

Broken Bones and Broken Stones: Exploring Fragmentation in Middle and Late Bronze Age Settlement Contexts in Ireland

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This article examines the evidence for fragmentation practices on Middle–Late Bronze Age (c. 1600–700 BC) settlement sites in Ireland by looking at two kinds of material: human remains, both burnt and non-burnt, and quern stones. It highlights evidence for the manipulation of non-burnt skulls through ‘de-facing’ and the potential retention of cranial and other fragments for ‘burial’ in settlements. It also explores the more difficult task of determining whether incomplete skeletal representation in cremated remains can be interpreted as deliberate fragmentation, and how the context of deposition must be considered. Human agency in relation to the fragmentation patterns of querns is also examined to understand whether the act of breaking these objects was intentional or unintended and if depositing them was symbolic or simply fortuitous. By discussing this evidence, I hope to contribute to the argument that the funerary and settlement spheres in later prehistoric Ireland were becoming increasingly intertwined.

Keywords: Bronze Age, settlement, fragmentation, cremated bone, non-burnt bone, quern stone

INTRODUCTION

Artefacts and ecofacts not only allow us to reconstruct past environments, subsistence strategies, and manufacturing skills, they also facilitate an understanding of how the material remains of everyday lives were used to create, maintain, and dissolve social relations. Settlement sites, as the arenas of everyday life, were similarly invested with social meaning, their life-cycle being intimately intertwined with that of their inhabitants (Barrett, 1994; Brück, 1999, 2001; Bradley, 2005). Patterning in the placement and condition of artefacts within such sites has been examined by several scholars and seen as ritualized practice in the domestic arena (Hill, 1995; Brück, 1999, 2001, 2006; Chapman, 2000; Bradley, 2005; Arnoldussen, 2008). At the Iron Age settlement of Crick Covert Farm,

Northamptonshire in England, for example, Woodward and Hughes (2007) critically examined the patterning of deposits within roundhouse gullies to determine that some represent deliberate placements at the time of abandonment and a preference for right-hand locations relative to doorways. Similarly, the use of ‘odd deposits’ on Middle–Late Bronze Age settlements in southern Britain were just one way the occupants could ‘rationalise the passing of time and attempt to influence the outcome of those central events that shaped their lives’ (Brück, 1999: 160; see also 2001). Within these deposits, deliberate fragmentation has become a sub-set; although the purpose and meaning behind it continues to be debated (Chapman, 2000; Fowler, 2004, 2008; Jones, 2005; Chapman & Gaydarska, 2007; Brudenell & Cooper, 2008; Brittain & Harris, 2010; Garrow,

2012; Larsson, 2015). This article explores the evidence for such fragmentation in Middle–Late Bronze Age settlements in Ireland, focusing on similarities between the treatment of the dead and of quern stones.

The discovery of human remains within occupation levels on prehistoric domestic sites is a well-documented phenomenon (e.g. Brück, 1995; Hill, 1995; Chapman, 2000; Eriksson, 2005; Cleary, 2006, 2014; Armit & Ginn, 2007; Arnoldussen, 2008: 271; Brudenell & Cooper, 2008; Booth et al., 2015). Most deposits are only fragments of the whole body: a select few bone types, namely the cranium and long bones, ‘token’ deposits of cremated bone, or parts of several individuals reconstructed and mummified. They are frequently incorporated into contexts that are liminal in character, such as ditches and entranceways. Similarly, quern stones, both whole and fragmented, alongside animal burials, pots, and other artefacts, have been recovered from the pits, ditches, and postholes of settlement sites, where they are argued to have been deliberately placed, often in association with both the building and abandonment of roundhouses and settlements (Barrett, 1989; Brück, 1999, 2006; Seager Thomas, 1999; Watts, 2014). On Middle Bronze Age settlements in southern Britain, Joanna Brück noted that ‘like their owners, querns (essential for the production of food and thus a potent symbol of life, fertility, and productivity) were burnt, broken, and buried upon death’ (Brück, 1999: 155). Through a series of site-specific case studies (Figure 1; Tables 1 and 2), I examine the evidence for such practices in Ireland and how these might be interpreted in the context of ideology and symbolic behaviour in settlement contexts.¹

¹ The temporal relationships between these deposits and the use of the settlements have been discussed

BRONZE AGE IRELAND (c. 2200–700 BC)

Settlement

In Ireland, distinctive house structures become archaeologically more visible from c. 1600 BC onwards and it is this Middle–Late Bronze Age period that I shall focus on here. Over 680 Bronze Age structures, spread throughout the island, are now known; most are circular or sub-circular, although some rectangular examples are recorded (Ginn, 2016). The principal forms of construction encompass various combinations of slot-trenches, postholes and stone wall footings, and the only regional patterns evident appear to be in response to raw material availability, although the use of locally specific elaborate entranceways has been identified (Ginn, 2014). Most are unenclosed settlements, although wooden palisades and ditches demarcated others. These represent farmsteads engaged in small-scale food production and craftworking, dispersed across the landscape, with familial connections forming the basis of social interactions resulting in local community identities. Many of the wetland sites aside, the range of artefacts found on these settlements is limited or even non-existent; although, where pottery and worked stone has been recovered, they are generally in a fragmentary condition, as is to be expected (Cleary, 2007). By examining potential taphonomic processes alongside recurring patterns of deposition, we can, however, begin to theorize about what these artefacts might tell us about past behaviour. Among the expected patterns resulting from natural formation processes and the management of ‘rubbish’ accumulation, there is also some evidence for repetitions

elsewhere (Cleary, 2014), but it is worth re-emphasizing their importance when attempting to interpret the practices within which these human remains and quern stones played a role.

