In Sheep's Clothing?

Humans and Other-Than-Humans in Iron Age Cremation Assemblages in North Spånga, Sweden

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This study investigates the potentially generative roles of animals in the cremation ritual through an in-depth study of an excavated Late Iron Age (*c.* 400–1050 BCE) grave-field in North Spånga, Sweden. The animal remains in this burial ground are generally of two categories: one comprises parts from several body regions, and one entails mainly fragments of the skull and lower extremities. Although there are general distinctions between animals of the first category (dogs, horses and cats) and of the second category (sheep/goat, pigs, fowl), they are not exclusive and do not reflect a dualist view of companions versus beasts of burden or food. Moreover, the latter category is here interpreted as the remains of skinned animals with head, toe and ankle bones still attached. As such, depending on how they were arranged on the pyre, they may have worked to deflect malevolent forces during the transformative part of the cremation. The collection and deposition of the cremated bones of both animals and humans, sometimes with additional unburned bone, suggests that they were considered as generative materialities in the grave, conceivably to shelter or aid the dead post-cremation.

Keywords: animal-human relations, burial archaeology, burial practices, multispecies archaeology

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Introduction

The role of animals in the Iron Age cremation rituals has been thoroughly discussed in previous research. Animals have variously been understood as personal possessions, guardians, symbols of rebirth, psychopomps, status objects, mnemonics, offerings/sacrifices, remnants of funeral meals or as food for the afterlife (e.g. Biuw 1992:289; Brück 2004:324; Fahlander 2014; Groot 2008:188; Nordberg 2003:240–244; Sigvallius 1994; Sten 2013:223; Williams 2001; Hållans Stenholm et al. 2023:92). These interpretations all have merits but tend to rely on analogies, textual sources and a generalized view of animals in terms of species. As such, animals are more or less viewed as interchangeable objects rather than as diverse beings with different affordances, properties, qualities, faculties and agencies. Considering that animal bones make up a large part of Iron Age burial assemblages, and the extra effort they pose in terms of the increased size of the pyre, there is curiously little discussion about why animals are part of the burial ritual in the first place (see for example Cerezo-Román et al. 2017; Kuijt et al. 2014; Thompson 2015; Williams & Lippok 2024). In contrast to other grave goods, such as weapons, pearls and costume fittings, the animal remains in Iron Age burials do not exhibit strong relations to the sex, age or status of the buried humans (Arcini & Magnell 2022:686; Sigvallius 1994:134). There are, however, interesting patterns in the forms and conditions in which animals are employed in the burial ritual. Some are put on the pyre as articulated bodies; others seem to be chopped into pieces or only part of the animal is cremated. The remaining bones of both categories were seemingly selected together with the human remains when moving material from the pyre to the grave (Sigvallius 1994; Williams 2005:33).

To deepen our understanding of the roles of different animals in Iron Age burial rituals it might be useful to allow the animals, and their bones, a more generative role rather than viewing them as symbolic and passive tokens for a species. In recent years, the field of human-animal studies has emphasized the active role of animals in their interactions with humans (Argent 2010; Hill 2013; Kirksey 2015; Oma 2018; Poole 2015). Emphasis is placed on how the affordances, behaviours, agencies, and needs of animals mutually form individual relations with humans and each other. Such relations (not necessarily relationships) are situational and vary between species as well as between individual beings according to e.g. age, sex, breed etc. (Law & Mol 2008; Poole 2015:863). Although the animals' particular properties and agencies are hard to determine from cremated remains, it is worth adopting a more symmetrical view of their roles in burials.

This issue also relates to a contemporary discussion of burials as composite contraptions, assembled to *do* something rather than merely represent or

symbolize individual status as memorials (Crellin 2017; Fahlander 2020b; 2024; Fowler 2013). This perspective emphasizes the physical properties, qualities and generative abilities of the materialities in the graves from an ontological point of view. Particular and intrinsic aspects of the interments (form, matter, colour, etc.) may thus be as important as the category of the item (a knife, pearl, femur of a pig, etc.). For example, does the tooth of a cow in a grave represent cattle or was it more important that the grave should contain the tooth of an animal? Such distinctions may prove important, as in some ontologies parts of animals can retain some of the qualities and abilities they had in life, even after the animal's death. The head, for example, being the seat of the major sensory organs, may be attributed with awareness after death, even performing the same functions (smelling, hearing, eating, viewing, etc.) as if it were alive (Hill 2011:409, 216). Thus, it is important to consider not only what certain animal species do but also the abilities and functions of different body parts (Fahlander 2020b:564; Lindström 2024:156–162). Although such aspects are difficult to discern archaeologically, a study of the configuration and type of bones that are deposited in the graves can be informative. Thus, after a brief background discussion, I will evaluate the benefits of such an approach in a case study of a typical Iron Age burial ground in North Spånga in central-eastern Sweden, paying close attention to animal remains in the composition of the cremation assemblages.

Background: animals in Iron Age burials

In central-eastern Sweden, the practice of cremating animals (e.g. sheep/goat, cattle, horse or pig) together with humans began in the Late Bronze Age (Hyenstrand 1968:189; Nylén 1958; Röst 2016:215–219). After being scarce in the pre-roman period, the amount and diversity of animal bones in graves increased substantially during the Late Roman and migration periods (*c.* 200–550 CE). During this period, complete bodies of certain animals also began to be placed on the pyre. This tradition culminated in the Vendel and Viking periods (550–1100 CE), with animal bones found in large quantities in cremation graves (Hållans Stenholm et al. 2023:90; Jennbert 2002:109, 2011; Nordberg 2003:239; Sigvallius 1994:133). Indeed, some Late Iron Age cremation burials contain more animal than human bone and a few even lack human bones altogether (Bond 1996:78; Sigvallius 1994:62). During this period, animals are also present in inhumation burials such as the boat-graves in Vendel and Valsgärde and the chamber graves at Birka (Gräslund 1980; Gräslund & Ljungkvist 2011). The practice of including animal remains in burials almost entirely ceased during

the period of Christianization, when inhumation in wooden cists became dominant (Artelius 2010; Hedeager 2004). The only remaining burial practice involving animal remains in this period involved the occasional placing of animal teeth in or on top of coffins (Fahlander 2018:58; Gilchrist 2019:141; Palmqvist 2021).

The majority of animal remains found in Iron Age cremation graves are bones from sheep/goats, horses, dogs, poultry and pigs. In the later part of the Iron Age, other species (for instance cats, birds, lynx, bears, rodents and fish) are also found in varying quantities (Flood & Hed Jacobsson 2018:50; Jennbert 2004a:194; Sigvallius 1994:109–113). Wild animals are less common, although there can be remains of birds of prey, fish, squirrels and occasional phalanxes of lynx and bear, the latter of which are often interpreted as remains of pelts (Lindholm & Ljungqvist 2016; cf. Mansrud 2023). The prevalence of farm animals has led to suggestions that the animals were put on the pyre to facilitate the creation of a new farm in the afterlife (Seiler & Sjölin 2022:149). However, comparisons between animal bones in settlements and burials show that the composition of animals in graves does not correspond to the stock of animals on contemporary farms (Iregren 1997; Magnell et al. 2017:220). Cattle, for example, which are common in farm refuse, are seldom found in cremation graves (Magnell et al. 2017:216). As Häggström (2011:237) points out, however, it is unlikely that all Iron Age farmsteads had the same type of animals available for burial.

It is also evident that not all species are treated the same way on the cremation pyres. Horses, dogs and to some extent cats, stand out because they seem to have been cremated as complete bodies (Nordberg 2003:240). Cattle, sheep and pigs, however, were normally cremated as parts (legs, feet and heads) and only rarely put on the pyre as complete bodies. This pattern is corroborated by in situ (*bustum*) cremation burials, where the grave was built directly over the pyre, which show a similar differentiation between the species cremated as complete bodies or as parts (Seiler & Sjölin 2022:145).

The Old Norse cosmythology is often employed to explain the roles of animals in Iron Age burial rituals. For example, dogs are commonly associated with *Garm* who in Völúspa and Grimnismál are guarding the gates of Hel (Gräslund 2004; Seiler & Sjölin 2022:147) and horses are associated with Sleipner on which Odin rides to Hel in the Edda (Loumand 2006; Seiler & Sjölin 2022:147). Cocks, and by association hens, are seen as symbols of rebirth and argued to wake the dead on the other side (Gräslund 1980:54; Nordberg 2003:266). However, the few burials described in these texts do not make such associations. They are more prosaic and only mention the occasional horse and dog accompanying their owner on the pyre (Lorentz 2020). Ibn Fadlan's account of a chiefly burial among the Rús in the Volga

Delta in 721 CE does not acknowledge any ownership of animals, but simply notes that a dog, a horse, two cows, a cock and a hen were killed and cut up before they were thrown onboard the boat to be burned (Montogomery 2014:249). Other contemporary accounts are curiously silent about animals. The Beowulf poem, for instance, which is supposed to narrate events from the period when animals were most frequent in burials, mentions no animals in relation to Beowulf's cremation (see Heaney 2000:211–213).

