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### Abstract

Stones, and especially the arrangement of large stones in relation to one another, have long been the focus of attention in megalith studies, a concern reflected in the name itself. It is, however, a blinkered view. Many so-called megalithic monuments embody other carefully selected materials in their construction, including turf, soil, rubble, and timber. In considering long barrows, Paul Ashbee noted that it was a false distinction to separate earthen long barrows from stone-chambered long barrows as the builders of long barrows inevitably used materials available within their local environments. Alternatively, writing mainly about the Irish material, Arthur ApSimon suggested a development from timber to stone implying a chronological progression in the preferred use of materials. Whether environmental or evolutionary, it is certain that many monuments interchangeably combine stone and wood in their construction in a way that forces us to consider what these and other materials meant to the megalith builders. Was it simply about what was available? Or what was fashionable? Or were there deeper sets of meanings relating to how different materials were perceived and understood within the cosmological systems that lie behind the design, construction, and use of long barrows, passage graves, dolmens and other related monuments? Focusing upon wood and stone, it is argued here that both were components of a cyclical world view of life and death that was embedded in the fabric and structure of monuments.

### Zusammenfassung

Steine, besonders die strukturelle Anordnung von großen Steinen hat lange Zeit den Schwerpunkt der Aufmerksamkeit der Megalithforschung angezogen. Jedoch ist dies eine verengte Sichtweise, da viele so genannte Megalithanlagen andere, sorgfältig ausgewählte Materialien als Konstruktionselemente aufweisen, wie etwa Torf, Erde, Gerölle und Holz. In Bezug auf Langhügel wies Paul Ashbee auf die Unterscheidung zwischen megalithischen und nichtmegalithischen Langhügeln hin, die im Wesentlichen von den verfügbaren Rohstoffen determiniert sei. Demgegenüber konnte Arthur ApSimon für Irland eine chronologische Abfolge von Holz zu Steinen aufzeigen. Insgesamt sollte klar sein, dass in vielen Monumenten Holz und Stein als Konstruktionselemente verwendet werden, und so sollten wir der Frage nachgehen, was diese und andere Baumaterialien den Erbauern der Anlagen bedeuteten. Ging es tatsächlich nur um die Verfügbarkeit, ging es um Modeerscheinungen? Oder gibt es ein tiefergehendes Set von Bedeutungen in Bezug darauf, wie die verschiedenen Materialien wahrgenommen und verstanden wurden, innerhalb des kosmologischen Systems, das hinter dem Design, der Konstruktion und der Nutzung von Langhügeln, Gang-

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gräbern, Dolmen und anderen Strukturen gelegen haben mag. Mit einem Schwerpunkt auf Holz und Steinen wird hier argumentiert, dass diese Komponenten eines zyklischen Weltbildes von Leben und Tod darstellten, welches in Material und Struktur der Monumente inkorporiert war.

## Introduction

The big stone monuments of Europe – literally the “mega-liths” – have been a focus for antiquarian and archaeological interest for more than 500 years. In France, a dolmen near Poitiers was described in 1532 by Francois Rabelais as a place of resort for local scholars who, “when they have nothing else to do, pass the time by climbing up onto the stone and banqueting there with large quantities of bottles, hams and pastries, and inscribing their names on the capstone with a knife” (in Mitchell 1982: 41). It is an image that has come booming down the centuries and coloured our thinking. Names are no longer cut into capstones, but attention still focuses on the big stones and their arrangement. Indeed, whole categories of archaeological entity have been created by focusing on the megalithic components while conveniently ignoring other elements which tend to be less well preserved. Megalithic tombs provide an obvious example, and one that I would like to explore in this paper with a plea for more nuanced approaches to architecturally complicated and symbolically sophisticated structures. The literature, and especially the popular literature, tends to be dominated by discussions and images of physically enormous monuments such as West Kennet in England, Newgrange in Ireland, Maes Howe in Orkney, or Gavrinis in Brittany. Certainly these sites need to be understood and the use of gigantic stones explained. But across Europe these monuments lie at the extreme end of a spectrum of structures that are typically more modest in their overall scale while the size of the components used in their construction is correspondingly smaller. Moreover, right from the earliest systematic studies of sites that we can now recognize as long barrows, passage graves, dolmens, and other related monuments it is clear that many different types of material were used in their construction, and that some did not incorporate large stones at all. Sir Richard Colt Hoare, a nineteenth century excavator who opened dozens of long barrows across southern Britain was clearly sensitive to such things when he journeyed to Stoney Littleton, North Somerset, in England (Fig. 1) and declared that “a new species of tumulus now excites my attention, which I shall denominate the stone barrow, varying from the long barrow not in its external, but in its internal mode of construction. None of this kind occurred to me during my researches in south Wiltshire; for the material of stone with