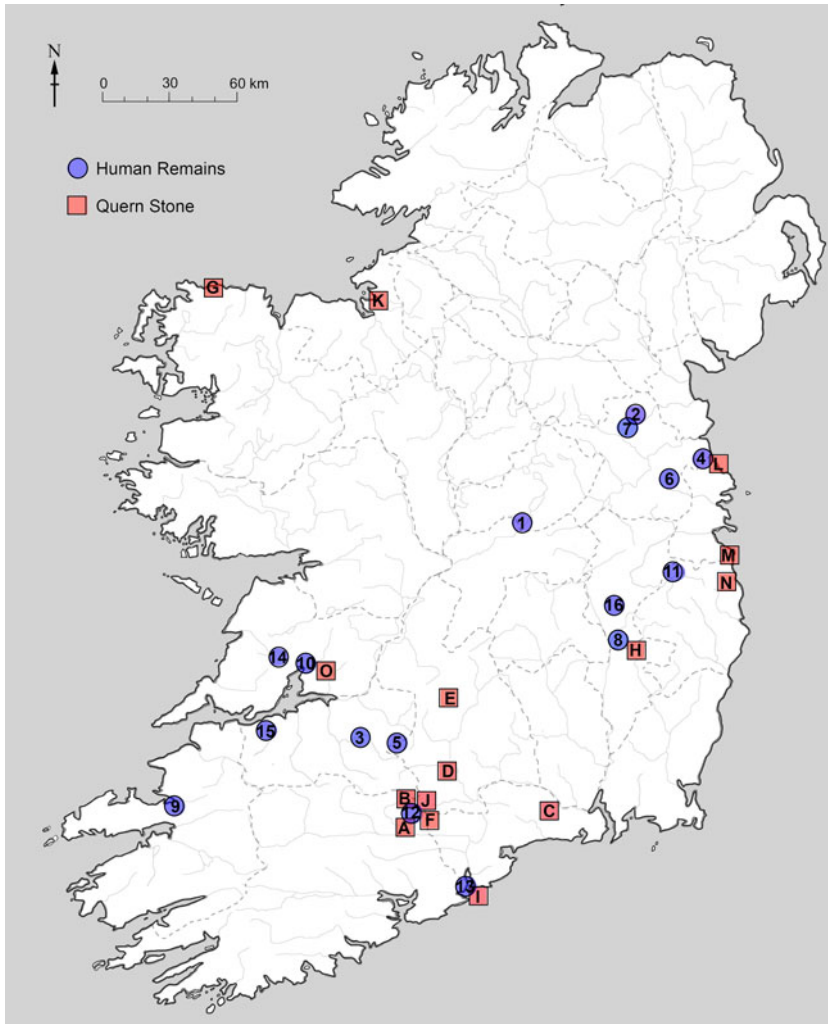


Figure 1. Sites with human remains and quern stones mentioned in the text (see [Tables 1](#) and [2](#) for details).

in context and conditions that suggest treatment in a specific way before final deposition (Cleary, 2007, 2015: 60–61).

Burial

Since here I take human remains as a type of material culture suitable for deposition at settlement sites, it is also necessary to briefly outline what is known about formal funerary practices in Ireland during this

period. Funerary architecture in the earlier Bronze Age took the form of pits or stone-lined cists, sometimes monumentalized by the addition of stone cairns, earthen mounds, encircling ditches, or standing stones.² Individuals were interred

² Earlier Irish monuments, such as Middle Neolithic passage tombs and Linkardstown-type graves, were re-used for Early Bronze Age burials; and this practice continued into the Middle Bronze Age, although with re-use during the Middle–Late Bronze Age taking more the form of votive offerings than burials (O’Brien, 1999: 223–5).

Table 1. Human remains on settlement sites discussed in text.

Fig. 1	Settlement site	Human remains	Context	Date: settlement	Date: bone	Reference
<i>Non-burnt bone</i>						
1	Ballinderry 2, County Offaly	adult male skull (face removed) adult female skull (face removed) adult male skull (top half of skull removed)	base of LBA occupation layer	LBA		O'Neill Hencken, 1942; Newman, 1997
2	Moynagh Lough, County Meath	skull (top half only)	edge of LBA occupation layer	2650 ± 80 BP (charcoal: GrN-12359); 922 ± 9 BC (Q 4383)		Bradley, 1985/86, 1997; Ginn, 2016: 48
3	Knockadoon, Lough Gur, County Limerick	infant skull (minus face)	pit centrally located within roundhouse	TPQ: 2880 ± 70 BP (charcoal; GrN-16822)		Cleary, 1995
4	Stamullin, County Meath	adult (possibly male) skull cap fragment adult skull cap fragment	lower part of main fill of outer ditch, 9 m north of eastern entrance main lower fill of outer ditch, north-western side	2680 ± 40 BP (elder seed; Beta-221293)	insufficient collagen levels	Ní Lionáin, 2008
5	Chancellorsland, County Tipperary	two skull fragments, possibly from same adult	basal fill of inner ditch, close to eastern entrance of outer ditch	3270 ± 40 BP (carbonized pot accretion; GrA-5292); 3140 ± 40 BP (animal bone; GrN-22383)	3180 ± 40 BP (GrA-5297)	Doody, 2008
6	Knocks, County Meath	adult (probably) femur shaft	fill of pit within enclosure, adjacent former ditch section terminal	2710 ± 40 BP (pig humerus; Beta-220134); 2740 ± 40 BP (cattle/deer/horse long bone; Beta-220135)		Elder, 2009
7	Raffin Fort, County Meath	human phalange (?part of)	fill of palisade foundation trench	2684 ± 113 BP (UB-3534)		Newman, 1993, 1995
8	Prumplestown Lower, County Kildare	adult, 23 bone fragments (8 axial; 15 unidentifiable to element)	pit within second phase of roundhouse	TPQ: 2970 ± 40 BP (charred material; Beta-243986); 2765 ± 30 BP (hazel charcoal; SUERC-27189)	2710 ± 30 BP (SUERC-27170)	Clark & Long, 2010

Table 1. (Cont.)

Fig. 1	Settlement site	Human remains	Context	Date: settlement	Date: bone	Reference
Cremated bone						
9	Cloghgers, County Kerry	adult, cremated fragments of rib and two long bones	southern posthole of eastern entrance of roundhouse	2890 ± 90 BP (charcoal; Beta-148850)		Kiely & Dunne, 2005
10	Knocksaggart, County Clare	cremated human bone	two postholes, western side of south-east entrance of roundhouse B pit outside roundhouse C	M-LBA		Hanley, 2001
11	Kilbride, County Wicklow	adult, cremated bone	internal structural posthole of roundhouse posthole at end of slot-trench, possibly marking entrance of roundhouse	M-LBA		Breen & Kelleher, 1998
12	Gortnahown, County Cork	juvenile, small deposit of cremated bone	slot-trench of roundhouse	M-LBA		O'Donoghue, 2011
13	Ballyvergan West, County Cork	small deposits of cremated human bone (where identifiable, mostly long bone fragments) adult, 12 skull, 3 femur, 2 tibia and 3 rib fragments	four pits and one hearth within concentration of habitation features pit within concentration of habitation features (within Structure G)	3060 ± 70 BP (charcoal; Beta-165320); 2880 ± 50 BP (charcoal; Beta-165318)		Kehoe & O'Hara, 2013
Burnt mounds						
14	Cragbrien, County Clare	adult (probably male) skull fragment and part of facial bone	upper deposit of burnt stone	2977 ± 31 BP (charcoal; UB-6059)		Hull, 2007
15	Inchagreenoge, County Limerick	adult male, complete skull	against edge of water spring, above spread of burnt stone, sealed by stone capping	3686 ± 39 BP (charcoal; UB-6015); 3518 ± 41 BP (charcoal; UB-6016); 3330 ± 50 BP (alder wood; GrN-28199)	2940 ± 30 BP (GrN-28198)	Taylor, 2007
16	Belan, County Kildare	top of skull	upper fill of trough	3830 ± 30 BP (pomoideae charcoal; SUERC-35337); 3660 ± 30 BP (hazel charcoal; SUERC-25341)	3395 ± 30 BP (SUERC-25251)	Clark, 2010