Another common theme in archaeological interpretations is that animals and humans were cremated together to merge after death (Jennbert 2004a:205; see also Fahlander 2020b; Ratican 2020:214). Hedeager (2004:222) has pointed out that the hybrid character of animals in Iron Age art resembles the way in which fragments of humans and animals are amalgamated in the cremation urns (see also Jennbert 2004a:199). Indeed, the development of the Nordic animal style coincides with the period in which animal bones increased in the cremation burials (Kristoffersen 2010; Morphy 1989:2). However appealing the idea of a hybrid ontology may seem, it does not fit well with the multitude of different species in the graves as human-animal hybridisation normally only concerns the merging of two bodies. Moreover, the animal style, accounts of shapeshifting and animal-themed personal names of the Iron Age mainly involve wild animals. In contrast, the vast majority of the animals in the cremations are domesticated farm animals.

A problem in drawing inspiration from other materials and sources is that human-animal relations are generally situational and contextual. It is unlikely that these relations remained constant across myth, ideology, on the farm or in death. That animals were already part of the cremation rituals during the late Bronze Age also speaks against relying on the Old Norse sources. Moreover, the Late Bronze and Iron Age cremations of northern Europe are an anomaly compared to other known cremation traditions that very rarely include animals (Davies 2005). Thus, a study of the roles of animals in Iron Age cremation rituals demands a formal (archaeological) rather than an informed (ethnographical/historical) approach. In such a study, it is important to note that Iron Age views of animals most likely differed from contemporary understandings in terms of classification (species) and dualist conceptions (wild/tame, human/animal, etc).

To understand the roles and functions of different animals in death rituals, we thus need to consider other types of categorisations in terms of affordances, behaviours, agencies and needs of different animals in an Iron Age context (see Hill 2018; Law & Mol 2008; Nordahl 2024; Oma 2018). This potential alterity inevitably turns the study into an ontological inquiry. A tangible starting point to the examination of such aspects is to analyse the different forms and conditions in which the animals are put

on the pyre and deposited in the graves; for example, whether the animals are cremated as whole bodies or only in parts and what bones are transferred to the graves. In order to evaluate the benefits of such an approach, I will examine the distribution and composition of animal remains in the cremation assemblages of a previously excavated Iron Age burial ground in North Spånga, *c.* 10 km northwest of the Swedish capital of Stockholm (Biuw 1992; Sigvallius 1994).

Humans and other-than-humans in Iron Age Spånga cremations

The excavations in North Spånga, carried out between 1964 and 1976, exposed 558 graves of which 488 were cremations spanning from the early to the late Iron Age (*c.* 500 BCE–1050 CE). The chosen grave field, labelled 157A, is situated on a small outcrop and covers about 100 cremations and two inhumation graves from the Migration period to the Viking Age (*c.* 400–1050 CE). The graves are generally round mounds or stone settings of various forms and sizes (Figures 1 and 2). Anita Biuw (1992), who took part in the excavations, distinguishes between Early Iron Age and Late Iron Age graves, but contrary to the standard division of the Iron Age, she considers the Migration period as part of the Early Iron Age. Judging from the 15 C-14 determinations from the site (which are made from charcoal) all graves but one are from the Late Iron Age (400–1015 CE). Thus, the temporal division is mainly between the Migration period (early) and the Vendel and Viking Ages (later). The early graves cluster in the middle and to the north of the outcrop (Figure 1) and judging from the type of the graves, contents and one of the C-14 determinations, the burials seem to have begun in the middle of the outcrop and thereafter progressed to the southeast and northeast. The burial items are typical for the late Iron Age and region and include pearls, rivets, nails, ceramics, gaming pieces, fragments of costume fittings, whetstones, slag, bone combs, nutshells, etc. (Biuw 1992:214–225). Of particular note are the amulet rings (*Sw.* torshammarringar), which were deposited in 18 graves. The purpose of the rings is widely debated but they are generally considered as magical, most likely protective devices (Andersson 2005:62–66; Harrysson 2023).

The osteological material from the Spånga graves was analysed by Berit Sigvallius and is presented in her thesis *Funeral Pyres: Iron Age cremations in North Spånga* (1994), as well as in a series of unpublished reports under her previous surname Vilkans. Both texts are products of their time and their perspectives and conclusions need to be critically scrutinized. For example, in her thesis, Sigvallius merges all nine separate burial grounds

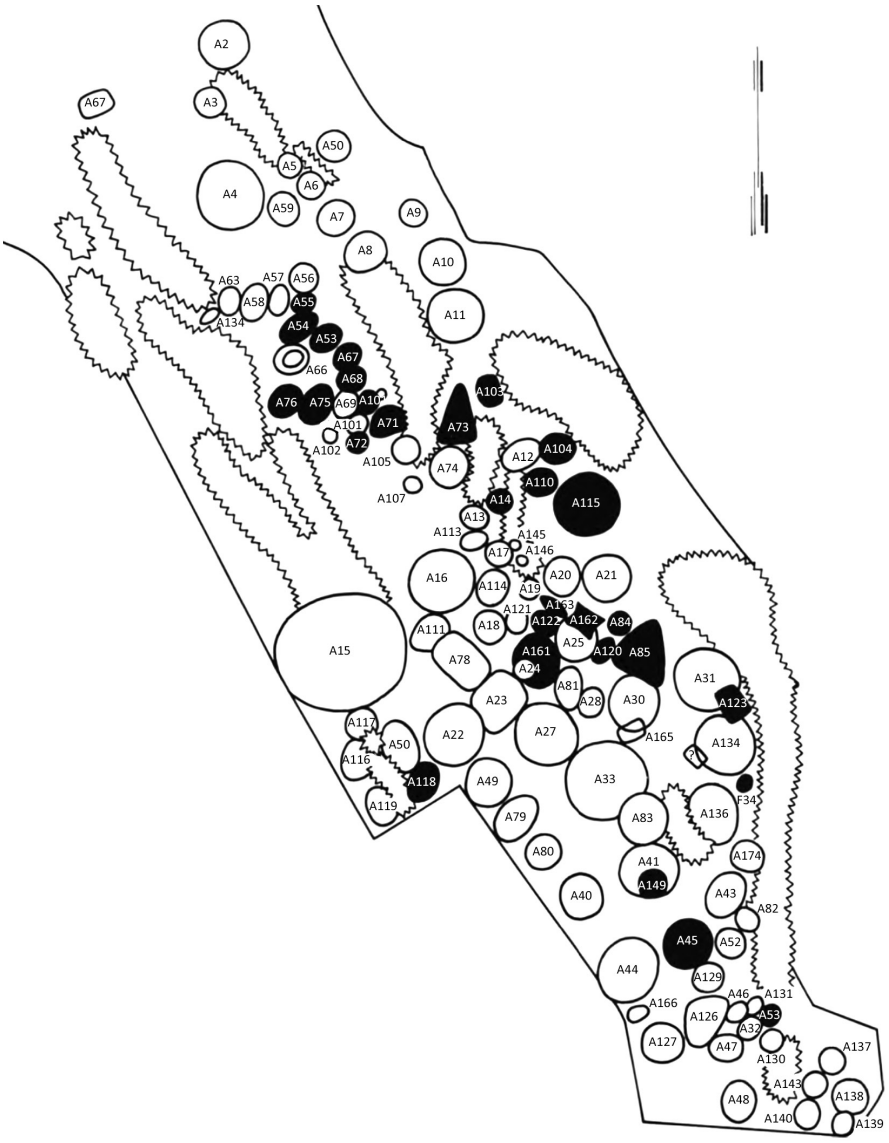

Figure 1. Map of grave field 157A (modified from Biuw 1992:82) with grave numbers added from the unpublished grave plan (ATA). The graves in black are considered earliest (i.e. from the Migration period). Areas encircled with pointed lines indicate areas with bedrock.

from different periods into one account that mainly focuses on statistical analyses of how animal bones, in terms of species, correlate to the age and sex of the buried humans. Moreover, because the material only supports a handful of osteological sex determinations, Sigvallius (1994:198–202) resorted to use the burial interments as sex indicators (Svenfelt 2009:93).

Figure 2. Photo of the south-eastern part of the burial ground 157A (modified from Biuw 1992:69).

According to this gendering principle, the 'males' tend to have more animals than the 'females' of each species, except in regard to dogs which are equal in numbers. Moreover, she concluded that horses are more often found with men and that the young adult graves (18–44 years) had more animals than other age groups (Sigvallius 1994:133). The latter correlation is not surprising since the majority of the determined human bones consist of adults. Because of the above-mentioned objections, Sigvallius' conclusions concerning humans and animals in North Spånga rest on a rather weak foundation. Fortunately, the unpublished osteological reports contain sufficiently detailed information on the individual bones to allow discussion of the distribution of animal remains in different graves, as well as the type of bones and their condition (cremated or unburned). The following is thus a restructured and reanalysed account of the burial ground 157A, mainly based on the osteological reports (Vilkans n.d.).

