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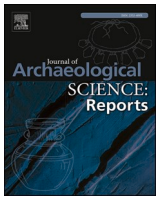

Fragmented analysis, fragmented interpretation: The necessity of integrated faunal and human analysis for identifying and understanding ritual contexts

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ABSTRACT

Recognising and understanding ritual practices in the past is a notoriously difficult process in archaeology. This is further hampered by variable approaches and recording systems used for human and animal remains, particularly when they are comingled within the same ritual deposit. Often this fragmented approach means that the treatment of faunal and human remains cannot be directly compared, obscuring the role of humans and animals within the ritual. This paper seeks to illustrate the necessity of using integrated taphonomic recording and analysis on human and animal remains in order to address the complexities of ritual in the archaeological record using a case study from a ritual shaft from first century AD Roman England. The integrated analysis revealed a complex relationship between dogs and humans that has not previously been recognised in Romano-British material.

1. Introduction

The question of 'ritual' or 'rubbish' plagues archaeology. Despite many years and much research (Brück 1999, Broderick 2012, Chadwick 2012, Hill 1995, Morris 2011), it has proved impossible to provide a ritual 'checklist' which can be applied regardless of context. Indeed, the question of if the separation of material into separate categories of 'ritual' and 'rubbish' is even useful has been expanded upon at length (Brück 1999, Hill 1995, Garrow 2012). Yet, right or wrong, the categorisation of material does inevitably impact approaches taken in the excavation and analysis of assemblages. What information is prioritised is, to some extent, a function of what archaeologists expect to find, or what they expect will be important. Given that the current model within UK archaeology is that each type of material is analysed and written up by different specialists, this can result in a complex mosaic of different, sometimes conflicting, interpretations (Maltby 2010). The same feature might be considered 'ritual' by one specialist, and 'rubbish' by another (e.g. Ashbee et al. 1989; Haslam and Haslam 2021; Woodward, 1993). Comparing different types of material from within the same context can become impossible due to different recording methods, and the resulting differing interpretations can be difficult to integrate. This is particularly evident in the case of human and faunal remains, where differing theoretical traditions have often led to varying methods of quantification, analysis, and interpretation.

It has been 19 years since Outram et al. (2005) published their paper "Understanding complex fragmented assemblages of human and animal remains: a fully integrated approach" calling for the integration of zooarchaeological and human osteological methodologies when investigating comingled contexts, and 14 years since Madgwick (2010) demonstrated the use of integration for investigating ritual specifically. Despite the persuasive arguments made in favour of integration within both of these papers, this methodology has not been widely adopted within archaeology. This paper seeks to further illustrate the advantages of an integrated approach, particularly when trying to unpick the thorny issue of if a context represents 'ritual', 'rubbish' or indeed 'ritual rubbish'. In order to highlight the importance of an integrated approach for identifying and understanding ritual contexts, the paper will use a case study of an early Roman quarry shaft from Surrey, England.

2. The problems of comparison

Human and faunal remains are often found together, particularly within 'ritual' contexts. In both Prehistoric and Roman Britain, it is not uncommon to find pits which contain comingled, disarticulated human and animal remains (Hill 1995, Wait 1985). The current methodology of post-excavation work normally involves the assemblages going to

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different specialists for analysis with their reports synthesised by a third party in order to create the overall site report. In ideal conditions these specialists liaise and take both strands of evidence into consideration when producing interpretations. However, as was raised by Outram et al.'s (2005) previous study, this is often not the case.

As set out below, after publication, this fragmented approach remains a problem due to the differences in how human and faunal remains are reported on. Even if material is recovered from the same context, varying methods of quantification, analysis and interpretation often stop the material from being directly comparable. This in turn reinforces the idea that the separate categories of material must have been considered separate in the past, rather than working together as parts of an integrated whole. Without being able to investigate the similarities and differences between the treatment of humans and animals how can the complex nature of their relationships be fully understood?

2.1. Quantification

In order to be able to compare types of material it is important that they are quantified in the same way. There are a wide number of methods for quantifying skeletal material, and those most relevant to this paper are presented in Table 1.

The standard methodology for quantifying human remains is to report either the number of individuals in the case of articulated remains, or a minimum number of individuals (MNI) in the case of disarticulated remains (Brickley and McKinley 2004, Buikstra and Ubelaker 1994). Animal remains are rarely recovered as articulated individuals, and this is reflected in the methods used for quantification. Zooarchaeological reports preferentially quantify faunal remains by the number of identifiable bone fragments (NISP), although fully articulated animals are often reported separately using the number of individuals (Baker and Worley 2019, Reitz and Wing 2008). While MNI is occasionally used in zooarchaeology, this is less common than NISP, as it is widely considered to overestimate the number of individuals and is more subjective than NISP because it requires calculation (Lyman and Wolverton 2023; O'Conner, 2000; Plug and Plug 1990, Reitz and Wing 2008).

Table 1
Quantification methods employed for skeletal remains in zooarchaeology and human osteology.

