have been thought of as ‘magical’, producing effects which do not articulate to the spectators ‘normal’ sense of self, embodiedness, agency and being in the world (Gell 1998, 71).

In a modern Western context, one might describe such engagements with visual images as stimulating ‘uncanny’ or ‘unsettling’ rather than ‘magical’ sensations. Turning to other contexts, such as in Xishuangbanna Dai Autonomous Prefecture, southwest Yunnan, China, carnivalesque⁹ sensibilities are played out through ‘water splashing’ engagements during the Dai New Year (*Sonkran*) celebrations. The Dai belief system states that water splashing is conducted when the gods visit the land to appraise peoples’ sins; splashing water beseeches gods for future abundance (Komlosy 2004, 357). The water splashing practice also subverts normal codes of practice in that the young people often go ‘beyond bounds’ and enjoy throwing buckets of water (sometimes muddy) on people indiscriminately (Komlosy 2004, 358). Indeed, the carnival is often employed as a tactic for acceptable ‘bad manners’ between differing persons (Calavia Sáez 2004). In these examples not *everyone* has to invert or participate, they can watch if they like (sometimes at some personal risk),¹⁰ while the marginal is briefly brought to the centre where it can mingle and then give way to other ways of being. Possible associations between water, the carnivalesque and some passage tombs are interesting as they allow one to imagine the settings as fluid and active, rather than as static and passive (see also Cochrane 2005).

⁷ I acknowledge that there are many ways of engaging with motifs or structures that do not involve the primacy of vision, such as their acoustic qualities, but restrictions of space dictate that here I focus mainly on what can be *seen* (see discussions in Ouzman 2001; Watson 2001; Boivin 2004; Jones 2004; Curtis et al. 2004; Witmore 2006).

⁸ The distortion and enhancement of images may also have been achieved via fire, with the flickering light creating a play of shadows (Lynch 1970, 40). This source of light may have simulated the movement or animation of the motifs (see also Sanches 2006, 135). Such illumination would work well with emphasis augmented by liquids.

⁹ The carnivalesque is often created when the themes of the carnival subvert, distort and invert habitual or established society. In carnival, all that is marginalised and excluded, such as the mad, the scandalous and the uncertain, takes centre stage and liberates in an explosion of otherness. In this environment, ‘negative’ bodily expressions such as hunger, thirst, defecation and copulation become a ‘positive’ corrosive force; life enjoys a symbolic victory over death (see Bakhtin 1968; Stam 1989; Bailey 2005; Cochrane 2005).

¹⁰ In a sense there are no ‘real’ spectators within carnivalesque environments as all near are immersed within it; they live in it with ‘normal’ life ceasing to exist during its time-span (Bakhtin 1968, 7).

The sensory qualities of particular substances seem to have played a role in determining what materials were employed in the construction of the Boyne Valley passage tombs. For example, the colour of stone seems to have been important in choosing what went where. In the Boyne Valley complex, the soft green coloured greywacke was the preferred (although not exclusive) medium for imagery carved on structural stones (O'Sullivan 1997, 28). The placement of white quartz façades, grey granite cobbles, platforms and standing stones in the Boyne valley complexes suggest deliberate combination and juxtaposition of substances of differing form, colour, texture and composition. The material aspects of the assemblages incorporated in to the passage tombs seem just as important before and after manipulation (see discussions in Ingold 2007). The colours of particular stones may have operated in similar ways as the imagery (O'Sullivan 1997, 30). As such, the coloured stones may have performed as agents of external manipulation, forming and moulding social ideals, through a complex web of relations, especially if emphasised through liquids. For instance, on K1 at Newgrange Site 1 (see Fig. 9.3) one can notice the difference between the areas stimulated by water and the areas not. This enhancement or activation through water or indeed any liquid, perhaps milk or blood, literally adds dimension to the image and makes it stand out. The water running is giving a 'suggestion' of movement. The liquid is adding dimension and illusion to the 'performance' of the image, which is objectively congealed in the stone. When produced in colour, one can notice the ways in which the water has enriched and literally brought out of the stone the red colours in the granite, exploring the surface tensions of the 'false relief' motifs.



Fig. 9.3 Notice how the motifs are enhanced and suggest movement through the action of running water: K1, Newgrange Site 1 (photo: author)

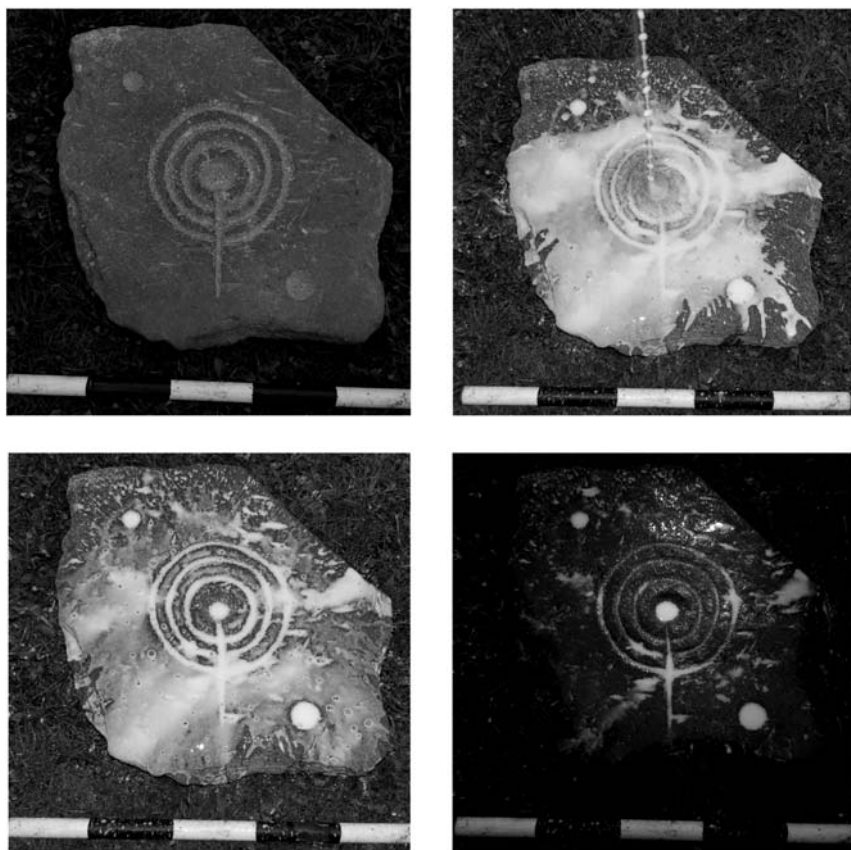


Fig. 9.4 Replica stone with cup and ring marks being stimulated by milk at Kilmartin House Museum, Argyll (photo: Author and Aaron Watson)