The grave field 157A contains just over 100 graves. The original map contains more features (113 pc) than the 108 graves reported by Sigvallius (1994) and the 102 considered by Biuw (1992:76–77, 214–224). These

inconsistencies may be due to the different ways in which the data can be interpreted, with some graves containing more than one cremation deposit, but they do not significantly alter the larger picture. The graves are not considered in situ cremations, rather mounds and cairns were constructed over elements from the pyre which were deposited in layers with or without ceramic vessels. Thus, the remains in the graves do not necessarily mirror the composition of the pyre. Moreover, a general problem of osteological analyses of cremation assemblages is that they might give a misleading impression of absolute numbers of individuals and the presence or absence of certain species in the graves. The proportion of determined bones in 157A is 15.2%, a reasonably high number, but it still means that some graves may include additional species and other types of bones than what have been recognised osteologically. These, and other taphonomical issues, are a good reason to focus on indications and trends in the material rather than absolute numbers. The osteologically determined material consists mainly of remains of humans and domestic animals such as dogs, horses, cats, cattle, sheep/goats, birds (mainly poultry and geese) and pigs. There is no evidence of wild animals including foxes, rabbits, snakes, elk, deer, rats, etc., and only a few claws from bears and lynx. Cats did not exist in Sweden until about 200 CE and began to appear more frequently in settlement sites and graves in the Mälaren region from the 6th century onwards (Sigvallius 1994:134; Toplak 2019:230). The manner of deposition, in pots or the surrounding cremation layer, does not reveal any structured pattern in terms of the animal and human bones. In 26 of the burials at 157A, bones were placed in a ceramic vessel, normally sited in a layer of cremation debris. There are no significant differences between bones that are placed in a pot versus the surrounding cremation layer. They contain the same species, possibly from the same individuals, and there are no more human than animal bones in the pots.

The humans

Judging from the unpublished osteological report of 157A (Vilkans n.d.), the grave field 157A comprises 114 buried humans. There are 16 graves without identified human bones and seven graves that contain more than one human (nos. 7, 14, 16, 18, 40, 43, 166). Five additional graves are considered double burials (nos. 13, 16, 18, 21, 33). An approximate age span has been determined for 85 individuals, with the majority (72 pc) being adults in the span of 18–64 years. Four individuals are considered pre-pubertal (0–7) and the additional nine determined individuals are placed in overlapping age spans (e.g. 4–14, 10–24, >60). Unfortunately, only 19 individuals have

Table 1. The age and sex of the human individuals in the graves of 157A. The numbers followed by a question mark refer to individuals whose sex is less conclusive and odd and overlapping age-spans are excluded (from Vilkans n.d.).

Age group	Individuals	Male/male?	Female/female?
0–7	4	-	-
18–44	27	1+5?	1+3?
18–64	5	1?	-
35–64	20	2+4?	1+1?
Adult	20	-	-

been assigned sex by osteology (13 males and 6 females), of which only five are conclusive (Table 1). This rate of the osteological sex and age determinations of 157A is fairly representative of all the excavated Spånga burials.

The animals

In total, there are animal remains in 65 of the 102 graves analysed by Sigvallius/Vilkans. Dogs are the most common species, followed by horses, sheep/goats, birds, pigs, cats and cattle (Table 2). Wild animals such as bears and lynx are only present in the form of the third phalanx and are interpreted by Sigvallius as remains of pelts (although the phalanxes could have been placed in the graves as individual objects). Plotting the distribution of the different species on the grave field plan do not reveal any significant spatial patterns. Most species are distributed fairly evenly, except for six of the eight cats that are found in a series of physically linked graves at the centre of the burial ground (A16, 22, 23, 50, 78 and 111). (see Figure 3). There are some differences between the early (Migration period) and the later (Vendel and Viking Age) graves. In the earlier period there are proportionally fewer graves with animal remains (41%) when compared with the latter (55%). The high frequency of animal bone in the graves attributed to the Early Iron Age is mainly due to Biuw's characterization of the Migration period as part of the Early Iron Age. For comparison, in an adjacent grave field (no 156), all but one of the graves categorised to the Early Iron Age with animal remains are dated to the Migration period (Biuw 1992:53). There are nonetheless a few chronological differences at 157A. The majority of dogs, for example, are with four exceptions (A34, 45, 103, 149) found in the graves of the later period. This is also the case for the horses, which are only found in three of the same early-period graves as the dogs (A34, 45, 149). These four graves are all clustered in the southern part of the outcrop, which may indicate that they in fact are later than the other early graves at the top of the outcrop. Birds are only found in two early graves (A34, 71) and pigs

Table 2. The animals in the graves of 157A. In addition, there are also four instances with phalanxes from bears and two from lynx. The bracketed numbers are unburned animal bones added to some of the graves (data from Vilkans n.d.).

Species	No of graves
Dog	58
Sheep/goat	36 (3)
Horse	33
Bird	24 (3)
Pig	14 (1)
Cat	8
Cattle	5 (1)

only in one (A73). Remains of sheep/goats are, however, evenly distributed over time and space. They are found in similar proportions between the early (28%) and late (26%) periods. In general, the distribution of animal remains at 157A is fairly representative of the other grave fields in North Spånga, the only significant divergence being theremains of fewer cattle (4.9%) compared to the average (8.6%) (Sigvallius 1994:71).

As already mentioned, correlating different species with the age or sex of the human individuals in the graves is difficult in this case. The thirteen possible males have all been cremated with typical species (dog, horse, sheep/goat, pig, cat, bird and cattle) in different combinations, while the six females have been cremated with dog, horse, pig, sheep/goat and bird, but no cat or cattle remains (which are rare at 157A). A similar lack of patterning in the deposition of animal remains is also evident when examining the age of the humans. The graves of young individuals under the age of 18 can include dogs, horses, cats, sheep/goats and birds. There are also three cases where young individuals, between 4–24 years old, buried in the same grave as an adult had been cremated with all the typical animals except for cattle. The few subadult individual (0–7) single burials, however, only contain the remains of horses and sheep/goats.

The remaining 37 graves without identified animal remains do not differ substantially from those containing animal bones. They too are evenly distributed throughout the outcrop, with a small concentration in the south. A common factor for these graves is the overall small number of bones; the humans in many of them are not age or sex determined which suggests that the lack of animals is, at least partly, due to taphonomy. It should nonetheless be noted that the superstructures of some of these graves are fairly large (A49, 66, 74, 85, 134, 136), which shows that a high number of animals on the pyre is not necessarily an indication of high status (as judged by the size of the grave).

Parts and wholes

On the whole, the Spånga cremations follow the general differentiation between species in Late Iron Age graves, with horses and dogs standing out as the most common animals in the graves to be cremated as complete bodies (Sigvallius 1994:109). The distinction between complete and partial bodies is determined by the types of bones that are found in the graves. In her thesis, Sigvallius (1994:110) differs between 'complete bodies', 'probably complete bodies' and 'uncertain'. However, employing this definition, humans are more often partial in relation to dogs. In the unpublished report, a complete body is instead defined as showing 'fragments from all body regions' (Vilkans n.d.). In this study, a complete body is defined by the identification of at least one fragment each of: the skull, spine/ribs/pelvis and extremities (parts of lower leg/foot). This correlates well with many species that are only present as fragments of skull and lower extremities. There are nonetheless several inconclusive cases such as grave 157A:33 that contained a scapula and extremities of a cat. This suggests a complete body even though it would not pass the criteria.

At 157A, 43 graves out of the total 84 graves with cremated material include the remains of at least one complete animal (Table 3). Dogs are most common, either as a single complete body or combined with a complete horse, sheep/goat, pig, cat or bird. Only three graves (A53, 113, 149) included bones from complete bodies (sheep, pig and horse) without a dog. Horses, the second most common animal to be cremated as a complete body, are found in 20 graves and always together with at least one other complete animal. Significantly, cattle never occur as a complete body in any grave in any of the nine burial grounds in North Spånga. Among animals cremated as complete bodies, a combination of dog and horse is most common (17 pcs). The number of complete animals in the 43 graves varies from one to five different species. Grave (A16) stands out, with five complete bodies (dog, horse, cat, sheep and bird) and grave A11 has four complete animals (dog, horse, cat and pig). An additional nine graves contain three complete animals, while twelve graves have two complete bodies. In the 15 cases where there is only one complete animal, it is with one exception always a dog. It should also be noted that one cat is found in a double burial containing two dogs, while the combination of cat and dog is found in four single burials. This may cast some doubt on the proposed idea of these animals as personal companions or pets.

The graves containing animal remains from complete bodies have no general relation to the sex and age of the buried humans. Of the 43 graves with at least one complete animal, the sex of the humans is undetermined, apart from one possible male and three females. Dogs cremated as complete bodies

Table 3. Remains of the animals cremated as complete bodies at 157A (data from Vilkans n.d.).

Species	Complete	Total no.	Share of total
Dog	41	58	71%
Horse	20	33	61%
Sheep/Goat	9	35	25%
Pig	6	14	43%
Cat	5	8	62%
Bird	2	26	13%
Cattle	0	5	0%

are present in graves of all sexes and ages, and horses are found in six of the nine male and two of three female graves. Remains from complete dogs and horses are only found together with adult individuals (ages 18–64), although one of the four double graves containing a young individual included two horses, which may indicate one horse for each human. Remains of complete sheep/goats are only found together with adult individuals. The sex of the humans in these graves is mainly undetermined, with the exception of one possible male and one female individual. Sigvallius (1994:114) notes that most sheep/goats cremated as complete bodies are in the Viking Age graves. Complete pigs are found together with adults of undetermined sex, apart from one from a grave with one male. Bones of cats are deposited in one double burial (one young person and one adult), and with one adult, but otherwise with individuals of undetermined age and sex. In summary, there are no consistent patterns of who (in terms of age, sex or status) is to be cremated with complete animal bodies of any particular species.