Method	Abbreviation	Definition	Calculation Method
Number of Identified Specimens	NISP	The number of bone fragments which can be identified to taxon level	The number of identifiable fragments in an assemblage is counted
Minimum Number of Individuals	MNI	The minimum number of individuals which must have been present in order to create a given assemblage	Calculated using repeated skeletal elements taking side and age-at-death estimation into account. In zooarchaeology size and sex may also be considered
Minimum Number of Elements	MNE	The minimum number of a specific skeletal element which must have been present to create a specific assemblage	Calculated using zonation data taking side and ages estimations into account. In zooarchaeology size may also be considered
Bone Representation Index	BRI	The percentage of a specific skeletal element present in an assemblage against the expected value assuming perfect preservation	Calculated by dividing the MNE for a given element by the expected number of that element assuming perfect preservation of the full MNI

MNI and NISP cannot be directly compared with each other, nor can one be used to extrapolate the other, unless a complete table of individual elements is provided. As such, from the point of view of recording, analysis of a comingled deposit of human and animal remains is fragmented, with even the most basic question of 'how many' answered in ways that cannot be compared.

A more flexible method of quantification is the minimum number of elements (MNE). MNE is a calculation of the minimum number of each anatomical element within an assemblage. This method of quantification is not always published within reports, however it is widely used both within human osteology and zooarchaeology for calculating a range of other indices including the prevalence of certain body parts and the MNI of an assemblage (Lyman and Wolverton 2023, Reitz and Wing 2008, Brickley and McKinley 2004).

The MNE can also be used to calculate the bone representation index (BRI). The BRI is a measure of the percentage of elements present against the number of elements that should be present assuming perfect preservation of all skeletons (Dodson and Wexlar 1979). The BRI is used in human osteology to identify secondary burial and other forms of post-mortem manipulation (Bello and Andrews 2006), and within zooarchaeology to examine which portions of the animal are most present within a given deposit (Outram et al. 2005). This can be essential for identifying if only portions (such as joints of meat) have been deposited within a deposit.

2.2. Analysis

Zooarchaeologists and human osteologists are often trying to answer different questions, and as a result, the analytical methods they use often focus on different aspects of each assemblage. Studies of human remains are often primarily concerned with the life of the individuals in question, with methods addressing questions about age-at-death, biological sex, health and social status. There is a greater focus on pathology in particular, and taphonomic recording is only addressed within *Guidelines to the Standards of Recording Human Remains* in the chapter on disarticulated and comingled assemblages (McKinley 2004). The recommended recording of taphonomy is restricted to the cortical preservation and completeness of skeletons (Brickley and McKinley 2004).

By contrast, zooarchaeological analysis tends to be focused around questions of what animals were used for after death. For this reason taphonomy plays a central role and the Historic England guidelines recommend recording: gnawing, evidence of digestion, trampling, peri- and post-mortem fractures, bone colour, weathering and butchery marks (O'Conner, 2019). The importance of post-depositional processes is also, in general, more of a focus within the zooarchaeological literature compared to the human osteological literature, particularly outside prehistoric contexts.

While both approaches yield valuable information, the difference in focus can result in wildly different specialist reports that are difficult to compare. The question of taphonomy and post-mortem modification is central to unpicking if human and animal remains have been treated in the same ways. Even if taphonomy is recorded to the same level within both assemblages, the use of differing recording systems may still confuse the matter. For instance, the McKinley scale is used as the standard for recording the surface preservation of human bone (McKinley 2004), while zooarchaeological reports are more likely to favour Behrensmeyer's weathering stages (Behrensmeyer 1978). While both systems measure cortical survival, they are not interchangeable, as the McKinley scale includes root etching, erosion and abrasion as well as weathering, while Behrensmeyer only records weathering.

2.3. Interpretation

Human osteology and zooarchaeology evolved as separate disciplines with different theoretical frameworks (Maltby 2010, Morris 2008,

Morris 2011). There is always an amount of tension between functionalist and ritual interpretations, but it is notable that the criteria for making these determinations sometimes vary greatly between human and faunal studies. The criteria for recognising sacrifice for instance: in human remains there is a focus around the idea of "overkill" or excessive brutality and violence at time of death (Aldhouse-Green 2001; Schwarz, 2018; Ludes et al. 2024), while in faunal material articulation (Morris 2010, 2012, Grant 1984), demographic patterns (Grimm and Worley 2011, Groot 2012), and the presence of human remains within the same feature (Morris 2010, 2011, Sykes 2015, Wait 1985) have all been used to identify probable sacrificed animals and violence is rarely considered. While it is true that humans and animals are different, and that animal sacrifice is more prevalent than human is, it is odd that such different criteria are applied without direct comparison even when human and animal remains are recovered from the same feature (eg. Barnett et al. 2011, Haslam 2009).

