SCANDIA
Journal of Medieval Norse Studies

NEW LAND, OLD CUSTOMS? VIKING-AGE GRAVES WITH ANIMAL REMAINS FROM SCOTLAND

NUOVA TERRA, VECCHIE USANZE? SEPOLTURE DELL'ETÀ VICHINGA CONTENENTI RESTI ANIMALI IN SCOZIA

Selene Mazza[1]

Abstract: This article provides a contextual analysis of Viking-Age graves with animal remains from Scotland, investigating human-animal relationships in a funerary context within this region. To do so a comparative approach is adopted in order to better place the evidence within the context of burial customs in the Scandinavian homeland and in other key areas of the Viking diaspora in western Europe. The general lack of animal remains in furnished graves on the territory, and the intentional deposition of only horses and dogs is approached from the point of view of changing, mixed identities in migrant contexts and culture contact with indigenous populations. This highlights the possible different meanings associated with animal depositions in the context of evolving traditions, and the need to send specific messages linked to personal identities to a given community. Acknowledging animals as once-living individual beings, this study addresses their presence in Scottish graves also from the point of view of the different types of relationships certain animals had with certain humans, and the multiplicity of roles they held in life as in death.

Keywords: Viking-Age Archaeology, Human-Animal Relationships, Burial Customs, Scotland

Riassunto: Questo articolo presenta un'analisi contestuale delle sepolture dell'Età Vichinga con resti animali in Scozia, analizzando le relazioni uomo-animale in contesto funerario in questa regione. Per realizzare ciò viene qui adottato un approccio comparato mirato ad inserire il materiale scozzese nel contesto delle pratiche funerarie sia della madrepatria scandinava che di altri territori chiave della diaspora vichinga nell'Europa dell'Ovest. La generale scarsità di resti animali in sepolture dotate di corredo funerario in Scozia, e l'esclusiva deposizione intenzionale di soli cavalli e cani, vengono analizzate sia dal punto di vista della mutevolezza ed ibridismo delle identità personali in contesti migratori, sia da quello dei contatti culturali con popolazioni indigene. Ciò permette di evidenziare i possibili diversi significati associati alla deposizione di animali in relazione all'evoluzione di usi e costumi e al desiderio di comunicare ad una data comunità specifici messaggi legati a concetti di identità personale. Riconoscendo agli animali il loro precedente stato di esseri viventi, questo studio affronta la loro presenza nelle sepolture scozzesi anche dalla prospettiva dei diversi tipi di rapporti che

[1] Independent scholar. MSc Archaeology, University of Aberdeen (2019); MA Viking and Medieval Norse Studies, University of Oslo and University of Iceland (2017). E-mail: selene.mazza@hotmail.it.

specifici animali avevano con specifici individui, e dei molteplici ruoli da loro assunti sia in vita che nella morte.
Parole chiave: Archeologia dell'Età Vichinga, Relazioni Uomo-Animale, Pratiche Funerarie, Scozia

Introduction

The aim of this article is to present an analysis of known Viking-Age graves[2] with animal remains in Scotland,[3] investigating human-animal relationships on the territory in relation to burial practices, and linking them to the discussion on culture contact and identity formation in migrant contexts. To do so, a comparison is carried out between the Scottish material and the evidence coming from the rest of the British Isles and Iceland - the other major settlement of the Viking[4] diaspora in the West - as well as from the Norwegian homeland.[5]

In recent years several publications have addressed human-animal relationships in the context of burial customs and ritual practices in the Scandinavian Iron Age and Icelandic Viking Age, e.g. Iregren (1997), Mansrud (2006), Jennbert (2011, 2014), Magnell (2013) and Sten (2013). Others have instead focussed on specific animal species in connection with rituality, like cats (e.g. Hatting, 1990, Andersson, 1993 and Zachrisson, 2016), horses (e.g. Sikora, 2003, Loumand, 2006 and Leifsson, 2012) and dogs (e.g. Prummel, 2002, Gräslund, 2014 and Iregren and Jennbert, 2014). In addition, numerous works have discussed the dynamics around the Scandinavian settlement of Scotland, with recent publications including Graham-Campbell and Batey (1998), Barrett (2004, 2012) and Jesch (2015).

[2] The term "Viking-Age grave" is here used to denote culturally-Scandinavian burials containing personal belongings and grave goods following the funerary traditions of Late Iron Age Scandinavia.
[3] For practical reasons this article makes use of modern country names, but with the awareness that such geographical and institutional boundaries did not exist as such during the Viking Age.
[4] The term "Viking" is here used interchangeably with the word "Norse" for stylistic reasons, with the awareness that the former originally only referred to a specific group of individuals among the peoples inhabiting Scandinavia at the end of the Late Iron Age, those engaged in seasonal raiding and piracy.
[5] The focus on Norway follows the notion that the majority of the Scandinavian settlers in Scotland came from this region of Scandinavia (cf. Graham-Campbell and Batey, 1998 and Barrett, 2012). Nevertheless, this does not exclude that individuals from the rest of Norse Scandinavia also moved to Scotland.