The partial bodies of animals such as pigs, sheep and cattle are generally interpreted as symbolic food offerings for the dead because they are rarely represented by the meaty parts of these animals (Vilkans n.d:3). As a general hypothesis, this is difficult to either prove or disprove, but it is significant that these bones were placed in the grave. At 157A, the bones of partial animals show the same degree of burning as the complete bodies that were placed on the pyre; hence, we can assume that both were put on the pyre at the start of the cremation process. It should also be noted that humans are sometimes only represented in the graves by remains from the head and feet. In fact, in the Spånga cremation graves, the remains of dogs are more often 'complete' than humans (1994:109, 116). That being said, the majority of farm animals like cattle, pigs, sheep/goats are mainly represented by pieces of the skull and lower extremities in the graves. This pattern is quite persistent and suggests that these body parts had particular significance in the burial ritual.

Remains of partial animals are found in 30 graves at 157A. The majority of the buried humans in these graves are adults, of which five are potentially male and one female. Sheep/goat dominate the partial animals in the graves (19 of 30); eight are found in graves of the early period and eleven in the later. They are evenly dispersed on the outcrop, with no particular structural relations to the sex of the buried human. Partial pigs are found in eight instances, with equal proportions as skull and teeth fragments or as parts of the lower extremities. They are only present with adult (ages 18–64) humans, of which four are potentially male graves (of the total six instances). When the entire Spånga material is considered, pigs are equally found in male and female graves, with only minor fluctuations over time (Sigvallius 1994:74). Pigs are mainly found in the late period graves, with the exception of one in an early grave (the large triangular grave A78), and are concentrated in the middle of the outcrop. Partial pigs and sheep/goats are buried together in three instances, while the teeth and toe bones of cattle are found in three graves (in addition to one with unburned teeth). The remains of partial birds normally consist of front and back extremities. As in the case of complete bodies, there are no consistent patterns of who (in terms of age, sex or status) is to be cremated with partial animal bodies of any particular type of bones or species. It is nonetheless interesting that the form and state of the animals is not as strict between species as is usually acknowledged. In one sense, the partial animals are more interesting than the complete ones with regard to the ways that they have been manipulated or curated before being placed on the pyre. The categorization of these animals as 'partial' deposits may also be misleading, as indicated by the consistent pattern of only heads and lower extremities being identified. I will elaborate on these aspects in the discussion.

Unburned additions to the grave

About 56 graves of all the nine Spånga burial sites (11%) contain unburned bone (Sigvallius 1994:128–132). At 157A, slightly less, that is seven of the 102 graves (7%), include unburned bones, mainly teeth from cattle, horses and pigs but also a couple of hens and two cases with human bone (Table 4). These additions have been found in the cremation layer, in a burial pot or in the filling of the superstructure. There is no obvious differentiation between the sex or age of the buried human in relation to unburnt additions. They are found in three potentially male burials and one female. The buried humans in these graves are all adults, except for one teenager (17–18 years of age) in the double grave (A16). The other interments in these graves include fragments of common grave materials, such as iron rivets and nails,

Table 4. Unburned additions to the graves including amulet rings (data from Vilkans n.d.; Biuw 1992).

Grave no	Unburnt additions
A15	One hen, one amulet ring
A16	Two hens (one with the legs cut off) and one fragment of a sheep/goat tooth. One amulet ring
A22	7 fragments of pig teeth and 2 fragments of sheep teeth. One amulet ring
A30	2 sheep/goat teeth, fragments of a femur and pelvic bone of a horse
A44	47g human bone from an adult individual of unknown sex. One amulet ring
A119	Cattle tooth and one amulet ring
A166	43g unburned bone of which 38g human

glass beads, combs, ceramics, slag, etc. At 157A, unburned bones are found in both mounds and stone settings, but only in graves dated to the Viking Age (Table 4). Partly because of this, they are only distributed in the southern half of the outcrop. It is striking that the two graves with unburned hens (A15 and A16), and two with unburned human bone (A44 and A166) are situated close to each other as pairs (Figure 1). This is an intriguing relation but could, of course, also arise from their construction close together in time.

It is worth noting that there is only one case (A16) that has both unburned and cremated animal remains of the same species (sheep/goat). Otherwise, the species that are added in unburned conditions are generally not the same as in the cremated animals in the graves. This may indicate that some graves needed to be 'supplemented' with animal bones of a specific type or species. It is probably not coincidental that the additions mainly comprise teeth. Unburned teeth probably had a special purpose in burials, since the tradition of depositing them continued into the early Christian period of inhumation burials. As indicated in the introduction, it is therefore not necessarily the species that was important; instead there may have been a concern with what a particular type of bone was thought to achieve. In addition, it is probably significant that all but two of these seven graves with unburned bones also include amulet rings (Table 4). Since amulet rings only are added to 11 additional graves (Biuw 1992:214–225), this is a strong indication that the unburned bones were also intentionally added to the graves to *do* something.

Discussion

As in other Iron Age burial grounds in central-eastern Sweden, there are few patterns in the composition of species in the graves at 157A in North Spånga. The few reliable sex and age determinations of human individuals

at the site make it untenable to draw any conclusions about the degree to which certain animals are related to or associated with particular categories of humans. This holds true even when considering Sigvallius' gender estimations based on the grave goods. The only exception, on the basis of Sigvallius' assessment, are horse remains, which are more than twice as common in male compared to female gendered graves (1994:161–165). It is not, however, evident if this is an actual correspondence or if it results from a stereotyped view of gender. The relationship between the number of animals and the size and position of the graves on the outcrop is also unclear. Thus, more animals in a grave do not indicate higher status burials – at least not in rural burial grounds like 157A (but see Bratt 2008:76). The distribution of the different species in the graves across the outcrop is fairly even, with no major differences between older and younger graves or between small and large graves. Only two species stand out in this respect: the cluster of cats in the middle of the burial ground and the lack of cattle bones in the graves.

At 157A, six of the total eight graves containing cats alongside human remains are clustered in the middle of the outcrop (Figure 3). The physical closeness of five of these graves (nos. A22, 23, 78, 111 and 16) might suggest that these graves have something in common that 'needed' cats on the pyre and in the grave. There is, however, nothing out of the ordinary in these graves. Their superstructures are either a mound or a low cairn. The humans are all adults, one male and one female as well as two possible males, while the other four are undetermined. The cats are accompanied by a typical set of other animals: all six graves include remains of dogs and horses and, in addition, five have sheep/goats, three include birds and one of them a pig. Two of the graves (A16 and A30) contained unburned teeth of sheep/goats and bones from fowl and horses. Thus, the cats do not seem to have replaced any other animal in the burial ritual. The artefacts in these graves are also typical for the period (Viking Age), although amulet rings were found in four of the eight graves with cats. The clustering and position at the middle of the outcrop suggest that the presence of cats might be linked to chronology, indicating a shorter period of use. The question then, is why cats ceased to be considered appropriate for the pyre and the grave. There could be several reasons for this: perhaps they did not fulfil their function in death or there was a change in cat-human relations during this period. The ontological status of cats and the nature of their relations with humans during the Iron Age were manifold (Poole 2015; Toplak 2019). Cats have a range of abilities and qualities that may or may not have made them suitable for the cremation ritual. They are well known for their great hearing and night vision and are curious, playful, great hunters, patient and seemingly 'lazy' beings. In terms of human-animal relations, there is evidence

Figure 3. The southern half of 157A with the graves containing cremated bones of cats (orange). Modified from (Biuw 1992:82).

of exploitative attitudes to cats in terms of skinning, but also admiration for their skills as mousers, as well as affectionate relationships based on the names of cats (Poole 2015). It is difficult from the cremated material to establish any of these behaviours, faculties or intrinsic properties that can explain their scarcity in the burials at 157A. Perhaps the most conceivable reason for the lack of cats in the cremation ritual may lie in their lifestyle which places them in-between domesticated and wild beings. As such, cats were probably not primarily held as pets on the farms. Some of them might occasionally socialise with humans, but they were more likely to live parallel lives, hunting small prey around the farm. In that sense, cats are more akin to wild animals when compared to other farm animals, and might hence have been regarded as less suitable for the cremation ritual after a brief 'trial period'.

When it comes to the lack of cattle bones, there are only a few foot fragments and one unburned tooth in a total of three graves. At North Spånga, cattle were apparently not deemed necessary or suitable on the pyre and in the grave. The few finds are not likely to be an issue of taphonomy, as the in situ cremation graves show a similar lack of cattle bones (Magnell 2017; Seijler & Sjölin 2022). This is unlikely a matter of food preference, as cattle were regularly slaughtered and eaten at Iron Age farms (Magnell et al. 2017:211). It can be argued that cattle were omitted because of eco-

nomic reasons, as they were an important source of leather, but that would not explain why so few heads or meaty parts did not make it to the pyre. Nor is it a matter of status, as the three graves with cattle remains at 157A are quite small (A13, 119) or mid-sized (A2) and since bones of cattle are common as Iron Age household refuse and in other ritual contexts it is unlikely to be a question of a taboo (Magnell 2017:105).