In many ways, what a specialist expects to find will influence what they look for. While there has been a swing towards the 'social theory' of zooarchaeology (Overton and Hamilakis 2013) and questions beyond the simplistic "what did they eat", such discussions have tended to focus on articulated bone groups (ABGs) rather than disarticulated material (Morris 2011, Groot 2012), and there is still a focus on functionalist narratives within much of the literature. Human remains, in contrast, are generally assumed to be inherently 'ritual' or 'special' unless there is compelling evidence otherwise (Wait 1985, Hill 1995). This often leads to an implication that faunal remains and human remains must have served different purposes, even when deposited within the same context. Without a way of directly comparing the two assemblages, this assumption cannot be examined and remains an artefact of anthropocentric thinking.

3. Materials and method

3.1. The Nescot shaft

In order to illustrate the potential of integrated analysis for identifying and understanding ritual contexts, this paper uses a case study from first-century AD Ewell, Surry, England. The former Nescot college animal husbandry centre was excavated in 2015 in advance of development. The Roman phase of the site comprised a series of ten quarry pits (Fig. 1), the majority of which appear to have been backfilled in the late first century-early second century AD (Haslam 2016), along with a ditch and the lower portion of an inhumation grave which extended beyond the limit of excavation. The quarry pits were dug for the extraction of chalk and flint, and the size of many of them suggests a large, oragnised operation (Haslam 2016). The earliest of the quarry pits to be backfilled, Quarry 1, consisted of an oval shaft approximately 4 m deep with vertical sides. A coin found in the base of the shaft indicated that the backfilling must have started in AD 77 at the earliest (Haslam and Haslam 2021). The backfill of Quarry 1 was remarkable in that it contained a very large assemblage of comingled, semi- and disarticulated human and faunal remains (combined NISP=11,422) as well as pottery, coins, and other assorted artefacts.

Quarry 1 appears to have had three distinct phases of use (Fig. 2), all dated to the late first century-early second century AD. The first phase of use is primarily characterised by the deposition of human remains within the shaft, and consists of at least four distinct deposition events. The second phase comprised five deposition events and had a very similar faunal assemblage to phase 1, but no human remains were deposited. During phase 3 the shaft appears to have been used differently, and the character of the assemblage, both in terms of taphonomic modification and body parts represented, is markedly different from phases 1 and 2. Six deposition events were noted, one of which appears to have been natural slumping, and no human remains were recovered. The faunal assemblage was sparse with more prevalent evidence of butchery and weathering.

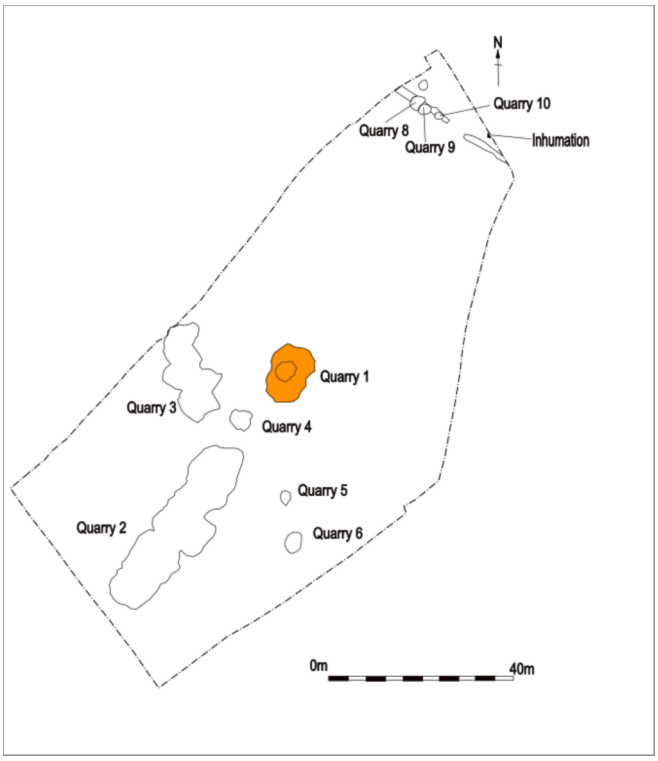

Fig. 1. Scale plan of the Nescot site showing quarry pits and a single ditch. Quarry 1 is highlighted in orange. After Haslam 2016.

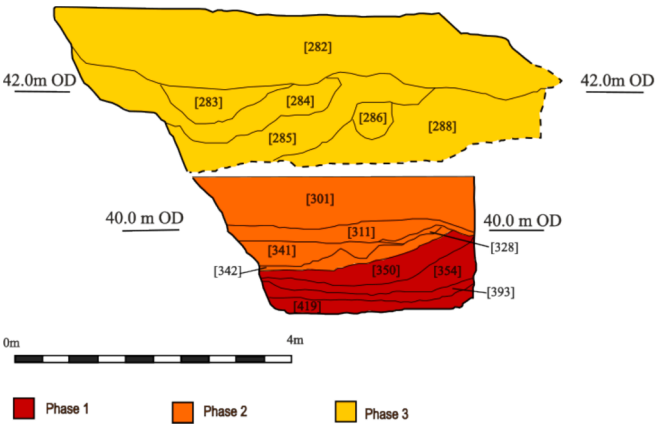

Fig. 2. Section of Quarry Pit 1 showing the three phases of use.

