Bridlington Boulevard Revisited: New Insights into Pit and Post-hole Cremations in Neolithic Britain

Jake T. Rowland & Jess E. Thompson

The majority of excavated human remains from Neolithic Britain emanate from monumental sites. However, it is increasingly recognized that multiple funerary practices are often attested within these monuments, and that diverse treatment of the dead is evident contemporaneously at non-monumental sites. In this paper, we highlight such variation in non-monumental funerary practices in Neolithic Britain (c. 4000–2500 BC) through the biographical study of an assemblage from a large post-hole at Bridlington Boulevard, Yorkshire. Through osteological and taphonomic analysis of the human bones and technological and microwear analysis of the accompanying axehead, we infer complex funerary processes, with the expediently manufactured axehead potentially featuring in the funerary rites and subsequent post-raising before being deposited in the feature. Bridlington Boulevard represents one element of a varied funerary complex—cremations in pits and post-holes—at a time when most individuals were not deposited in monuments, or indeed were not deposited at all. Compiling these non-monumental cremations across Britain causes us to look beyond categorizing these assemblages as funerary contexts, and instead suggests important cosmological associations and forces were brought together in pit and post-and-human cremation deposits.

Introduction

Neolithic (*c.* 4000–2500 BC) funerary practices in Britain represent a diverse range of strategies for dealing with the dead (Gibson 2016; Jones 2008; Thomas 2000; Willis 2019). Our understanding of these actions is often skewed by the large assemblages of inhumed, cremated and disarticulated remains from megalithic and earthen monuments: henges, timber and stone circles, round and long barrows, ring ditches, tombs and cairns. Despite this wealth of evidence, these evidently do not represent the total Neolithic population of the British Isles, suggesting that the majority of individuals were subject to funerary practices that are difficult, or indeed impossible, to detect in the archaeological record (Brophy *et al*. 2018; Gibson 2016; Jones 2008).

Non-monumental deposits of human remains are increasingly recognized as an important but under-represented feature of British Neolithic funerary practices (Brophy *et al.* 2018; Schulting 2007; Willis 2019). These include a diverse range of potential methods for processing the dead body, such as exposure (Evans & Simpson 1991; Smith 2006; Whittle *et al.* 1998), the placement of human remains into waterways (e.g. rivers, lakes or seas) and other natural features (e.g. caves, rock fissures, sinkholes) (Peterson 2019; Schulting 2007), isolated flat graves, pit and post-hole deposits (Brophy & Noble 2011), incorporation into the fabric of pots as bone temper (Smith & Darvill 1990), and scattering cremated remains over the ground surface, or perhaps simply being left to blow in the wind (Brophy *et al.* 2018).

The majority of these practices leave little to no readily interpretable archaeological traces. Schulting

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(2007) has already highlighted the difficulties with interpreting finds from waterways, in contrast to depositions in caves and flat graves which have a long history of research, with significant numbers of individuals having been recovered and studied (Barnatt & Edmonds 2002; Chamberlain 1996; Peterson 2019; Schulting 2007; 2020). The same cannot be said for deposits (predominantly of cremated bone) in often isolated non-monumental pit and post-hole features (Fig. 1; Table 1). Such sites are difficult to identify prior to archaeological intervention; they are not marked above ground by upstanding earthworks, nor do they appear as distinct feature types which differentiates them from non-funerary pits in remote sensing data. Funerary pits and post-holes—and any human remains they contain—can only be recognized directly through excavation, and as a result are probably under-represented in the archaeological record. Identifying and interpreting this range of non-monumental funerary sites, and the people deposited in them, is critical if we are to approach a fuller understanding of the breadth of Neolithic funerary practices in Britain.

In this paper, we document a biographical study of a non-monumental post-hole deposit at Bridlington Boulevard in East Yorkshire highlighting the interpretive potential of these features and the assemblages they contain. Biographical studies of whole funerary contexts have provided intimate insights into specific practices, burial assemblages and the identity of the deceased (e.g. Fitzpatrick 2013; Jones 2016; Little *et al.* 2017; Wentink 2020). Our analysis integrates the methodological and conceptual tools of object biography and funerary taphonomy to reconstruct the production and use of the flint axehead and the post-mortem treatment of the human remains. Setting the Boulevard site within its broader temporal context, we draw on comparative data on other pit and post-hole cremation deposits. In so doing, it becomes clear that cremations often were not central features of these deposits. As a result, we argue that cremations in non-monumental contexts should not *a priori* be categorized as funerary deposits. Instead, by paying attention to the materials drawn together in these assemblages, other items or acts may assume priority, for example, cremations may commemorate posts, rather than the other way around. Further, a posthuman perspective leads us to the proposition that cremations in pits and post-holes were qualitatively different things.

Bridlington Boulevard

During the rescue excavation of a medieval post mill by J.R. Earnshaw in 1969 at Bessingby Hill, Bridlington (N.G.R. TA 166676), a large Neolithic post-hole was excavated and found to contain cremated human remains and an edge-ground flint axehead (Fig. 2; Earnshaw 1973). The site, known locally as 'The Boulevard', is located 2 km from the sea, on the northern bank of the Gypsey Race, a river that follows an easterly course down to the sea at Bridlington. After excavation, finds were washed, archived, and the human remains partially reconstructed. The Boulevard site was briefly reported on in the *Yorkshire Archaeological Journal* (Earnshaw 1973), but until now, full post-excavation analysis and reporting has not been undertaken.

The post-hole

The feature was sub-oval in plan and measured *c.* 1.8×2.5 m with steeply sloping sides merging with a flat base at a depth of *c.* 0.76 m (Fig. 2). A ramp appears to have been present at the western edge of the post-hole, although this had been truncated by a medieval foundation trench. According to the excavation records, the post-hole cut an earlier pit (labelled as 1 on Figure 2) which contained a 'few flint flakes and a burnt flint scraper' (Earnshaw 1973, 24). On the basis of its stratigraphic relationship, Earnshaw suggested the earlier feature was Mesolithic, although the character of the lithic assemblage would suggest a more probable Neolithic date. It is uncertain if this truncation was purely coincidental or represents intentional re-cutting or re-marking of an earlier deposit that was still visible on the surface.

The post appears to have been positioned against the east side of the cut, with the small deposit of cremated human remains placed near the foot of the post immediately after it was raised into place. Brown and yellow-brown sand, probably upcast from digging the feature, was subsequently used to pack around the base of the post. A number of burnt timbers and large charcoal deposits, possibly the remains of pyre debris or evidence of *in situ* burning prior to post raising, were also incorporated into this packing material. One timber lay in an east–west direction (Fig. 2), and two others reportedly crossed this in a north–south direction, but were removed by workmen before drawings could be made (Earnshaw 1973, 22). Unfortunately, none of these posts were recovered during excavation and no information regarding their species or size was obtained.

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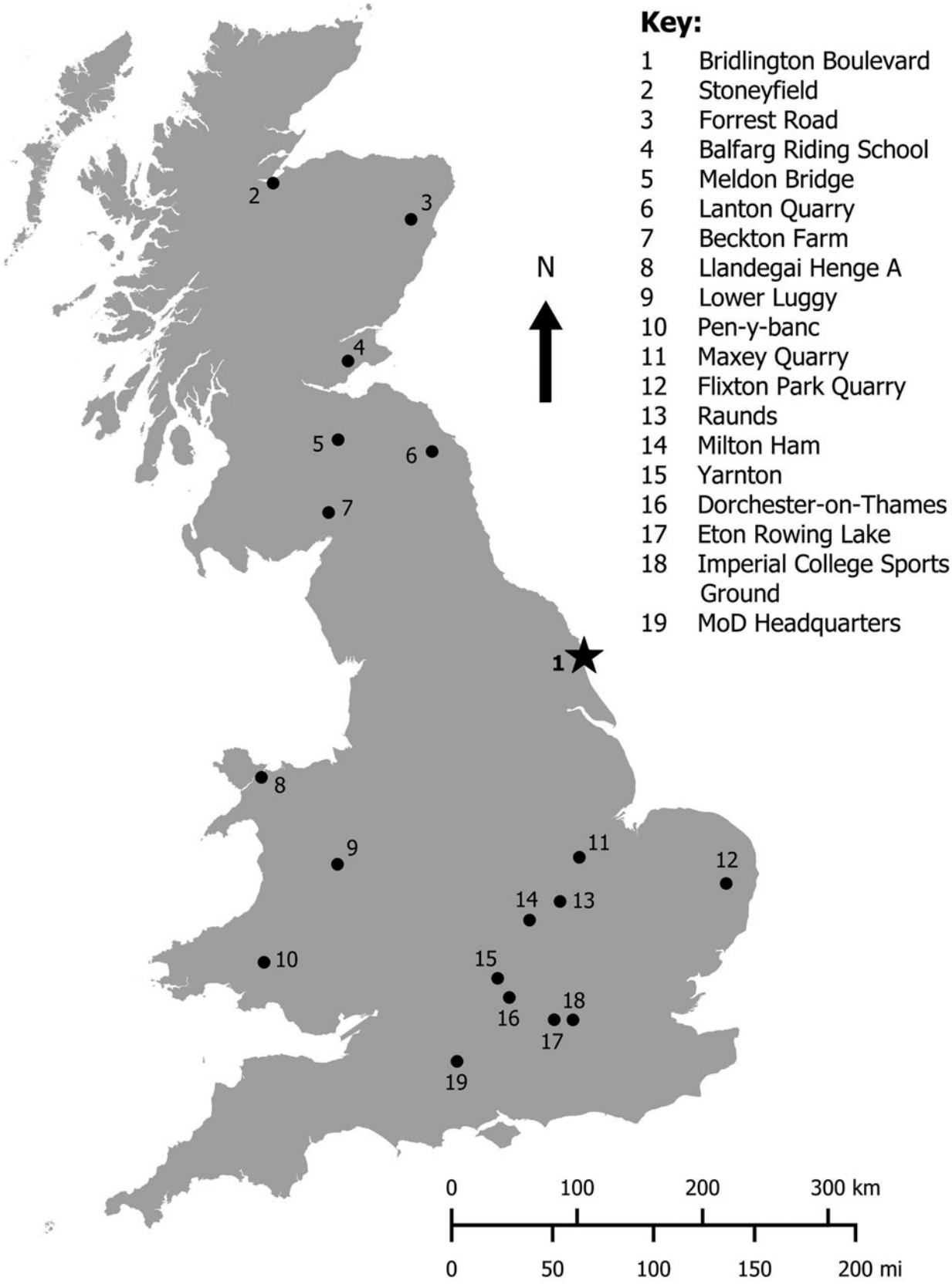

Figure 1. *Location of Bridlington Boulevard and other Neolithic non-monumental cremations from mainland Britain.*