The absence of cattle in the burials cannot be explained by the faculties and agencies of their species, in comparison to other animals on the farm. Cows and bulls may not be as intelligent as pigs, horses and dogs, but they can recognize individual humans and form social bonds (Young 2018). Cows, just like sheep, provide secondary products such as milk and hides. They eat grass, like sheep, and have horns like goats. Full-grown cattle are large animals, arguably too large for the pyre, but size is not likely to be the main issue, since a calf is no bigger than a sheep and smaller than a horse. The list can be continued, but there is no evident faculty, relation or agency of cattle that can explain their scarcity in the burial ritual. Regardless, something that the lack of cattle bones suggests, given their abundance in slaughter deposits, is that partial animals were not primarily put on the pyre as food for the afterlife or leftovers from funeral feasts. Moreover, the lack of cattle, and the few cats, also shows that distinctions between appropriate species on the pyre were not necessarily only made between wild and domestic animals, beasts of burden and meat and dairy producers; instead other aspects of the animals were considered when arranging a cremation ritual.

The arrangement and condition of the cremated animals

A tangible aspect of the cremation ritual concerns the forms and conditions in which animals are put on the pyre. For example, it is evident that some animals are much more frequently cremated as complete bodies at 157A. Dogs and horses also stand out in this respect when compared with other species. It must, nonetheless, be emphasised that, although their total numbers are low, a fair number of cats, pigs and sheep/goats are also cremated as complete bodies (Table 3). The complete pigs are most likely full grown; Vilkans/Sigvallius generally note when a specific animal is of a young age. It may thus be a mistake to reduce pigs and sheep/goats to meat, dairy and wool producers, in contrast to dogs, cats and horses as companions and beasts of burden. Sheep/goats stand out, as only 25% were cremated as complete bodies despite being as common as horses in the graves (61%). These numbers and proportions fit well with other contemporary burial sites of

the period, although there is some regional variability (e.g. Seiler & Sjölin 2022; Magnell et al. 2017:214).

Was it a privilege for an animal to be cremated as a complete body? Does it signify a special status or even personhood? Or were they mere possessions or personal beings tied to the deceased that could not be inherited? The latter might be true for horses, especially those used for warfare and hunting, which tend to be connected to one single human (Argent 2010:161). Dogs also tend to form personal bonds with particular individuals, although it is questionable that more than half of the population, children, adults and elderly, owned a personal dog in the same way as in modern Western societies. On an Iron Age farm, dogs were more likely to move freely about the farm or be kept in a common kennel rather than as personal pets. It must also be emphasised that other animals, including wild ones, can form strong bonds with humans (Birke & Hockenhull 2012). In Spånga, there is a fair share of pigs cremated as complete bodies (6 out of 14). From an economic point of view, pigs differ from sheep as they grow quicker but do not offer secondary products (Oma 2018:98). Their intelligence and sociality are, however, on par with dogs and they can form close and personal bonds with individual humans (Marino & Colvin 2015; Marino & Merskin 2019). Should we expect some people to have such close bonds with individual pigs that they were to join them on the pyre when they die? Probably not. After all, there are cases with up to five complete animal bodies in some graves, which suggests that being cremated as a complete body was not primarily about emotional bonds. Moreover, the disarticulated distribution of complete animals in many bustum graves does not correspond to an animal lying in a supine position by the human body (see Seiler & Sjölin 2022:144). It rather suggests that smaller animals like dogs, cats, pigs, sheep/goats were cut up (as in Ibn Fadlan's account) or put on the pyre hung by their heads on posts (as in other ritual contexts, see Jochelson 1905:91–95; Figure 5b). Thus, taken all together, to be cremated as a complete body seems not to be wholly concerned with according the animal greater respect; after all, these animals were killed during the rituals.

Another way of looking at this distinction is to consider the long-term inclusion of animals in cremation burials. During the first millennium BCE, cremated body parts of goats/sheep, cattle and pigs in the graves only occasionally included dogs and horses (Häggström 2022:92–93). The concept of cremating complete animal bodies thus coincides with the rapid increase of dogs and horses in the graves during the transition to the Late Iron Age. It is probably significant that when these animals were added to the pyres it was generally as complete bodies from the beginning. This development indicates changes in human relations to dogs, cats and horses (and maybe pigs) during the transition between the Early and Late Iron Age. The rea-

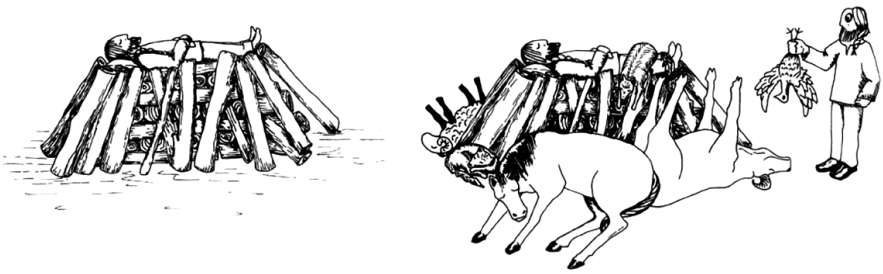

Figure 4. Illustration of a common envisioning of an Anglo-Saxon cremation (left) and what it may have looked like taking into consideration the remaining animal bone (right). (Reproduced with permission from Bond 1996:80).

sons for such a change may have been due to alterations in faith, perceptions of the afterlife, social turbulence or smaller changes in farm life and the organisation of the longhouses that led to altered encounters with animals (see Oma 2018). It might even have been due to the animals themselves. For example, a new breed of dogs adapted for different uses could have affected the relationship to the species per se (see e.g. Iregren 1994; Magnell et al. 2024). Even the introduction of poultry and cats during this period could hypothetically have had unintended consequences for human-animal relations. The introduction of cremating complete animals also entails physical and practical aspects in terms of building a larger pyre to successfully cremate multiple bodies (Bond 1996:79; Prata & Sjöling 2017, Figure 4). The short- and long-term causes for this change in burial practice are most likely complex but reveal a conscious change in the cremation practices during the transition between the Early and Late Iron Age.

The proposition that partial animals were put on the pyre as food offerings and leftovers from funeral meals seems rather weak, considering the lack of cattle bones in the graves. It is also somewhat contrary to the evidence for proportionally large numbers of sheep/goat remains in the graves. The cremated goats/sheep are, like the pigs, not young individuals and are hence more likely to have been producers of milk and wool rather than of meat (Ericson et al. 1988; Jennbert 2004b). Regardless, the very term 'partial' or 'incomplete' concerning these animals may be misleading. As already mentioned, there is a pattern in the type of bones (mainly fragments of the skull and lower extremities) that are deposited from partial animals in the graves. It has been suggested that these bones represent the remains of bedding pelts (Äijä 1993:68; Bennett 1987:117). However, pelts of sheep or pigs rarely have the head, toe and ankle bones still attached. Instead, this combination of bones indicates a different kind of arrangement. One scenario that better fits with the type of bones in the graves, is that the animals were skinned with the head and lower extremities still attached. As such, they

Figure 5. Left (a): Reconstruction of skinned horses raised on poles with head and lower extremities still attached (from Olofsson & Josefsson 2007:33). Right (b): A tentative illustration of a cremation pyre with a human, a dog mounted on a pole and a sheep skin with head and lower extremities still attached. Image compiled by the author.

may have been draped or hung on a post over the grave, in a similar manner to the way in which horses were set in relation to wetlands (Hagberg 1967; Klindt-Jensen 1957:86–88, 248; see Montgomery 2014:209, Figure 5a). Indeed, animal hides mounted on stakes on the pyre may be a conceivable explanation for the type of bones of sheep/goats and pigs found in the Iron Age graves. Raised in this way, the lower extremities would work as weights to keep the hide in place and even animate the hides as the hooves dangled in the wind. Arranging animals like this on the pyre would have been a spectacular visual prop that would not have gone unnoticed during the cremation ritual (Figure 5b). From a ritual point of view, a potential reason for such an arrangement might have been to animate the animals, making them seem alive. In this arrangement, the hides potentially acted as deflectors, attracting any malicious spirits to attack them, rather than the dead human, during the transformation phase of the cremation (see Houlbrook 2013:107).

Another, or complementary, function for such hides, if draped or raised to a tent-like structure over the human body, could have been to cremate the human body within a 'shell' of an emptied animal (see Davies 2005:82). If the dead were wrapped or set 'within' an animal while being cremated it might be fair to speak of hybridization and merging with that particular animal. Either way, it begs the question why it was mainly sheep/goats that might have been arranged this way on the pyre? In her book *Sheep People*, Oma (2018:141–142) argues that people and sheep had a special relation in the Bronze Age since humans wore clothes made from wool. Indeed, in some ontologies, dressing up in the hides of an animal is a way to become the animal itself (Descola 2013:80). It is, however, not a very likely scenario

in this case, as the wool was refined into fabrics, thus losing its immediate relation to the sheep. Therefore, being cremated under a sheepskin probably did not mean that humans were to 'become sheep' in death. However, Oma also emphasises how humans, sheep and dogs can form a special matrix of relations during herding, where dogs are trained by humans to pen or divide a flock of sheep (Oma 2018:116). In this context, dogs become an extension of human agency, although they are capable of performing their duties autonomously. The presence of dogs and sheep as the two most common animals on the pyres at 157A may be related to their relations and agencies in life. For example, if animals were assumed to retain some of their faculties in death, an assemblage of sheep, humans and dogs on the pyre might utilize the dogs' abilities to control the sheep (as deflector) and secure a successful cremation process while the dead human is incapacitated. This implies that arrangement and condition (complete or partial) of animal remains corresponds, to some extent, to different functions, qualities and faculties of the animals rather than to the type of species in general.