Table 2. *Quern stones on settlement sites discussed in text.*

Fig. 1	Settlement site	Grinding stones	Associated material	Context	Date: settlement	Reference
A	Ballybrowney Lower, County Cork	quern stone, complete	—	southern posthole of entrance to roundhouse E	3360 ± 50 BP (oak charcoal; Beta-201050)	Cotter, 2013a
		quern stone, fragment	—	northern posthole of entrance to roundhouse B	3260 ± 40 BP (oak charcoal; Beta-210766)	
		quern stone, fragment	—	fill of stone-lined slot-trench for palisade enclosure 3	3330 ± 40 BP (hazel charcoal; Beta-201051)	
B	Mitchelstown, County Cork	quern stone, fragment	—	primary fill of slot-trench on southern side of entrance to roundhouse C	3077 ± 39 BP (oak charcoal; UB-6772)	Cotter, 2013b
		quern stone, fragment	—	primary fill of internal pit/post-pit of roundhouse B	3057 ± 38 BP (mixed charcoal; UB-6773) 3087 ± 37 BP (mixed charcoal; UB-6774)	
C	Adamstown, County Waterford	quern stone, fragment	heat-shattered stones; scorched clay	top of primary fill of north-eastern post-pit of entrance to roundhouse	3290 ± 60 BP (oak charcoal; Beta-209760)	Russell & Ginn, 2011
D	Ballydrehid, County Tipperary	quern stone, fragment quern stone, fragment	— copper alloy socketed tool; possible burnishing stone	fill of stone-lined slot-trench of roundhouse B		McQuade, 2009
E	Killoran, County Tipperary	quern stone, fragment	possible struck quartz	fill of slot-trench of roundhouse A	3340 ± 80 BP (charcoal; Beta-117545)	Ó Néill, 2005
		quern stone, fragment (in 2 pieces)				
		quern stone, fragment	flint flake	post-pit within roundhouse A		
F	Gortnahown, County Cork	quern stone, almost complete (1 small fragment missing)	burnt bone, probably animal	base of roundhouse slot-trench (south of possible entrance), grinding surface face down		O'Donoghue, 2011
G	Belderg Beg, County Mayo	quern stones, at least some only fragments		some in postholes of roundhouse	3170 ± 85 BP (burnt wood block; SI-1473)	Caulfield et al., 2009
H	Prumplestown Lower, County Kildare	fragments from 2 quern stones (1 in two pieces)	rubbing stone; 100 animal bone fragments (of which 7 cattle); cereal grains; cremated human bone (1 adult)	main fill of pit within second phase of roundhouse	TPQ; 2970 ± 40 BP (charred material; Beta-243986); 2765 ± 30 BP (hazel charcoal; SUERC-27189); 2710 ± 30 BP (cremated human bone; SUERC-27170)	Clark & Long, 2010

Table 2. (Cont.)

Fig. 1	Settlement site	Grinding stones	Associated material	Context	Date: settlement	Reference
I	Ballyvergan West, County Cork	quern stone, almost complete	possible whetstone fragment	primary fill of pit within concentration of habitation features	2880 ± 50 BP (charcoal; Beta-165318);	Kehoe & O'Hara, 2013
		quern stone, fragment	50 fragments of cremated human bone (long bone including femur); 18 coarseware pottery sherds	primary fill of pit within concentration of habitation features	3080 ± 50 BP (charcoal; Beta-165319); 3060 ± 70 BP (charcoal; Beta-165320)	
J	Ballynamona, County Cork	quern stone, complete	cereal grains; hazelnut shells; 2 rubbing stones (1 broken); rubbing stone/hammerstone	upper fill of pit within roundhouse	3025 ± 24 BP (hazelnut shell; UBA-14152);	Hegarty, 2010
		possible quern stone, complete (cup-like depression on top)	—	stakehole associated with pit within roundhouse	2929 ± 25 BP (charred seeds; UBA-14113); 3009 ± 27 BP (charred barley; UBA-14111)	
K	Caltragh, County Sligo	quern stone, complete	2 hammerstones; grinding stone; 13 chert scrapers; struck chert; 4 riverine pebbles	burnt fill overlying northern side and entrance area of roundhouse 1	3220 ± 80 BP (alder charcoal; Beta-194432);	Danaher, 2007
		quern stone, fragment	—	—	3140 ± 70 BP (pomoideae charcoal; Beta-194433);	
		quern stone, fragment	—	—	3210 ± 40 BP (alder/willow charcoal; Beta-194434)	
L	Stamullin, County Meath	quern stone, 2 fragments	2 chert scrapers; struck chert	fill on western side of foundation trench of roundhouse 2	—	Ní Lionáin, 2008
		quern stone, 5 fragments	chert debitage	fill of large pit east of roundhouse 2	—	
		quern stone, complete	fragmented grinding stone, 2 clay objects (? <i>briquetage</i>); sherds from 2 LBA vessels	lower fill of outer ditch (north area), grinding surface face down	2680 ± 40 BP (elder seed; Beta-221293)	
M	Laughanstown, County Dublin	quern stone, complete	sherds from 2 LBA vessels	upper fill of outer ditch (north-eastern area)	—	Seaver, n.d
		quern stone, complete	sherds from 3 LBA vessels	basal fill of recut of outer ditch (south-western area), grinding surface face down	2766 ± 31 BP (pomoideae charcoal; UBA-7897)	
		quern stone, complete (cup-like depressions in base)	—	—	—	
N	Charlesland, County Wicklow	quern stone, complete	burnt granite, several complete and broken rubbing stones and grinding stones	large pit south-east of roundhouse	2700 ± 31 BP (charred cereal; OxA-12754);	Molloy, 2005
		quern stone, complete	—	—	2765 ± 31 BP (charcoal; OxA-12756); 2934 ± 31 BP (charcoal; OxA-12755)	
O	Knocksaggart, County Clare	fragments from 2 quern stones	9 flints; cereal grains; animal bone fragment	pit outside roundhouse 2	1429–1265 cal BC	Hanley, 2001
O	Knocksaggart, County Clare	quern stone, fragment	cremated human bone	pit outside roundhouses C	M–LBA	Hanley, 2001

both singly and in cemeteries (see Waddell, 2010: 150–72). From approximately 1900 BC onwards, cremation dominates the burial record, and a succession of funerary pottery styles that had developed during the Early Bronze Age cease by around 1500 BC (Brindley, 2007). While some funerary customs continued into the later Bronze Age, such as the use of pits and cremation, there were also some notable differences. Where pottery accompanied the dead, it now comprised coarse flat-bottomed vessels comparable to those from contemporary settlement sites and often consisted of only a small number of sherds, likely representing a single complete vessel (Grogan, 2004: 62; McGarry, 2008: 116–22). Not only do these vessels resemble those from settlement sites, but many have sooting or blackened accretions, suggesting they were previously used in cooking, perhaps in domestic contexts (Grogan & Roche, 2010: 43). If this can be seen as another way in which the sacred and the secular became increasingly intertwined from the Middle Bronze Age onwards, then perhaps the fragmentation of both people and objects played a role in this readjustment of the cosmological structure.

‘OFF WITH THEIR HEADS’... LEGS AND ARMS: HUMAN REMAINS ON SETTLEMENT SITES

The discovery of both burnt and non-burnt human remains on prehistoric settlement sites in contexts that could be considered non-funerary, informal, or unceremonious has been well-documented across Europe, for example in Late Bronze Age and Iron Age Britain (Brück, 1995; Hill, 1995; Armit & Ginn, 2007; Brudenell & Cooper, 2008), the Balkan Neolithic and Copper Age (Chapman, 2000), Bronze Age Sweden (Eriksson,

2005) and the Middle Bronze Age of the Netherlands (Arnoldussen, 2008: 271).