3.2. Methods

In order to address the problems of compatibility and create a comparable dataset, all bones were examined by a single specialist (the author) and recorded using the same form regardless of species. The information recorded for each fragment consisted of: context number, taxon, anatomical element, side, bone zones present (following Dobney and Rielly, 1988 and the human conversion Knüsel and Outram 2004), the state of fusion of all epiphyses, the presence or absence of root etching, the presence or absence of weathering, evidence of burning, abrasion and erosion (following McKinley 2004), evidence of butchery/cutmarks (following Reitz and Wing 2008), evidence of gnawing, peri- and post-mortem fractures (following Ubelaker 1991), and pathological lesions (following Roberts and Connell 2004).

Taxon identification was achieved using a combination of the University of Reading reference collection, Hillson 1992, Amorosi 1989,

Prummel 1987 and White and Folkens 2005. Undiagnostic fragments were sorted into large mammal and medium mammal where possible. These fragments were included within the taphonomic results, but not the demographic results. Dobney and Reilly (1988) and Knüsel and Outram (2004) were selected for zonation, as together they comprise the only set of published zonation methodologies usable on both human and faunal remains, allowing for direct comparison. In the case of peri- and post-mortem fractures, the angle, surface texture, and colour of the fracture was recorded, permitting fractures to be sorted into 'fresh' fractures (which occurred when the bone contained the majority of its collagen), dry fractures (which occurred when the bone had lost most of its collagen but still within the past), and modern fractures (which occurred either during excavation or post-excavation handling) (Outram 2001, Ubelaker 1991).

The zone, side, fusion and anatomical element results were combined to calculate the MNE for each element. This was in turn used to calculate both an MNI and BRI. In the case of Quarry 1, the taphonomic processes within the shaft should have acted equally on both human and faunal remains, and therefore differences in BRI are likely to be due to anthropogenic action rather than natural processes.

4. Results

This paper focuses on two specific sources of information, BRI and general taphonomic analysis, which served to identify potential ritual practices and to illustrate the potential cosmological connections between species.

4.1. Quantification

The breakdown of the major taxa identified within the shaft is shown in Table 2. In addition a number of microfauna (including rodents, amphibians and mustelids) were also recovered from the shaft, however these likely represent either intrusive burrowing animals or pit fall victims. The remains of four birds were also recovered, each represented by a single bone. Three of these birds were identified as galliformes, most likely chickens, and the last was identified as a thrush.

4.2. Bone representation index

The BRI by taxa and phase is shown in Fig. 3. It should be noted, as is shown in Table 2, the sample size is quite variable between phases, but some distinct patterns can still be observed. As would be expected, dense bones, such as the humerus and the femur had, in general, higher survival rates. Within the dog and cattle assembladges there is a notable difference in which elements are present between phase 1 and phase 3. In the pig assemblage it is notable that phase 3 includes only the haunch rather than the whole animal.

4.3. Taphonomy

The majority of taxa had similar rates of taphonomic modification (Fig. 4), and these were low (1.68 % for the entire assemblage). There were two outliers, cattle and sheep/goat, both of which showed higher rates of modification. The sheep/goat assemblage made up the vast majority of remains which showed evidence for burning. The cattle assemblage had high rates of butchery, both cut marks and chop marks, in relation to the rest of the taxa. It is worth noting that in the case of the cattle remains the sample size is significantly lower than that of other taxa. The human remains do not appear to have been treated significantly differently than the majority of the faunal remains.

A small number of phalanges, metacarpals, metatarsals and ulnae from humans and dogs recovered from phases 1 and 2 had a patina, giving them a 'polished' appearance. Eleven human bones and 14 dog bones had a translucent, smoothed appearance to the entire cortical surface of the bone (Fig. 5, Fig. 6) or patches of extreme abrasion on the shafts of the bone (Fig. 7, Fig. 8). Pathology was ruled out as a cause for the modification by both radiography and macroscopic inspection. Taphonomically, both effects are the result of abrasion (Fernández-Jalvo and Andrews 2016, Green 2023).

While both equifinality (Lyman and Fox 1997) and microenvironments within the context (Madgwick 2010) must always be considered, it is unlikely that this abrasion occurred within the quarry pit. The bones which displayed a smoothing over the entire cortical surface most resemble fragments which have been subject to either the constant bombardment of small particles over the entire surface, as might happen in the case of flowing water or wind-blown sediment (Fernández-Jalvo and Andrews 2016), or those which have been exposed to indirect heat (such as boiling) (Botella et al. 2000, Hurlbut 2000, Bosch et al. 2011). The shaft itself was filled primarily with silt and chalk rubble, comprising a free draining matrix that could would not have allowed for the constantly flowing water needed to abrade the bones in this manner. Similarly, it is unlikely to have been caused by windblown particles as the bones show no signs of exposure (such as weathering), and the shaft itself would have protected from wind.