The lack of wild animals in the graves of 157A adds to this general interpretation. If formulated in terms of sociality and control, it might be easier to understand why they were omitted. Wild animals are not devoid of human relations. Some are likely to be named and even accorded personhood. However, relations to wild animals tend to be either generalized according to species or only concern individuals in a particular situation (Willerslev 2007). This might also be true for some farm animals, but the farm environment tends to lead to repeated encounters and closer relations between humans and animals to a higher degree. This distinction can be articulated in terms of familiarity and control. In a cremation ritual where a human body undergoes a potentially vulnerable transformation process, it might be desirable to avoid including animals that may not behave appropriately. Thus, farm animals that are nourished and trained over time were more likely to be selected for the pyre because they had proven themselves to be friendly and dependable. A distinction based on sociality and control, instead of dual categories such as wild and tame, could also clarify why semi-wild cats and certain wild animals at other Iron Age burial grounds were sometimes put on the pyre.

The efficacies of animal bones

That remains of the animal bones from the cremation were collected and placed with human remains in the graves indicates that the functions of animals were not restricted to the cremation process. Experiments have showed that it is relatively easy to spot most bones from a cremation pyre Henriksen

2019), Despite that, not all bones found their way to the graves since there is an overrepresentation of parts of femurs, humeri, ribs and skulls. Thus, there seems to be a selection process at play (Jennbert 2004a:192). Some bones were also curated, cleaned from soot, broken or crushed before deposition (Bennet 1987:13; Kaliff 1992:103; Sigvallius 1994:32, but see Harvig et al. 2012). But why was it important that cremated animal bones were added to the graves? And can we really make direct associations between species and their transformed remains after the cremation? To be fair, there are no actual bodies in the Iron Age cremation burials, only a haphazard assemblage of bits of bones. The apparent lack of differentiation between bones of different species (human and non-human) rather suggests blurred boundaries, with the remaining bones in their new fragmented and transformed state becoming something distinct or new (Fahlander 2018). Thus, from a less anthropocentric perspective, the Iron Age cremations could be considered to be multispecies assemblages, that is, not exclusively human burials in the traditional sense. Indeed, the amount of animal bones in the burials outnumbers the human ones (which, in some graves, are lacking altogether) and, as previously indicated, humans are not the only species cremated as complete bodies. However, as appealing as such a notion may seem, the majority of the grave goods are artefacts with close ties to human dress or practices. Humans also occupy a central position in the contemporary inhumation graves, and written sources are quite firm on the identification of humans as the focus of burial activity. Thus, the vast majority of graves from the Iron Age must be considered as features that primarily follow the death of a human individual, thus justifying a traditional distinction between humans and animals as different categories of being.

That being said, one possibility is that the animals were thought to have persistent agentic influence after their death through their bones (Hill 2018). In this case, they could have continued to fulfil the roles assigned to them on the pyre after deposition in the grave. It is also conceivable that animal bones were believed to possess certain magical efficacy. This is supported by evidence of animal bones being deposited in relation to load-bearing structures, at external wall lines and entrances of longhouses. The role of animal remains in this context is generally understood to create apotropaic devices that protected the house and its inhabitants (Carlie 2004:107, 109). Such generative abilities of animal bone also plays a more direct role in Iron Age material culture. Terje Gansum, for example, has suggested that animal bone (and perhaps human bone) was used while forging swords in the Late Iron Age (2004:51; see also Hedeager 2011:143). The carbon in the bones is coupled with the iron to form steel. This practice provides the opportunity to choose specific bones of specific individuals with particular qualities (e.g. robust, aggressive, quick, agile, etc.) to become part of the weapon.

We should also consider the addition of unburned bones and teeth to some of the graves. We can only speculate on the function of animal teeth in a grave, since there is little in their materiality and form that stands out, except for a certain resilience when compared to other bones. The correlation between the amulet rings and instances of unburned bones suggests that they both were deposited in the graves for a reason – to *do* something (Fahlander 2014, 2020a, 2020b; see also Crellin 2017). If animal bones and other deposited materials were considered generative, they might work to protect the living from the deceased, to assist them in the afterlife, or to provide the deceased with appropriate paraphernalia to allow the dead a continued existence in some form after death. Considering that animals have been part of the cremation practices since the Bronze Age, and thus throughout several ideological, social and cultural developments, their attributed efficacies are likely to have been less about religion and cosmology and more about the ontology and realities of death and dead bodies.

Summary and conclusions

This paper has aimed to discuss the roles of animals in Iron Age cremation rituals from a symmetrical perspective that acknowledges the importance of individual faculties, properties and agencies. This has been explored through a study of a late Iron Age burial ground (157A) in North Spånga, Sweden, with a special focus on the form and conditions in which different animals were put on the pyre and what type of bones were subsequently deposited in the graves. From a general point of view, the common species (dog, horse, sheep/goat and pig) are evenly distributed, with no significant correlations with burials of different types, sizes or locations. Moreover, there are no significant relations between different species, or number of animals, with the sex, age or status of the buried humans. This is significant, as it sets aside animal bones from most other grave interments that have stronger associations with the buried humans' social persona. The study also challenges the common interpretation that partial animal remains represent food offerings, highlighting the consistent pattern of skull and lower extremity fragments of the non-complete animals (e.g. sheep/goats and pigs). This suggests that they were put on the pyre as hides with the head and lower extremities attached rather than as cut up meat. The collection and deposition of cremated animal bones in the graves, alongside unburned bones and teeth, further suggests that animal remains were believed to possess persistent agencies and efficacies that extended beyond the cremation event.

From a long-term perspective, the practice of cremating certain species (predominately dogs and horses) as complete bodies around 400 CE com-

prises a substantial shift in the cremation ritual. This distinction between species was, however, not simply about separating "companions" (horses, dogs and cats) from producers of meat, milk and wool (sheep/goats, pigs and fowl). Over time, a fair number of pigs and sheep/goats were also cremated as complete bodies. One reason for this flexibility is argued to lie in both individual faculties and the multiple status of many animals. That is, they could simultaneously belong to more than one category (companions, producers of meat, milk and wool, pets, beasts of burden, etc.). In general, familiarity with individual animals and their personalities and experiences seems to have been pivotal to their participation in the cremation ritual. For example, wild animals were apparently not regarded as appropriate for the pyre. Considering the sensitive transformative process of cremation, it is not surprising that only animals that had proven themselves dependable and predictable (i.e. well-known farm animals) were chosen. This argument is corroborated by the small number of cats on the pyres, whose lifestyle as half-wild and less predictable made them less appropriate for burials. Thus, the main criteria for choosing animals for the pyre was less about the type of species and more about how well they were considered able to perform their roles in the cremation ritual.

In conclusion, the study of the cremated animals at 157A shows that animals were indeed important contributors to the Late Iron Age cremation ritual beyond being passive offerings, status objects or personal possessions. The choice of animals and the different conditions in which they were added to the pyre depended on a mixture of species-specific properties, affordances and abilities, as well as their behaviour and relations to humans in life. Dogs, for example, may have been added because of their abilities to perform actions, such as herding, independently of human supervision. To facilitate a more precise discussion of the roles of animals in the past there is a need for greater attention to variation within species (e.g. age, size, sex, colour of coat, origins/place of birth, etc.) through osteology, isotope- and genetic analyses of the animal bones, in a manner similar to the analyses carried out on human bones. Such efforts would not only significantly add to our specific understandings of human-animal relations but also to the changing ontologies and social life of past societies in general.

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References

Andersson, G. 2005. *Gravspråk som religiös strategi: Valsta och Skälby i Attundaland under vikingatid och tidig medeltid*. Stockholm: Riksantikvarieämbetet.

Arcini, C. & Magnell, O. 2022. Bilaga 8. Osteologisk analys. In: Seiler, A. & Sjölin, M. (eds), *Gravar och gårdsmiljöer vid Bådstorp: Bilagor*, pp. 677–713. Stockholm: Arkeologerna.

Argent, G. 2010. Do the Clothes Make the Horse? Relationality, Roles and Statuses in Iron Age Inner Asia. *World Archaeology*. Vol. 42(2), pp. 157–174, doi.org/10.1080/00438241003672633.

Artelius, T. 2010. *Den gamla döden och den nya: Om vikingatidens förkristna begravningar, religiösa idéer och religionsskiftet*. Jönköping: Jönköpings läns museum.

Äijä, K. 1993. *Åbygravfältet*. Rapport 1987:11. Stockholm: RAÄ.

Bennett, A. 1987. *Graven: Religiös och social symbol. Strukturer i folkvandringstidens gravskick i Mälarområdet*. Stockholm: Stockholms universitet. Diss.

Birke, L. & Hockenhull, J. 2012. On Investigating Human/Animal Bonds: Realities, Relatings, Research. In: Birkeand, L. & Hockenhull, J. (eds), *Crossing Boundaries: Investigating Human-Animal relationships*, pp. 15–36. Leiden: Brill.

Biuw, A. 1992. *Norra Spånga: Bebyggelse och samhälle under järnåldern*. Stockholm: Komm. för Stockholmsforskning. Diss.

Bond, J.M. 1996. Burnt Offerings: Animal Bone in Anglo-Saxon Cremations. *World Archaeology*. Vol. 28(1), pp. 76–88, doi.org/10.1080/00438243.1996.9980332.