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Table 1. *Summary of Neolithic non-monumental cremations from mainland Britain. Radiocarbon dates in* ***bold*** *indicate direct dates on cremated bone.*

Site		Feature type	Cut width (m)	Cut depth (m)	MNI	Weight (g)	Age & (sex)	Calibrated date (cal. BC at 2σ)	Date (BP)	Lab code	Reference
Bridlington Boulevard		Post-hole	2.50	0.76	1	191.4	Ad. (?M)	-	-	-	Earnshaw 1973; this publication
Eton Rowing Lake, 9930		Pit	1.33	0.31	1	-	Ad.	-	-	-	Allen *et al.* 2013, 313, 549
Imperial College Sports Ground, 40413		Pit	0.30	0.30	1	5.9	YA	**3329-2904**	**4399±50**	**NZA-32693**	Powell *et al.* 2015, 20
Maxey Quarry		Pit	-	-	-	-	-	**3645-3386**	**4790±35**	**SUERC-39011**	Gibson 2013
MoD Headquarters, 7531		Surface Deposit	-	-	1	161.2	MA	**2621-2459**	**4000±34**	**SUERC-49176**	Thompson & Powell 2018, 18, 81
Flixton Park Quarry, 0337		Pit	0.38	0.16	1	651.5	YA (M)	**2868-2577**	**4120±30**	**SUERC-35894**	Boulter 2011
Dorchester-on- Thames, F3003		Pit	1.50	-	1	-	Adol.	**3950-3191**	**4800±130**	**OxA-119**	Whittle *et al.* 1992
Yarnton Site 5, 9002		Pit	0.75	0.15	?1	2.0	-	3497-3103	4577±36	OxA-11454	Hey *et al.* 2016, 423
Yarnton Site 7, 3815		Pit	2.00	0.90	1	625.0	Ad. (?F)	**3655-3535**	**4867±35**; **4775±35**	**OxA-14479; SUERC-5689**	Hey *et al.* 2016, 475
Yarnton Site 7, 3207		Pit	1.25	0.16	?1	2.0	-	3350-2910; 3350-2920	4440±45; 4460±45	OxA-11513; OxA-11514	Hey *et al.* 2016, 479–82
Yarnton Site 7, 3700		Pit	1.65	0.42	?1	4.0	-	-	-	-	Hey *et al.* 2016, 481–2
Yarnton Site 7, 4755		Pit	0.80	0.30	?1	1.0	-	-	-	-	Hey *et al.* 2016, 508
Yarnton Site 7, 4758		Pit	1.25	0.30	?1	2.0	-	-	-	-	Hey *et al.* 2016, 508
Yarnton Site 7, 4580		Post-hole (House)	0.82	0.70	?1	127.0	-	3910-3650; 3930-3640	4960±40; 4970±60	OxA-11460; OxA-6772	Hey *et al.* 2016, 464–6
Yarnton Site 7, 3964		Post-hole (House)	-	-	?1	2.0	-	-	-	-	Hey *et al.* 2016, 468–9
Yarnton Site 7, 4701		Post-hole (House)	-	-	?1	7.0	-	-	-	-	Hey *et al.* 2016, 468–9
Yarnton Site 7, 4702		Post-hole (House)	-	-	?1	1.0	-	-	-	-	Hey *et al.* 2016, 468–9
Yarnton Site 7, 3446		Pit	-	-	?1	1.0	-	-	-	-	Hey *et al.* 2016, 556
Lanton Quarry, Cremation Pit 1	(4054) (Primary)	Post-hole	1.29	0.40	1	9.1	Inf.	-	-	-	Cockburn 2016
	(4030) (Recut)				1	697.3	MA-OA	-	-	-	
	(4050) (Recut)				2	42.0	Ad. + Neo-Inf.	-	-	-	

Continued

Table 1. *Continued*

Site		Feature type	Cut width (m)	Cut depth (m)	MNI	Weight (g)	Age & (sex)	Calibrated date (cal. BC at 2σ)	Date (BP)	Lab code	Reference
Lanton Quarry, Cremation Pit 2	(4056) (Primary)	Post-hole	1.80	0.48	1	543.7	Ad.	-	-	-	Cockburn 2016
	(4061) (Primary)				3	655.9	Adol-YA + SubAd + SubAd	-	-	-	
Lanton Quarry, Cremation Pit 3	(4036) (Primary)	Post-hole	1.02	0.36	1	48.3	Ad.	**3074-2890**	**4334±34**	**SUERC-69264**	Cockburn 2016
	(4032) (Recut)				1	217.5	Adol-YA	**3084-2896**	**4349±34**	**SUERC-69263**	
Lanton Quarry, Cremation Pit 4	(4075) (Primary)	Post-hole	1.30	0.40	1	8.5	YC	-	-	-	Cockburn 2016
	(4041) (Recut)				2	846.8	Ad. + Adol.	-	-	-	
Lanton Quarry, F4110		Pit	0.50	0.20	1	226.5	?Ad.	2632-2464	4012±34	SUERC-69265	Cockburn 2016
Lanton Quarry, F4120		Post-hole	0.80	0.46	1	207.3	Adol.	-	-	-	Cockburn 2016
Milton Ham, 205		Pit	0.29 - 0.48	0.13 - 0.2	1	822.0	Ad.	3349-3017	4470±40	Beta-257598	Carlyle & Chapman 2012
Milton Ham, 203		Pit			1	14.0	Ad.	-	-	-	Carlyle & Chapman 2012
Milton Ham, 207		Pit			1	-	-	-	-	-	Carlyle & Chapman 2012
Raunds, F47087		Pit	0.40	0.08	2	1044.0	Ad. + Ad.	3354-2926	4460±70	OxA-3054	Allan *et al.* 2013
Raunds, F5549		Pit	0.60	0.25	1	1.5	Inf.	-	-	-	Allen *et al.* 2013
Lower Luggy, 5090		Pit	0.60	0.20	2	1249.0	YA (F) + ND	**3022-2702**	**4280±45**	**GrA-29332**	Gibson 2006; Willis 2019, 83–4
Llandegai, FA370		Pit	1.10	0.23	1	1113.0	Ad.(F)	**3361- 2970**	**4480±50**	**GrA-22954**	Lynch & Musson 2004
Pen-y-banc, 237008		Pit	0.80	0.10	1	0.1	-	3357-3101; 3503-3102	4515±29; 4580±40	SUERC-54700; Beta-257720	Hart 2013
Forest Road, P25		Pit	1.40	0.55	?1	-	-	3785-3537	4895±45	SUERC-1374	Cook & Dunbar 2008, 62
Forest Road P53		Pit	0.85	0.38	?1	-	-	2878-2583	4145±40	SUERC-1326	Cook & Dunbar 2008, 77–8
Stoneyfield P20		Pit	0.75	-	4	40.0	Ad. + OC + YC + ND	**3090–2907**	**4371±33**	**SUERC-77846**	Simpson *et al.* 1997; Copper *et al.* 2018
Stoneyfield P21		Pit	1.00	0.30	2	3.0	Ad. + ND	-	-	-	Simpson *et al.* 1997
Stoneyfield P41		Pit	1.30	-	1	2.0	-	3892-3528	4890±60	SRR-426	Simpson *et al.* 1997
Stoneyfield P42		Pit	1.20	-	1	1.0	-	-	-	-	Simpson *et al.* 1997
Stoneyfield P44		Pit	0.80	-	1	18.0	Ad. (M)	-	-	-	Simpson *et al.* 1997

Continued

Table 1. *Continued*

Site	Feature type	Cut width (m)	Cut depth (m)	MNI	Weight (g)	Age & (sex)	Calibrated date (cal. BC at 2σ)	Date (BP)	Lab code	Reference
Stoneyfield P45	Pit	0.60	-	2	4.5	Ad. + YC	-	-	-	Simpson *et al.* 1997
Stoneyfield P49	Pit	1.10	-	1	42.0	Ad. (?M)	2878-2479	4100±70	SRR-425	Simpson *et al.* 1997
Beckton Farm F080	Pit	0.85	0.30	1	7.4	-	2923-2584	4220±60	GU-3534	Pollard 1998
Balfarg Riding School F1228	Post-hole (House)	0.70	-	?1	-	-	-	-	-	Barclay & Russell-White 1994
Balfarg Riding School F7063	Post-hole (House)	0.20	0.20	1	60.0	-	-	-	-	Barclay & Russell-White 1994
Meldon Bridge K21	Post-hole	0.95	0.75	1	58.0	OC	**2877–2631**	**4153±29**	**SUERC-73285**	Speak & Burgess 2000; Sheridan *et al.* 2017
Meldon Bridge K26	Pit	0.35	0.15	?1	-	-	-	-	-	Speak & Burgess 2000

Overlying these timbers were packing stones of 'sandstone, quartzite and volcanic rock' (Earnshaw 1973, 22), probably obtained from the local glacial till deposits. These were placed in a crescentic distribution around the post and indicate the timber would have had a diameter of up to 0.7 m, potentially accommodating a large tree trunk, although conceivably may have been smaller. From the section drawings, which are offset from the centre of the feature, it is unclear whether a post pipe had been present. However, the position of the packing stones, which appear to be undisturbed, would suggest the post had been left to decay *in situ*. Prior to backfilling, a flint axehead, possibly still in its haft, was deposited on top of the largest packing stone. This represents one of only two cremations associated with an axehead from a British Neolithic context.

Unfortunately, the feature could not be directly dated, given that none of the human bone fragments were fully calcined. However, the presence of the edge-ground flint axehead implies a likely Mid–Late Neolithic (*c.* 3500–2500 BC) date for the deposit (Manby 1979; Pitts 1996). Flint debitage, sherds of Grimston Ware, a discoidal core and a number of scrapers have been found in the immediate vicinity of the post-hole, perhaps relating to intermittent activity at the site (Earnshaw 1973). However, no other Neolithic features were identified in the immediate vicinity of the post-hole, suggesting it was not part of a settlement or other structure, monument, or arrangement of posts. Since the post did not form part of a larger structure, it may be suggested that it was erected to mark the position of the cremation deposit. Alternatively, given the size of the post, the small quantity of cremated remains and the wider context of pit and post-hole cremations, as we discuss below, a non-anthropocentric perspective asks us to consider the proposition that the cremation instead commemorated the post-raising event.

Human remains

Analysis of the human remains assessed age, sex, palaeopathology and taphonomic modifications (following Buikstra & Ubelaker 1994; Mitchell & Brickley 2017). The remains weigh 191.4 g, although their weight has been increased by consolidants previously applied to restore the calotte. It was not necessary to sieve the remains, as they had already been separated from sediment. The bones were examined macroscopically and with a hand lens (10× magnification). A 3D model of the reconstructed calotte was created using structure from motion in 3DF Zephyr (see Supplementary material).