Fig. 1. Stoney Littleton long barrow, North Somerset, England. View of the forecourt and chamber entrance showing the relatively small stones used in its construction (Photograph by Timothy Darvill, Copyright reserved).

Abb. 1. Der Stoney Littleton Langhügel, North Somerset, England. Blick auf den Eingangsbereich und die relativ kleinen Steine, die zur Konstruktion genutzt wurden (Foto: Timothy Darvill, Copyright reserved).

which they were partly formed was wanting" (Colt Hoare 1821, 44). It was a prescient statement. Results from more recent excavations, coupled with scientific studies of the materials used and more robust theoretical frameworks, serve to further expand the complexity and emphasize the degree of selectivity in the choice of materials.

Physically, our long barrows, passage graves, and dolmens were architectural projects with a degree of planning and design that for a moment in time at least expressed an identity associated with purpose and meaning. Some were physically remodeled as identities were socially reworked. Critically, each provided an arena for the performance, containment, and structuring of events played out by living people and perhaps also supernatural beings. As Magdalena Midgely (2008, 26) has emphasized, the internal and external structures need to be understood not in terms of ground-plans and elevations but as places, forms, and spaces variously experienced by those passing by, as well as by their users. Thus details such as spatial structuring which parallels the social use of space in houses (Hodder 1984), order in the journey into and out of the monument (Darvill 2004 a, 108–113), the external form of the cover-mound and patterns of access to internal spaces (Bradley 1998, 58–62), the pairing or multiplication of key elements (Midgely 2008, 161–67), and the orientation of mounds and chambers to connect cycles of use with movements in the heavens, all provide strands to the grammar controlling engagements that somehow translated beliefs and cosmologies into physical existence. This sense of monumentality, definable in terms of dramatic content and a purposefully constructed ability to communicate elemental emotions to those who observe and engaged with a structure, is important and represents a crucial scale of analysis. Related, but at a more intimate scale, is the issue of materiality, which concerns the raw materials brought together to make a monument, their source, shape, fabric, composition, texture and colour. Here the focus is on sets of cultural relationships through which immaterial beliefs, ideas, thoughts, images, and associations are given material form and visual expression (Ingold 2007; Meskell 2005; Tilley 1996a; 2004). Thus it is the meaningful selection, assembly, deployment, and social engagement with particular materials that I would like to focus on here, arguing that geographically widespread and socially deep-rooted cosmologies find expression in a wide variety of monument forms.

### **Material representation**

Looking across the range of long barrows, passage graves, dolmens, and other related monuments built between about 5000 BC and 2000 BC within a geographical area extending from Portugal and the Atlantic coastlands of western Europe to Poland and the Oder valley-lands of eastern Europe there is shared interest in half a dozen or so commonly found construction materials.

Stone, because of its inherent durability, is the most widely represented and most recognizable. Various sizes are represented from large blocks over 3m across down to small slabs around 1m across. Many different colours are found including white, yellow, brown, red, grey, and black according to bedrock type. Such stones were typically plucked from extant surface outcrops or quarried from the bedrock in adjacent borrow-pits. Large blocks and slabs were used mainly as orthostats, capstones, roofing stones, peristaliths, façade stones, and kerbstones. Smaller slabs were used to create subdivisions of space within monuments.

Rubble comprises a mixture of medium to small-sized loose stones derived from breaking-up larger stones or bedrock. Many different colours occur including white, yellow, brown, red, grey, and black. It is used mainly as infill, cairn-building material, flooring, and for dry-stone walling.

Aggregate comprises small stones mixed in varying proportions with a finer-grained matrix usually represented as gravel or “pea-grit”. It is usually derived from bedrock extracted from adjacent borrow-pits or quarry-ditches, and is mainly used as cairn-building material and flooring.