The water has brought to life and refreshed the engraved images and the subtleties of the stone in the viewers' minds eye, maybe vitalising the cosmological powers in the rock, defeating a static spectatorial recapitulation. The application, precipitation and evaporation of these liquids may have created a sense of temporality, (re)generation, reconfiguration and transformation (see Ingold 2007; see Fig. 9.4). Certainly, inside the passage tombs condensation caused by human breath and movement can create the impression that the stones are 'sweating' and pulsating. This affect of 'breathing' stone via human interaction in an environment can be perceptively enhanced with the usage of intoxicants or psychoactive substances. Whilst drinking coffee with Muiris O'Sullivan, he commented that when the eastern tomb at Knowth Site 1 was first opened the stones all were awash with water that had penetrated the mound, thereby exposing the varied colours of the stone – a sight that is often not witnessed today. The contrast in colour and brightness between the wet and dry states of the stone might reflect connotations



Fig. 9.5 Kerbstone 52, Newgrange Site 1 in an unpainted state and with some motifs digitally enhanced with pigment to demonstrate possible contextual effects and dense patterns – note how the stimulated images appear more vibrant (photo: author)

with the vividness of blood and the emotive and animate aspects of life (see also Cooney 2002, 101). Interestingly, K1 has a vertical channel dividing the upper half of the decorated surface in the centre. A similar channel is present on K52 that is diametrically opposite on the rear of the mound (see Fig. 9.5). This feature also occurs on the entrance stones for the eastern (K74) and western (K11) passages at Knowth 1 (Eogan 1986). At Dowth on K50 there is also a vertical line on the surface, and this stone is located directly opposite the rear of the north passage tomb, on the eastern side of the mound (O'Kelly, M. J. and O'Kelly, C. 1983). McMann (1994) argued that the vertical strokes implied that the builders believed an axial alignment extended through the structure and into the landscape, whereas Eogan (1996) has taken these vertical channels to indicate the presence of an entrance (see also Lewis Williams and Pearce 2005). This latter statement is clearly true in three examples, but is not, however, universal. I suggest the channels served a more active role, allowing liquids to flow and permeate down and through these particular and possibly significant stones.

I believe that our multiple experiences of a reality are influenced by visual images and that these constructs literally create visual or virtual realities. Whether the Irish Neolithic peoples did create complex cosmologies to experience the decorated kerbstones as being animated, momentary, fluid and flexible is something that we will never ultimately 'know'. What we can 'know' is that people, be they modern or Neolithic, depend on water and liquids for life and that people universally in temperate Europe live in situations that are periodically altered and influenced by the effects of water and rain. I am not suggesting that peoples in the past *only* experienced or used the monuments in the rain or with water, but rather that we should consider that some passage tomb settings, such as the Boyne Valley passage tombs, are framed by water and that the tombs are orientated in a context so that they repel water (i.e., with the structural corbelled roofs) and also incorporate it (such as with water flowing over the kerbstones and possibly in the basins). For instance, the passage lintels in Newgrange Site 1 had grooves or water channels cut into the upper surfaces. The grooves were up to 5 cm wide and 1 cm deep and were designed to drain rainwater outwards on to each side of the passage. Although the passage was designed to repel water, the act of entering the tomb may have been associated with plunging into the earth or even water, with the loss of light and change in temperature being immediately noticeable (Fowler

and Cummings 2003, 14). It has previously been suggested that passage tombs can often amplify or distort the effects of temperature, humidity, sound and light or darkness (Bradley 1989; Watson and Keating 1999; Watson 2001). Such elemental relations are able to transcend not only the structural dichotomies of wet and dry, but also inside and outside.

Intimate engagements with these passage tombs may have stimulated emotional responses through their architecture, content and context. One may imagine the stress undergone by a person isolated in a place associated with enormous power (Dronfield 1996), such as the Newgrange Site 1 passage tombs. It has been suggested that architecture and location are a deliberate exercise in controlling and manipulating how tombs and the activities that would have taken place at them were experienced (Thomas 1990; Kirk 1993; Richards 1993; Fraser 1998). Passage tombs can therefore restrict and influence bodily movement, the senses, space, airflow and temperature. Furthermore, tombs can disorientate, humble and generate fear in those who enter, creating what Squair has called an 'architecture of inconvenience' (1998). This environment could be accentuated with repetitive sound waves produced by percussive instruments or by an infrasonic component of thunderstorms, both of which can induce altered states of consciousness (Watson and Keating 1999). It is suggested that tinnitus (a condition of ringing, buzzing, hissing or humming in the ears) from any cause, such as drumming, can trigger auditory hallucinations of music or even speech (Gordon 1993). The recent discovery of a prehistoric musical instrument constructed from six graded cylindrical hollow yew wood pipes, arranged side by side, at Charlesland, Co. Wicklow and dated between 2120 and 2085 cal. BC, does suggest an early knowledge for the generation of sound waves (in modern terms) or 'noise' (Molloy 2004). Indeed it has been proposed that no known societies, past or present, lack the ability to produce sounds at some level (Seeger 2002, 686). Altered states of consciousness can be provoked by repetitive noise in enclosed spaces, such as passage tombs or even modern small 'Drum and Bass' clubs, and these events are sometimes described as feeling like one is submerged underwater or underground (Lewis-Williams and Dowson 1990, 10–11).