The bones which display intense abrasion on the shaft most closely resemble bones from within osteological teaching collections, where constant handling of bones causes areas which are frequently touched to develop a smoothed, shiny appearance (Mary Lewis pers. comm.). A similar phenomenon has been observed on bone tools, which are abraded both by constant handling and the material they are used with (Fisher 1995). The midshaft of the phalanx is a natural place to grip the bone, and it is likely that the abrasion was caused by repeated handling rather than abrasion within the shaft. It is notable that phalanges and metapodials of multiple taxa were recovered, but only human and canine bones showed this specific taphonomic modification.

5. Discussion

An integrated analysis of the human and faunal assemblages revealed a set of correlations, particularly between humans and dogs. This can primarily be seen in the similar patterns observed in the BRI and the abrasion of the small selection of phalanges, metapodials and ulnae from phases 1 and 2. These similarities imply a similar treatment of human and dog remains, which is notably different from the treatment of the other animals within the shaft, and open a window onto the complex cosmological connections between the two species.

5.1. Bone representation Index

Even in the best circumstances it is rare for an entire skeleton to be preserved in perfect condition, but taphonomic bone loss tends to follow

Table 2
Quantification of taxa by phase.

Phase	Human		Dog		Pig		Cattle		Horse		Sheep/Goat	
	MNI	NISP	MNI	NISP	MNI	NISP	MNI	NISP	MNI	NISP	MNI	NISP
1	21	675	92	3506	23	319	5	43	10	135	25	438
2	0	0	41	1909	15	342	1	3	6	16	5	32
3	0	0	7	48	2	5	6	42	6	23	4	12
Total	**21**	**675**	**140**	**5463**	**40**	**666**	**12**	**88**	**22**	**174**	**34**	**482**

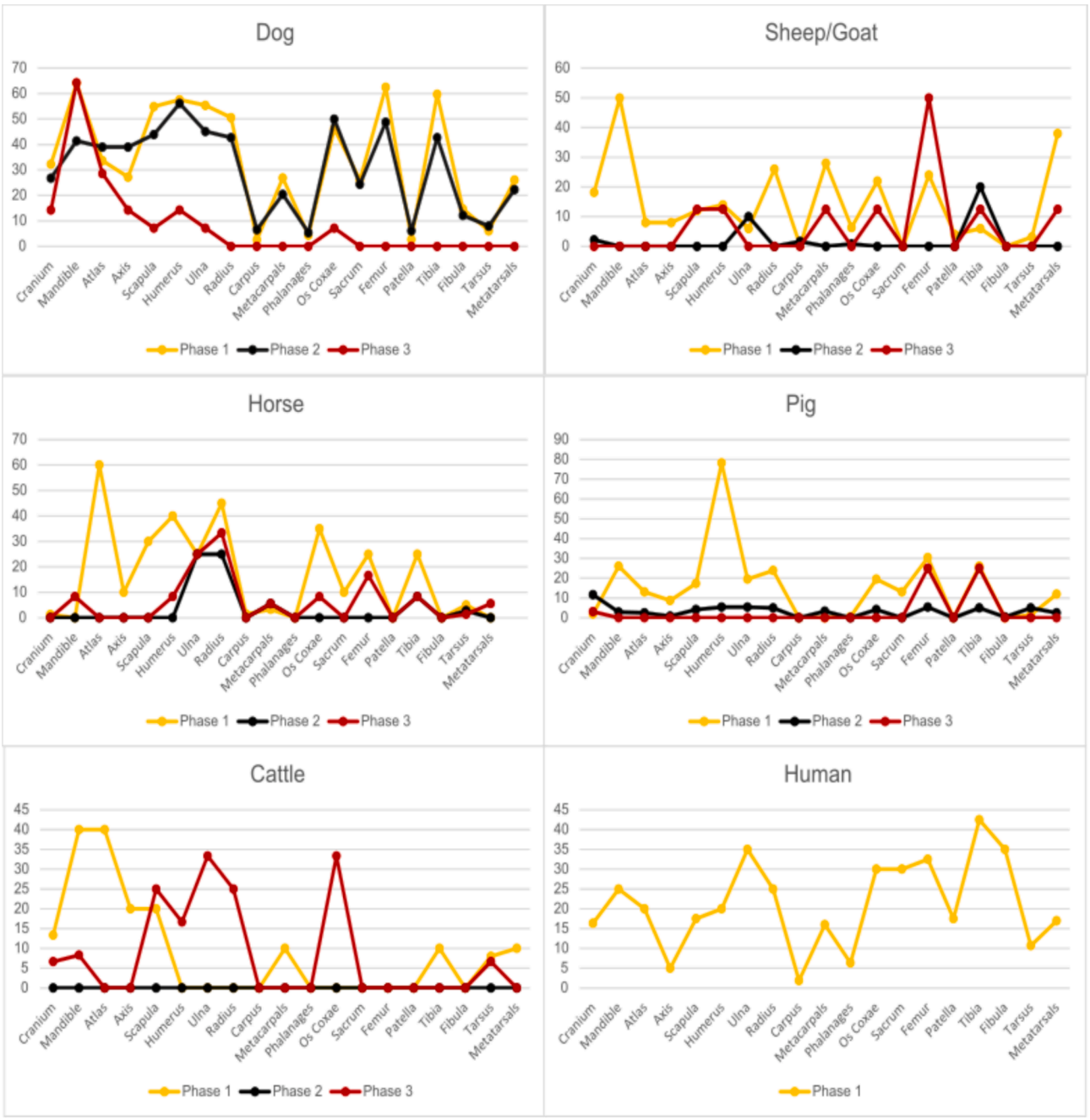

Fig. 3. BRI by taxa and phase. Human remains were only present in phase 1.