Clay comprises a stiff sticky earth with few stones or large inclusions that is usually strongly coloured – red, brown, orange, grey, or white. It is usually derived from bedrock extracted from adjacent borrow-pits or quarry-ditches. It is used mainly as cairn-building material and as a sealant to prevent water penetrating chamber areas.

Soil comprises disintegrated rock with an admixture of organic material, usually soft in texture and dark in colour. It is obtained from land-surfaces where it develops as the overmantle covering many kinds of bedrock lithology. It is mainly used as cairn-building material.

Turf comprises a layer of grass with soil and matted roots forming as the surface vegetation of established grassland. It is obtained from land surfaces and although initially green in colour it variously becomes brown and yellow as the component plant species die off after cutting. It is used mainly as cairn-building material or in the construction of sod walls.

Wood comprises a hard fairly durable fibrous organic material taken from the trunk or branches of a tree or shrub. It is usually covered by an outer fairly rough coating of bark. Internally it is usually light in colour: white, yellow, or grey. Wood is mainly used as posts or planks to form orthostats, roofing, walling material, edging for the mound, and façade uprights. Less common is hurdling made from thin flexible strips of wood used as fencing within or around the mound, and bark used as packing material between stones.

## Environment and development

At a superficial level it might be argued that the materials deployed in any particular construction were simply those available in the vicinity, and in a sense that is true. But environmental concerns are only part of the story. In considering the long barrows of the British Isles, Paul Ashbee argued that it was a false distinction to separate earthen long barrows from stone-chambered long barrows on the basis of the materials available to the builders, noting that “separation will undoubtedly continue but now it can be seen that the boundary is blurred and that earthen long barrows are only one constituent of a series of long monuments, widespread in Britain and Ireland” (Ashbee 1984).

It is a problem that is not confined to long barrows, and one that is being exacerbated by the recognition of whole new kinds of archaeology as result of new research and large scale commercially-funded excavations in landscapes that might otherwise be overlooked. Excavations in 1978–9 by Gordon Barclay at North Mains, Perthshire, in Scotland revealed a large earth and rubble round barrow about 40 m in diameter and 5.5 m high covering the remains of a timber structure whose reconstructed form suggests it was essentially a timber passage grave with its post-lined passage opening to the northeast and a central timber-orthostat edged chamber about 7m in diameter (Barclay 1983, 189–42; 1998, 55 for reconstruction drawings). Similar-

ly, free-standing timber mortuary chambers such as those at Street House, Redcar and Cleveland, in England (Vyner 1984) and Pitnacree, Perthshire, in Scotland (Coles / Simpson 1965) provide parallels for the stone-built portal dolmens such as the Whispering Knights, Oxfordshire, in England (Lambrick 1988) and Dyffryn Ardudwy, Merionethshire, in Wales (Powell 1973) in terms of their general design, use, and place within the sequence of events represented at multi-phase sites.

Nor is the problem confined to Britain. In southern Scandinavia the Konens Høj and Troelstrup style mortuary houses (Madsen 1979) can also be seen to have similarities in form and the arrangement of their principal supports (orthostats/posts) with urdolmens in southern Scandinavia and north Germany, as for example at Tårup, East Jutland, in Denmark (Holst 2006) and Grave 5 at Barskamp, Niedersachsen, Germany (Sprockhoff 1975, 45 no. 709), which are among many monuments with rectangular chambers defined at either end by single D-shaped orthostats. In Denmark, overlaps between so-called earth graves and simple dolmens have been recognized since the 1940's, (Midgley 1992, 411), and within the north European TRB separating earthen long barrows from stone chambered tombs is increasingly problematic (Midgley 1985). Indeed, some long barrows include both stone and timber chambers, as at Barkær and Sjørup amongst others in Denmark (Madsen 1979). Postholes around hunebed chambers are known in The Netherlands at Tinaarlo, Drenthe, and at Tannenhausen East, Ostafriesland, in northwest Germany posts appear to have formed the orthostats of the passage (Bakker 1992, 32). Most curious of all perhaps is the monument excavated by Roger Jousaume in 1970–1 at La Pierre Virante in the Vandée region of western France. Here the stone dolmen-like monument seems to have been contained within a timber structure that the excavator thinks was roofed (Jousaume 1987, fig. 20).