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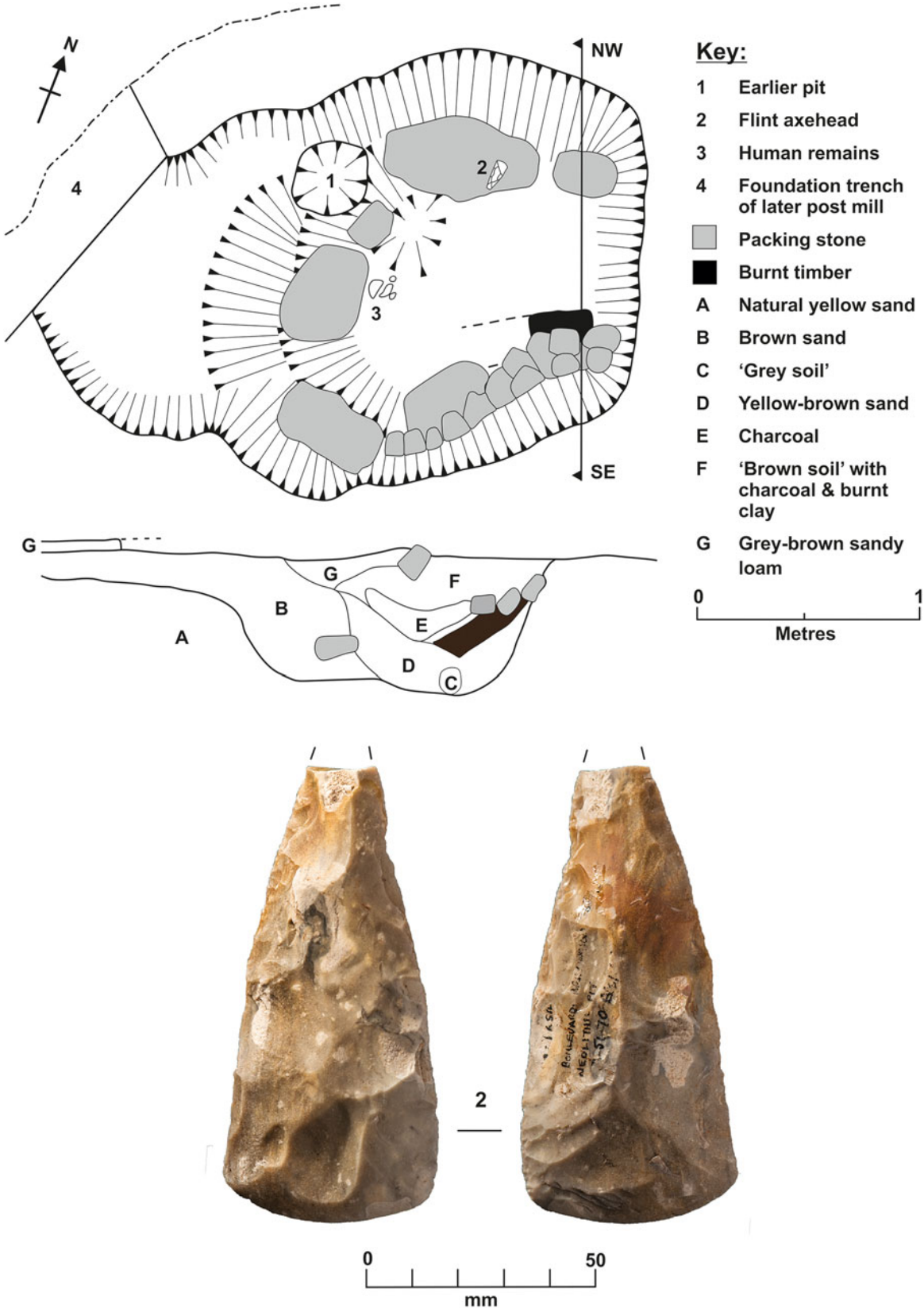

Figure 2. *Plan and section of the Bridlington Boulevard post-hole (redrawn from Earnshaw 1973, fig. 3) with inset image of flint axehead. (N.B. Context letters have been assigned retrospectively.)*

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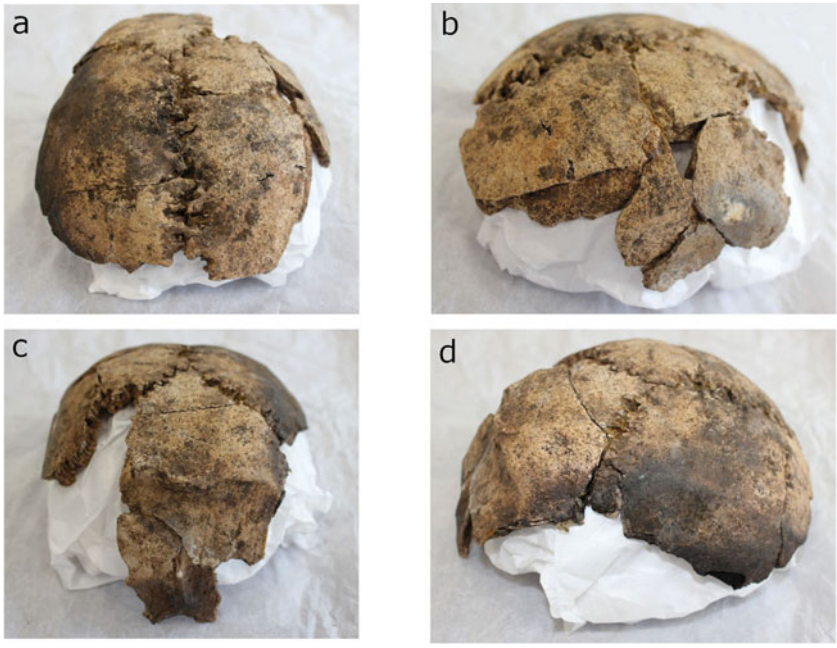

Figure 3. *Reconstructed calotte: (a) antero-superior view; (b) left lateral view, displaying breakage on the extant left parietal bone; (c) postero-inferior view; (d) right lateral view, displaying uneven burning concentrated on the right parietal and occipital bones.*

The original report describes the human remains as comprising 'large pieces of human skull and an atlas vertebra, all of which had been partially cremated' (Earnshaw 1973, 23). The reconstructed partial calotte (cranium lacking the bones of both the face and base) encompasses part of the right and left parietal bones and the posterior portion of the occipital bone; the parietal bones and the occipital bone are incomplete (Fig. 3). A further 22 small cranial fragments cannot be re-fitted. The human remains encompass more elements than originally recognized, including five fragments of cervical vertebrae, two fragments of the right scapula and two fragments probably of the right clavicle, as well as further small unidentifiable fragments (Fig. 4). These comprise parts of the head and neck and the right shoulder. Given that not all of the skeletal elements from this region are represented (e.g. rib fragments are present, but not thoracic vertebrae, to which the ribs articulate anatomically, and there are no mandible fragments), it is reasonable to suggest that these remains were already disarticulated when they were deposited.

The cranium retains only the nuchal crest for sex estimation, which is rugose, an expression of the trait which is usually observed in males. However, multiple traits across several elements should be consulted to produce an osteological sex estimation: therefore we prefer to classify the cranium as of undetermined sex. The morphology of the cranium is adult, although glue across the extant portions of the sagittal and lambdoid sutures prevents examination of suture closure. Traces of healed porotic hyperostosis are observed on the extant right and left parietal bones, as well as on the right side of the extant occipital planum. The cranial bone is hyperostotic; along the fragmentation margins, thickening of the inner and outer tables and the diploë is observed. Potential aetiologies of porotic hyperostosis include (but are not limited to): anaemia (acquired, genetic, or iron-deficiency), B12 deficiency, scalp infections, parasitic or gastro-intestinal infections, and poor vitamin absorption (Brickley 2018; Stuart-Macadam 1985; 1992; Walker *et al*. 2009), and more generally indicates period(s) of illness during growth.

Taphonomic analysis

Taphonomic analysis is used to infer funerary practices through observations of human remains *in situ* in their archaeological context (archaeothanatology) and post-excavation examination of bone surface and internal changes (Duday 2009; Fernández-Jalvo & Andrews 2016). Interpreting the original position or treatment of the body, the stage/s of funerary practices and their sequence provides deeper insights into ritual practices and beliefs surrounding death and dying (Duday 2009; Knüsel & Robb 2016).

Analysis of the Bridlington Boulevard remains was limited to surface modifications, specifically the characteristics of fragmentation edges (Outram 2001; Wieberg & Wescott 2008); animal damage (Fernández-Jalvo & Andrews 2016); weathering (Behrensmeyer 1978); processing, e.g. via cutmarks or percussion marks (Crozier 2018; White 1992) and