Such underwater or underground description certainly fits well with the 'cavernous' or 'under-earth' architecture at Newgrange Site 1. At the deepest end of the passage is located a chamber, measuring over 5.25m by 6.5m. This is cruciform in plan, consisting of the central chamber at the end of the passage and three smaller chambers or recesses on the north (cell 2), east (cell 3) and west (cell 1). Cell 3 is the largest of the three and is the most profusely ornamented. Cell 1 is only one orthostat deep, while both cells 2 and 3 are two orthostats deep, resulting in an irregular cruciform plan. Stone basins are set on the floors of each of the recesses; there are two basins in the eastern recess (M. O'Kelly 1982, 21). The original function of these basins is unclear, but they might suggest that grinding and mixing of materials performed a role in the practices that occurred within the chambers. Some have suggested that these basins may have held materials such as cremated bone (Herity 1974, 119; Shee Twohig

1990, 43), and I suggest that liquids may have been added to the mix, possibly activating and refreshing the dry human remains. Liquids are certainly recorded at some Neolithic cruciform chambered sites; for instance at Barclodiad y Gawres, Anglesey, Wales, a liquid stew that contained wrasse, eel, whiting, frog, toad, natterjack, grass snake, mouse, shrew and hare was used to douse a fire in the central area of the tomb (Lynch 1970, 37).

The liquids may also have included milk and semen as demonstrated by the semen/milk transactions by the Sambia of Melanesia (Gell 1999a, 58–63). In these Sambia ‘rituals’, semen is used to activate the semen in other males, who are thought of as ‘female’ at this stage and the production of milk and children in females (see also Strathern 1988); liquids are therefore used actively in relations that create the generation and continuation of life and the expression of gender. Neolithic people may have regarded themselves at some level as integral wholes in which liquids could be transmitted (in life or death); yet such boundaries may still have been permeable, with substances being able to flow through and between them. These permeable or partible boundaries in flux may also have been extended to include the fragmented cremations and objects, the structure of the tomb and the motifs on it – such is the nature of mixtures. Busby (1997) has recently made similar observations in studying personhood in south India. It is noted that even though south Indian people may be sexually dimorphic, this is only regarded as a symptom of the presence of liquid substances (milk and semen) flowing and mixing within and between their bodies (Busby 1997, 270).

For the Mandari of the southern Sudan, milk is used in certain rites, first because it is white and second because it is a ‘living thing’ (Buxton 1973, 389). Certainly the notion of the ‘semen-milk of the ancestors’ (Tilley 1996, 316, 322), has already been raised in other prehistoric contexts. I suggest that it is possible that these liquids were also used literally – meaning that milk or semen was applied in practice. Furthermore, and in fitting with the archaeological data, in some past societies (such as the ancient Egyptians and Greeks) the act of ‘drinking’ any liquid with the dead was regarded as an act of incorporation and consequently allowed one to travel amongst the dead and out of danger (van Gennep 1960, 165). Whichever liquids were used, their inclusion as a ‘magical lubricant’ (van Gennep 1960, 172) might be considered to have existed in certain ceremonies, such as transitional rites of passage for persons or essences with the stone basins and associated motifs.

Fluid Structures

Quartz is a recurring visual component in the Knowth Site 1 and Newgrange Site 1 passage tombs, and may therefore have played important roles in cosmological experiences. For instance, in many societies, such as the California Yuman Indians, the Australian aborigines or Western neo-shamans and pagans, quartz is considered to be ‘living’ or a ‘live rock’, with special or healing properties, often derived from water (Vinnicombe and Mowaljarlai 1995, 240;



Fig. 9.6 'Healing Stones' – blocks of white quartz crystal for sale at the National Museum of Scotland, Edinburgh (photo: author)

Pearson 2002, 142; Wallis 2003; see Fig. 9.6). The idea that quartz objects are fluid with a suggested movement is certainly interesting. It has been noted that the stone clutter on the hilltop tors in southwest England creates visual sensation that swirls in an ever-changing pattern of trance-like forms (Tilley et al. 2000, 222). Whilst at Newgrange Site 1 I noted that a similar captivating experience could be created by staring intensely at either the reconstructed quartz façade or the quartz fragments on the ground (see Fig. 9.7).¹¹ Some ethnographic data suggests that some worldviews are conceived as being influenced by enchanting encounters and enveloped in luminescent light. For instance, in commenting on the importance of colour, shadow and light to some pan-Amerindians, Saunders has noted that these factors can reveal and transform the appearance of varied essences in the world (2002, 213; see also Taçon 1999). In another context, the

¹¹ Whether the quartz was originally presented as a near vertical façade or whether it was deposited on top of the cairn as Macalister (1939) suggested, or spread out in front as is found at Knowth's Site 1 eastern tomb (Eogan 1986, 47), has recently been questioned (e.g., Bradley 1998, 101; Darvill 2002, 82; Cooney 2006, 704; Eriksen 2006, 709). Cooney (2006) has recently suggested that the quartz was removed from the cairn slopes to create a quartz platform on the ground, where performances could have occurred.

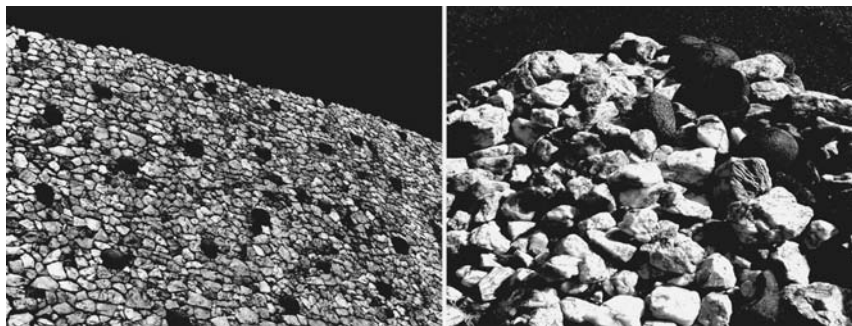


Fig. 9.7 The quartz façade and loose quartz on the ground both creating optical effects at Newgrange Site 1 (photo: author)

last known Numic rain-shaman, Bob Rabbit from north America, used quartz crystals in his weather-control ceremonies to create water and release the spirits from within the stones (Whitley et al. 1999, 235; see also Vinnicombe and Mowaljarlai 1995, 238–40). For these people, vision is widely regarded as seeing the ‘essence’ rather than the surface of things; in the manner that quartz can reveal the ‘sacred’ glow within. The decision to incorporate ‘black’ and ‘white’ stones at Knowth Site 1 and Newgrange Site 1 might therefore present a harnessing of social and mythical significances of light, colour and matter, through their transformation in to solid forms via technical skills or technologies of enchantment (see Gell 1998; 1999b; Saunders 2002).