A rather different approach to the integration of stone and timber in long barrows and related monuments was taken by Arthur ApSimon (1997) writing mainly about the Irish material. Drawing on earlier work in France, Denmark, and Poland he suggested that some of the court tombs, portal tombs, and wedge tombs could derive from timber prototypes either within or outside Ireland. Certainly there are a number of sites that show a development from timber to stone, with concomitant similarities in constructional techniques. Amongst them is the long barrow at Dooley's Cairn, Co Antrim, in Ireland which has a wooden chamber and stone antechamber (Evans 1938; Collins 1976). But ApSimon goes beyond simple chronology, suggesting as well a desire on the part of Neolithic builders for greater displays of power by using stone, or, perhaps less tangibly, the recognition of qualities perceived as immanent within the stones (ApSimon 1997, 138). This point is critical for it moves the spotlight away from functional aspects of design. Whatever role environmental or evolutionary factors may have played in the background, it is certain that many monuments interchangeably combine stone and wood in their construction in a way that forces us to consider what these materials meant to the megalith builders. Was it simply about what was available? Or what was fashionable? Or were there deeper sets of meanings relating to how the materials themselves were perceived and understood within the cosmological systems that lie behind the design, construction, and use of long barrows, passage graves, dolmens and other related monuments? Three strands of evidence can perhaps take us a step further in exploring this aspect of materiality in Neolithic monuments.



Fig. 2. Carreg Coitan dolmen, Pembrokeshire, Wales. Large capstone raised on six orthostats (Photograph by Timothy Darvill, Copyright reserved).

Abb. 2. Der Dolmen Carreg Coitan, Pembrokeshire, Wales. Ein mächtiger Deckstein auf sechs Trägersteinen (Foto: Timothy Darvill, Copyright reserved).

## Landscapes and multiple sources

First is the source of materials and the relationship between a monument and its landscape. Colin Richards (2004) has expanded France Lynch's suggestion (1975) that at Carreg Samson, Mathry, in southwest Wales the dolmen was built by lifting a large glacial boulder out of the ground and raising it up on five orthostats (fig. 2). Archaeologically, the process is manifest through the presence of a pit slightly larger than the raised stone; the dolmen is effectively an enormous tablestone high in the air and rather than being a burial structure per se is a monument in itself. There was no mound covering the structure, although some kind of platform may have defined and enhanced the appearance of the monument at ground-level. Material found underneath the tablestone could have been connected with burials, or perhaps was placed as offerings. Rather than seeing the structure as a monument constructed to a defined blueprint, Richards suggests that it was the act of uncovering and lifting the stone that was important here (2004). Other dolmens and portal dolmens in western Britain may well have had similar origins (cf. Darvill 2004a, 47–52). One of the largest is Pentre Ifan, also in Pembrokeshire, which has a capstone weighing about 60 tons that was raised more than 2.5 m and balanced on just three orthostats. Here again the monument was built over a pit broadly similar in shape and size to the capstone (Grimes 1948). Similar sequences may in due course be found at dolmens elsewhere in Europe.

By contrast with the dolmens that use mainly local stones derived from their immediate surroundings, many developed passage graves incorporate both locally and distantly sourced raw materials. La Hougue Bie on Jersey incorporates at least nine kinds of stone from sources across the eastern half of the Island (Patton 1992), while Newgrange in Ireland incorporates five main stone types from distances of up to 40 km both north and south of the Boyne Valley (Mitchell 1992). In these cases the materials themselves may be taken to represent tokens of other lands or other landscapes, pieces of significant places brought together in a new order or a microcosm of the original. Earlier monuments may have been dismantled and components reused elsewhere as in the case of decorated menhirs being broken up and used as capstones and backstones in the passage graves at Table des Marchant, Gavrinis, and Mane-Rutal in Locmariaquer, Brittany (Bailloud et al. 2003, 89). But it was not only the sources that are important. Emmanuel Mens (2008) has convincingly shown through what he calls "mental refitting" that in Brittany at least natural outcrops of stone were systematically dismantled with blocks from different levels of the quarry being reassembled as a passage grave to mirror the original arrangement and always positioned so that the flat quarried side faced inwards.