Where non-burnt human remains considered contemporary with occupation have been uncovered in Ireland, they are mainly represented by fragments of the whole body via a select few bone types, namely the cranium and long bones. This over-representation is unlikely to be due to taphonomic processes, such as mode of burial and post-depositional disturbance, given the survival of complete Early Bronze Age skeletons and the recurring patterns across large geographical areas with diverse preservation conditions. Where deposits of cremated bone have been incorporated into settlement contexts, the selection of particular body parts may be less obvious because of constraints in the identification. The fragmenting of bodies or bones prior to burning is generally not detectable in the archaeological record, and the selection of only specific body parts for cremation is also difficult to prove. For example, where bones are exhumed and cremated some time after death, the elements most likely to be recovered are the skull, hip bones, and long bones (Garrido-Varas & Intriago-Leiva, 2015: 237). An over-representation of the cranium and long bones has, however, been observed in the later Bronze Age and Early Iron Age cremations of Uppland in Sweden (Eriksson, 2005: 247). In Ireland, similar deliberate selection of skeletal elements has been proposed for cremation pits at Early–Middle Bronze Age burial sites at Rath, County Meath (Lynch & O’Donnell, 2007: 120), Killoran, County Tipperary (Buckley, 2005: 328), and Mitchelstowndown North, County Limerick (Ó Donnabháin, 1988: 193–94). More recently, Geber (2009: 218) argued against the meaningfulness or intention of skull selection in an Early–Middle Bronze Age flat cemetery at Templenoe, County

Tipperary, despite a higher number of skulls represented. He suggested that, after incineration at high temperatures, the 'missing' bones become very fragile and easily pulverized to tiny unidentifiable fragments, while the skull fragments remain the largest and densest and thereby more extractable from the pyre. Observations by others somewhat counter this argument. Lynch and O'Donnell (2007: 107) suggest that, although the level of cremation differs due to the type of pyre structure, fuel, weather conditions, and difficulty of controlling time, temperature, and oxygen, a recognizable skeleton is still preserved, though fragmented, directly after cremation and would, therefore, facilitate bone selection (see also McKinley, 2006: 85). In comparing cremations dating to the Early and Middle Bronze Age in Ireland, Laureen Buckley has also emphasized that the earlier burials were represented by larger deposits of cremated bone that was not deliberately crushed and 'contained every possible skeletal element including vertebrae, ribs, metacarpals, metatarsals and phalanges' (Buckley, 2005: 328), while the later burials contained very little or none of the axial skeleton and only a few fragments of metatarsals and phalanges. There is now a growing body of evidence that this practice of interring 'token' burials at funerary sites may have started as early as the nineteenth century BC (Eogan, 2011: 276; Troy 2015: 136–38). Thus, at minimum, alongside the obviously natural fragmenting of the body through cremation, if we assume that the whole body was burnt shortly after death, the selection of only a portion of a cremated body for burial may suggest another form of fragmentation.

The possibility of deliberate fragmentation through the reduction of bone size by 'pounding or rolling into tiny (≤ 5 mm) fragments' as a post-cremation, pre-burial treatment has also been postulated

(Grogan, 2004: 69), but is much debated and the arguments surrounding fragment size as the only indicator remain unsatisfactory (see McKinley, 1994, 1997; Buckley, 2005: 328; Lynch & O'Donnell, 2007: 112; Geber, 2009: 227–30; Harvig, 2015: 56). Perhaps future analytical methods will be able to address this, and residue analysis on artefacts discovered with cremated bone may also offer some insights. It has been suggested, for example, that basin stones in Neolithic passage tombs could represent 'funerary querns' if used in conjunction with maceheads and hammerstones to fragment cremated bone (McQuillan & Logue, 2008; see also Geber, 2009: 228).³ This debate aside, it is certainly worth considering this trend towards increasingly fragmented or 'token' deposits of human bone in funerary contexts from the end of the earlier Bronze Age in relation to the deposition of human remains in settlement contexts from the Middle Bronze Age onwards.

It has been suggested that, when deposited together, there was no distinction between the human bone and other settlement remains (Brück, 2006; Brudenell & Cooper, 2008). While some could be interpreted as casual inclusions of accumulated occupation debris, others are more structured and we must question why prehistoric people would have been concerned with burying 'rubbish' in such a manner, in what must have essentially been open

3 The occurrence of quern stones in various funerary contexts has long been noted (see Lidström Holmberg, 1998; Skoglund, 1999: 158; Hamon, 2006; Bakker cited in Van Gijn, 2009: 130), and in Ireland, a quern stone was placed over an Early Bronze Age encrusted urn and cremated bone in a cist at Ballyveelish, County Tipperary (Doody, 1987). This cist was enclosed by a ring-ditch that also contained a quern stone. Similar associations are the 'discarded saddle quern' used as a side stone in a cist at Corrower, County Mayo (Raftery, 1960/61), a heat-affected quern placed on the capstone of a cist at Ballymacrea Lower, White Rocks, Co. Antrim (Collins, 1977), and the fragments from five quern stones and four rubber stones deposited in a burial cairn at Moneen, County Cork (O'Kelly, 1952).

environments. It is, therefore, likely that the process of depositing was important, perhaps as events marking acts linked to the lifecycle of the settlement and its inhabitants. In this case, it is possible that the origin of the bone may have been less significant than the overall contents and act of deposition, including fragmentation.

Non-burnt bone

As detailed elsewhere (Cleary, 2006, 2014), in deposits of non-burnt human bone on Irish Middle–Late Bronze Age settlements there was a clear preference for skull fragments and long bones, including the pelvic region; and they are mainly recovered from pits, ditches, and foundation layers (Table 1). The particularly poignant symbolism of skulls has been addressed in many publications (e.g. Bonogofsky, 2011), while the significance of the other bones has perhaps received less attention but is equally likely to have had representational connotations. This is also comparable with data from Late Bronze settlements in Britain, where analysis of the depositional contexts (mainly pits and ditches) highlighted the role human remains played in emphasizing critical points in space, such as liminal areas, and time, such as foundation and abandonment events (Brück, 1995, 1999, 2001).

Returning specifically to the question of fragmentation, it is notable that all three adult skulls beneath the wooden structures at Ballinderry were deliberately fragmented or ‘de-faced’: the frontal bone was cut from at least two of the skulls and only the top half of the skull and brow ridges remained on the third (O’Neill Hencken, 1942; Newman, 1997). Comparable practices were recorded at Moynagh Lough, where the upper part of a cranium was recovered from the edge of an occupation

layer (Bradley, 1997) and at Knockadoon, where an infant cranium, minus the face, was placed in a pit centrally located within a roundhouse (Cleary, 1995). Similarly, at Stamullin (Figure 2), two partial skull cap fragments, probably from two different adults, were recovered from the fill of the outer ditch (Ní Lionáin, 2008) and at Chancellorsland, two skull fragments, possibly from the same adult, came from the basal fill of the inner ditch (Doody, 2008). Fragmented human remains have also been recorded from some Bronze Age burnt mounds or *fulachtaí fia* (see Table 1), which can be interpreted as more temporary or seasonal loci of occupation, perhaps even outliers to the houses and defined settlements referred to above (Cleary, 2015: 64, 81). Two such sites dated to the Middle Bronze Age are associated with skulls. At Cragbrien, a skull fragment and part of the facial bone were incorporated into an upper deposit of burnt stone (Hull, 2007) and at Inchagreenoge, a complete skull was deposited against the edge of a spring directly above a spread of burnt stone associated with a trough (Taylor, 2007). An Early–Middle Bronze Age example is known from Belan, where the top of a skull was recovered from the upper fill of a trough (Clark, 2010), perhaps relating to the final use of the site.