Bergh has proposed that the animating power of quartz lies in its ability to produce or reflect light and that this may have been seen by some as a regenerative act (1995, 153). Interestingly, the roof-box entrance slit at Newgrange Site 1 was originally closed by two blocks of quartz. The roof-box lintel RS1 produced evidence of scratch marks on its surface, suggesting that people had frequently visited the roof-box and had pulled out and pushed back the blocks a number of times (M. O’Kelly 1982, 96). This opened hollow structure may have acted as some form of interactive oracle or communicative device (Lynch 1973, 152; Sheridan 1985/6, 28). Certainly, Eliade refers to quartz as ‘light’ and notes that some people use it to create relations (1964, 138). The transformative power of quartz is demonstrated by the Cubeo Indians of the northwest Amazon, who insert quartz crystals into a neophyte’s stomach, to activate a metamorphic process that will create a shaman from a mere layman (Pearson 2002, 142).

Interestingly, the cobbles included in the quartz façade are rock fragments, pebbles and boulders and are described as being rounded to sub-rounded in shape due to water rolling (Meighan et al. 2002, 33). Mitchell’s (1992) paper on the cobbles found at the entrances to the passage tombs at Newgrange Site 1 and Knowth Site 1, concluded that most of them originated from the northern shore of Dundalk Bay. In this report, particular cobbles were given complex histories, involving water, such as pre-glacial weathering, transport by ice and glacial meltwater and exposure to marine wave action. These water worn stones

were then transported 30 km to the Boyne Valley by Neolithic people. More recent examinations have discovered yet more varieties of cobbled granite and place their provenance further away in the Mourne Mountains (Wilde 1849, 191; Meighan et al. 2002, 35). Fowler and Cummings argue that the incorporation or deposition of quartz at a given stone monument may have been performed in a process of ‘making it wet’ (2003, 14), thus marking it out as appropriate for acts of transformation. Since the majority of Neolithic people were not buried in passage tombs (or in any other contexts that we know of as of yet), one might speculate that many deceased persons were deposited into the Boyne River. If aspects of life are seen as being transformed in to water, then it may make some sense within that context to include water in the construction of passage tombs through the use of an alternative solid material medium, such as quartz. Such beliefs may have been periodically enhanced via the application of liquids to the motifs on the structural stones of the Boyne Valley passage tombs.

Conclusions

By amalgamating visual cultural perspectives and anthropological examples with contemporary neurology, I have investigated the power that images can have. The images on passage tombs are not just passive and static forms that require the penetrating gaze of the spectator, waiting to be read with meanings comprehended. Instead, they are fluid events that manipulate and affect people who engage with them over time and space – the politics of visibility. By considering images as such, I was able to further describe the possible social relations, routines and interactions that may have occurred around them and that may have influenced how people thought. One of the difficulties in expressing how Neolithic people may have thought or acted includes the constraints of the linguistic structure that we choose to use. Dualisms seem to percolate through our understandings and expressions, while the search for meanings still dominates some Western thought (see Bloch 1995 for discussion). In order to move beyond the representational, structuralist and Platonic approaches that have been previously adopted to understand Irish passage tombs (e.g., Lynch 1973; Dronfield 1996; Lewis-Williams and Pearce 2005), I feel scholars should attempt to explore relations and experiences through alternative perspectives and more intimate engagements with the elements in the world.

The motifs on passage tombs perform by blurring and disrupting perceived boundaries between interpretations of reality and social construction. The stimulation of motifs via solutions, the enhancement of their detail, context and composition provides the *punctum*, that is, the destabilising or unpredictable effects of engagement with imagery. This means that the motifs provoke the viewer to react, thus creating unsettling, unexpected and sometimes unknown experiences (see Bailey 2005, 131). The images on passage tombs engender and connect themselves to spectators and each other through two-

way intimate engagements. By considering them as such we can begin to see how the motifs perform, play and produce illusions for the viewer – they actively present rather than passively represent. These simulations not only stimulate but also create gazes or perspectives through which people can often formulate belief systems. The traits of illusion may therefore include the ability to enchant and enhance, whilst masking the disappearance of an interpretation of the world, when supplanted by another. The mixtures of images, settings and passage tombs therefore socialise people – the social is visually constructed – through their being, structure and choreography. Such performances may have created cosmologies, dialogues, myths and narratives about the uniqueness of these places. These conversations would in turn factor and texture new engagements at these sites, whilst creating fresh opportunities for experience. The acts involved in applying motifs onto stone, of possibly interacting with them in differing states of being, were therefore endeavours that disrupted, transformed and distilled the processes of experience and understanding at some Irish Neolithic sites.

Acknowledgments I would like to thank Paul Webb for managing to retrieve all the images from my corrupted 1 GB memory card. Oliver Harris, Alasdair Whittle, Doug Bailey, Muiris O’Sullivan and Kate Waddington were very kind in reading earlier drafts of this chapter. The mistakes are still mine alone. Ian Russell read this chapter and also devoted much time to discussion, and for this I thank him. I would like to thank Leontia Lenehan from the Brú na Bóinne Visitor Centre near Donore, Co. Meath for repeatedly granting access to the sites, and Steve Trick for being the designated driver who suffered hours of my continual story-telling! Ken Williams has once again generously allowed me to use images from his recent ‘Shadows and Stones’ exhibition (see www.shadowsandstone.com) and I thank him for his support. Many thanks are given to Sharon Webb for allowing access to the Kilmartin House Museum replica and for assisting in bathing the stone in milk! I would also like to thank Carl Knappett and Lambros Malafouris for inviting me to the TAG session, for commenting on earlier versions of this chapter, and for creating this volume.

