The use of caves for funerary and ritual practices in Neolithic Ireland

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Research

Caves in Ireland, as elsewhere, have been used for shelter and burial over much of recorded time. The author here focuses on their use during the Neolithic, carefully isolating the available material and arguing from it that caves then had a primary role in the remembrance of the dead, and were used for excarnation, token deposition or inhumation. The author compares these practices to other contemporary types of burial and concludes that there was a strong symbolic or ritual sense shared in Neolithic Ireland between passage tombs and those certain kinds of cave that they resembled.

Keywords: Neolithic, Ireland, caves, funerary practice, ritual

Introduction

Understanding the use of caves in the Neolithic period in Ireland has to begin with a careful evaluation of the material available and its context. Many of the discoveries have taken place informally or were made many years ago, and the records are frequently incomplete or untrustworthy. A point of departure was provided by several key assemblages which indicated the use of caves in the Irish Neolithic. In 1928, at Kilgreany Cave, Co. Waterford, the Bristol Speleological Society uncovered significant quantities of human bones including two crouched inhumations that became known as Kilgreany A (an adult female) and Kilgreany B (an adult male). Because Kilgreany B appeared to be sealed beneath a layer of stalagmite it was originally interpreted as Palaeolithic in date (Tratman 1929: 120). Subsequent excavation in the cave revealed that the stalagmite layer was fragmentary and it was suggested that the burial was probably Neolithic (Movius 1935: 282). After fluorine analysis indicated the possibility that the human remains could be contemporary with bones of reindeer (*Rangifer tarandus*) and giant deer (*Megaloceros giganteus*), Kilgreany A was radiocarbon dated, giving a Neolithic date (Barker & MacKay 1968). In the 1980s a radiocarbon date was obtained from Kilgreany B also placing this individual in the Neolithic (Brindley & Lanting 1989/90: 2; Molleson 1985/86: 1-2).

In 1972, speleologists descending Pollthanacarra, a 20m-deep vertical swallowhole in Co. Fermanagh, discovered human bones, leading to an excavation of the site by members of the Geology Department of the Ulster Museum (Doughty 1995: 54). The radiocarbon date of one bone, from an assemblage representing a minimum of four individuals (Fibiger 2005), indicated a Neolithic horizon.

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In 1992 a cave containing human burials was discovered during limestone quarrying at Annagh, Co. Limerick which led to a rescue excavation of the site by the National Museum of Ireland. The remains of five adult males were associated with lithics, decorated pottery vessels and a perforated antler tine (Ó Floinn 1992). Radiocarbon dates from each of the individuals indicated they had been placed in the cave in the earlier part of the Neolithic. Not far from Annagh, excavations in Killuragh Cave, Co. Limerick, also in the 1990s, led to the discovery of a series of human bones which were dated to the Mesolithic, Neolithic and Bronze Age (O'Shaughnessy 1994: 51-2; Woodman 1997: 67-8). Again in the early 1990s, the Irish Quaternary Fauna Project was established to investigate the range of species that existed in Ireland during the Pleistocene and Early Holocene (Woodman *et al.* 1997: 129). As part of the project, a human bone that had been recovered from Ballynamintra Cave, Co. Waterford in 1879 was radiocarbon dated and produced a Neolithic date (*ibid*. 133-4).

By the end of the 1990s therefore, a small corpus of dates had been obtained which indicated that activities involving human remains had taken place at a number of Irish caves during the Neolithic. The author has advanced this research by undertaking a major survey designed to assemble the corpus of Irish caves of archaeological significance and to isolate material belonging to the Neolithic, using radiocarbon dating. The results are summarised here, together with an interpretation of the rites involved, their cultural affiliations and their context. In particular, I consider why caves were used for funerary practice and their relationship with contemporary ritual sites, such as passage tombs.