Other human skeletal elements have also been recorded from settlement sites. At Knocks, a Late Bronze Age ditch delimited an area of domestic activities including cooking, the working of bone and antler, and possibly the tanning of hides (Elder, 2009). The shaft of a human femur was recovered from a pit that also contained a charcoal-rich fill with burnt stones and two unidentifiable heat-affected animal bones. The Middle–Late Bronze Age palisaded enclosure at the multi-period site of Raffin Fort contained part of a human finger bone, pottery, and a

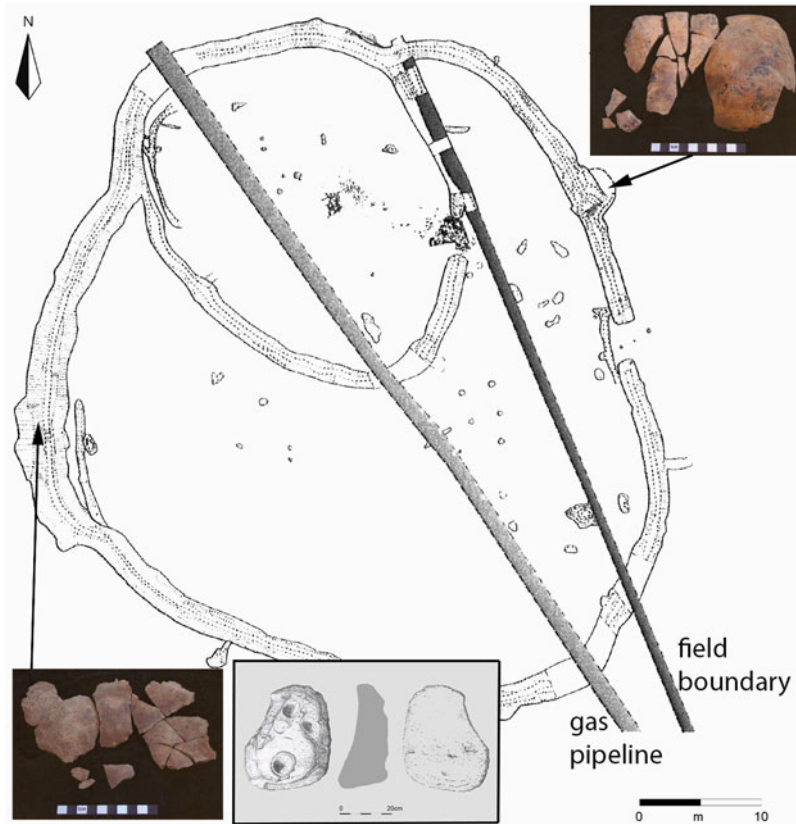


Figure 2. Deposits of skull fragments and cup-marked quern stone in enclosing ditch at Stamullin, County Meath. From Ní Lionáin, 2008: figs 7 and 63, plates 68–69; plan by Arch Tech Ltd, photographs by Linda Fibiger, quern illustration by Mick O'Donoghue, reproduced courtesy of Clíodhna Ní Lionáin.

polished stone disc (Newman, 1993, 1995), while at Prumplestown Lower (Figure 3), a pit within the second phase of a Late Bronze Age structure contained fragments of human bone, some identifiable as from the axial skeleton, and animal bone fragments, including cattle (Clark & Long, 2010). This pit also contained several items of worked stone, including fragments of two quern stones (see below). While it is possible that these examples may represent sub-samples of rubbish that originally accumulated in a midden-like deposit at settlements where human burials also occurred, it does not exclude the possibility that the process of

depositing the fragmented material remains had symbolic significance, during both the formation of the midden and its subsequent redeposition (see Needham & Spence, 1997; Brudenell & Cooper, 2008). Although it could be argued that some of the bone may not have been recognizable as human by all the Bronze Age inhabitants, particularly if not taken directly from a body or funeral context, and the identity of the individuals may have been forgotten, it is unlikely that the memory of the 'rubbish' pile as a location where human remains were incorporated was lost, be they non-burnt, charred, or cremated.



Figure 3. Quern stone fragments from pit in roundhouse at Prumplestown Lower, County Kildare. From Clark & Long, 2010: figs 13 and 37, plate 17; photographs by Rubicon Heritage Services, reproduced courtesy of TII.

Cremated bone

The natural fragmenting of human bone through the process of cremation is frequently discussed in archaeological literature, as is the potential loss of bone during recovery from the pyre, and indeed the possibility of deliberate selection and subsequent additional fragmentation through intentional manual crushing and pounding (see above). In Ireland, it has been suggested that from the later Early Bronze Age onwards formal cremation burials

contain fewer quantities of bone per person, some of which may have been deliberately reduced further into fragments of fragments (see Grogan, 2004; Eogan, 2011; Troy, 2015). In many cases, these are interpreted as ‘residual’ or ‘token’ burials, particularly when recovered from settlement sites, where cremated bone, like non-burnt human bone, is sometimes deposited in pits and ditches, but also with a recurring focus on the structural elements of roundhouses, particularly entrances or thresholds, as well as

temporal transitions, such as foundations and abandonments (Table 1). In many instances, this bone is so heavily fragmented that it is not possible to definitively identify it as human. As outlined above, this may sometimes also have been the case in the Bronze Age; but perhaps this was not relevant as the bone was imbued with human values and used to fulfil a representative role within these acts of deposition (Brück, 1999; Sofaer, 2006; Brudenell & Cooper, 2008). Although exploring the comparative evidence for the treatment of non-human bone at these sites is beyond the scope of this article, it has been suggested, for example, that there was no human-animal dichotomy; dead materials such as pieces of human bone, animal burials, and deposits of broken artefacts were deliberately deposited and evoked ideas of regeneration or rebirth (Brück, 2000, 2006: 86).

At Cloghers, fragments of cremated bone, including elements from a rib, two long bones, and a scapula from at least two individuals, were recovered from a structural posthole at the entrance to one roundhouse (Kiely & Dunne, 2005). At Knockagart, cremated bone was found in two postholes defining the entrance porch of one roundhouse and in an external pit, which also contained a quern stone fragment (see below; Hanley, 2001). At Kilbride, cremated bone came from an internal posthole and further fragments from a posthole at the end of the slot-trench, possibly marking one side of a truncated entranceway (Breen & Kelleher, 1998). At Gortnahown, a small deposit of cremated bone was recovered from a slot-trench associated with a roundhouse;⁴ the

smooth edges of the fragments could indicate bone that was retained for some time before final deposition or was residual (O'Donoghue, 2011). Small deposits of cremated human bone were also identified in six pits within a myriad of pits, post-holes and stakeholes at Ballyvergan West, with most of the identifiable fragments representing long bones and cranium, the majority of the latter recovered from a single pit (Kehoe & O'Hara, 2013).