References

- Bailey, D. W. 2005. *Prehistoric figurines: representation and corporeality in the Neolithic*. London: Routledge.
- Bakhtin, M. M. 1968. *Rabelais and his world*. Trans. H. Iswolsky. Cambridge: MIT Press.
- Benjamin, W. 1940. The work of art in the age of mechanical reproduction. In H. Arendt (ed.), *Illuminations*, 211–44. London: Fontana Press.
- Bergh, S. 1995. *Landscape of the monuments: a study of the passage tombs in the Cúil Irra region, Co. Sligo, Ireland* (Akeologiska undersökningar Skrifter no. 6). Stockholm: Riksantikvarieämbetet.
- Bidney, D. 1953. *Theoretical anthropology*. New York: Columbia University Press.
- Bloch, M. E. F. 1995. Questions not to ask of Malagasy carvings. In I. Hodder, M. Shanks, A. Alexandri, V. Buchli, J. Carmen, J. Last, and G. Lucas (eds.), *Interpreting archaeology: finding meaning in the past*, 212–15. London: Routledge.
- Bloch, M. E. F. 1998. *How We Think They Think: Anthropological Approaches to Cognition, Memory and Literacy*. Oxford: Westview Press.

- Boivin, N. 2004. Rock art and rock music: petroglyphs of the south Indian Neolithic. *Antiquity* 78, 38–53.
- Borić, D. 2002. Apotropaism and the temporality of colours: colourful Mesolithic-Neolithic seasons in the Danube Gorges. In A. Jones and G. Macgregor (eds.), *Colouring the Past: The Significance of Colour in Archaeological Research*, 23–43. Oxford: Berg.
- Bowie, F. 2000. *The Anthropology of Religion: An Introduction*. Oxford: Blackwell Publishers Ltd.
- Boyer, P. 1994. Cognitive constraints on cultural representations: natural ontologies and religious ideas. In L. A. Hirschfeld and S. A. Gelman (eds.), *Mapping the Mind: Domain Specificity in Cognition and Culture*, 391–411. Cambridge: Cambridge University Press.
- Boyer, P. 1996. What makes anthropomorphism natural: intuitive ontology and cultural representation. *Journal of the Royal Anthropological Institute* 2, 83–97.
- Bradley, R. 1989. Darkness and light in the design of megalithic tombs. *Oxford Journal of Archaeology* 8, 251–9.
- Bradley, R. 1998. *The significance of monuments: on the shaping of human experience in Neolithic and Bronze Europe*. London: Routledge.
- Bradley, R. 2000. *The Archaeology of Natural Places*. London: Routledge.
- Bradley, R., Phillips, T., Richards, C. and Webb, M. 2000. Decorating the houses of the dead: incised and pecked motifs in Orkney chambered tombs. *Cambridge Archaeological Journal* 11(1), 45–67.
- Breuil, H. and Macalister, R. A. S. 1921. A study of the chronology of Bronze Age sculpture in Ireland. *Proceedings of the Royal Irish Academy*, 36C, 1–9.
- Bueno Ramirez, P. and Balbin Behramann, R. de. 1996. El papel del elemento antropomorfo en el arte megalítico ibérico. *Revue Archéologique de l'Ouest*, supplément n° 8, 41–64.
- Busby, C. 1997. Permeable and partible persons: a comparative analysis of gender and body in south India and Melanesia. *Journal of the Royal Anthropological Institute* 3, 261–78.
- Buxton, J. 1973. *Religion and Healing in Mandari*. Oxford: Oxford University Press.
- Calavia Sáez, O. 2004. In search of ritual: tradition, outer world and bad manners in the Amazon. *The Journal of the Royal Anthropological Institute* 10, 157–73.
- Clark, A. 1997. *Being there: Putting Brain, Body and the World Together Again*. Cambridge: MIT Press.
- Cochrane, A., 2005. A taste of the unexpected: subverting *mentalités* through the motifs and settings of Irish passage tombs, in *Elements of being: mentalities, identities and movements*, (eds.) D. Hofmann, J. Mills & A. Cochrane. BAR International Series 1437, 5–19.
- Cochrane, A., 2006. The simulacra and simulations of Irish Neolithic passage tombs. In *Images, representations and Heritage: Moving beyond modern approaches to archaeology*, ed. I. Russell. New York: Springer, 247–78.
- Cochrane, A. 2007. We have never been material. *Journal of Iberian Archaeology* 9/10, 138–57.
- Cochrane, A. and Russell, I., 2007. Visualising archaeologies: a manifesto. *Cambridge Archaeological Journal* 17(1), 3–19.
- Coles, J. 2004. Rock carvings at Bro Utmark, Bohuslän, Sweden. *Proceedings of the Pre-historic Society* 70, 173–206.
- Cooney, G. 1987. *North Leinster in the earlier prehistoric period (7,000 – 1,400 bc): a settlement and environmental perspective on foragers, farmers and early metallurgists*. Unpublished PhD Thesis submitted to University College, Dublin.
- Cooney, G. 1992. Body politics and grave messages: Irish Neolithic mortuary practices. In N. Sharples and A. Sheridan (eds.), *Vessels for the Ancestors: Essays on the Neolithic of Britain and Ireland in Honour of Audrey Henshall*, 128–142. Edinburgh: Edinburgh University Press.
- Cooney, G. 2000. *Landscapes of Neolithic Ireland*. New York: Routledge.
- Cooney, G. 2002. So many shades of rock. In A. Jones and G. Macgregor (eds.), *Colouring the Past: The Significance of Colour in Archaeological Research*, 93–107. Oxford: Berg.
- Cooney, G. 2003. Introduction: seeing land from the sea. *World Archaeology* 35(3), 323–328.