Date range

Over 80 caves have been identified from which human remains have been recovered; of these, 14 have produced human bone assigned to the Neolithic period by radiocarbon dating (Figure 1; Table 1; other samples have produced a wide range of dates from the Early Mesolithic to the later Middle Ages). The earliest date, represented by Sramore Cave, occurs in the Late Mesolithic-Early Neolithic transition – a period for which we otherwise have very few human remains. Indeed, the date is significantly earlier than the others presented here and raises the question of whether this particular cave was used by a hunter-gatherer community rather than by settled farmers. As can be seen from Table 1, there is otherwise a marked concentration of Irish cave dates between 3600 and 3400 BC, essentially around the transition between the Early and Middle Neolithic.

Definition of burial rites: excarnation, token deposition and inhumation

The human bone most commonly occurs in small quantities, frequently representing just one individual, but complete inhumation burials are also known. Even in cases where assemblages are large, the numbers of bones do not usually represent full skeletons. For instance, though 50 bones were recovered from Ballynamintra Cave, they represent two individuals while the 137 bones from Pollthanacarra represent four individuals. It is necessary to remember that in all these cases, only one individual per site has been dated to the Neolithic and it cannot be assumed that all individuals are contemporary. Killuragh Cave is a good example:

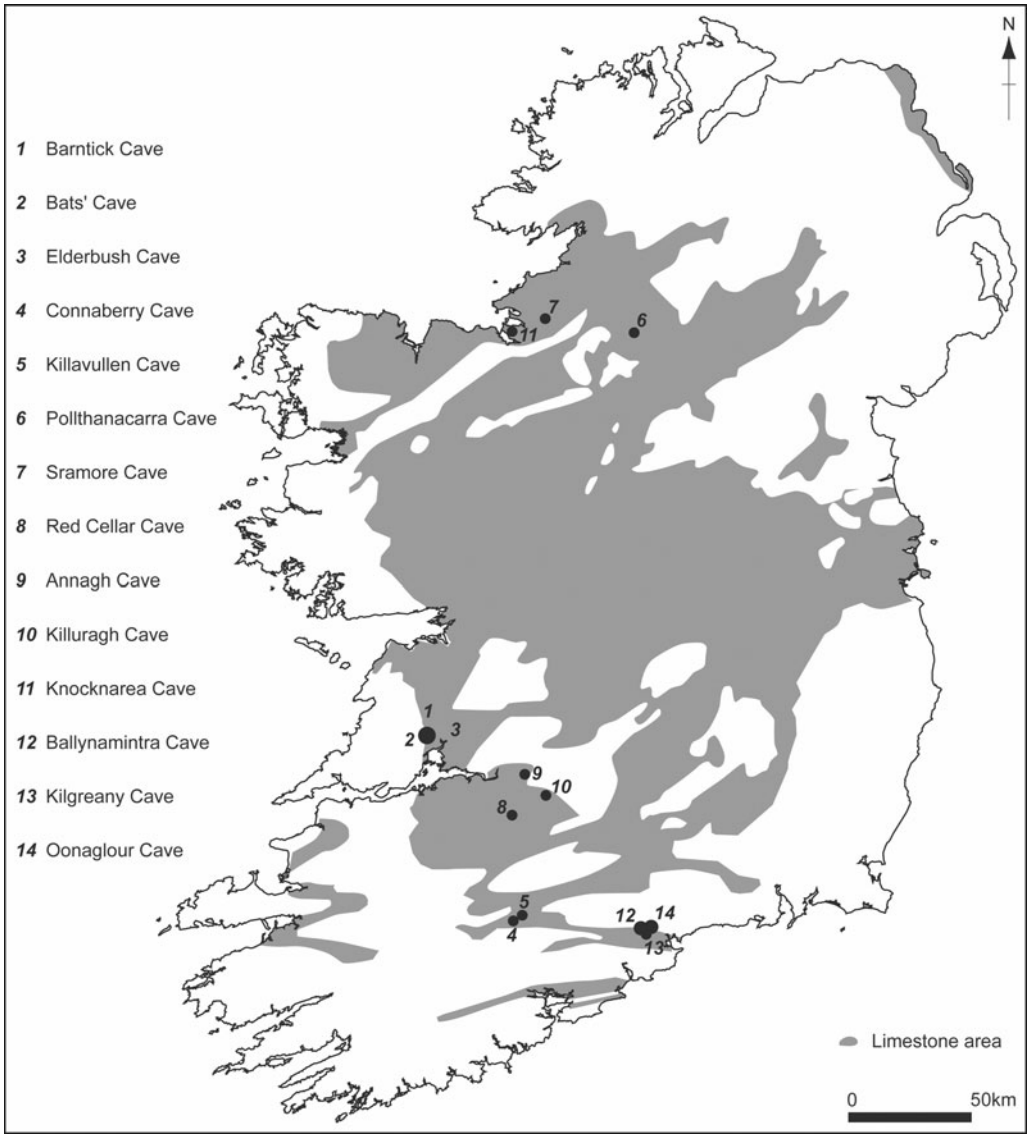

Figure 1. Caves with human remains of Neolithic date.

c. 150 bones representing at least seven individuals were recovered, yet radiocarbon dating established that the bones spanned the Early Mesolithic through to the Early Bronze Age with one only individual of Neolithic date (Woodman 1997). In cases such as Knocknarea Cave and Sramore Cave, the small number of bones is a result of the fact that they were discovered on the cave floor but the sites were never actually excavated. Despite this, and taking into account the destruction of bones by a variety of natural and cultural formation processes, the evidence indicates a real trend for the repeated occurrence of small numbers