certain patterns (Bello and Andrews 2006, Andrews and Bello 2006, Waldron 1987). Dense bones, such as the femur and the humerus, on average, survive better than the smaller bones such as those of the carpus or distal phalanges (Waldron 1987). As such, BRI permits the separation of taphonomic loss from post-mortem manipulation, though caution must still be used as the loss of an excess of small bones may also be due to excavation bias and a lack of sieving (Bello and Andrews 2006). In order to more closely examine the BRI results for the dog and human remains, a 'normative' BRI was calculated using data from Roman Britain (Bellis 2020, Waldron 1987), which was then compared to the results from the Nescot quarry shaft (Fig. 9). The human remains in particular diverge notably from what would be expected in terms of survival, and this suggests that certain elements, in particular the crania, were being removed from the shaft after skeletisation (Green, In press). The dogs within phase 1 for the most part conform to the expected patterns of survival. Crania are rarer than one might expect (BRI=32.33 %), particularly given the exceptional preservation of the mandibles (BRI=64.13 %) within the context. This pattern of missing crania is much more marked within phase 2 (BRI=26.83 %), notably the period in which human remains are no longer deposited within the shaft.

It is unlikely that these losses are simply due to taphonomic damage, as the majority of elements within the canine assemblage conformed to the expected survival rates, and did not deviate more than 10 %. While variation in the number of small bones from the paws can be explained by a lack of sieving on the part of the excavators; crania, even when fragmented, are unlikely to be looked over in such numbers.