Long barrows are slightly different again. Many are dominated by local materials, but some incorporate stone from further afield. In England, Stony Littleton, North Somerset, for example has Blue Lias slabs from more than 8km away (Donovan 1977); Hazleton North, Gloucestershire, has key orthostats from outcrops of Farmington Freestone more than 6 km away (Worssam in Saville 1990, 229–30); and West Kennet together with at least half a dozen other long barrows in the Avebury area of north Wiltshire has oolitic limestone slates from at least 32 km away used for walling (Piggott 1962, 58). Soil too was brought to some long barrows. At South Street, Wiltshire, in England there was no evidence of a burial deposit within a long barrow more than 41m in length and 15 m wide, but it had been constructed as a series of about 40 hurdle-defined bays arranged either side of a central axis running along the length of the mound (Ashbee et al. 1979, 250–75). The material used to fill individual bays included turf, soil, coombe rock rubble, and chalk rock rubble. Some structure was evident in the disposition of material with no chalk on the north side except for bay 14. In general the various materials were kept separate, the boundaries being sharp and often marked by a thin layer of pale humic chalky mud tentatively interpreted as the remains of decayed brushwood (Ashbee et al. 1979, 259). The nearby site of Beckhampton Road, Wiltshire, was built in a similar fashion but here the finished surface of the mound would have had a patchwork appearance with yellow and brown tints of the coombe rock, brick-earth, and turves used in some bays, contrasting with appearance of white marl and chalk gravel used to cap other bays (Ashbee et al. 1979, 240; and see Russell 2002, 25–70).

### Colours, textures, and shapes

Moving to the second strand, it is clear that the very nature of the building blocks used was also important (Jones / Bradley 1999; Lynch 1998). Because of its good preservation stone inevitably dominates discussion of such things, but there is no reason why wooden elements should not have been treated in similar ways. Andy Jones (1999) examined the colour-choices made at Clyde-Carlingford style long barrows on the island of Arran to show that all the tombs were constructed using red and white stones; those tombs with a façade of white granite or schist had red sandstone walling between the uprights, and vice versa. Red packing stones between uprights are also a recurrent feature of passage graves in western Skåne (Tilley 1996 b, 316). Further south across the Baltic, red coloured glacial boulders also seem to have been preferentially used for the kerbing on long barrows in North Meklenburg (fig. 3), and in the same area red stones were often used as capstones for the chamber and sometimes as the orthostat facing the entrance. Similarly, at the Clava Cairns in eastern Scotland Richard Bradley (2000 a, 122–9) has shown that red stones were used as chamber orthostats opposite the entrances so that on the winter solstice light from the setting sun would illuminate these uprights and presumably create a red glow within the chamber. For Chris Tilley (1996 b, 322), the focus on black, white and red within Danish passage graves and long barrows relates to experiences of the human body and its substances in life and death.

Rock types, surface texture, fossils, and mineral inclusions within stones selected for prominent positions within passage graves and long barrows have been recognized by a number of studies. Chris Tilley (1996 b, 124–5) shows how passage graves in parts of Denmark favour sedimentary rocks for orthostats along the passages and around the edge of the chambers, but igneous rocks as roofing



Fig. 3. Grave I (Sprockhoff 311) Everstorf, Schönberg, Mecklenburg, Germany. Long barrow with substantial kerb made from predominantly red glacial erratics (Photograph by Timothy Darvill, Copyright reserved).

Abb. 3. Grab 1 (Sprockhoff Nr. 311) von Everstorf, Schönberg, Mecklenburg, Deutschland. Langhügel mit markantem Steinrahmen von überwiegend roten glazialen Findlingen (Foto: Timothy Darvill, Copyright reserved).

stones. A fossil ammonite appears to have been placed in a highly visible position on the western portal slab at Stoney Littleton, North Somerset, in England, and naturally perforated slabs were used within several other Cotswold-Severn type long barrows in the west of England and Wales (Darvill 2004 a, 113). Richard Bradley and Tim Phillips (2008) working on passage graves in Bohuslän on the west coast of Sweden show how textures and mineral inclusions were used to contrive striking visual effects both within the chambers, and on the outer faces of cairns, and cover-mounds so that some were apparent to casual visitors while others were only apparent to those inside the chamber. Although no single scheme was recognized the familiar use of red, white, grey, and pink stones was widespread, while natural striations, patterned inclusions and sparkling surfaces tended to occur in the chambers rather than the passages. Timber components of similar monuments may also have been selected because of distinctive grain patterns or the colour and texture of the bark.