Table 1. Neolithic radiocarbon dates from human bones from caves.

Cave name, townland, county	No. of bones #**	Total MNI **	Age & sex of dated indiv.	Element dated	Lab. no.	BP Date	Cal. BC two sigma
Barntick Cave, Barntick, Co. Clare +	10	1	Adult	Mandible	GrA-21498	4530 ± 50BP	3370–3030
Bats' Cave, Newhall, Co. Clare +	11	3	Child < 10yrs	R scapula	GrA-21489	4430 ± 50BP	3340–2910
Elderbush Cave, Newhall, Co. Clare +	18	1	Adult	Pelvis	GrA-21492	4800 ± 50BP	3700–3370
Connaberry Cave, Connaberry, Co. Cork +	14	1	Adult	R maxilla	GrA-22115	4730 ± 60BP	3640–3370
Killavullen Cave 3, Ballymacmoy, Co. Cork ++	24	2	Adult, female (?)	R ilium	UB-6409	4544 ± 39BP	3371–3098
Pollthanacarra Cave, Legg, Co. Fermanagh	137	4	Adult	Unknown	Unknown	4650 ± 300BP	4100–2500
Sramore Cave, Sramore, Co. Leitrim ++	3	1	Adult, male (?)	R femur	UB-6407	5202 ± 39BP	4217–3967
Red Cellar Cave, Knockfennell, Co. Limerick ++	3	2	Adult	R talus	UB-6679	4671 ± 38BP	3625–3364
Annagh Cave, Annagh, Co. Limerick		5					
Annagh I			Adult male	R scapula	GrA-1703	4670 ± 70BP	3650–3100
Annagh II			Adult male	R scapula	GrA-1704	4780 ± 60BP	3660–3370
Annagh III			Adult male	R scapula	GrA-1707	4810 ± 60BP	3710–3370
Annagh IV			Adult male	R scapula	GrA-1708	4640 ± 60BP	3650–3100
Annagh V			Adult male	R scapula	GrA-1709	4840 ± 60BP	3770–3380
Killuragh Cave, Killuragh, Co. Limerick +	*c*. 150	7	Uncertain	Metacarpal	GrA-2510	4670 ± 50BP	3624–3348
Knocknarea Cave, Knocknarea North, Co. Sligo +	1	1	Uncertain	Occipital	GrA-21493	4740 ± 50BP	3640–3370
Ballynamintra Cave, Ballynamintra Lower, Co. Waterford	50	3	Uncertain	Radius	OxA-4250	4230 ± 75BP	3020–2570
Kilgreany Cave, Kilgreany, Co. Waterford	2,129	21 or 22					
Kilgreany A			Adult female	Ribs & phalanges	BM-135	4660 ± 75BP	3650–3100
Kilgreany B			Adult male	Skull	Pta-2644	4820 ± 60BP	3720–3370
Kilgreany 3 +			Adult, male (?)	Mandible	GrA-21499	4790 ± 50BP	3660–3370
Oonaglour Cave, Bridgequarter, Co. Waterford ++	73	2	Adult	L radius	UB-6677	4503 ± 38BP	3357–3037

Number of bones or bone fragments located in 2005; original number found in cave often higher.