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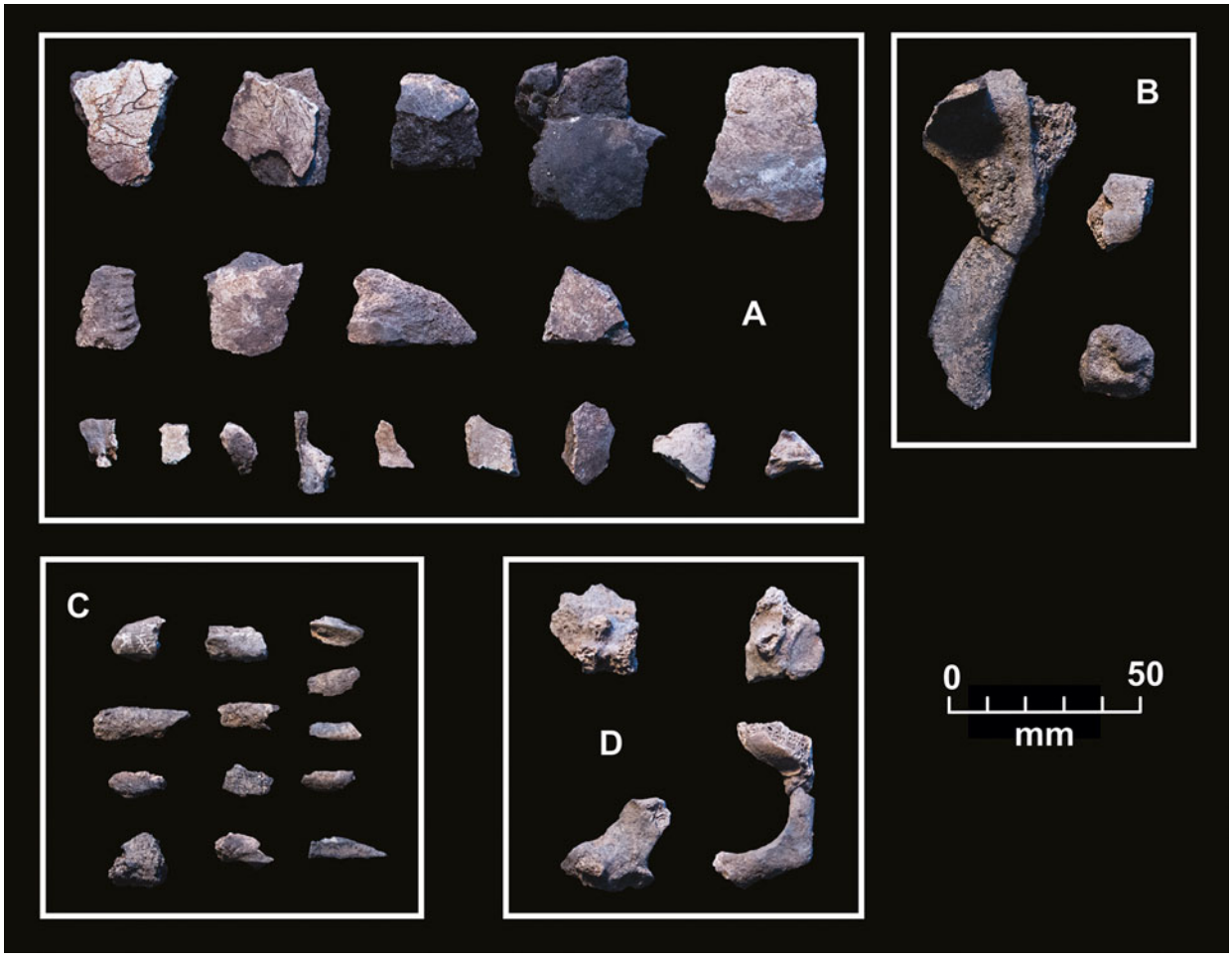

Figure 4. *Cranial fragments which cannot be refitted to calotte (A); and postcranial fragments identifiable to element: (B) right scapula and clavicle; (C) rib; (D) cervical vertebrae, displaying varied extents of burning.*

burning, including colour, shape changes, cracking patterns, the weight of the deposit, and identifiable elements to attempt to determine the number of individuals (McKinley 2004).

No evidence of gnawing, percussion damage, or cutmarks were observed on any fragments. Minor root etching and sediment adhesion is present on the cranial bones, as well as patchy staining likely from iron-rich deposits in the feature. On the endocranial (internal) surface of the calotte, the bone is unburnt in places, interspersed with patchy charring and black speckling from mineral staining. Dark brown charring is observed in areas of the occipital bone and the right parietal bone (Fig. 3d), with patchy mid-brown charring on the left parietal bone. On the ectocranial (external) surface, the bone is incompletely burnt; the extant right parietal bone exhibits more dark brown to black charring than the rest of the calotte. A small portion of the right lambdoid suture is charred black and an area on the inferior nuchal line is burnt light grey to white in colour. Inferior to this and surrounding the posterior arch of the foramen magnum is an area of dark brown charring. On the right parietal bone, patches of dark brown to black charring emanate superiorly from the lateral fragmentation margin. Traversing the superior temporal line, an area of fine 'checked' cracking is observed within the charred bone. In contrast, the left parietal bone is mostly unburnt except for a small area of light grey burning comprising patches of white calcination and fine cracking. From the margins, calcination is visible only on the outer table.

Most fragmentation margins are jagged or straight, with a rough texture, and the lateral fragmentation margin on the right parietal bone is fully burnt, suggesting that it was broken before cremation. The lateral fragmentation margins on the left

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parietal bone are more complex. Several fragments have been re-fitted and glued together in the area of the temporal line, with some small fragments missing. Nevertheless, the fragmentation margin in the mid-portion of the element presents greater removal of the outer table and bevelling across the diploë, although in places it is truncated by modern damage (Fig. 3b). Along this bevelled fragmentation margin, there is up to 12.9 mm greater removal of the outer table than the inner table. Within the diploë in this area there is mid-brown discolouration, but it cannot be determined if this is sediment staining or charring. This breakage pattern is uncommon on crania and typical of perimortem breakage, or breakage in the short period post mortem where some collagen is retained (Ribeiro *et al.* 2020). It is unlikely to represent perimortem trauma, as no concentric or radiating fractures are observed extending from the margins (Redfern & Roberts 2019). Instead, this bevelling strongly suggests post-mortem processing of the human remains. Given that this side of the cranium is largely unburnt, it cannot be determined whether this breakage occurred pre- or post burning.

Two re-fitting fragments of right scapula are burnt black; two fragments of the distal portion of the right clavicle are almost fully charred to a dark grey/black colour; five fragments derive from cervical vertebrae, and two re-fit to form part of the posterior arch of the atlas. None of the remaining fragments can be attributed to the axis, and may represent two or three further cervical vertebrae. All vertebral fragments are charred to a dark brown/grey colour with irregular and rough fragmentation margins. Wysocki and Schulting (2005, 128) suggested that the association of the atlas vertebra with the cranium may indicate the individual had been decapitated, either peri- or post mortem. However, this was not based on firsthand analysis and is not supported based on the extant remains. A further 13 fragments 12.9–25.1 mm in maximum length present differing extents of burning; of these, cortical thickness suggests that three are long-bone fragments, eight are rib fragments and two are unidentifiable. Finally, 101 small fragments 2–9.9 mm in maximum length, all unidentifiable to element, were partially or completely charred black.

There is currently no consensus regarding identifying whether remains were burnt fleshed or while the bone was 'dry' (Correia 1997). Results from recent histo-taphonomic studies are contradictory (Lemmers *et al.* 2020; Végh *et al.* 2021). Some studies have found distinctions in fracture types produced when bone is burnt fleshed or fresh ('green') *versus* when it is burnt dry (Baby 1954; Binford 1963; Symes *et al.* 2014a). It is generally expected that fleshed bones will fracture in a curved or diagonal outline, with deep or thumbnail cracking, fissures and/or curling and warping. Some experimental studies have failed to produce these results (Buikstra & Swegle 1989; Thurman & Willmore 1980) and others have reported characteristics which overlap with those reported in different categories elsewhere (Heglar 1984; Webb & Snow 1974; Wells 1960). In unburnt bone, there is a clearer pattern to fractures in fresh *versus* dry or demineralized bone (Wieberg & Wescott 2008). However, heat alteration of bone accelerates its brittle quality (Symes *et al.* 2014b) and characteristically dry bone fractures may occur from the cremation process, even if the body is burned while fleshed. The uneven distribution of burning across the remains, the low temperatures needed to achieve such, and the observation of burning across some fragmentation margins indicate that the remains were cremated or burnt unevenly, perhaps when already dry.

As the fragments represent a selective deposit of an incomplete skeleton, it is not possible to determine whether the whole body or skeleton was burnt, or whether only part of their remains was. The greater extent of burning on the right side of the calotte suggests that, if burnt on a pyre, they were placed on their right side. The occipital is generally late to burn during cremation of a fleshed body (Symes *et al.* 2014b, 380), as the body may take on a contracted or pugilistic posture (the head and neck will hyperextend, protecting the occipital region with greater soft tissue coverage). Symes *et al.* (2008) note that heterogeneous burning is expected on crania burnt while fleshed. On the other hand, they may have been exposed to an open fire if burnt *in situ* in the post-hole, and therefore the left side would have been in contact with the base of the feature. Since the cranium presents only patchy charring and slight calcination, it indicates burning at a moderate, inconsistent temperature (probably between 300° and 600°C) with incomplete oxidization, perhaps of already dry bone. The bevelled edge observed on the left parietal bone, which exhibits only minor charring, indicates intentional modification while the bone was relatively fresh.

At least two stages of funerary treatment are inferred: breakage of the cranium while the bone was fresh, and burning or cremation at a low temperature of probably dry bones. Questions remain as to the sequence of these actions, whether only part of the skeleton was burnt, or whether the skeleton was burnt and only part later deposited in the post-hole. If only part was burnt, an earlier stage of

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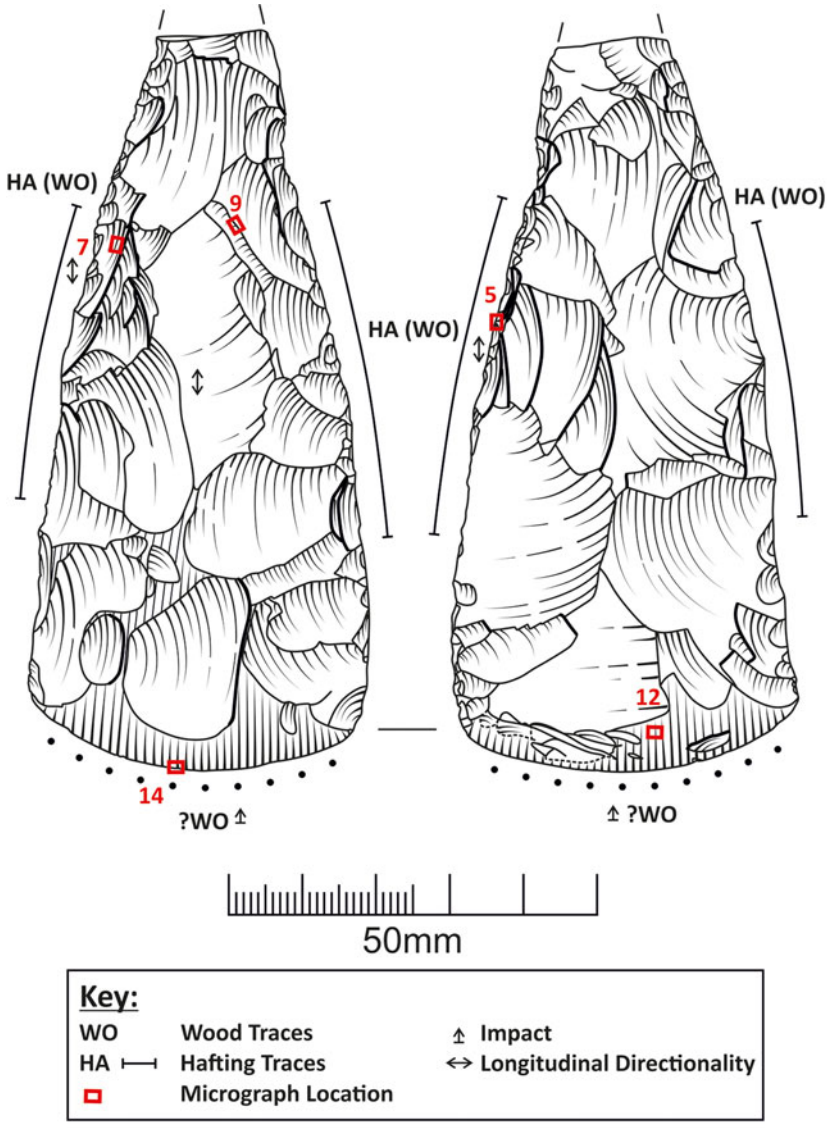

Figure 5. *The flint axehead showing location of wear traces and micrographs discussed in the text. Micrograph images are found separately in Figure 6.*

exposure or primary deposition could have been carried out. If, instead, the skeleton had been burnt, then it appears that most of the remains were disposed of in alternate ways.