- Cooney, G. 2006. Newgrange – a view from the platform. *Antiquity* 80, 697–710.
- Curran-Mulligan, P. 1994. New megalithic art in Sligo: yes, it is art! *Archaeology Ireland* 27(8), 14–15.
- Curtis, P., Wood, J. and Feeke, S. 2004. *With Hidden Noise: Sculpture, Video and Ventriloquism*. Leeds: Henry Moore Institute.
- Darvill, T. 2002. White on blonde: quartz pebbles and the use of quartz at Neolithic monuments in the Isle of Man and beyond. In A. Jones and G. Macgregor (eds.), *Colouring the Past: The Significance of Colour in Archaeological Research*, 73–91. Oxford: Berg.
- Díaz-Andreu, A., Brooke, C., Rainsbury, M. and Rosser, N. 2006. The spiral that vanished: the application of non-contact recording techniques to an elusive rock art motif at Castlerigg stone circle in Cumbria. *Journal of Archaeological Science* 33, 1580–87.
- Dronfield, J. 1996. Entering alternative realities: cognition, art and architecture in Irish passage tombs. *Cambridge Archaeological Journal* 6(1), 37–72.
- Ego, R. 2001. A pictorial device: the dynamic action of water in a few depictions of rain animals. Trans. by Paul Bahn. *Pictogram* 12, 27–34.
- Eliade, M. 1964. *Shamanism: Archaic Techniques of Ecstasy*. Princeton: Princeton University Press.
- Eogan, G. 1984. *Excavations at Knowth I: Smaller Passage Tombs, Neolithic Occupation and Beaker Activity*. Dublin: Royal Irish Academy.
- Eogan, G. 1986. *Knowth and the Passage-Tombs of Ireland*. London: Thames and Hudson.
- Eogan, G. 1991. Prehistoric and Early Historic culture change at Brugh na Bóinne. *Proceedings of the Royal Irish Academy* 91C, 105–32.
- Eogan, G. 1996. Pattern and place: a preliminary study of the decorated kerbstones at Site 1, Knowth, Co. Meath and their comparative setting. *Revue Archéologique de l'Ouest*, supplément n° 8, 97–104.
- Eogan, G. 1997. Overlays and underlays: aspects of megalithic art succession at Brugh na Bóinne, Ireland. *Brigantium* 10, 217–34.
- Eriksen, P. 2006. The rolling stones of Newgrange. *Antiquity* 80, 709–10.
- Fraser, S. M. 1998. The public forum and the space between: the materiality of social strategy in the Irish Neolithic. *Proceedings of the Prehistoric Society* 64, 203–244.
- Fowler, C. 2004. *The Archaeology of Personhood: An Anthropological Approach*. London: Routledge.
- Fowler, C. and Cummings, V. 2003. Places of transformation: building monuments from water and stone in the Neolithic of the Irish Sea. *Journal of the Royal Anthropological Institute* 9, 1–20.
- Gell, A. 1992. *The Anthropology of Time: Cultural Constructions of Temporal Maps and Images*. Oxford: Berg.
- Gell, A. 1998. *Art and Agency: An Anthropological Theory*. Oxford: Oxford University Press.
- Gell, A. 1999a. Strathernograms, or, the semiotics of mixed metaphors. In A. Gell (edited by E. Hirsch), *The Art of Anthropology: Essays and Diagrams*, 29–75. London: The Athlone Press.
- Gell, A. 1999b. The technology of enchantment and the enchantment of technology. In A. Gell (edited by E. Hirsch), *The Art of Anthropology: Essays and Diagrams*, 159–186. London: The Athlone Press.
- Gordon, A. 1993. Benzodiazepines and ear-tinnitus, hallucinations and schizophrenia. *Canadian Journal of Psychiatry* 38(2), 156–157.
- Gosden, C. 2001. Making sense: archaeology and aesthetics. *World Archaeology* 33(2), 163–7.
- Gosden, C. 2005. What do objects want? *Journal of Archaeological Method and Theory* 12(3), 193–211.
- Grogan, E. 1991. Appendix: radiocarbon dates from Brugh na Bóinne. In G. Eogan, Prehistoric and early historic change in Brugh na Bóinne, 126–7. *Proceedings of the Royal Irish Academy* 91C, 105–32.
- Hallowell, A. I. 1955. *Culture and Experience*. New York: Schocken Books.

- Hallowell, A. I. 1975. Ojibwa ontology, behaviour and world view. In D. Tedlock and B. Tedlock (eds), *Teachings from the American Earth: Indian Religion and Philosophy*, 141–78. New York: Liveright.
- Herity, M. 1974. *Irish Passage Graves: Neolithic Tomb-Builders in Ireland and Britain, 2500 BC*. Dublin: Irish University Press.
- Hoffman, D. 2000. *Visual Intelligence: How We Create What We See*. New York: W. W. Norton.
- Hollan, D. 2000. Constructivist models of the mind, contemporary psychoanalysis, and the development of culture theory. *American Anthropologist* 102, 538–50.
- Ingold, T. 2000. *The Perception of the Environment: Essays in Livelihood, Dwelling and Skill*. London: Routledge.
- Ingold, T. 2007. Materials against materiality. *Archaeological Dialogues* 14(1), 1–16.
- James, W. 1995. *Selected Writings*. London: Orion.
- Jones, A. 2004. By way of illustration: art, memory and materiality in the Irish Sea and beyond. In V. Cummings and C. Fowles (eds), *The Neolithic of the Irish Sea: Materiality and Traditions of Practice* 202–13. Oxford: Oxbow.
- Jones, A. 2005. Lives in fragments? Personhood and the European Neolithic. *Journal of Social Archaeology* 5(2), 193–224.
- Jones, A. and Bradley, R. 1999. The significance of colour in European archaeology. *Cambridge Archaeological Journal* 9(1), 112–14.
- Jones, A. and MacGregor, G. 2002. Introduction: wonderful things – colour studies in archaeology from Munsell to materiality. In A. Jones and G. Macgregor (eds.), *Colouring the Past: The Significance of Colour in Archaeological Research*, 1–21. Oxford: Berg.
- Kirk, T. 1993. Space, subjectivity, power and hegemony: megaliths and long mounds in Earlier Neolithic Brittany. In C. Tilley (ed.), *Interpretative Archaeology*, 181–223. Oxford: Berg.
- Knappett, C. 2002. Photographs, skeuomorphs and marionettes: some thoughts on mind, agency and object. *Journal of Material Culture* 7(1), 97–117.
- Knappett, C., 2006. Beyond skin: layering and networking in art and archaeology. *Cambridge Archaeological Journal* 16(2), 239–51.
- Komlosy, A. 2004. Procession and water splashing: expressions of locality and nationality during Dai New Year in Xishuangbanna. *The Journal of the Royal Anthropological Institute* 10, 351–73.
- Latour, B. 1993. *We Have Never Been Modern*. Trans. by C. Porter. Hertfordshire: Harvester Wheatsheaf.
- Latour, B. 1999. *Pandora's Hope: Essays on the Reality of Science Studies*. Cambridge: Harvard University Press.
- Latour, B. 2000. The Berlin key or how to do words with things. In P. M. Graves-Brown (ed.), *Matter, Materiality and Modern Culture*, 10–21. London: Routledge.
- Layton, R. 1991. *The Anthropology of Art*. Cambridge: Cambridge University Press.
- Lewis-Williams, J. D. and Dowson, T. A. 1990. Through the veil: San rock paintings and the rock face. *South African Archaeology Bulletin* 45, 5–16.
- Lewis-Williams, J. D. and Pearce, D. 2005. *Inside the Neolithic Mind: Consciousness, Cosmos and the Realm of the Gods*. London: Thames and Hudson.
- Lynch, F. 1970. *Prehistoric Anglesey: The Archaeology of the Island to the Roman Conquest*. Llangefni: The Anglesey Antiquarian Society.
- Lynch, F. 1973. The use of the passage in certain passage graves as a means of communication rather than access. In G. Daniel and P. Kjærø (eds.), *Megalithic Graves and Ritual: Papers Presented at the III Atlantic colloquium, Moesgård 1969*, 147–61. Copenhagen: Jutland Archaeological Society.
- Lynch, F. 1998. Colour in prehistoric architecture. In A. Gibson and D. D. A. Simpson (eds.), *Prehistoric Ritual and Religion: Essays in Honour of Aubrey Burl*, 62–7. Stroud: Sutton.
- Macalister, R. A. S. 1939. *Newgrange, Co. Meath*. Dublin: Stationery Office