** Data obtained by osteoarchaeologist Linda Fibiger (2005) except for Annagh Cave, Killuragh Cave and Knocknarena Cave.

+ Dates obtained by Peter Woodman and M. Dowd, funded by the Heritage Council; ++ Dates obtained by M. Dowd, funded by the Royal Irish Academy.

Total MNI – in caves with several individuals, not all can be assumed to be Neolithic in the absence of radiocarbon dating.

of human bones in caves. This is likely to reflect one of two practices – *excarnation* or *token deposition*.

Caves would have provided ideal locations for the process of *excarnation*, where the corpse is exposed and the flesh decomposes naturally, leaving a dry skeleton. Caves offer free circulation of air yet protection from the elements and animals, particularly if the cave entrance was temporarily blocked off during the months or years that the corpse was left to decompose. Fibiger observed that none of the human bones from the caves that have produced Neolithic dates bore gnaw marks or any traces of animal interference which supports the idea that cave entrances may have been deliberately blocked to deter interference from scavengers (Dowd *et al.* 2006: 17).

After excarnation, the major parts of the skeleton could then be collected for disposal elsewhere. At such sites one would expect to find small numbers of small skeletal elements (e.g. carpals, phalanges and vertebrae) – bones that would have been missed during the collection of the larger and more visible elements. One would not expect to find skulls or long bones. In this regard, Scharff *et al.* (1906: 17-8) noted the preponderance of '*hand- and foot- bones*' in the original assemblage from Elderbush Cave (only part of the assemblage can be located at present). Similarly, Alice and Gwendoline Cave located nearby produced primarily phalanges, carpals and metacarpals (*ibid.*: 63). Though no radiocarbon dates have been obtained from the latter site, the evidence suggests prehistoric use of this cave for excarnation.

An alternative to the excarnation hypothesis is *token deposition* where only particular bones were selected for deposition in the caves. In some instances, token deposits may reflect ancestor veneration, with bones of the dead being placed in caves which were associated with the earlier dead. For example, the Neolithic human bone from Killuragh Cave and a dog of Neolithic date that was buried at the cave entrance (Woodman 1997) may have been deposited in the knowledge that this was a place of Mesolithic ritual activity. A further possibility is that the bones of venerated ancestors were in circulation within a community, or between communities, for generations with some of the remains finally being placed in a cave.

To date, intact Neolithic *inhumation burial*s have only been discovered in two Irish caves – Annagh Cave and Kilgreany Cave. However, it is quite likely that, at some sites, scatters of human bones may actually reflect burials that were later disturbed and dispersed. Annagh and Kilgreany both served as communal burial places. A MNI of 22 was recently identified from Kilgreany Cave with at least three individuals placed in the cave during the Neolithic and at least one individual deposited in the Early Bronze Age according to radiocarbon dates (Dowd *et al.* 2006: 17). Remains of five individuals were recorded from Annagh Cave (Ó Donnabháin forthcoming). At both sites, individuals appear to have been placed directly on the cave floors – in some cases in the crouched position – with no evidence of grave-cuts.

The *swallowhole* at Pollthanacarra also deserves mention here. Human remains representing an adult female, two adult males and an adult of indeterminate sex (Fibiger 2005) were recovered from the site in addition to the bones of ten cattle (six immature), five sheep/goats (two immature), seven pigs (four immature), two dogs/wolves (one immature), two red deer and three hares (Doughty 1995: 58). One of the cattle bones also produced a Neolithic date (*ibid.*: 58). At the time of excavation it was surmised that the animals

and humans may have fallen into the swallowhole (*ibid.*: 59). But if so, why were there not similar casualties in later millennia? It is also interesting that most of the faunal remains represent immature domestic species – animals one would expect would have been protected from falling into swallowholes. It seems more plausible that both humans and animals were deliberately thrown into Pollthanacarra. The human remains may represent victims of conflict, illness or violence that were conveniently disposed of. But another hypothesis is that Pollthanacarra served as a place for the ritual deposition of animals and humans.