Human remains on settlements

As these examples demonstrate, human remains in a fragmented or partial condition, be it small quantities of cremated bone or selected non-burnt bones, were incorporated into some roundhouses, enclosing ditches, associated pits, and other settlement-related sites during the Middle–Late Bronze Age in Ireland, marking significant points in both the life-cycle and the spatial layout of the settlements. While the deliberate fragmentation of some non-burnt bone is irrefutable, such as the de-faced skulls discussed above, whether others were intentionally fragmented before deposition is less tangible; it could certainly be argued that those left to be excarnated, be it in tombs, cenotaphs, or midden-like deposits, may have been purposefully ‘broken’ from the whole body before secondary use at settlement sites. Similarly, it is difficult to determine archaeologically the question of intent in relation to fragmentation of cremated remains; however, alongside the fundamental process of transformation or fragmentation by fire, the characteristically ‘token’ nature of these deposits is noticeable. It is difficult to interpret whether the inclusion of non-burnt bone *versus* cremated bone was an important distinction, but either way these deposits appear to mark both the foundation and

4 Gortnahowan, Kilbride, and Knockagart have not been radiocarbon-dated but are morphologically consistent with Middle–Late Bronze Age structures excavated in Ireland; however, this style of roundhouse continued into the Earlier Iron Age, although relatively few examples have been confirmed (Becker, 2009: 354; Cleary, 2014: 57, n.2).

abandonment of sites, often in liminal areas such as thresholds and enclosing features (see [Table 1](#)). Perhaps the deposits represent localized expressions of identity that could have reinforced a sense of belonging and ownership. In these fragmented states, human bones are also an easily portable material that could be cut up, divided, and shared if required. What, for example, became of the facial bone fragments cut from the skulls at Ballinderry or the remaining bone from the juvenile represented at Gortnahown? What survives in the archaeological record is clearly just one stage in complex mortuary practices that saw the human body manipulated and probably utilized for a variety of social practices. One line of argument is that from the end of the Early Bronze Age onwards the increased fragmentation of both human bone and pottery in funerary contexts, the incorporation of ‘domestic’ pottery into burials, the inclusion of human bone in settlement contexts, and the building of substantial roundhouses rather than monumental funerary architecture suggest changes in ritual behaviour. If what we interpret as the ritual arena was becoming more domestic and everyday life was becoming more ritualized, then the archaeological distinction between the sacred and the secular becomes increasingly blurred. With this in mind, it is also worth examining another type of material culture often uncovered on these settlement sites: quern stones.

BREAKING STONE: CONDITION AND CONTEXT OF GRINDING STONES ON SETTLEMENT SITES

Quern and rubbing stones are often found on the later prehistoric settlements of agricultural communities; based on the locations selected for their final deposition and

the condition in which they are disposed, archaeologists have argued both for and against them representing ‘votive deposits’ (Barrett, 1989; Brück, 1999, 2000, 2001; Seager Thomas, 1999; Watts, 2014). For example, one interpretation of the quern stones recorded from several Middle–Late Bronze Age settlement sites in Britain is that they formed part of offerings used to ‘maintain the household subsistence cycle’ in a society where there was ‘a more mutualistic relationship between people and environment’ (Brück, 2000: 280). Some were included whole, often at significant spatial locations, and it is suggested that ‘they were the “anvil” on which other bodies were broken, reworked and recycled’ (Fowler, 2004: 41), while others were deliberately broken and burnt for incorporation into ritualized acts of commensality before abandonment (Seager Thomas, 1999; Nowakowski, 2001: 141; Brück, 2006; Watts, 2014). It has been suggested that they were also ‘broken’ by the separation of the upper (rubber) and lower (quern) stones, which renders them inoperable (Pryor, 2001: 428; Watts, 2014: 43, 54), although it is recognized that almost all undergo this form of fragmentation (Heslop, 2008: 69). The grinding stones recovered from Middle–Late Bronze Age settlements in Ireland have generally been separated in this way, but many are also broken further, be it in half or with a range of fragment sizes missing, from large sections to small pieces knocked off the sides (see [Figure 3](#)).

The re-use of grinding stones has also been interpreted as functional; for example, when recovered from the structural components of a roundhouse, such as post-pits and slot-trenches, it has been argued that these artefacts were broken along weak points and opportunistically re-used as stone packing during construction. An example is provided by the Bronze Age settlement in Scarcewater,

Cornwall, where a lack of impact marks on fourteen quern stone fragments was interpreted as simply representing breakage along lines of weakness while in use (Quinnell, 2010: 113). What about such re-use on sites where there is no evidence for previous occupation, as in most Irish examples? It seems unlikely that a disused or broken quern would be conveniently located nearby or intentionally brought to a new location to be inserted as stone packing. In other depositional contexts, however, particularly with unknown temporal relations to the occupation, the possibility of quern fragments originating in midden-like accumulations of refuse that leave no archaeological trace should be considered (Brudenell & Cooper, 2008), as well as the possibility that some were inconvenient to move and therefore left behind after a site was abandoned. Such casual discard should be archaeologically evident as there would be little need to bury a grinding stone that was no longer functional rather than just leave it above ground, particularly if a settlement was being abandoned. Even if one takes the view that this simply represents 'rubbish' management, it still implies that there was significance in the means of disposal, often involving the manipulation and selective mixing of artefacts, most probably because objects created in the domestic sphere do not easily lose their meaning, even in 'death' (Brück, 1999, 2000; Chapman, 2000: 4–5). Ultimately, consistencies in the depositional contexts of many of these objects (Table 2) suggest that their placement goes beyond the merely functional to a particular set of meanings.

What, then, of the condition of these objects? When fragmented, accidental breakage from heavy work or through dropping is assumed, but never really questioned. John Chapman, however, while accepting the possibility of breakage

through use as heavy hammers, queried this assumption, stating that 'breakage of what are, by definition, substantial stone artefacts is not necessarily to be expected during the normal working life of a set of grinding stones!' (Chapman, 2000: 94), particularly the 'transverse or, more rarely, longitudinal fracture of querns and rubbers', suggesting that deliberate fragmentation cannot be excluded. Similarly, Heslop (2008: 68–72) has argued that beehive querns from northern Yorkshire and southern Durham were intentionally broken into fractions of the whole, usually either into half or quarter pieces, or specific parts were removed for use elsewhere. To test the hypothesis that fragmentation was a deliberate, intentional, and probably dramatic act, it is necessary to determine the intrinsic molecular strength (IMS) of the stones used (mainly sandstone and granite in Ireland), in order to measure the various forces, both man-made and natural, that could result in the patterns of fragmentation we see in the archaeological samples. This should allow us to compare the IMS results from non-archaeological samples tested to the point of destruction to archaeological samples tested in a non-destructive way. Although this research is in its infancy, the results to date are promising: preliminary tests indicate that the complete breakage of a sandstone quern stone via accidental dropping, from friction through use, or through natural freeze thaw, is highly unlikely. This, then, reaffirms the idea that these objects are not readily or easily broken, supporting interpretations of deliberate human agency. This is not to suggest that fragmentation must be difficult for it to be meaningful, but to further challenge the notion that these objects are simply fortuitously re-used.