- McMann, J. 1994. Forms of power: dimensions of an Irish megalithic landscape. *Antiquity* 68, 525–44.
- Meighan, I., Simpson, D. and Hartwell, B. 2002. Newgrange – sourcing of its granitic cobbles. *Archaeology Ireland* 16(1), 32–35.
- Meskel, L. 2005. Introduction: object orientations. In L. Meskel (ed.), *Archaeologies of Materiality*, 1–17. Oxford: Blackwell Publishing.
- Mitchell, G. F. 1992. Notes on some non-local cobbles at the entrances to the passage-graves at Newgrange and Knowth, Co. Meath. *Journal of the Royal Society of Antiquaries of Ireland* 122, 128–45.
- Mitchell, G. F. 1997. The geology of the Bend of the Boyne. In T. Condit and G. Cooney (eds.), *Brú na Bóinne*, 5–6. Dublin: Archaeology Ireland.
- Mithen, S. 1996. *The Prehistory of the Mind: A Search for the Origins of Art, Science and Religion*. London: Thames and Hudson.
- Mithen, S. 1999. Symbolism and the supernatural. In R. Dunbar, C. Knight and C. Power (eds.), *The Evolution of Culture: An Interdisciplinary View*, 147–69. Edinburgh: Edinburgh University Press.
- Molloy, B. 2004. Unique prehistoric musical instrument discovered in County Wicklow. *Archaeology Ireland* 18(2), 5.
- Ortiz, A. 1972. Ritual drama and the Pueblo world view. In A. Ortiz (ed.), *New Perspectives On the Pueblos*, 135–161. Albuquerque: University of New Mexico Press.
- O’Kelly, C. 1971. *Illustrated Guide to Newgrange*. Wexford: John English and Co. Ltd.
- O’Kelly, M. J. 1982. *Newgrange: Archaeology, Art and Legend*. London: Thames and Hudson.
- O’Kelly, M. J. and O’Kelly, C. 1983. The tumulus of Dowth, Co. Meath. *Proceedings of the Royal Irish Academy* 83C, 135–190.
- O’Sullivan, M. 1986. Approaches to passage tomb art. *Journal of the Royal Society of Antiquaries of Ireland* 116, 68–83.
- O’Sullivan, M. 1993. *Megalithic Art in Ireland*. Dublin: Country House.
- O’Sullivan, M. 1996. Megalithic art in Ireland and Brittany: divergence or convergence? *Revue Archéologique de l’Ouest*, supplément n° 8, 81–96.
- O’Sullivan, M. 1997. On the meaning of megalithic art. *Brigantium* 10, 23–35.
- O’Sullivan, M. 2005. *Duma na nGiall: The Mound of the Hostages, Tara*. Bray: Wordwell.
- Ouzman, S. 2001. Seeing is deceiving: rock art and the non-visual. *World Archaeology* 33(2), 237–56.
- Overing, J. and Passes, A. 2000. Introduction: conviviality and the opening up of Amazonian anthropology. In J. Overing and A. Passes (eds.), *The Anthropology of Love and Anger: The Aesthetics of Conviviality in Native Amazonia*, 1–30. London: Routledge.
- Pearson, J. L. 2002. *Shamanism and the Ancient Mind: A Cognitive Approach to Archaeology*. New York: AltaMira Press.
- Pearson, M. and Shanks, M. 2001. *Theatre/Archaeology*. London: Routledge.
- Phelan, P. R. 1994. *The Magang Ceremony and Head-Hunting*. Kota Kinabalu: Department of Sabah Museum.
- Powell, T. G. E. 1938. The passage graves of Ireland. *Proceedings of the Prehistoric Society* 4(2), 239–248.
- Richards, C. 1993. Monumental choreography: architecture and spatial representations in Late Neolithic Orkney. In C. Tilley (ed.), *Interpretative Archaeology*, 143–78. Oxford: Berg.
- Richards, C. 1996. Henges and water: towards an elemental understanding of monuments and landscape in Late Neolithic Britain. *Journal of Material Culture* 1(3), 313–36.
- Ridington, R. and Ridington, T. 1975. The inner eye of shamanism and totemism. In D. Tedlock and B. Tedlock (eds.), *Teachings from the American Earth: Indian Religion and Philosophy*, 190–204. New York: Liveright.
- Rose, H. and Rose, S. (eds.) 2000. *Alas, Poor Darwin: Arguments Against Evolutionary Psychology*. London: Jonathan Cape.