Cremated bone has so far only been found in one Irish cave. Two discrete deposits of undated cremated human bone were found in Kilgreany Cave – one outside the cave entrance and the second in a fissure inside the cave (Movius 1935: 295). It appears that a significant proportion of the cremated bone has been lost but of the 149g that survives, two individuals are represented – an adult and a juvenile (Fibiger 2005). The fact that the human remains placed in caves during the Neolithic are repeatedly in an unburnt state suggests a deliberate preference, particular at a time when human remains placed in passage tombs and court tombs were often cremated. However, the cremated remains from Kilgreany should not be ignored as the evidence from megaliths clearly indicates the deposition of a combination of both burnt and unburnt remains.

Where it has been possible to determine age and sex (and this is often not possible due to an absence of the relevant skeletal elements), remains of both females and males have been recovered from Irish caves but there is a marked paucity of non-adult remains (Fibiger 2005), consistent with general patterns in formal burial places of the Neolithic. However, the human remains from Kilgreany Cave comprise 15 adults (at least three females and three males), four juveniles/adolescents and three neonates/infants, although not all the human bones from this site reflect Neolithic activities (see above). Annagh Cave was clearly reserved for the deposition of individuals of a particular age, sex and status. The three crouched inhumations from the site consist of adult males – two over 55 years and one over 30 years. These were accompanied by a scatter of bone representing at least two further adults, probably also males (Ó Donnabháin forthcoming). The age of two of the Annagh individuals is worth noting considering that most men at this time died in their late 20s or early 30s (Cooney 2000: 87).

Artefact assemblages

Lithics from sites such as Potter's Cave and Boat Cave attest to short-term occupation of caves along the Antrim coast during the Late Mesolithic (Woodman 1978: 273). Similarly, lithics from Glencurran Cave, Co. Clare (Sternke 2006) and probably also those from Kilgreany Cave, Co. Waterford (Dowd 2002: 86) indicate possible domestic use of caves in the Bronze Age. However, while single artefacts such as hollow and convex scrapers have been found in some caves, nothing resembling Neolithic settlement floors, knapping debris or lithic assemblages has yet been found. Neolithic pottery is also scarce from cave contexts. Herity (1982: 265, 372) suggested that the Early Neolithic carinated pottery from the inner chamber of Kilgreany Cave represented habitation. However, the lack of other signs of

domestic activity at this site, coupled with the use of the cave over a prolonged period for burial, suggests the pottery was associated with ritual activities (Dowd 2002: 82). In support of this, some of the Kilgreany sherds derive from a closed vessel - a type not commonly found on habitation sites (Carroll 1998: 110, 115; Sheridan 1995: 8). Nevertheless, because caves were used in the Mesolithic and Bronze Age for occupation, and because Neolithic settlement strata have been recorded from caves elsewhere in Europe (e.g. Barker 1981: 82; Ribé *et al.* 1997: 71-4; Whitehouse 1992: 14-6), the use of caves for domestic activities in Neolithic Ireland cannot be discounted.

No artefacts whatsoever have been recovered from seven of the 14 sites with Neolithic radiocarbon dates. This tends to support the idea of depositing token quantities of human bones in caves rather than intact burials. However, this figure needs to be assessed with caution as the absence of artefacts may in some cases be the result of non-scientific excavations rather than real Neolithic practices. Of the remaining caves in the sample, Annagh Cave is the only site where a grave-good package can be identified with certainty. In all other instances, stratigraphic and contextual disturbance, occasionally coupled with less than ideal excavation techniques, have made it difficult to link artefacts with Neolithic human bones. However, some patterning is evident: stone axes, pottery and lithics (mainly scrapers) are occasional but not frequent finds; beads – in the form of perforated shells and perforated animal teeth – have turned up at some sites; and fossils, quartz crystals and animal bones may also be of significance.