The presence of white sparkling quartz within passage graves and long barrows is common right across the distributions of these monument types. Sometimes it is present as boulders used as orthostats or kerbing; sometimes it is present as veins running through prominently placed stones; and on other occasions it is present in the form of pebbles placed within or around the monument. At Tårup, East Jutland, Denmark, the preserved floor within a dolmen perpetuated the red, white and black tripartite colour system already noted with red scorched areas surrounded by spreads of black charcoal and white burnt flint (Holst 2006). Vicki Cummings has emphasized the role of haptic senses – touch and movement – but in surveys of dolmens and long barrows in different parts of the British Isles she found little evidence of patterning although among long barrows almost all cases examined showed juxtaposed different textures either in the façade or the chamber walls (Cummings 2002).

Although few stone components of passage graves, long barrows, and dolmens appear to have been deliberately shaped, the stones used do seem to have been selected for their natural outline and placed to accentuate those shapes in profile or outline. Most distinctive are the paired pointed and flat-topped stones found flanking the entranceways at long barrows and occasionally at passage graves along the Atlantic coastlands (Darvill 2004 b, 51–2). Good examples can be seen at Cashtal yn Ard and King Orry's Grave on the Isle of Man (Darvill/Chartrand 2000; Gale et al. 1999), at Cairnholy I, Dumfries and Galloway (Piggott/Powell 1949, fig. 5) in Scotland, and in Ireland at Ballymacdermot, Armagh (Collins/Wilson 1964), Creevy-



Fig. 4. The Grey Mare and Her Colts, Dorset, England. Pair of façade stones flanking the entrance to the terminal chamber of a small long barrow: male and female forms? (Photograph by Timothy Darvill, Copyright reserved).

Abb. 4. Grey Mare und Her Colts, Dorset, England. Ein Paar von Umfassungssteinen, den Eingang zur letzten Kammer eines kleinen Langhügels flankierend. Männliche und weibliche Formen? (Foto: Timothy Darvill, Copyright reserved).

keel, Sligo (Hencken 1939), and Culleens, Sligo (O’Nualláin 1989, 35 and pl. 14). Crossing the Irish Sea, at Trefignath, Anglesey, in Wales the stones flanking the entrance to the chamber of the third-phase barrow appear from the front as a slender pointed stone to the left and a broader side-on stone to the right. The effect is achieved by the way the stones are positioned as much as their actual shape (Smith and Lynch 1987, figs. 18–19). In southern England there are abundant examples as at Wayland’s Smithy, Oxfordshire, the classic Cotswold-Severn long barrow (Whittle 1991) and the Grey Mare and Her Colts (fig. 4) near the Dorset coast of the English Channel (Piggott 1945). In general the pointed stone lies to the left and the flat-topped stone to the right on entering the chamber from the exterior of the monument. Binary sexual symbolism has often been linked to this pairing: the pointed stones considered phallic in form and may thus “male”, while the flat-topped stones should be considered “female” (Smith 1965, 251). It is a proposition born out by the pair of stalae added to the façade of the long barrow known as dolmen MVI at Petit-Chasseur Sion, in Switzerland, during the later Neolithic or Chalcolithic (Bocksberger 1976, plan. 54) where the left-hand stone as seen when looking towards the front of the barrow has a pointed top and a dagger while the right-hand stone has a rounded top. But it may also be extended from a simple male/female opposition to the possibility that these are physically or metaphorically mother/father figures standing on the boundary between the external world of the living and the internal world of the dead and the unborn. It is a possibility that leads to a third aspect of materiality to consider briefly here, that of meaning and referencing.