The flint axehead

The edge-ground axehead (Fig. 5) measures 99 mm long, 46 mm wide and 18 mm thick and has been made from locally available wolds flint. The flint is opaque grey in colour; however, the butt end of the axehead has been stained yellow-orange, probably from contact with iron rich sandy soil in the fill (similar to staining on some of the burnt bone fragments). The butt of the axehead has broken off across a large stony inclusion in the flint. Part of this break is iron-stained, indicating that it occurred in antiquity. However, the fracture pattern is not consistent with deliberate breakage (Anderson-Whymark 2011), suggesting it occurred during either manufacture or use. The axehead was unburnt, demonstrating that it did not accompany the human remains during burning.

Flaking has removed any trace of the type of blank (nodule or flake) the axehead was produced from. The absence of any thinning flakes, and the large size of the negative bulbs of many of the flake scars, suggest the axehead was knapped using hard hammer percussion only. A number of the platforms

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along the lateral edge of the axehead have been crushed, indicating poor platform preparation, and a noticeable twist is evident along its length. This may be due to a low level of skill and experience of the knapper or may reflect rapid manufacture of the axehead, with little regard for its aesthetic appearance. The axehead has been ground along its cutting edge and partly along the spine, although this is not extensive, suggesting the activity was undertaken with a level of expediency.

Microwear analysis

Wear traces develop on the surface of an object as a result of use and the various treatments they undergo throughout their lives. Experiments undertaken using replica objects have demonstrated that the character of these wear traces, consisting of striations, edge removals, edge rounding and polish, vary according to the contact material (e.g. bone, antler, wood, bark, plants, mineral, hide, etc.), the activity or motion involved and the duration and intensity of use (Keeley 1980; Semenov 1964; van Gijn 1990). By mapping the distribution of wear traces across the surface of an object, we can provide details about the sequence of artefact manufacture, use, reuse, re-sharpening, hafting, prehension, alongside non-utilitarian traces such as wrapping, sheath wear, or storage (Rots 2010; van Gijn 2010; Wentink 2020).

Microwear analysis utilized a GT Visions GxM-100 metallographic microscope (50–500×) to study the distribution, character and directionality of the polishes and other wear traces in detail, facilitating the interpretation of specific contact materials. All inferences are based on analogy with experimentally obtained wear traces, so strictly speaking they constitute interpretations and not identifications (van Gijn 2014). All traces were described and photographed at 200× magnification, using a GXCAM-U3 18MP camera and GX Capture software, and stacked using Helicon Focus 6.8.0 software.

Microwear analysis of the axehead revealed very clear traces of manufacture. After having been knapped, the axehead was partially ground with a coarse abrasive stone. This resulted in uniform striations orientated transverse to the cutting edge, covering the ground areas of the implement (Fig. 6.12). Their uniform size and shape suggest the axehead was ground on a single stone, unlike the multi-staged grinding process seen on some ground flint implements (Rowland forthcoming).

Once the blade had been ground, the implement was hafted. Hafting bright spots were identified on a prominent point on the lateral edge of the implement (Fig. 6.5) and on prominent flake scar ridges in the interior of the axehead (Fig. 6.9). These patches of bright flat polish are only present on the high surface topography suggesting contact with a hard material. Striations, made up of smaller jitter marks in both transverse and longitudinal directions, are also present within the polish along with a small number of pits. In some locations where these patches are developing, the polish has a slightly rougher character. Hafting bright spots are a recurrent feature on axeheads, typically appearing on the high topography, resulting from friction between the axehead and its haft, directly as a result of use (Rots 2010). However, the more limited extent and development of individual zones of hafting traces on the Bridlington Boulevard axehead suggests contact with the haft was short-lived.

On the inside of flake scars on the lateral edge of the axehead (Figures 6.7a & 6.7b) are developed patches of bright and smooth reticulated polish, which are starting to become linked. The polish is only present on the tops of grains and prominent ridges, associated with heavy rounding of these areas, suggesting a moderate hardness to the material. There is clear directionality in the polish and some short striations, oriented parallel to the longitudinal axis of the implement. The traces are interpreted as wood polish resulting from contact with a wooden haft. Hafting traces covered the central portion of the axehead, suggesting the blade, and a small portion of the butt, protruded from the haft. The small number of wooden Neolithic axe hafts known from Britain indicate the butt of an axehead often protruded from the back socket of the haft and thus was not subject to significant wear during use (Taylor 1998).

The cutting edge of the axehead is heavily rounded and some microflaking is present, consistent with the axehead having been used. This is associated with a moderately bright, rough polish developing along the edge of the implement, eroding ridges between grinding striations (Fig. 6.14). The polish contains a number of small irregular pits and has transverse directionality. These traces are poorly developed but beginning to form over the high surface topography, suggesting contact with a medium–hard material, probably wood. Unfortunately, interpretation of the specific contact material was not possible due to the limited development of wear traces along the cutting edge. This may, in part, result from the short contact time between the axehead and its contact material.

Biography of an axehead

The absence of well-developed hafting traces, combined with the poorly developed wear traces along

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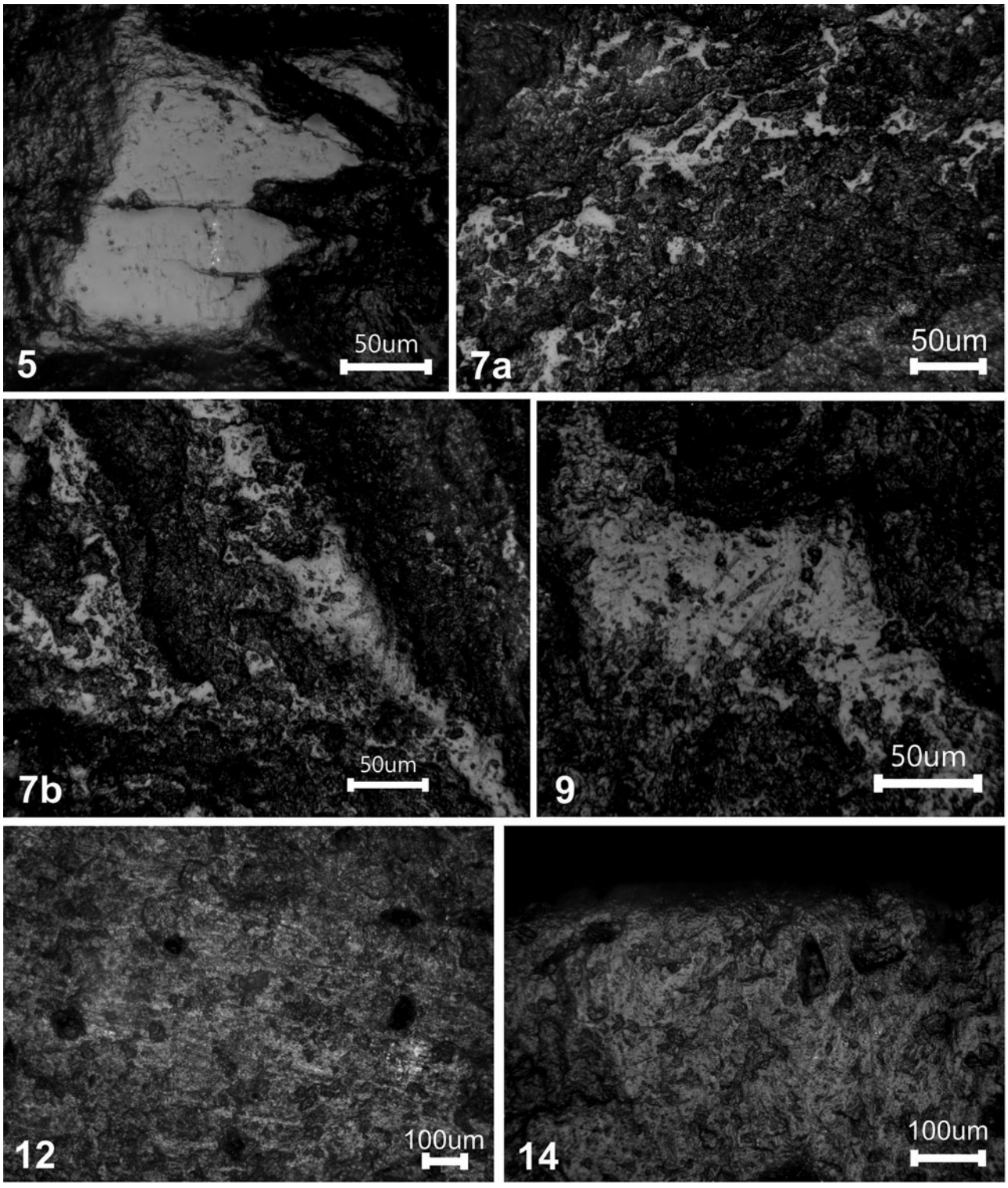

Figure 6. *Wear traces: (5, 7 & 9) wood hafting traces (×200 magnification); (12) grinding traces (×100); (14) heavily rounded cutting edge associated with polish development (×200).*

the cutting edge, suggests the axehead was used for a relatively short period of time. The absence of resharpening bevels along the cutting edge and the uniformity in the grinding traces indicate that the axehead was not re-ground, implying a short, perhaps even single, phase of use. Indeed, it is possible

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that these traces may correspond to the length of time it would take to fell and/or carve the post which stood in the post-hole, and/or perhaps felling wood to fuel the pyre. Additionally, the post may have been carved with images, symbols or figures, though this is purely speculative. Nonetheless, it is likely that the Bridlington Boulevard axehead played an active part in the events surrounding the post-raising.

It may be tempting to view the axehead as a grave good, but the object was both physically and temporally (in depositional sequence) separated from the cremated remains. Its unburnt state provides confirmation that the implement was not burnt with the deceased. Moreover, given its short use-life, the axehead was unlikely to have been a treasured personal possession, or an object with inalienable ties to the deceased, although it may have become 'problematic' through association to the deceased during life (Büster 2021). Instead, we favour the interpretation that the axehead was commissioned after death, to be made and used specifically for the post-raising and deposition.