The use and appreciation of cave space

The spatial distribution of human bones from the 14 sites discussed here display a focus at the entrances. It appears that bodies or bones were placed at, immediately inside, or immediately outside cave entrances, and that material was subsequently washed or carried deeper into the caves. At Barntick Cave and Bats' Cave, the majority of the human remains were discovered concentrated at, or immediately inside, the entrances. At Elderbush Cave it seems that human bones and artefacts were originally deposited inside the cave entrance but were later carried deeper into the cave by natural processes. At Kilgreany Cave, the Neolithic burials were confined to the outer chamber just inside the cave entrance; no burials were encountered in the deeper parts of the cave though activities represented by Early Neolithic pottery occurred there (Dowd 2002: 79). A dog of Neolithic date was deliberately placed at the entrance to Killuragh Cave (Woodman 1997). The focus on cave entrances during the Neolithic is interesting, particularly considering that during the Bronze Age people appear to have travelled deep into caves to deposit both burials and votive hoards (Dowd 2004). It seems that during the Neolithic people were reluctant to venture too far into caves (or it may have been taboo to do so) and remained close to the entrances – and daylight – when conducting various funerary rituals.

Two 'morphological' types of caves were used for funerary and ritual purposes. The preferred cave type consisted of a simple long narrow passage such as Barntick Cave, Bats' Cave, Elderbush Cave, Killuragh Cave and Knocknarea Cave. It is possible that these passage-type caves were the most symbolic of a passage to another world and/or passage to the world of the dead. They best represent the liminal nature of caves: the boundary between the

outside world and the cave interior is immediately apparent. The restricted space heightens the sense of 'passage' or the sense of moving into another world. However, restricted space also increases the sense of claustrophobia, fear and danger and it seems that people did not venture too deep into these narrow passages. However, if people did enter places such as Bats' Cave or Elderbush Cave, movement would need to have been slow, deliberate and careful. Most of these sites are on average just 0.7m wide and it is often difficult to turn around and exit the caves which would have increased the fear of encountering wild animals (e.g. bears, wolves, foxes, badgers, bats). The second type of cave that was favoured for use consisted of simple, single- or double-chambered caves such as the small single-chambered Connaberry Cave and the larger chambered Kilgreany Cave. Pollthanacarra is different in that it comprises a vertical swallowhole and may never have been physically entered by the living. Apart from Oonaglour Cave which is a relatively extensive system, there is little to suggest that Neolithic people used large underground cave complexes. It is also worth noting that even though many of the caves are located in knolls which are locally prominent features of the landscape, the caves themselves (at present at least) are frequently difficult to locate or are hidden, which may have contributed to an atmosphere of secrecy or a sense of liminality. Few of the caves selected for use during the Neolithic contain geological formations such as stalagmites or stalactites and all are devoid of underground rivers, lakes or pools.

Some caves, by virtue of their dates and location, would appear to relate to each other. Bats' Cave is located just 122m from Elderbush Cave and in the same limestone knoll. The radiocarbon dates from these two caves (Table 1) are interesting because they indicate the possibility of a tradition of using these locations for excarnation over a significant period during the Neolithic. Also intriguing is that the dates from Bats' Cave and Barntick Cave are roughly contemporary (Table 1). These caves are located on opposite sides of Ballybeg Lough with the entrances facing one another. They may have been intervisible during the Neolithic and they certainly seem to have been used for similar purposes at about the same time. It is possible that Barntick Cave and Elderbush Cave were also intervisible.