### Meaning and referencing

One of the big unknowns in Neolithic studies is how communities living in northern and western Europe during the fifth, fourth, and third millennia BC conceptualized their world. How were materials categorized? What did those categories and the stuff subsumed within them mean to people? And how did familiar materials mediate experiences of the real world with the beliefs and cosmological structures? It is tempting to impose modern Christian or Islamic views such as Cartesian dualisms and binary oppositions onto the material represented in the archaeological record through the use of relational analogy (e.g. Parker Pearson / Ramilisonina 1998). But such approaches must be treated with extreme caution as John Barrett and Kathryn Fewster amongst others have stressed (Barrett/Fewster 1998). At a very general level, the materials that we now call stone

and wood may have existed within the compass of a single broad conceptual category in the mind of Neolithic people with nested levels of meaning and metaphorical association. Certainly such an idea would explain rather neatly some of the difficulties addressed by Ap-Simon and Ashbee in trying to reconcile and understand the parallel use of stone and wood in the construction of monuments with seemingly common forms and purposes. The fairly widespread use of birch bark sandwiched between stone slates in the walling of passage graves in Denmark (Dehn / Hannen 2006) may also support the essential integrity of these materials.

Distinctive variations within the broad stone/wood category perhaps carried more specific meanings. I have suggested elsewhere that quartz for example might have represented the soul or spirit if the shared contextual appearance of this stuff in both ancient and recent times carries a shared understanding of its metaphorical associations (Darvill 2002). Likewise, the selection of oak for the posts in at least some of the timber chambers within long barrows in eastern Britain (Ashbee 1984) and southern Scandinavia (Madsen 1979) might suggest specific associations with attributes of that species. The application of designs and motifs to stones used in the construction of passage graves and long barrows, and perhaps if we could only see them to wooden components too, presumably changed or elaborated the meanings of the material, especially in light of the frequent incorporation of natural features of the background “canvass” (stone and equally perhaps wood) in the form and layout of the designs.

But perhaps the most important and potentially significant is the way that the very internal spaces of dolmens, long barrows, passage graves, and all the other related monuments recreate the internal structure of the trees and rocks that seem to “grow” on or out of the land surface (cf. Bradley 2000 b, 110–3). The raising of giant capstones at dolmens certainly create “stones that float to the sky” to use Alasdair Whittle’s evocative phrase (2004), but they also create spaces between the ground and the stone: cracks between the lithosphere and the biosphere into which human remains and offerings were placed, including pottery, worked flint, stones, and perhaps a range of organic materials too. Mens’ work in Brittany suggests a similar pattern (2008). Here protuberances on the land surface were demonstrably taken apart and then re-built with a space inside as a resting place for the dead and visits by the living: an arena for ceremonies and performances by both the quick and the dead. At West Kennet, Wiltshire, in England, the sarsen stones used as orthostats in the construction of the chambers seem have been set up with their



Fig. 5. Holger Danske, near Århus, Denmark. Split boulder used as adjacent orthostats within a passage grave later incorporated into a long barrow. (Photograph by Timothy Darvill, Copyright reserved).

Abb. 5. Holger Danske, bei Århus, Dänemark. Gespaltene Steine, die als benachbarte Othostaten in einem Ganggrab benutzt worden, das später in einen Langhügel integriert wurde (Foto: Timothy Darvill, Copyright reserved).

exposed weathered faces outwards and their protected originally earthfast faces inwards, and Chris Tilley (1996b, 124) has noted the same phenomenon at tombs in Denmark. In constructing the chambers of Holger Danske near Århus in Denmark a boulder was split open and set so that the inside of the original boulder became the inside of the chamber (fig. 5). The case for cleaving stones elsewhere in the TRB territory has been fully considered by Jan Bakker (1992, 25–6) who shows it was a fairly extensive practice. In other parts of Europe where orthostats were quarried from banded rocks in borrow-pits or quarry ditches surfaces that would have been together in the ground have been opened as the stones were arranged in the monument.

The same happens with the timber orthostats used in mortuary houses found under long barrows and related monuments in eastern Britain and southern Scandinavia. Whole tree trunks appear to have been split vertically to create a pair of D-shaped posts that were then set in the ground with the space between used for the placement of burials. Recent studies of the dating at Fussell's Lodge, Wiltshire, in England (Wysocki et al. 2007) shows the developing use of the site first as a timber mortuary structure around 3700 cal. BC which was then expanded eastwards with the formation of a more conventional timber single-cell terminal chamber within a standard long barrow perhaps around 3630 cal. BC. Detailed studies of the long barrow at Haddenham, Cambridgeshire, in eastern England shows that its massive oak rectangular chamber took the model of a house and transformed it into a passage into the ground. The four individuals deposited in the chamber were not placed there to enjoy a corporeal afterlife the excavators argue, but to become something else (Evans/Hodder 2006, 192–3). Good preservation here allowed the close examination of the timbers used in constructing the chamber and showed that several very large and aged oaks each about 1.5 m in diameter and 300–400 years old had been used, and the split-trunk posts and planks always positioned so that the heartwood faced into the chamber and the outer surfaces faced outwards.