This contrasts with the majority of Neolithic cremation deposits where grave or pyre goods are often placed directly with the dead. The axehead might instead be seen as an object polluted through its role in the funerary rite and/or post-raising activities. Such actions may have rendered it taboo to use for another purpose and necessitated its deposition and containment within the Bridlington Boulevard post-hole, akin to the deposition of antler picks in pits and ditches at numerous Neolithic sites. Ethnographic parallels may also be drawn with the erection of carved and painted posts as part of Tiwi Aborigine burial rites in northern Australia, which are also associated with strict taboos around the burial site and the deceased's material possessions (Venbrux 2007). Taboos around funerary rites are rarely isolated phenomena and generally extend to other actions (e.g. naming the dead, their personal effects, viewing the body) which may have occurred as part of these activities.

Funerary processes at Bridlington Boulevard in Mid–Late Neolithic context

Given the partial burning of the Bridlington Boulevard remains, and the probable intentional breakage of the cranium in a period shortly after death, the possibility of post-mortem exposure of the deceased's body must be considered. Exposure and excarnation are not usually recognized as common funerary pathways in this period, since the only direct evidence for such practices is extensive weathering, animal gnawing, or cutmarks (e.g. Smith 2006). There are no traces of animal damage on the Bridlington Boulevard remains, but they represent only a small portion of the skeleton. Yet the largely 'invisible' dead from this period had to go somewhere. Exposure and/or excarnation provide options for processing of the dead that leave minimal traces in the archaeological record. For example, some Aboriginal Australian and First Nations tribes tied their dead to trees, laid them out on platforms constructed in trees, placed them within hollow trees, or constructed tall scaffolds to expose the dead on a bier high above the ground (Oxenham *et al.* 2008; Seeman 2011).

Following a potential period of exposure, the body—or what remained thereof—was burnt or cremated. If cremated on a pyre, the pattern of burning suggests they were laid on their right side, echoing the flexed position bodies were usually buried in. Cremation is a difficult and time-consuming process: it can take at least 1–1.5 hours, at a temperature of 700–1000°C, to cremate a human body fully (Roberts 2009, 52), and requires 300 kg to one tonne of dry timber in the pyre structure (Hadders 2018; Parker Pearson 2003, 49). Those who have watched contemporary open-air cremation rites have remarked that the pyre and the burning corpse require active management (Downes 1999). Most of the Bridlington Boulevard bone fragments were burnt black, with only minimal calcination, indicating that the burning time was relatively short. The fuel for the pyre may have been insufficient, or the pyre could have been doused prior to complete cremation. Alternatively, disarticulated and dry bones could have been retrieved and subjected to incidental burning, for example *in situ* in the post-hole, prior to post-raising. The presence of burnt timbers in the packing material could represent pyre debris or the residue of a small fire. In any event, the processing of the remains required intimate interactions with the bones, probably involving retrieving remains from an earlier location of deposition or exposure, breaking up the cranium into smaller portions and then directly exposing them to fire. Cremation or burning would have been a dramatic and evocative process for onlookers to witness and would probably have evoked emotion and visceral reactions, ensuring the deceased was not easily forgotten (Brophy *et al.* 2017; Williams 2004).

Partial or incomplete cremation is not without precedent during the Neolithic (Cooney 2014; Smith & Brickley 2009; Willis 2019). At the passage grave of Le Dehus (Guernsey), 14.9 per cent of the human remains were burnt, mostly black, taupe or grey in

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colour, indicating minimal oxidization. Similarly, the Bridlington Boulevard remains are mostly burnt black or dark brown. At Le Dehus, it is suggested that there could have been multiple stages of burning, possibly while the body was already decomposing, and pre-cremation rites could have included a period of 'rest' or exposure (Cataroche & Gowland 2015). One fragment showed that the left side of a cranium was deliberately broken while the bone was still in a relatively fresh state, inviting comparison with the Bridlington Boulevard calotte. Perhaps this breakage was aimed at removing brain matter or was associated with broader fragmentation of the body. Traditional Hindu cremations involve a rite of breaking open the cranium (*kapal kriya*) to release the deceased's soul (Singh 2015). Such examples highlight that these actions could have been intended to bring about practical effects in the physical and/or spiritual world.

The Bridlington Boulevard deposit evidently does not account for a whole individual. The average archaeological weight[1] of an adult cremation is expected to be around 1650 g (this average is reached through combining the sexes: McKinley 2000, 269; Willis 2019, 145–6), although most Neolithic cremations weigh less than this. It is likely that just two Neolithic non-monumental cremation deposits represent the (near) complete remains of a single individual: a pit (FA370) at Llandegai Henge A (Gwynedd) containing a cremated female adult, weighing 1113 g (Lynch & Musson 2004) and a pit (5090) at Lower Luggy (Powys), which contained the cremated remains of a young adult female and a few fragments of another individual weighing a total of 1249 g (Gibson 2006; Willis 2019, 83–4). It is more often the case that pits and post-holes accommodated only fragments or token portions of cremations (Fig. 7).

Such minimal cremation weights imply that the people whose remains they represent were deposited across multiple locations in the landscape or, perhaps, across multiple features within a single site. Alternatively, selection of only small quantities of cremated bone from the pyre may account for this. Other possibilities include dispersal of cremated remains between mourners for retention or circulation, or cremations of only portions of the body (Booth & Brück 2020; Fowler 2010, 17). The skeletal distribution of the elements at Bridlington Boulevard could suggest that bones were gathered up from one end of a pyre, or retrieved preferentially from the head and neck region of an already defleshed body as part of a secondary funerary process. The possibility that different parts of the body were subject to further actions as part of the funerary rite and processed in other prescribed ways cannot be ruled out.

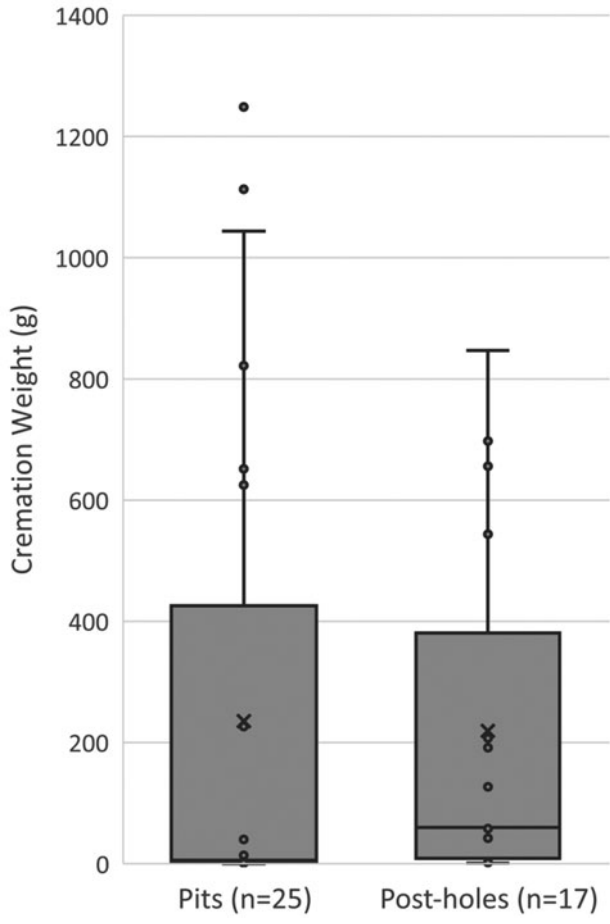

Figure 7. *Summary of Neolithic cremation weights from non-monumental pit and post-hole deposits in mainland Britain.*

Neolithic pit and post-hole cremations

A literature review of currently available evidence identified 46 non-monumental features containing 51 cremation deposits, from 21 sites in mainland Britain (Table 1). These cover a broad geographic area from highland Scotland to Wessex, attesting to the widespread nature of this form of funerary activity (Fig. 1). These features comprised 13 post-holes, 32 pits and a single surface deposit. The majority of these features (n = 35) date to the Mid–Late Neolithic. However, four deposits, from Yarnton (Oxfordshire) 3815 & 4580, Eton Rowing Lake (Buckinghamshire) Pit 9930 and Forrest Road (Aberdeenshire) Pit 25, produced Early Neolithic dates and/or cultural material, while a further five

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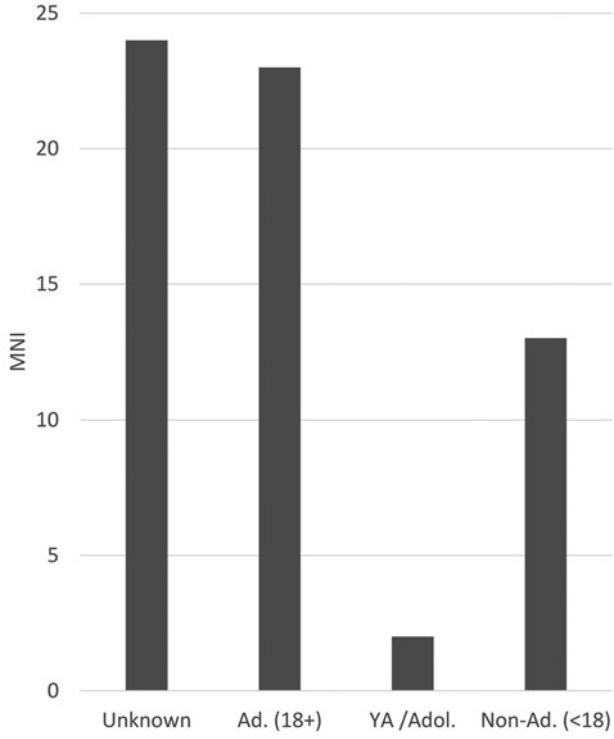

Figure 8. *Summary of age at death for Neolithic individuals from non-monumental cremation deposits in mainland Britain.*

deposits from Balfarg Riding School (Fife) and Yarnton consisted of post settings from Early Neolithic timber houses.

Some sites included in this review were later monumentalized through the construction of large earthwork features (e.g. barrows, henges), or through the erection of palisades or standing stone circles. In each case, the pit and post-holes included in this study preceded these constructions. For this reason, deposits from cremation cemeteries such as Forteviot (Perth and Kinross) (Brophy & Noble 2020) or Sarn-y-bryn-caled (Powys) (Gibson 1994; 2010) were not included as the deposits were contemporary with or subsequent to the construction of monumental earthworks. It may be argued that the pit digging and, especially, the raising of large individual posts, constituted mini-monuments in their own right. However, their construction required markedly less time, resources and aggregations of people relative to that of stone circles, barrows, henges and palisades and thus they are treated here as non-monumental features, at least at the time of their construction.