Excavations have also revealed some caves that were definitely *not* used for funerary or ritual activity during the Neolithic and this poses some interesting questions. Fortlands Cave, Clahane td., Co. Kerry was targeted for research excavations (Dunne 2002: 148-9) due to its proximity to a nucleus of Neolithic, Beaker and Bronze Age activity – both secular and ritual in nature. However, no archaeological deposits were encountered. Likewise, despite the abundance of Neolithic settlement and burial at Lough Gur, Co. Limerick, the human bone of Neolithic date from the nearby Red Cellar Cave and the stone axe hoard from the adjacent Grange Hill Cave (Dowd 2004), no archaeological material was found during excavations inside Knockadoon Cave, Lough Gur td., Co. Limerick (Cleary 1995: 5-7). Fortlands Cave and Knockadoon Cave were located near foci of Neolithic activity, so they would have been 'available' for use, and morphologically they resemble some of the caves that were used for Neolithic funerary rites (Fortlands Cave is similar to Killuragh Cave; Knockadoon Cave is not unlike Connaberry Cave). However, these two caves appear to have been deliberately avoided during the Neolithic.

Comparisons with Britain

Overall, the Neolithic Irish cave data are similar to the evidence from Britain. Killuragh Cave and probably also Sramore Cave complement the British evidence for the use of caves for Mesolithic ritual and burial (Conneller 2006). This is followed by what Chamberlain (1996: 951) has noted as a *'sudden and marked incidence of deposition of human remains in British caves after 5000 bp which contrasts with the almost complete absence of cave burials during the previous two millennia.... The frequency of dates seems to decrease after 4500 bp'*. He contends that cave burial in Britain was '*an innovative funerary practice*' during the first half of the Neolithic (Chamberlain 2001). Recent dates from cave burials in south Wales and the south-west of England confirm this trend, again clustering between 3600 BC and 3400 BC (Schulting & Richards 2002: 1020). In contrast to Ireland, the British caves have datable artefacts. Polished stone axes (principally Group VI tuff axes), lithics (frequently leaf-shaped arrowheads) and pottery (especially Peterborough Ware) are common finds in caves containing human remains of Neolithic date (based on Chamberlain & Williams; 1999; 2000a & b). Though previously dated to the Late Neolithic and Early Bronze Age, Peterborough Ware is now known to reflect Middle Neolithic activities (Gibson 2002: 78) and therefore correlates with the Irish cave dates.

In Britain caves were used for the deposition of both extended and crouched inhumations but also for the placement of token deposits of disarticulated bones (Chamberlain & Williams 1999; 2000a & b). Neolithic graves and cists have been found in some of the British caves (Gilks 1989: 14) and there is also evidence for the deliberate sorting of bones, such as packing bones into crevices or treating skulls and long bones in a particular manner (*ibid.*: 14). The deposition of humans and animals in swallowholes is also documented such as at Brimble Pit in the Mendips and sites in North Yorkshire such as Slip Gill Windypit, Antofts Windypit and Ashberry Windypit (Lewis 2000). This also recalls Neolithic ritual deposits placed in vertical flint mining shafts in Britain (Barber *et al.* 1999: 62, 66-7, 70; Russell 2002: 107-9).

Compelling evidence of excarnation in Britain comes not from caves but from Neolithic long cairns at Ascott under Wychwood, Oxfordshire and Parc le Breos Cwm on the Gower Peninsula. But calcite deposits partly encased the human bones found at these two sites suggesting that the bones had been exposed in caves for some time before their final deposition (Barnatt & Edmonds 2002: 114). In Ireland, unburnt human bones from Neolithic tombs are typically disarticulated and rarely representative of complete individuals, for instance, the remains from Poulnabrone, Co. Clare (Lynch & Ó Donnabháin 1994) and the 'pseudo-cave' site of Caherguillamore, Co. Limerick (Hunt 1967). This patterning suggests that the dead were placed to excarnate at a different location after which disarticulated bones were brought to the tomb. It is virtually impossible to trace the different locations involved in multi-stage and multi-locational funerary rituals; typically it is the final location that is most visible and receives most attention. However, we must consider that caves would have provided opportune places at which to excarnate the dead and therefore, it is possible that the disarticulated human bones found at megalithic tombs in limestone regions may originally have been gathered from caves (if caves occur in that area).