5.2. *Taphonomy*

The taphonomic condition of the bones with a patina indicates a

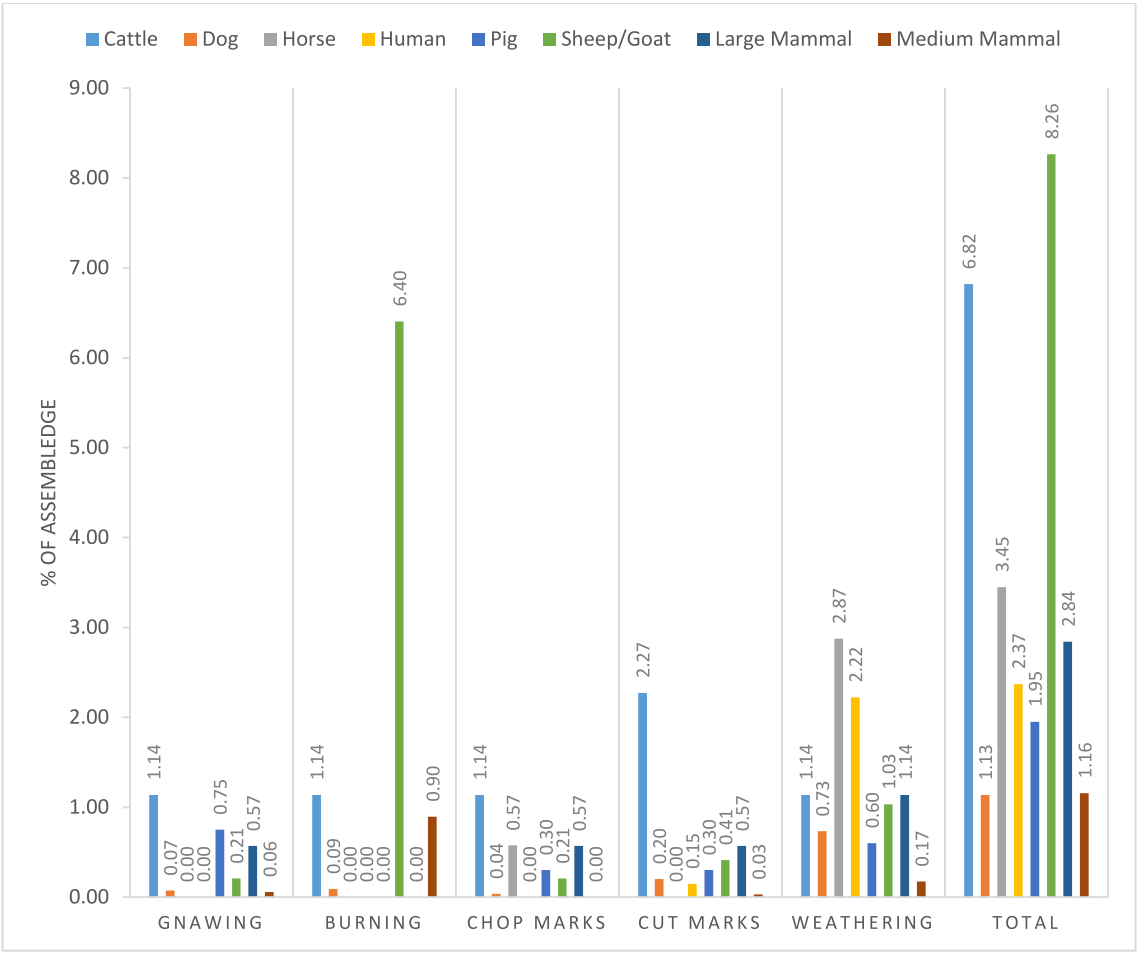

Fig. 4. Taphonomic modification by taxon.

Fig. 5. Human proximal phalanges from Phase 1. The bone on the left shows a slightly translucent waxy appearance in comparison to the phalanx on the right.

degree of curation of both human and canine remains. If the bones were subject to boiling it was very likely used as a method of quickly defleshing the remains. Such practices are attested in medieval Europe (Weiss-Krejci 2001, Scorrano et al. 2017), and are still employed in the preparation of modern reference collections and anatomical samples. If the bones were being used as objects, as is implied by the handling wear on the shafts, then this would have represented a quicker method of preparing the remains than letting them decompose naturally.

It is worth at this point stopping to address the other potential implication of boiling human remains, that of cannibalism. There are no published archaeological cases of potential cannibalism in Roman Britain, nor any suggestion from textual sources that it was occurring. It has been suggested on a small number of late Iron Age sites there was evidence of cannibalism (Aldhouse-Green 2001; Carter, 2000; Luff 1996). However, the criteria used to identify it (the presence of cut marks and *peri*-mortem fracturing of bone similar to that seen in marrow processing) can also be created during manual defleshing and disarticulation without consumption, and thus is not necessarily diagnostic (Knüsel and Outram 2006). Given that the Nescot assemblage shows remarkably few cut marks and fresh fractures, and the general lack of evidence of cannibalism in the period, it is extremely unlikely that it was occurring despite the evidence for boiling bones.

The curation of human remains is an accepted part of Iron Age mortuary practices (Armit 2017, Madgwick 2008, O'Brien 2014). During the Roman period there is less evidence for curation, however literary sources (Graham 2011) as well excavations (M. Fulford pers. comm., Green, In press, Mays and Steele 1996) have shown it did occur. The curation of canine bone is even less well attested. This, to some

Fig. 6. Dog metatarsals. The bone on the left shows the yellowish, translucent, slightly waxy appearance as opposed to the normative taphonomy of the bone on the right.

extent, is likely influenced by the assumption that disarticulation is the 'normal' state of animal remains, and thus it is less likely to be remarked upon in the literature, and evidence of curation less likely to be looked for. Missing bones from articulated dog skeletons, recovered within the second century ritual shaft at Springhead, Kent, were theorised to have been removed after skeletisation to be used as "good luck charms" (Grimm and Worley 2011), and isolated dogs crania were found deposited pits, wells and foundation deposits at Silchester (Fulford 2001), Porchester (Cunliffe 1975) and Baldock (Stead and Rigby 1986).

5.3. *The role of the dog in Romano-British ritual*

Dogs held many roles within Romano-British society, from the mundane and practical to the spiritual and religious. Canine remains have been found on upwards of 80 % of Romano-British sites (Allen 2018, Bellis 2020), and their presence is well attested throughout the province by gnawed bones and footprints in *tegulae* (Smith 2006). Religiously, dogs were associated with a variety of gods of healing, fertility and the underworld (Smith 2006), and are a very common inclusion within a variety of 'ritual' deposits both in the Iron Age and the

Fig. 7. Canine phalanx showing abrasion on the shaft.

Fig. 8. Human phalanx showing abrasion on the shaft.

Roman period in Britain (Allen 2018, Smith 2006, Smith 2018, Fulford 2001, Wait 1985). A connection between dogs and the burial of infants has been noted largely theorised to be due to the dog's role as either a guardian or psychopomp (Smith 2006, Smith 2018).

The similarities in the post-mortem treatment of the remains in the Nescot shaft, however, suggest a different cosmological connection, that of dogs as potential proxies for humans. It is notable that the same skeletal elements (phalanges, metacarpals, metatarsals and ulnae) were selected from both species for processing and use before redeposition, despite the availability of these elements from the other species within the shaft. While the exact use of these bones is impossible to ascertain,