From this review, 32 cremation deposits (76 per cent) weighed <230 g, with the majority (n = 25) weighing <50 g (Table 1). Most publications did not record an estimate for the minimum number of individuals (MNI), but most deposits probably represented a single individual or several isolated cremated bones. While the greatest cremation weights were all found in pits, the cremation weights are largely homogeneous across feature types (Fig. 7). This suggests that the significance of the cremation deposits lies in the wider assemblage within these features. A broad range of ages and sexes are also represented, with a minimum of 23 adults and 13 non-adults identified, even including infants (in Lanton Quarry (Northumberland) cremation Pit 1 and Raunds (Northamptonshire) Pit F5549) (Fig. 8). However, there is a slight preference towards the deposition of adults. Among the deposits for which the MNI could be estimated, this ranged from 1–4 individuals although, in most cases (76 per cent), the deposits contained just a single individual. Of these, 34 (66 per cent) were accompanied by grave or pyre goods (Table 2) and 17 (33 per cent) were not associated with any artefacts. Ceramics, animal bone, unretouched flint flakes and blades are the most common artefacts found alongside the cremated remains (Fig. 9). Notably, burnt bone and antler pins, frequent finds from monumental cremation cemeteries at Stonehenge (Wiltshire), Forteviot, Cairnpapple (West Lothian), West Stow (Suffolk), Dorchester-on-Thames (Oxfordshire) and Duggleby Howe (East Yorkshire), are completely absent from these non-monumental assemblages (Rowland forthcoming; Willis 2019). That these objects do not appear to have been deposited outside of large cemeteries highlights the selective nature of these artefact associations, perhaps indicating differences in the funerary rites afforded to these individuals.

The extent of these pit and post-hole features varied greatly, from 0.3–2.5 m in diameter and 0.1–0.76 m deep (Fig. 10). With 64 per cent measuring <1 m in diameter, many of these features were small and understated. It is notable that the Bridlington Boulevard post-hole cut is significantly larger than the majority of such features containing cremations, suggesting it once held a substantial timber. Based on a ratio of 1:3 (below:above ground) the post is estimated to have had a maximum standing height of *c.* 2.3 m. The felling, transportation and erection of a timber post up to *c.* 0.7 m in diameter, even if felled relatively close by, would have necessitated the participation of a number of individuals involved in the post-raising activities.

A small number of non-monumental funerary sites provide evidence of grave markers. At Lanton Quarry and Meldon Bridge (Borders) cremations

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Table 2. *Summary of finds associated with Neolithic non-monumental pit and post-hole cremation deposits from mainland Britain.*

Site	Axehead	Arrowhead	Knife	Strike-a-light	Core	Serrated blade	Scraper	Awl	Flakes & Blades	Retouched Flake	Polissoir	Stone flake	Hammer stone	Animal Bone	Antler	Shell Fragments	Plain / Carinated Bowl	Impressed Ware Vessel	Grooved Ware Vessel	UnID Ceramic Vessel	Reference
Bridlington Boulevard	1																				Earnshaw 1973; this publication
Eton Rowing Lake, 9930		1			1	2	1		16					37			x			x	Allen *et al.* 2013, 313
Maxey Quarry																		x			Gibson 2013
Dorchester-on- Thames, F3003							1														Whittle *et al.* 1992
Yarnton Site 5, 9002									1			x	1	11				10			Hey *et al.* 2016, 423
Yarnton Site 7, 3815									22	1				x							Hey *et al.* 2016, 475
Yarnton Site 7, 3207									22	2				8				x			Hey *et al.* 2016, 479–82
Yarnton Site 7, 3700					1				17	12			1	64				x			Hey *et al.* 2016, 481–2
Yarnton Site 7, 4755							1		25	1				19	x				x		Hey *et al.* 2016, 508
Yarnton Site 7, 4758									25	2				49	x				x		Hey *et al.* 2016, 508
Yarnton Site 7, 4580														x							Hey *et al.* 2016, 464–6
Yarnton Site 7, 3964														x							Hey *et al.* 2016, 468–9
Yarnton Site 7, 4701									3					x							Hey *et al.* 2016, 468–9
Yarnton Site 7, 3446														x					x		Hey *et al.* 2016, 556
Lanton Quarry CP2 (4056)									1					x							Cockburn 2016
Lanton Quarry CP2 (4061)			1						4												Cockburn 2016
Lanton Quarry CP3 (4032)														x							Cockburn 2016
Lanton Quarry CP4 (4041)														x							Cockburn 2016
Raunds F47087				1					2												Allan *et al.* 2013
Raunds F5549					2				3											x	Allen *et al.* 2013
Lower Luggy 5090									3	2			1								Gibson 2006
Llandegai FA370											1	1				x		1			Lynch & Musson 2004
Pen-y-banc 237008									1									x			Hart 2013
Forest Road P25		2			2		2	1	47			18	1				21				Cook & Dunbar 2008, 62
Forest Road P53	1							1	5										5		Cook & Dunbar 2008, 77–8
Stoneyfield P20																			3		Simpson *et al.* 1997
Stoneyfield P21														x					4		Simpson *et al.* 1997
Stoneyfield P41					1					1				x					7		Simpson *et al.* 1997
Stoneyfield P42														x					1		Simpson *et al.* 1997
Stoneyfield P44						1															Simpson *et al.* 1997
Stoneyfield P45														x					1		Simpson *et al.* 1997
Stoneyfield P49		1					1												10		Simpson *et al.* 1997
Beckton Farm F080														x	x				1	1	Pollard 1997
Balfarg Riding School F7063														x							Barclay & Russell-White 1994
Total no. of sites	***2***	***3***	***1***	***1***	***5***	***2***	***5***	***2***	***16***	***7***	***1***	***3***	***4***	***20***	***3***	***1***	***2***	***6***	***11***	***3***	

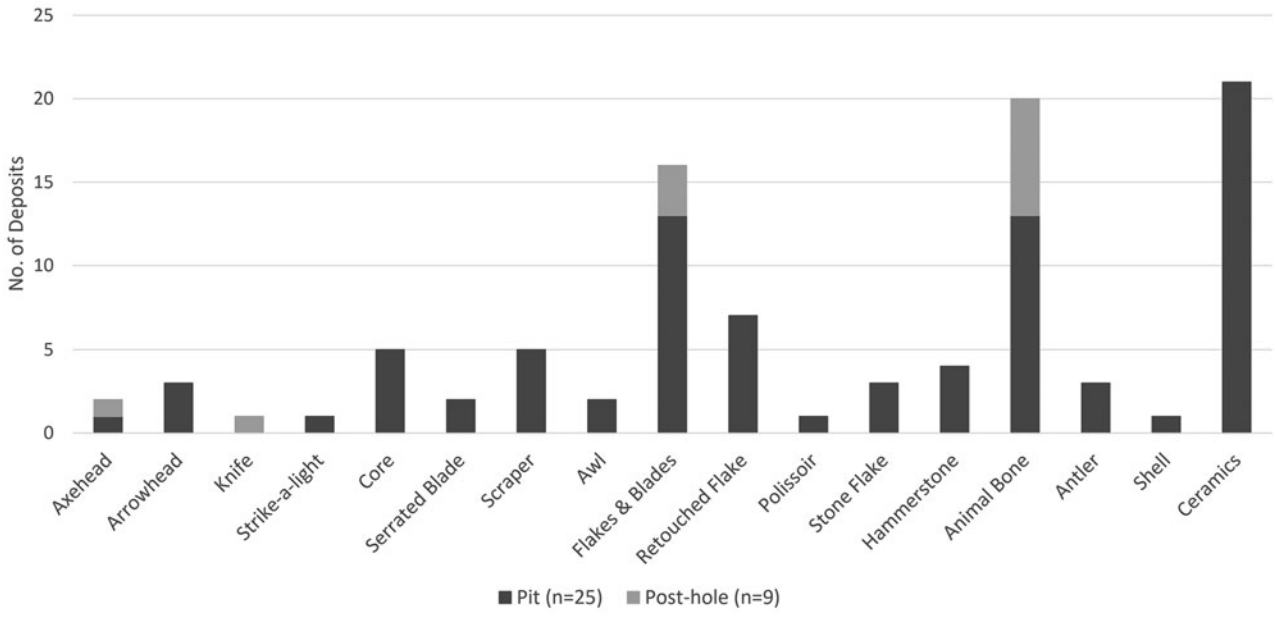

Figure 9. *Frequency of objects associated with non-monumental pit and post-hole cremation deposits in mainland Britain.*

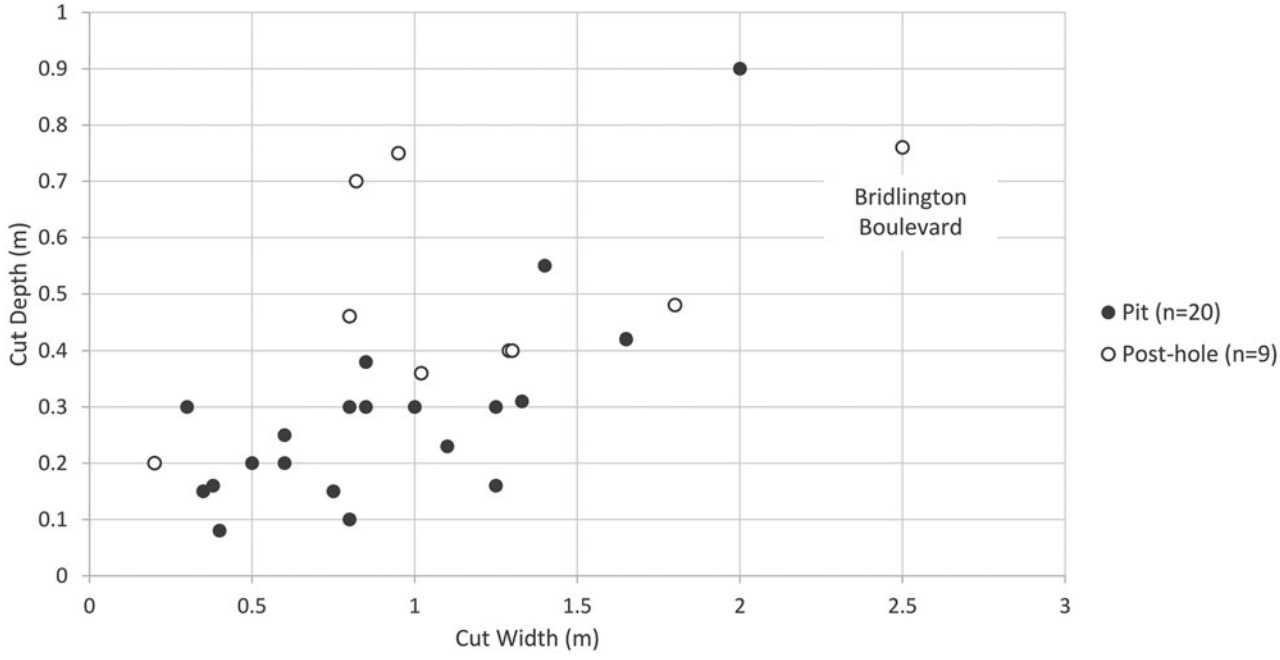

Figure 10. *Feature depth and width for non-monumental pits and post-holes containing Neolithic cremation deposits from mainland Britain.*

were deposited within the packing of features containing post-markers, representing small-scale cremation cemeteries (Cockburn 2016; Speak & Burgess 2000). The close spatial association of two post-holes with three pits containing cremated remains at Milton Ham (Northamptonshire) may also be interpreted to represent marker posts for a small cremation cemetery (Carlyle & Chapman 2012). At Lanton Quarry, three of the post-holes had also been recut to allow deposition of