Discussion

Because few Irish caves have produced diagnostic Neolithic artefacts, assessing the number that may have been used for funerary or ritual activity is extremely difficult. As natural features in the landscape, it is not possible to associate caves with one particular period nor is it easy to identify in advance which caves are of archaeological significance. Of the 700 or so caves recorded in Ireland (Drew 2004), only about 75 have been excavated to any degree and only 14 of these have here been shown to contain human bone of Neolithic date. This equates to approximately 19 per cent, which, if applied to the total number of caves in Ireland, suggests the possibility of at least 130 caves associated with human remains of Neolithic date. Together with caves, discoveries such as the human remains of Neolithic date from Stoneyisland bog, Co. Galway (Brindley & Lanting 1995: 135; Ó Floinn 1995: 140) and from the foreshore of the Shannon estuary in Co. Limerick (O'Sullivan 2001: 74, 76), highlight the significance of natural places with regard to funerary practice and religious belief.

It is evident that not all caves were considered appropriate places at which to conduct funerary and ritual activities. But why? One suggestion is that the proximity of some examples to areas of settlement may have deemed them unsuitable to carry out rituals associated with the dead. Another concerns their shape and whether it was appropriate to the rituals concerned. The dates indicate that the funerary use of caves in Ireland co-existed with the use of passage tombs, court tombs and portal tombs, as well as cist burials (Brindley & Lanting 1989/90; Scarre *et al.* 2003: 98). A number of important similarities between caves and megalithic tombs suggest that, inside them, space could have been used in a similar way (Bradley 1993: 26). It is passage tombs in particular that most resemble caves in terms of morphology and the sensory experience: both are dark, both comprise confined spaces and both affect the senses in a similar manner. Caves and passage tombs share the same feeling of being underground and in another world. It is likely that the chambers and passages of these megalithic tombs reflect attempts to replicate the chambers and fissures in caves, or that passage tombs represent human efforts to capture or recreate the symbolic and phenomenological aspects inherent in certain caves, i.e. the 'cave experience'. Or, as Oosterbeek (1997: 70) has suggested, megalithic tombs are *'a particular type of artificial cave.'*

Although it is not clear which came first, it is likely that caves pre-echoed certain properties that were to become important for Neolithic tomb-builders. Several archaeologists (Bahn 1997: 36-7; Barnatt & Edmonds 2002: 126; Clottes 2003: 11; Lewis-Williams 2002: 227; Sieveking 1997: 29; Skeates 1991: 127) have suggested that caves were perceived as sacred places in the landscape. Lewis-Williams (2002: 214) and Barnatt and Edmonds (2002: 125) claim that in prehistory, the sensory deprivation afforded by remote, silent and totally dark caves could have induced altered states of consciousness. Human voices and sound in caves become distorted, amplified and may cause echoing. Research into the acoustic properties of various chambers and passages in Upper Palaeolithic caves indicated that resonant areas were more likely to contain art than non-resonant areas (Bahn 1997: 37; Clottes 2003: 21; Lewis-Williams 2002: 225; Sieveking 1997: 29). Because of their enclosed nature, caves tend to contain odours. With caves that were used for communal burial, the smell of human

bodies at various stages of decay may have been overpowering and pungent. Caves hold a sense of consistency or permanency with a lack of 'day' but permanent 'night'. They maintain a constant cool temperature and do not reflect the changing weather or seasons of the outside world.

Evidently, a variety of different ways of disposing of the dead co-existed in Neolithic Ireland, and a number of different sites, including caves and megalithic tombs, had significant roles in the processing of the dead. General perceptions may have existed regarding life, death and the afterlife, but different choices were made, on a personal, local or regional level, as to how the dead were treated. Such choices may have been influenced by the age, gender or status of the deceased. While the traditional approach of compartmentalising and classifying burial forms has been necessary, is has also been, to a certain extent, unhelpful. Indeed, to classify the caves discussed here as a distinct form or category of Neolithic burial would be misleading. Certainly, some caves formed the primary focus of activities and were used as the final resting place of the dead. However, other caves were used for excarnation and therefore served as temporary or transitory places in multi-stage and multi-locational funerary rituals.

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