On Middle–Late Bronze Age settlements in Ireland, both whole and fragmented quern stones have been recovered

from a variety of foundation and abandoning contexts (Table 2). They were incorporated into the structural elements of roundhouse entrances at Ballybrowney Lower (Figure 4; Cotter, 2013a), Mitchelstown (Cotter, 2013b), and at Adamstown, where accompanying heat-shattered stones and scorched clay may indicate that a fire had been lit in the post-pit prior to the post being inserted (Russell & Ginn, 2011). Similarly, quern stone fragments also came from slot-trenches defining roundhouses at Ballydrehid (McQuade, 2009) and Killoran; at the latter site one such fragment was further broken into two pieces (Ó Néill, 2005). At Gortnahown, a quern stone with a small fragment missing from one side, was placed at the base of the slot-trench with its grinding surface face-down (O'Donoghue, 2011). Quern stones, at least some of which were probably fragments, were also identified in the packing

of postholes of the roundhouse excavated at Belderg Beg (Caulfield et al., 2009: 35, 156). More came from internal pits/post-pits, such as at Mitchelstown (Cotter, 2013b), Prumplestown Lower (where one fragment was further broken into two pieces; Clark & Long, 2010; see Figure 3), Ballyvergan West (Kehoe & O'Hara, 2013), and Ballynamona (Figure 5; Hegarty, 2010). At the latter site, two quern stones and two rubbing stones, one of which was broken, a burnt hammerstone/rubbing stone, and large quantities of charred cereal grains were all found together in a large pit. At Caltragh (Figure 6), one roundhouse appears to have been deliberately burnt down and a 'closing deposit' placed across the entrance area incorporated one complete quern stone and fragments from two others (Danaher, 2007: 82). Quern stones have also been recovered from enclosing ditches at Ballybrowney Lower (Cotter, 2013a)

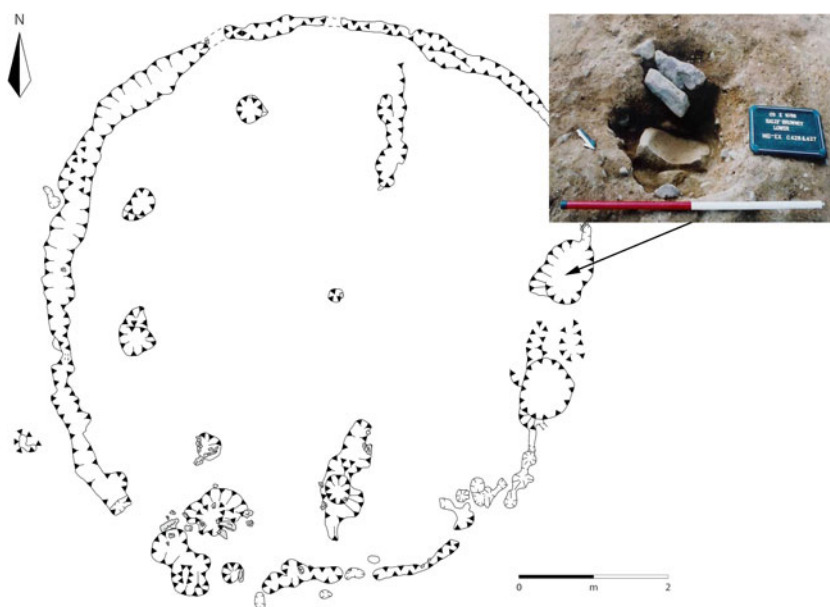


Figure 4. Quern stone in entrance posthole of House B at Ballybrowney Lower, County Cork. From Cotter, 2006: fig. 14, plate 21; plan and photograph by Archaeological Consultancy Services Ltd, reproduced courtesy of TII.



Figure 5. Rubbing and quern stones from the vicinity of a roundhouse at Ballynamona, County Cork. From Hegarty, 2010: plate 8; photograph by John Sunderland, reproduced courtesy of TII.

and Stamullin (see [Figure 2](#); Ní Lionáin, 2008). At Stamullin, the excavator noted that at least three of the four complete quern stones, one of which had cup-like depressions in its base, had been deposited with their grinding surfaces placed downwards, akin to that at Gortnahown. Pits located outside houses have also been used, such as at Charlesland (Molloy, 2005), Knocksaggart (Hanley, 2001), and at Laughanstown, where a large pit was backfilled with burnt blocks of granite and a number of both intact and broken rubbing stones and grinding stones, all ‘capped’ with a very large quern stone (Seaver, n.d). The recurring ways in which these objects were deposited, frequently broken, fragmented, or chipped, sometimes face downwards, often at key spatial

locations (particularly liminal contexts such as entranceways and enclosing boundaries), suggests deliberate actions, including formal decommissioning processes.

As illustrated in relation to human remains, the recurring placement of these querns into structural features and their deposition during episodes of deliberate backfilling suggest that they could equally have played a role in the increased ritualization of the domestic sphere, with the offerings deposited as a reflection of the household’s history as well as a mark of the passing of time (Bradley, 2005: 78–79). Like the human remains, the condition in which these objects were buried is also significant. A surface examination of these stones lends weight to the suggestion that many were ‘broken down upon

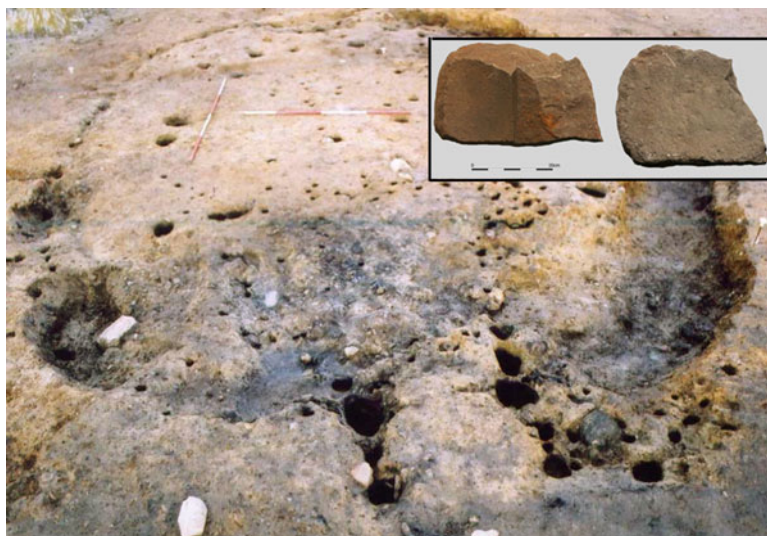


Figure 6. Quern stone fragments from closing deposit over northern side and entrance area of round-house at Caltragh, County Sligo. From McCabe, 2005, plates 7, 16, 17; photographs by Archaeological Consultancy Services Ltd, reproduced courtesy of TII.

death' (Brück, 2001: 153); however, others were certainly deposited complete and may have been 'decommissioned' in other ways, such as by being placed grinding surface down or without accompanying rubbing stones.