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subsequent cremations, indicating these places were returned to periodically, although the paucity of radiocarbon dates means it is unclear over what timespan this took place (Cockburn 2016). Feature K21 at Meldon Bridge had also held two successive posts, followed by an off-centre stake and finally a small standing stone, marking the site of the deposit, reflecting prolonged re-engagement with the dead (Speak & Burgess 2000). At some sites, such as Meldon Bridge, Raunds barrow 5, Llandegai Henge A and Stoneyfield (Highland), non-monumental deposits preceded later monumentalisation. The incorporation of these features suggests long-term continuity and memorialization, perhaps through oral tradition, of the significance of these areas and the individuals interred therein. The deposition of human remains in these locales may have served as foundation deposits to establish the ancestral significance of such places or to imbue them with spiritual essences of the dead.

Post-human cremation assemblages

It is tempting to define most contexts containing human bone as funerary deposits and, in doing so, accord the human presence with primary importance. Such narratives can unduly retroject presentist notions of anthropocentrism, overlooking the potential for non-human agents to intervene in actions which might be as mundane as household rituals (e.g. Büster 2021), or as intensive as landscape clearance or monument construction. Recent works have also problematized such an approach by revealing the often blurred and overlapping boundaries between depositional practices usually studied separately (e.g. grave goods, hoards, cenotaphs, structured deposits) and the significance of 'body-less' object deposits in their own right, beyond symbolic markers of missing bodies (Büster 2021; Cooper *et al.* 2020). A posthuman approach urges us to reconsider the dynamic forces that flow between and emerge from assemblages of substances, things and organic matter, including, but not prioritizing, people (Bennett 2010; Braidotti 2013; Crellin & Harris 2021). Reconsidering relations and capacities in this way highlights that Neolithic worlds did not follow ontological hierarchies familiar to many of us today, but that instead animals, trees, plants and things were forceful influences driving change. Substances comprising the natural world were dynamic materials taken up to produce effects in the landscape, and communities were probably conceived of as expansive beyond just humans (e.g. Banfield 2016; 2018; Harris 2013).

A posthuman perspective harnesses a re-evaluation of these pit and post-and-human cremation deposits. Ninety-five per cent of the pit and post-hole cremations reviewed here are unrepresentative of a complete individual; they were 'token' pieces of bone, perhaps expediently disposed of when appropriate times or circumstances allowed. These events may not have marked a significant component of the funerary process, and it is unlikely that such small deposits were primarily intended to commemorate an individual's death. Furthermore, while cremations can be tied into wider practices of selective and secondary deposition, non-monumental deposits indicate a continuity of practice which was small-scale, occasional and dispersed. What was it that enchained these cremation deposits? They are so idiosyncratic in nature as to suggest that their motivation was circumstantial, perhaps characterized by cosmological associations specific to their context, such as the availability of a range of materials and conditions which prevailed to enable their deposition.

Instead of posts marking the resting place of ancestors, the items—including cremated remains—placed within post-holes may instead be conceptualized as gatherings of dynamic essences which affected the rites and actions surrounding post-raising or decommissioning. Token cremation deposits in post-holes of Early Neolithic houses, for example at Yarnton and Balfarg Riding School, could have exerted influential forces which were imbued into the properties of the houses themselves. Since the deposition of cremated human remains in Neolithic houses in Britain is somewhat rare, it is interesting to consider what houses raised over the dead could *do differently*. These forces could have been propitiatory, perhaps evoking ancestral spirits, or conversely might have marked the containment of malevolent essences. In the case of post-holes, a symmetry is noticed between the material used as fuel to burn or cremate the dead, and subsequently raised accompanied by these cremations. Perhaps these post-and-human cremation assemblages referenced past wood-and-human assemblages which came together in the felling of woodlands for the cremation pyre.

Qualitatively examining the materials placed alongside cremations in pits and post-holes (excluding the single surface deposit from MoD headquarters (Wiltshire) and the pit from Maxey Quarry (Cambridgeshire) where the presence of pyre debris is uncertain) shows that similar proportions of both feature types contained pyre debris (40 per cent of pits and 44 per cent of post-holes) and both regularly

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contained worked flint and animal remains. However, the post-and-cremation assemblages are notably devoid of ceramics, antler, shell and coarse stone artefacts (Fig. 9). The lithic assemblages from post-holes are similarly limited: besides the axehead in the Bridlington Boulevard post-hole, one knife, one blade and seven flint flakes were present in only four out of a total of 13 cremations in post-holes (31 per cent). The pit-and-cremation assemblages are, in contrast, exceptionally diverse in their fills, suggesting distinct conditions and qualities were involved in their creation. This pattern may extend more widely to other pit assemblages containing unburnt bone. Post-holes contained gatherings of more restricted ranges of materials, but perhaps most importantly were dug out to contain and stabilize posts, thereby representing upstanding, visible and tangible interventions. Pits, on the other hand, drew together a greater assortment of materials which might have been efficacious and sensorially affective (Pollard 2001). When combined, these qualities could have productive, regenerative, or harmonious consequences, but they were eventually hidden or obscured. These variations might relate to different life stages of the materials or features themselves: while the infilling of pits could represent a ritual *closure* of features perhaps dug originally for another purpose, post-hole deposits gathered together materials suitable either for *founding* a structure or monument or *decommissioning* it on removal of the post. Nonetheless, the varied contents of these deposits suggests each depositional act was unique.

Cremations in post-holes were brought into relation with timber posts and structures, sometimes alongside combinations of burnt and unburnt materials, including animal bone and occasionally worked flint. In pits, they were conversant with buried bricolages of stone tool 'kits' and other probable occupation debris, such as animal bone from varied species, organic remains and broken pots. If we accept that relations constitute the capacities of things, cremations in post-holes and pits were qualitatively different. Similar to Banfield's (2016) proposition regarding the multiplicities of chalk, clay and sarsen stones in the Avebury stone-hole settings, we suggest that cremations' capacities changed according to the contexts in which they were deployed and features in which they were deposited. Given this, it is worth exploring the material taxonomies of bone further; future work might ask whether the capacities of cremated human remains differed to the capacities of unburnt human bone in similar contexts.

Conclusion

The Bridlington Boulevard cremation provides a rare insight into Neolithic non-monumental funerary and depositional practices. It highlights the complex sequence of activities that may be involved and reveals the potential for multi-stage funerary practices. As Gibson (2016, 58) has stated, 'the treatment of human remains in the fourth to second millennia BC was totally alien to our own ideas'. So, who *were* these people who assembled the deposit at Bridlington Boulevard and, more specifically, *who* was the person that was partially burnt and deposited here? Unfortunately, given the selective nature of the human bone deposit, little can be deciphered about the identity of the deceased. They were an adult, of uncertain sex, who at their time of death may have been a son or daughter, parent, sibling, partner, craftsperson, farmer, hunter and/or elder, and whose death would likely have been deeply felt by the community they left behind.

After death, the body of the deceased was possibly exposed or excarnated, the cranium deliberately broken, whole or part of their body burnt and then partially deposited, although the sequence in which these events occurred is unknown. The majority of their remains must have been treated in other ways: perhaps placed in other sites or landscape features (even including the nearby Gypsey Race river), or divided and circulated amongst the living community, creating multiple opportunities for engagement and re-engagement with the deceased. Collating the data on pit and post-hole cremations reveals a surprising number of known examples of this depositional type, spanning the Early to Late Neolithic. Despite its longevity and broad geographic distribution, each pit and post-hole cremation is unique: different quantities of burnt or cremated remains were interred, and accompanied by diverse (or no) objects, reflecting a highly variable funerary complex.

One reading of the Bridlington Boulevard assemblage might suggest that the feature was constructed to commemorate the deceased, with the axehead knapped to fell a memorial post and deposited alongside the burnt bones and timbers once its purpose was served. Yet accounting for ontological difference and more-than-human forces in Neolithic worlds leads us to argue alternatively. With so few pits and post-holes containing burnt or cremated human remains, and even fewer containing a large number of fragments, it was these actions of intervening in the world which were significant. Digging into the earth, or embedding timber posts

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(be they isolated or structural), were undoubtedly routine acts in Neolithic lives. Yet, when incorporating carefully chosen assemblages of materials, these objects and depositional acts could have bestowed forces needed to achieve real outcomes at moments when the world was being altered and augmented through sub-surface or above-ground constructions.

Note

1. The estimate of an archaeological weight of a cremation refers to studies of modern cremation weights where only remains >2 mm in size are included, creating a more realistic scenario for archaeological cremations and excluding ash from coffin wood (see Willis 2019, 145–6).

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Supplementary material

A 3D model of the reconstructed Bridlington Boulevard calotte can be accessed by clicking the following link: https://skfb.ly/oBpFN

Jake T. Rowland
Archaeology
University of Southampton
Avenue Campus
Highfield Road
Southampton SO17 1BF
UK
Email: jr8g14@soton.ac.uk

Jess E. Thompson
McDonald Institute for Archaeological Research
University of Cambridge
Downing Street
Cambridge CB2 3ER
UK
Email: jet71@cam.ac.uk

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Author biographies

Jake T. Rowland is an SWWDTP-funded PhD student at the Universities of Southampton and Reading, working on reconstructing the life histories of Middle Neolithic grave goods. His research integrates technological, contextual and use-wear analysis to explore prehistoric technology, materiality, depositional practices and the relationships between people and objects.

Jess E. Thompson is a Post-doctoral Research Associate at the McDonald Institute of Archaeological Research, University of Cambridge. Her research is concerned with the intersection between deathways and identity, and she leads the bioarchaeological analysis for the ERC-funded project 'Making Ancestors: the Politics of Death in Prehistoric Europe'.