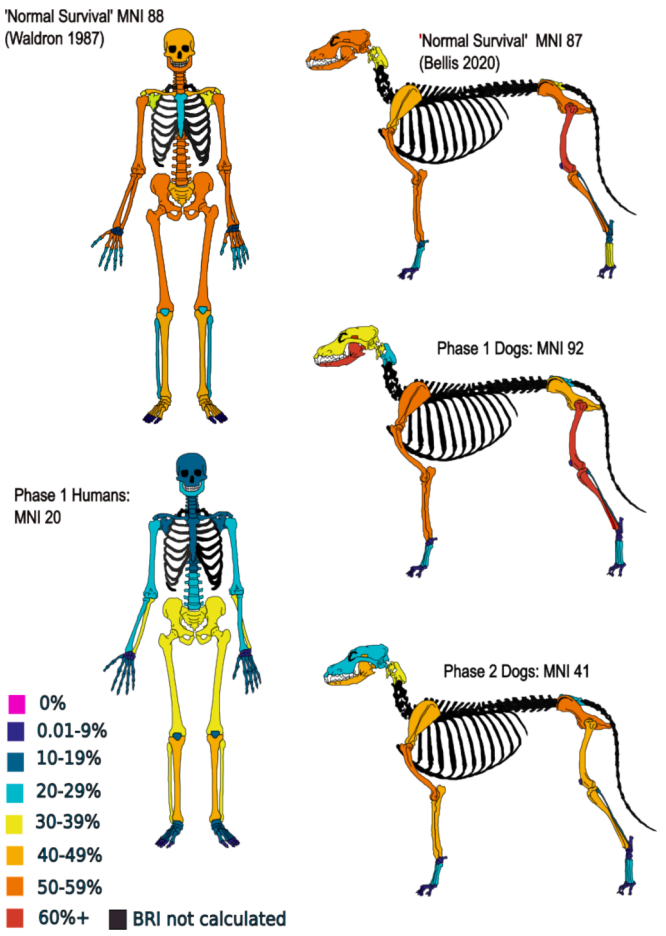

Fig. 9. Bone Representative Index Diagram of Humans and Dogs.

they were handled regularly, and their portable nature suggests they may have acted as charms or talismans. The handling of human remains in this way would have been seen as spiritually polluting, and in the worst cases as necromancy or witchcraft, by the Romans, despite it likely being quite normalised among the native population of Britain (Lindsay 2000, Taylor 2008, Weekes 2014). Consequently, it is not impossible that a substitute would have been sought in the Roman-founded roadside settlement of Ewell. Equally, the evidence of boiling implies that there may have been a demand for such objects, as boiling greatly speeds the defleshing process rendering the time needed down from potentially a few years to a few hours (Ubelaker 2006). If there was a greater demand, then the use of canine bones (in addition to human) may have allowed for a greater supply. The pattern of crania removal is also reminiscent of the treatment of human remains. In phase 1, there are fewer dog crania than would be expected taphonomically, echoing, but not as dramatic as the lack of crania in the human assemblage. The low number of crania in the dog assemblage becomes much more drastic in phase 2, when humans are no longer being deposited. This may suggest that in the absence of human crania, the removal of dog crania became of greater importance. This in turn suggests a much tighter and more complicated cosmological connection between dogs and humans within the shaft.

There are no similar cases of humans and dogs being treated this way within the literature, and Roman texts on dogs certainly do not equate them with people. However, no texts deal directly with Romano-British ritual, and in the absence of integrated human and faunal analysis of 'ritual' deposits it is difficult to say if Nescot is truly unique or if other cases have simply been missed. A similar integrated study of Iron Age material in Wessex however did also indicate dogs and horses have a more complex relationship with humans than other animals within 'ritual' contexts. Their remains were consistently showed different treatment when in contexts with human remains in comparison to contexts without, but the human remains were still treated quite differently (Madgwick 2008). It is possible that Nescot represents a blending of Iron Age and Roman ideas about the role of animals.

6. Conclusion

Understanding the role animals played in past societies is key to understanding what life would have been like. In religious and ritual contexts this can be difficult, as the roles and connotations of different animals are highly culturally specific and without textual sources difficult to access. This is further hindered by the assumption that faunal remains and human remains are two categories of material and thus must be two separate categories of analysis. This idea is based in modern thought, and held up by the fragmented way that analysis is performed on archaeological material. Based on a traditional separation of materials all that can be said about the dogs of Nescot is that they were abundant, and that their bones were comingled with the human remains. A lack of cut and chop marks would have been noted, showing that they were unlikely to be food remains. They could have been interpreted as sacrificial animals as was the case at Springhead (Grimm 2007) or as a result of population control similar to that observed within Oakridge well (Maltby 1993), depending on the theoretical approach of the zooarchaeologist. In both scenarios, the dogs would have been considered separate to, and in a theoretical sense, less important than, the human remains they shared a pit with. Integrated analysis however adds additional layers, showing the similarities in how the bodies were processed and used after death and implying a much more complex relationship between the humans and dogs as opposed to the other animals present in the shaft, clarifying their ritual role within the shaft.

If the goal of archaeology is to make the window to the past as clear as possible, then it is paramount to integrate as much of that evidence as possible, and to prioritise its comparative potential. How can we ever hope to see the whole picture if we insist on only looking at fragmented portions in isolation?

CRediT authorship contribution statement

Ellen Green: Writing – review & editing, Writing – original draft, Resources, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data will be made available on request.

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