Bratt, P. 2008. *Makt uttryckt i jord och sten: Stora högar och maktstrukturer i Mälardalen under järnåldern*. Stockholm: Stockholms universitet. Diss.

Brück, J. 2004. Material Metaphors: The Relational Construction of Identity in Early Bronze Age Burials in Ireland and Britain. *Journal of Social Archaeology*. Vol. 4(3), pp. 307–333, doi.org/10.1177/1469605304046417.

Carlie, A. 2004. *Forntida byggnadskult: Tradition och regionalitet i södra Skandinavien*. Stockholm: Riksantikvarieämbetets förlag.

Cerezo-Román, J., Wessman, A. & Williams, H. (eds). 2017. *Cremation and the Archaeology of Death*. Oxford: Oxford University Press.

Crellin, R.J. 2017. Changing Assemblages: Vibrant Matter in Burial Assemblages. *Cambridge Archaeological Journal*. Vol. 27(1), pp. 111–25, doi:10.1017/S0959774316000664.

Davies, D. 2005. *Encyclopedia of Cremation*. Aldershot: Ashgate Publishing Limited.

Descola, P. 2013. Beyond Nature and Culture. In: Harvey, G. (ed.), *The Handbook of Contemporary Animism*, pp. 77–91. Durham, UK: Acumen.

Ericson, P., Iregren, I. & Vretemark, M. 1988. Animal Exploitation at Birka: A Preliminary Report. *Fornvännen*. Vol. 83, pp. 81–88.

Fahlander, F. 2014. Djur och människor: Posthumanistiska perspektiv på yngre järnålderns gravar, In: Alexandersson, H., Andreeff, A. & Bünz, A. (eds), *Med hjärta och hjärna: En vänbok till Elisabeth Arwill-Nordbladh*, pp. 237–250. Göteborg: Göteborgs universitet.

Fahlander, F. 2018. Grave Encounters: Ontological and Material Aspects of Post-Burial Practices in South Scandinavian Late Iron Age. *Primitive Tider*. Vol. 20, pp. 51–63, doi.org/10.5617/pt.6631.

Fahlander, F. 2020a. Unruly Bones and Efficacious Stones: Materialities of Death in Early Christian Post-Burial Interactions in Central-Eastern Sweden, In: Aspöck, E., Müller-Scheessel, N. & Klevnäs, A. (eds), *Grave Disturbances: The Archaeology of Post-Depositional Interactions With the Dead*, pp. 27–41. Oxford: Oxbow.

Fahlander, F. 2020b. Becoming Dead: Burial Assemblages as Vitalist Devices, *Cambridge Archaeological Journal*. Vol. 30(4), pp. 555–569, doi:10.1017/S0959774320000116.

Fahlander, F. 2024. Dödens former och material: Nya undersökningar av Jordbrogravfältet, *In Situ Archaeologica*. Vol. 17, pp. 5–28, doi.org/10.58323/insi.v17.23221.

Flood, A. & Hed Jakobsson, A. 2018. *Ett gravfält från sen vendeltid och tidig vikingatid i Kärnbo*. Upplands Väsby: Arkeologikonsult.

Fowler, C. 2013. *The Emergent Past: A Relational Realist Archaeology of Early Bronze Age Mortuary Practices*. Oxford: OUP.

Gansum, T. 2004. Role of the Bones: From Iron to Steel, *Norwegian Archaeological Review*. Vol. 37(1), pp. 41–57, doi.org/10.1080/00293650410001199.

Gilchrist, R. 2019. *Sacred Heritage: Monastic Archaeology, Identities, Beliefs*. London: Routledge.

Gräslund, A. & Ljungkvist, J. 2011. Valsgärde Revisited. In: Kleingärtner, S., Lützau Pedersen, S. & Matthes, L. (eds), *Det 61. Internationale Sachsensymposion 2010, Haderslev, Danmark,* pp. 123–139. Neumünster: Wachholtz Verlag.

Gräslund, A.-S. 1980. *Birka: Untersuchungen und Studien. 4 The burial customs: a study of the graves on Björkö*. Uppsala: Uppsala universitet. Diss.

Gräslund, A.-S. 2004. Dogs in Graves: A Question of Symbolism? In: Santillo Frizell, B. (ed.), *Pecus: Man and Animal in Antiquity*, pp. 167–176. Rome: The Swedish Institute in Rome.

Groot, M. 2008. *Animals in Ritual and Economy in a Roman Frontier Community: Excavations in Tiel-Passewaaij.* Amsterdam: Amsterdam University Press.

Hagberg, U. 1967. *The Archaeology of Skedemosse II: The Votive Deposits in the Skedemosse Fen and Their Relation to the Iron-Age Settlement on Öland, Sweden*. Stockholm: Almqvist & Wiksell International.

Häggström, L. 2011. People and Animals in Halland, AD 500–1100. *Det 61. Internationale Sachsensymposion 2010, Haderslev, Danmark*, pp. 237–248. Neumünster: Wachholtz Verlag.

Häggström, L. 2022. *Gravar, ritualer och människor i halländsk förhistoria*. Halmstad: Kulturmiljö Halland.

Hållans Stenholm, A.-M., Petersson, M. & Seiler, A. 2023. *Kunskapsunderlag Ostlänken. Järnåldersboplatser i åkermark och järnåldersgravfält.* Nyköping: Länsstyrelsen i Södermanlands län.

Harrysson, I. 2023. Amulettringarna: En förhoppning om goda tider. In: Odebäck, K., Vinberg, A. & Harrysson, I. (eds), *Hjulsta: Arkeologi i skärningspunkt mellan liv, död och kult*, pp. 200–251. Västerås: Stiftelsen Kulturmiljövård.

Harvig, L., Lynnerup, L. & Amsgaard Ebsen, J. 2012. Computed Tomography and Computed Radiography of Late Bronze Age Cremation Urns from Denmark: An Interdisciplinary Attempt to Develop Methods Applied in Bioarchaeological Cremation Research, *Archaeometry*. Vol. 54(2), pp. 369–387, doi: 10.1111/j.1475-4754.2011.00629.x.

Heaney, S. 2000. *Beowulf: A New Verse Translation*. New York: W.W. Norton & Company, Inc.

Hedeager, L. 2004. Dyr og andre mennesker – mennesker og andre dyr. Dyreornamentikkens transcendentale realitet, In: Andrén, A., Jennbert, K. & Raudvere, C. (eds), *Ordning mot kaos: Studier av nordisk förkristen kosmologi*, pp. 219–252. Lund: Nordic Academic Press.

Hedeager, L. 2011. *Iron Age Myth and Materiality: An Archaeology of Scandinavia, AD 400–1000*. London: Routledge.

Henriksen, M.B. 2019. Experimental Cremations: Can They Help Us to Understand Prehistoric Cremation Graves? In: Cieśliński, A. & Kontny, B. (eds), *Interacting Barbar-*

ians: Contacts, Exchange and Migrations in the First Millennium AD, pp. 289–296. Warsaw: Univ.

Hill, E. 2011. Animals as Agents: Hunting Ritual and Relational Ontologies in Prehistoric Alaska and Chukotka. *Cambridge Archaeological Journal*. Vol. 21(3), pp. 407–426, doi:10.1017/S0959774311000448.

Hill, E. 2013. Archaeology and Animal Persons: Toward a Prehistory of Human-Animal Relations. *Environment and Society: Advances in Research*. Vol. 4 (2013), pp. 117–136 doi.org/10.3167/ares.2013.040108.

Hill, E. 2018. A Relational Geography of Humans and Animals on the Arctic Coast of Alaska. In: Baltus, M.R. & Baires, S.E. (eds), *Relational Engagements of the Indigenous Americas Alterity, Ontology, and Shifting Paradigms*, pp. 1–20. Lanham: Lexington Books.

Hyenstrand, Å. 1968. Gravformer och symboltecken under yngre bronsålder. *Fornvännen*. Vol. 185, pp. 185–189.

Houlbrook, C. 2013. Ritual, Recycling and Recontextualization: Putting the Concealed Shoe into Context. *Cambridge Archaeological Journal*. Vol. 23, pp. 99–112.

Iregren, E. 1994. Kremationer från Tuna, Badelunda i Västmanland samt en jämförelse med andra brandgravfält i Mälardalen. In: Nylén, E. & Schönbäck, B. (eds), *Tuna i Badelunda: Guld, kvinnor, båtar 2*, pp. 202–211. Västerås: Kulturnämnden.

Iregren, E. 1997. Why Animal Bones in Human Graves? An Attempt to Interpret Animals Present in Iron Age Cremations in Sweden. In: Smits, E., Iregren, E. & Drusini, A.G. (eds), *Cremation Studies in Archaeology*, pp. 9–31. Padova: LOGOS Edizione.

Jennbert, K. 2002. Djuren i nordisk förkristen ritual och myt. In: Jennbert, K., Andrén, A. & Raudvere, C. (eds), *Plats och praxis: Studier av nordisk förkristen ritual*, pp. 105–133. Lund: Nordic Academic Press.

Jennbert, K. 2004a. Människor och djur: Kroppsmetaforik och kosmologiska perspektiv. In: Andrén, A., Jennbert, K. & Raudvere, C. (eds), *Ordning mot kaos: Studier av nordisk förkristen kosmolgi*, pp. 193–217. Lund: Nordic Academic Press.