As with the positioning of stones, so timber posts are characteristically set with their raw exposed inner core facing into the monument. At Storgård IV near Fjelsø, North Jutland, in Denmark, three large façade posts made from split trunks between 0.5 m and 0.7 m in diameter were set with the flat internal faces inwards (Kristensen 1989). The same can be seen in the façade of the early Neolithic long barrow at Bjørnsholm also in North Jutland (Andersen/Johansen 1990).

## Conclusions

Stepping back from some of the detail it seems clear that the materials selected and used in the construction of dolmens, long barrows, passage graves, and related monuments were varied in many dimensions and deployed in a range of meaningful ways. Archaeologically, focusing on stone because of its durability, and therefore its preservation, is inevitable. But in thinking about the concerns and experiences of Neolithic people it is important to recognize that other materials were important at these sites too, and in some cases might have been interchangeable in the way they were used and the meanings attaching to them. Sources, shapes, sizes, colours, textures, and sometimes the very substance of the material itself were presumably meaningful to the builders and users of the monuments, and through careful contextual analysis some of those meanings can be glimpsed. One of the most intriguing was

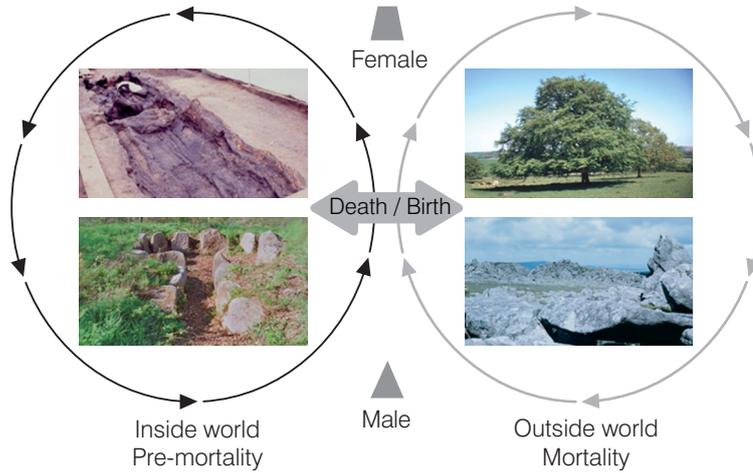


Fig. 6. Schematic representation of a cyclical cosmology based on two phases of mortality (Diagramme by Timothy Darvill, Copyright reserved).

Abb. 6. Schematische Darstellung einer zyklischen Kosmologie, basierend auf zwei Phasen von Sterblichkeit (Diagramm: Timothy Darvill, Copyright reserved).

perhaps the most fundamental. Consider for a moment both the inside and outside of the monuments as living spaces, but spaces in which a human spirit could live under different conditions of mortality (c.f. Bloch Parry 1982). Constructing the monument was not so much the creation of a container, but rather the creation of a crucible into which, and out of which, life could pass. In some landscapes stone dominated world views, in others wood provided the primary focus of attention. Graphically, the cosmological referencing implicit to these monuments might be seen as a figure-of-eight or a pair of interlocking spirals (fig. 6). In the “outside world” of the real landscape the spirit is bounded within its host human body, and is mortal in the sense of enjoying the state of being subject sooner or later to death. In the “inside world” of the monumental landscape the spirit is bounded within a non-human body built to represent trees and rocks at the interface between the biosphere and the lithosphere; this is what might be called pre-mortality, the state of suspended being that is believed to be subject sooner or later to re-birth. In such a view stone and wood are animistic materials in the sense of containing or being organized by supernatural powers, with the architecture of the monument acting as a technology to expedite movement between states of mortality. Standing at the boundary between these two worlds in many long barrows and passage graves, at the intersection of the cycle in the doorway between the monument and the landscape, are representations of a male and female, facilitators of the transitions between worlds; material expressions of birth and death.

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