CONCLUSION

Exploring the interrelationships between settlements, burials, and deposition locations has been successfully used to demonstrate important connections between ancestors, agricultural land, and those living in farming communities (see Fokkens & Arnoldussen, 2008). This association provides a fundamental background for understanding the cosmological structure occupied by these Middle–Late Bronze Age societies and, by using case studies such as those employed here, we can explore why some material remains appear to have been deposited in ways that intimate a symbolic significance, perhaps

alongside a practical one. The suggestion of a decreasing distinction between the funerary and domestic arenas during this period can be demonstrated by the changing treatment of human remains, the mixing of 'funerary' and 'domestic' artefacts, and the fragmentation of people and objects. This article has attempted to emphasize the latter by presenting discoveries of human bone and quern stones on a selection of settlement sites in Ireland, which give the opportunity to debate both the taphonomic processes and social practices that potentially influenced these deposits.

Middle–Late Bronze Age funerary sites in Ireland, such as pits and ring-ditches/barrows, are frequently associated with minute or 'token' deposits of bone, whereby the remnants of a full cremation was not removed from the pyre for burial, was spread across multiple contexts, or even dispersed in the landscape (Grogan, 2004; Becker, 2014). This is echoed in some contemporary domestic sites where

it seems that, like mortuary rituals, 'the focus was on the destruction of flesh and the fragmentation of the bodies of the dead: whether through fire or defleshing by some other means (through human agency or natural processes)' (Larsson & Nilsson Stutz, 2014: 48). While the recognition of these fragmented or burnt bones as human by the inhabitants can be debated, where the context of deposition is recurring (e.g. the entranceways of roundhouses), it is likely that they represent deliberate acts, particularly when viewed in conjunction with the condition and context of other material remains, such as the quern stones.

The increasingly close connection between funerary and domestic sites during this period also resonates in the use at both kind of sites of stylistically comparable plain, flat-based, bucket-shaped ceramic vessels and perhaps even the use of pots previously used for cooking at some funerary sites. Furthermore, while fragmented pottery sherds are to be expected in a settlement context, it represented a new fashion in the burial arena, where, Beaker pottery aside, complete vessels dominated in the earlier Bronze Age (see Grogan & Roche, 2010; Waddell, 2010: 150–72). Finally, if we consider the suggestion by Becker (2014, 15) that the minute or even absent bone deposits in many ring-ditches indicates that they are not burial sites at all but 'define ritual areas within which the act of cremation took place', then the comparisons drawn between the size and defining ditches of some roundhouses and those of ring-ditches, which cannot always be differentiated (Clarke & Carlin, 2009: 7), may be significant. This may be another way in which the funerary and settlement spheres were becoming increasingly intertwined.

Returning to the question of deliberate fragmentation, the 'de-faced' remains from

some sites show that the practice of manipulating human bone existed, while preliminary testing indicates that the breaking of quern stones required considerable force. This, in conjunction with the theory that simply cremating bone and separating the upper and lower stones of a quern were also forms of fragmenting, must encourage us to reflect on what role these 'broken' remains played in society. While there is so far no evidence to suggest that these 'fragments' automatically infer enchainment or partible exchange relations, they may indicate a desire to reinforce notions of identity, belonging, and ownership through the deposition of material representing the ancestors, the community, and subsistence agriculture. While some of the material remains may be interpreted as the re-deposition of midden-like deposits (cf. Brudenell & Cooper, 2008), others, as demonstrated, can be stratigraphically linked to episodes of abandonment when such practical management seems unnecessary. The question of why it was sometimes deemed necessary to return such material to the ground still needs to be considered. We remain at the mercy of the fragmentary archaeological record, but questioning what happened to both the present and the missing parts will strengthen our understanding of deliberate fragmentation within the social practices of the Irish Middle–Late Bronze Age.

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BIOGRAPHICAL NOTES

Kerri Cleary completed her doctoral research at University College Cork in 2007 on Bronze Age settlements in Ireland. She has worked in academic and commercial archaeology, as a contributor to *Archaeological Excavations at Tullabedy, County Tipperary: Neolithic Settlement in North Munster* (2011) and *Archaeological Networks: Excavations on Six Gas Pipelines in County Cork* (2015), as editor and contributor to *Celtic from the West 3* (2016),

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Ossements et pierres brisés : étude sur la fragmentation dans le contexte des habitats de l'âge du Bronze moyen et récent en Irlande

Les données concernant les pratiques de fragmentation sur les sites d'habitat de l'âge du Bronze moyen et récent (environ 1600–700 av. J.-C.) en Irlande sont à la base d'une étude dédiée à deux types de vestiges matériels : les restes d'ossements humains (calcinés ou non) et les pierres à moudre, particulièrement les meules. Cette étude met en relief des indices sur la manipulation de crânes non-brûlés par mutilation (« défigUREMENT ») et la possibilité que certaines parties du crâne et autres éléments du corps aient été conservés pour « enterrement » dans les habitats. On considèrera également la tâche plus difficile qui consiste à établir si les éléments incomplets de squelettes incinérés résultent d'actes de fragmentation intentionnels ou non ainsi que les façons d'examiner le contexte des actes de dépôt. Le facteur humain dans les exemples de fragmentation des pierres meulières fait l'objet d'un examen visant à déterminer si la brisure de ces objets était voulue ou non, et si leur dépôt était symbolique ou fortuit. Le but de cette discussion est de contribuer à une prise de conscience du fait que les domaines funéraires et domestiques s'entremêlaient de plus en plus étroitement vers la fin de l'époque préhistorique en Irlande. Translation by Madeleine Hummler

Mots-clés: âge du Bronze, habitat, fragmentation, ossements incinérés, ossements non-brûlés, meules

Zerbrochene Knochen und Steine: eine Untersuchung der Fragmentierung in mittel- und spätbronzezeitlichen Siedlungsbefunden in Irland

In diesem Artikel werden die Hinweise auf die Fragmentierungsbräuche in mittel- und spätbronzezeitlichen (ca. 1600–700 v. Chr.) Siedlungen in Irland untersucht. Dies wird hier anhand zwei verschiedener Fundtypen analysiert: menschliche Überreste (verbrannt und nicht verbrannt) und Mahlsteine, besonders Reibesteine. Diese Untersuchung stellt heraus, dass unverbrannte Schädel durch Verunstaltung manipuliert worden sind und dass möglicherweise Schädelteile und andere Körperteile für „Bestattung“ auf Siedlungen behalten worden sind. Die schwierigere Aufgabe, zu bestimmen, ob man die unvollständigen Skelettreste von Leichenbränden als absichtliche Fragmentierung deuten kann und welche Umstände zur Deponierung dieser Fragmente geführt haben, werden auch angesprochen. Die Untersuchung der menschlichen Wirkung auf die Gliederung der Fragmentierung von Mahlsteinen hat zum Ziel, zu verstehen, ob der Bruch von diesen Gegenständen absichtlich oder nicht war und ob die Deponierung symbolisch oder zufällig war. Diese Diskussion wird hoffentlich zur Anerkennung, dass die Grab- und Siedlungsbereiche während der späten Urgeschichte in Irland immer enger zusammenrückten, beitragen. Translation by Madeleine Hummler

Stichworte: Bronzezeit, Siedlung, Fragmentierung, Leichenbrand, unverbrannte Knochen, Mahlsteine