Jennbert, K. 2004b. Sheep and Goats in Norse Paganism. In: Santillo Frizell, B. (ed.), *PECUS. Man and animal in antiquity*, pp. 160–166. Rome: Swedish Institute.

Jennbert, K. 2011. *Animals and Humans: Recurrent Symbiosis in Archaeology and Old Norse Religion*. Lund: Nordic Academic Press.

Jochelson, W. 1905. *The Jesup North Pacific Expedition, pt. 1. Religion and Myths of the Koryak*. New York: G.E. Stechert.

Kaliff, A. 1992. *Brandgravskick och föreställningsvärld: En religionsarkeologisk diskussion*. Uppsala: Uppsala universitet.

Kirksey, E. 2015. *Emergent Ecologies*. Durham, N.C.: Duke University Press.

Klindt-Jensen, O. 1957. *Bornholm i folkevandringstiden og forudsætningerne i tidlig jernalder*. København: Nationalmuseet.

Kristoffersen, S. 2010. Half Beast–Half Man. Hybrid Figures in Animal Art. *World Archaeology*. Vol. 42(2), pp. 261–272, doi.org/10.1080/00438241003672906.

Kuijt, I., Quinn, C. & Cooney, G. (eds) 2014. *Transformation by Fire: The Archaeology of Cremation in Cultural Context*. Tucson, AZ: University of Arizona Press.

Law, J. & Mol, A. 2008. The Actor-Enacted: Cumbrian Sheep in 2001. In: Knappett, C. & Malafouris, L. (eds), *Material Agency: Towards a Non-Anthropocentric Approach*, pp. 57–78. New York: Springer.

Lindholm, K.-J. & Ljungqvist, J. 2016. The Bear in the Grave: Exploitation of Top Predator and Herbivore Resources in First Millennium Sweden. First Trends From a Long-

Term Research Project. *European Journal of Archaeology*. Vol. 19(1), pp. 3–27, doi:10.1179/1461957115Y.0000000010.

Lindström, T. 2024. *Människor, djur och varelser i miniatyr: Flerartliga förbindelser i den gropkeramiska kulturen*. Stockholm: Stockholms universitet. Diss.

Lorenz, T. 2020. Burial Arrangements and Conceptions About the Afterlife in Old Norse Literary Sources From the 9th To the 14th Century, With Reference to the Role of Birds of Prey Played Therein. In: Grimm, O. (ed.), *Raptor on the fist: Falconry, its imagery and similar motifs throughout the millennia on a global scale*, pp. 489–509. Wachholtz: Kiel/Hamburg.

Loumand, U. 2006. The Horse and Its Role in Icelandic Burial Practices, Mythology and Society. In: Andrén, A., Jennbert, K. & Raudvere, C. (eds), *Old Norse Religion in a Long-Term Perspective*, pp. 130–134. Lund: Academic Press.

Magnell, O. 2017. *Gårdarnas djur: Osteologisk analys. Utbyggnad av Ostkustbanan genom Gamla Uppsala*. Rapport 2017:1–12, Stockholm: Arkeologerna.

Magnell, O., Prata, S. & Sjöling, E. 2017. Att behandlas som ett djur: Vendel- och vikingatida djurben från gravar och gårdar. In: Beronius Jörpeland, L., Göthberg, H., Seiler, A. & Wikborg, J. (eds), *At Upsalum: Människor och landskapande*, pp. 209–236. Stockholm: Arkeologerna.

Magnell, O., Iregren, E. & Jennbert, K. 2024. Breeding, Feeding and Mobility Among Dogs in the Elite in the Merovingian Period: Analysis of Dogs in the Boat Grave Nabberör, Öland, Sweden. *Journal of Archaeological Science: Reports*. 56, 104558, doi:10.1016/j.jasrep.2024.104558.

Mansrud, A. 2023. The Power of the Paw: Multi-Species Perspectives on the Bear Claw Burial Tradition in a Long-Time Perspective in South Norway, In: Grimm, O. (ed.), *Bear and Human: Facets of a Multi-Layered Relationship from Past to Recent Times, with Emphasis on Northern Europe*, pp. 489–532. Turnhout: Brepols.

Marino, L. & Colvin, C. 2015. Thinking Pigs: A Comparative Review of Cognition, Emotion, and Personality in Sus Domesticus. *International Journal of Comparative Psychology*. Vol. 28(1), doi.org/10.46867/ijcp.2015.28.00.04.

Marino, L. & Merskin, D. 2019. Intelligence, Complexity, and Individuality in Sheep. *Animal Sentience*. Vol. 25(1), pp. 1–26, doi.org/10.51291/2377-7478.1374.

Montgomery, J.E. (transl.) 2014. *Mission to the Volga: Ahmad Ibn Fadlan*. New York and London: New York University Press.

Morphy, H. (ed.) 1989. *Animals into Art*. London: Unwin Hyman.

Nordahl, E. 2024. *De andra döda i graven: Människa-djurrelationer under skandinavisk järnålder utifrån Bådstorps gravfält*. Unpublished Master Thesis, Stockholm: Stockholms universitet.

Nordberg, A. 2003. Krigarna i Odins sal: Dödsföreställningar och krigarkult i fornnordisk religion. 2. uppl. Stockholm: Stockholms universitet.

Nylén, E. 1958. Pryda, skydda, binda? Om gravskickets mening och skärvstensrösenas problem. Med anledning av ett aktuellt bronsåldersfynd. *Gotländskt Arkiv* 1958, pp. 23–38.

Olofsson, J. & Josefsson, E. 2007. Horse Sacrifice at Eketorp Fort, Sweden. *Expedition Magazine*. Vol. 49(1), pp. 28–34.

Oma, K. A. 2018. *The Sheep People: The Ontology of Making Lives, Building Homes and Forging Herds in Early Bronze Age Norway*. Sheffield: Equinox Publishing.

Palmqvist, F. 2021. *Det tidigkristna gravskicket: Återkommande avvikelser och gemensamma drag*. Unpublished Master Thesis, Stockholm: Stockholms universitet.

Poole, K. 2015. The Contextual Cat: Human–Animal Relations and Social Meaning in Anglo-Saxon England. *Journal of Archaeological Method and Theory*. Vol. 22, pp. 857–882, doi.org/10.1007/s10816-014-9208-9.

Prata, S. & Sjöling, E. 2017. Bränt var det här! En osteoarkeologisk studie av begravningar med bålplatser. In: Beronius Jörpeland, L., Göthberg, H., Seiler, A. & Wikborg, J. (eds), *at Upsalum: Människor och landskapande*, pp. 209–236. Stockholm: Arkeologerna.

Ratican, C. 2020. *The Other Body: Persons in Viking Age Multiple Burials in Scandinavia and the Western Diaspora*. Cambridge: University of Cambridge.

Röst, A. 2016. *Fragmenterade platser, ting och människor: Stenkonstruktioner och depositioner på två gravfältslokaler i Södermanland ca 1000–300 f.Kr.* Stockholm: Stockholms universitet.

Sigvallius, B. 1994. *Funeral Pyre: Iron Age Cremations in North Spånga*. Stockholm: Stockholms universitet.

Seiler, A. & Sjölin, M. (eds) 2022. *Gravar och gårdsmiljöer vid Bådstorp*. Stockholm: Arkeologerna.

Sten, S. 2013. Sacrificed Animals in Swedish Late Iron Age Monumental Mound Burials. In: Ekroth, G. & Wallensten, J. (eds), *Bones, Behaviour and Belief: The Zooarchaeological Evidence as a Source for Ritual Practice in Ancient Greece and Beyond*, pp. 223–231. Stockholm: Svenska Institutet i Athen.

Svenfelt, Y. 2009. Metoder vid könsbedömningar av kremerat skelettmaterial med utgångspunkt från Ula-gravfältet. *Viking*. Vol. 72, pp. 91–108.

Thompson, T. (ed.) 2015. *The Archaeology of Cremation: Burned Human Remains in Funerary Studies*. Oxford: Oxbow Books.

Toplak, M. 2019. The Warrior and the Cat: A Re-Evaluation of the Roles of Domestic Cats in Viking Age Scandinavia. *Current Swedish Archaeology*. Vol. 27, pp. 213–245, doi.org/10.37718/CSA.2019.10.

Vilkans, B. n.d. *Up, Spånga, Ärvinge. Gravfält 157A+B. Osteologisk undersökning*. Unpublished report, Stockholms universitet.

Willerslev, R. 2007. *Soul Hunters: Hunting, Animism, and Personhood Among the Siberian Yukaghirs*. Berkeley: University of California Press.

Williams, H. 2001. An Ideology of Transformation: Cremation Rites and Animal Sacrifice in Early Anglo-Saxon England. In: Price, N. (ed.), *The Archaeology of Shamanism*, pp. 193–212. London: Routledge.

Williams H. 2005. Animals, Ashes and Ancestors. In: Pluskowski, A. (ed.), *Just Skin and Bones? New Perspectives on Human-Animal Relations in the Historical Past*, pp. 19–41. Oxford: BAR.

Williams, H. & Lippok, F. (eds) 2024. *Cremation in the Early Middle Ages: Death, Fire and Identity in North-West Europe*. Leiden: Sidestone Press.

Young, R. 2018. *The Secret Life of Cows*. New York: Penguin Books.