- Russell, I. 2004. Freud and Volkan: psychoanalysis, group identities and archaeology. *Antiquity* 80, 185–95.
- Russell, I. 2007. Objects and agency: some obstacles and opportunities of modernity. *Journal of Iberian Archaeology* 9/10, 72–87.
- Sahlins, M. D. 1977. *The Use and Abuse of Biology: An Anthropological Critique of Sociobiology*. London: Tavistock Publications.
- Sanches, M. J., 2006. Passage-graves of northwestern Iberia: setting and movements. An approach to the relationship between architecture and iconography. *Journal of Iberian Archaeology* 8, 127–58.
- Saunders, N. J. 2002. The colours of light: materiality and chromatic cultures of the Americas. In A. Jones and G. Macgregor (eds.), *Colouring the past: the significance of colour in archaeological research*, 209–226. Oxford: Berg.
- Schefer, J.-L. 1999. *Questions d'art Paléolithique*. Paris: P.O.L.
- Seeger, A. 2002. Music and dance. In T. Ingold (ed.), *Companion encyclopedia of anthropology*, 686–705. London: Routledge.
- Shee Twohig, E. 1973. Techniques of Irish passage grave art. In G. Daniel and P. Kjærsum (eds.), *Megalithic Graves and Ritual: Papers Presented at the III Atlantic colloquium, Moesgård 1969*, 163–72. Copenhagen: Jutland Archaeological Society.
- Shee Twohig, E. 1981. *The Megalithic Art of Western Europe*. Oxford: Clarendon Press.
- Shee Twohig, E. 1990. *Irish Megalithic Tombs*. Princes Risborough: Shire Books.
- Shee Twohig, E. 2000. Frameworks for the megalithic art of the Boyne valley. In A. Desmond, G. Johnstone, M. McCarthy, J. Sheehan and E. Shee Twohig (eds.), *New Agendas in Irish Prehistory: Papers in Commemoration of Liz Anderson*, 89–105. Bray: Wordwell.
- Sheridan, J. A. 1985/1986. Megaliths and megalomania: an account, and interpretation, of the development of passage tombs in Ireland. *Journal of Irish Archaeology* 3, 17–30.
- Sheridan, J. A. 2003. The chronology of Irish megalithic tombs. In G. Burenhult (ed.), *Stones and Bones: Formal Disposal of the Dead in Atlantic Europe During the Mesolithic-Neolithic interface 6000–3000 BC. Archaeological conference in honour of the late professor Michael J. O'Kelly*, 69–73. BAR International Series 1201.
- Stam, R. 1989. *Subversive Pleasures: Bakhtin, Cultural Criticism and Film*. London: The John Hopkins University Press.
- Stout, G. 2002. *Newgrange and the Bend of the Boyne*. Cork: Cork University Press.
- Strathern, M., 1988. *The Gender of the Gift: Problems with Women and Problems with Society in Melanesia*. Berkeley (CA): University of California Press.
- Squair, R. 1998. The Neolithic of the Western Isles. Unpublished PhD Thesis submitted to Glasgow University.
- Taçon, P. S. C. 1999. All things bright and beautiful: the role and meaning of colour in human development. *Cambridge Archaeological Journal* 9(1), 120–23.
- Thomas, J. 1990. Monuments from the inside: the case of the Irish megalithic tombs. *World Archaeology* 22, 168–178.
- Tilley, C. 1996. *An Ethnography of the Neolithic: Early Prehistoric Societies in Southern Scandinavia*. Cambridge: Cambridge University Press.
- Tilley, C., Hamilton, S., Harrison, S. and Anderson, E. 2000. Nature, culture, clutter: distinguishing between cultural and geomorphological landscapes; the case of hilltop tors in south-west England. *Journal of Material Culture* 5(2), 197–224.
- Tringham, R. 2005. Weaving house life and death into places: a blueprint for a hypermedia narrative. In D. Bailey, A. Whittle and V. Cummings (eds), *(Un)settling the Neolithic*, 98–111. Oxford: Oxbow Books.
- Turner, V. 1967. *The Forest of Symbols: Aspects of Ndembu ritual*. Ithaca: Cornell University Press.
- van Gennep, A. 1960. *The Rites of Passage*. Trans. by M. B. Vizedom and G. L. Caffee. London: Routledge and Kegan Paul.

- Vinnicombe, P. and Mowaljarlai, D. 1995. That rock is a cloud: concepts associated with rock images in the Kimberley region of Australia. In K. Helskog and B. Olsen (eds), *Perceiving Rock Art: Social and Political Perspectives*, 228–46. Oslo: Novus forlag.
- Wade, N. 1990. *Visual Allusions: Pictures of Perception*. Hare: Erlbaum.
- Wade, N. 1998. *A Natural History of Vision*. Cambridge: MIT Press.
- Wade, N., and Swanston, M. 2001. *Visual Perception: An Introduction*. Hare: Psychology Press.
- Wallis, R. J. 2003. *Shamans/neo-shamans: Contested Ecstasies, Alternative Archaeologies and Contemporary Pagans*. London: Routledge.
- Watson, A. 2001. The sounds of transformation: acoustics, monuments and ritual in the British Neolithic. In N. S. Price (ed.), *The Archaeology of Shamanism*, 178–92. London: Routledge.
- Watson, A. and Keating, D. 1999. Architecture and sound: an acoustic analysis of megalithic monuments in prehistoric Britain. *Antiquity* 73, 325–336.
- Warner, W. L. 1958. *A Black Civilization: A Social Study of An Australian Tribe*. Chicago: Harper and Bros.
- Whitley, D. S., Dorn, R. I., Simon, J. M., Rechtman, R. and Whitley, T. K. 1999. Sally's rockshelter and the archaeology of the vision quest. *Cambridge Archaeological Journal* 9(2), 221–247.
- Wilde, W. 1849. *The Beauties of the Boyne and the Blackwater*. Reprinted [2003]. County Galway: Kevin Duffey.
- Wilkins, A., Nimmo-Smith, I., Tait, A., McManus, C., Della Sala, S., Tilley, A., Arnold, K., Barrie, M. and Scott, S. 1984. A neurological basis for visual discomfort. *Brain* 107, 989–1017.
- Witmore, C. 2006. Vision, media, noise and the percolation of time: symmetrical approaches to the mediation of the material world. *Journal of Material Culture* 11(3), 267–292.
- Webmoor, T. and Witmore, C. forthcoming. 'What is gathered under the banner of the social? On the deprivations of dialectics in understanding humanity through a "social archaeology"'. *Norwegian Archaeology Review* 40(2).
- Zeki, S. 1999. *Inner Vision: An Exploration of Art and the Brain*. Oxford: Oxford University Press.