However, with the exception of Cooke (2017), no extant publication has, until now, exclusively addressed human-animal relationships in relation to the Norse settlement of Scotland and burial practices in particular.

Theoretical background

Human-animal relationships in the past

The theoretical framework at the base of this study is that of human-animal relationships in the past, and the development, in recent years, of social zooarchaeology in the wake of the so-called "animal turn" in archaeological theory (e.g. Pedersen, 2014 and Thomas, 2015).

Acknowledging that the relationship between humans and animals was as complex and multifaceted in the past as it is in present times, recent scholarship has moved towards a contingent and context-related approach to animal remains, informed by the idea that not only did different animals possess different ontological statuses, but that different societies, groups and single individuals related themselves to animals in different ways based on multiple factors (cf. Oma, 2010, Jensen, 2013 and Hill, 2014).[6] Shifting from a view of animals as objects to beings equipped with subjectivity allows to get a glimpse into the complex roles animals had in human society as living, individual beings with their own life biography, engaging in different social arenas at the same time (Oma, 2010, p. 179, Morris, 2011, p. 16 and Hill, 2014, p. 119-120). Thus, investigating the context behind the discovery of animal remains represents a fundamental step towards understanding and interpreting the archaeological evidence. In this zooarchaeology needs to also take into consideration data sets from other disciplines within and outside archaeology itself (see Ashby, 2002, p. 51-52, Russell, 2011, p. 399-400).[7]

[6] Such as sex, gender, age, occupation, personal history etc.
[7] Nevertheless, a limit to our knowledge is represented by the fact that we can only see the past through our point of view as humans, and consequently an anthropocentric component will always be present in our interpretations, even if it can be critically addressed.

Rituality, burial practices and animals in the Viking Age

As a premise, the discussion on human-animal relationships in burial contexts requires a reflection on ritual and rituality in past societies. The term "ritual" is here conceived as a formulaic action aimed at affecting and/or changing the material world, without necessarily implying religious connotations (Brück, 1999, p. 320 and Morris, 2011, p. 14).

Funerary practices in Viking-Age Scandinavia were diverse and characterised by regional and chronological variability, elements that were also translated to the colonies of the Viking diaspora.[8] Comparing the number of graves with the size and number of settlements it is evident that not everyone was granted an archaeologically visible burial, with the extant evidence mostly representing the higher social strata. Clearly "graves" were not the only way to dispose of the deceased at the time. The inclusion of grave goods and several animal species in burials was a regular occurrence, and it appears that the performativity of funerary practices and the involvement of the living community played a central role (cf. Andrén, 2007 and Price, 2010, 2012). The place of burial also represented an important element, with the reuse of ancient monuments and locations on high-ground, near waterways and proximity to roads being the preferred burial sites (cf. Pedersen, 2006 and Thäte, 2009).

The practice of placing animal body parts in graves in Scandinavia can be traced back to the Stone Age. The Late Iron Age saw an increase in species variability, with the deposition of whole individuals starting from the end of the Roman Iron Age. This practice became a regular occurrence during the Viking Age (Iregren, 1997, p. 10, Jennbert, 2011, p. 101 and Mansrud, 2006, p. 135).[9] Multiple specimens are commonly found in Viking-Age graves, with species ranging, on average, between one and six. The most common taxa deposited in this period are horses, sheep, goats, cattle, pigs, dogs, cats, fowls and birds of prey, either cremated or inhumed. It appears that there was no exclusive association between specific species and the biological sex and age of the deceased. Furthermore, different species were treated in different ways, with dogs, horses, cats and birds of prey mostly deposited as fully articulated

[8] Concerning Viking-Age burial customs it is important to note that continuity and development can be seen throughout the Late Iron Age in Scandinavia, with the Viking Age being the culmination of a process begun centuries before and not an isolated phenomenon.
[9] And the preceding Migration period/Vendel period as well.

bodies, while body parts of farm animals often occur as processed food offerings. Some species appear to also have been deliberately selected to feature in funerary practices, as evidenced by the different proportions in the number of specimens of a given taxa between graves and farms. Strikingly, it is evident that in some contexts certain people and certain animals were disposed of in similar ways, and although uncommon, animal graves for horses, dogs and bears are also attested in Scandinavia, testifying to the importance attributed to these specific species (Iregren, 1997, Sten and Vetremark, 1988, Jennbert, 2003, 2011, 2014 and Sten, 2013).

The central role of animals in the Scandinavian Late Iron Age is also attested by contemporary iconography and the medieval sources[10] on Norse mythology and pre-Christian *forn siðr*,[11] emphasizing how the boundary between animal and human, if extant at all, was perceived as blurry and permeable, with hybridity and transformation playing a central role.

The Vikings in Scotland and culture contact

The Scandinavian settlement of Scotland is still an issue of debate among scholars. Despite historically attested Viking raids in northern Britain at the end of the 8th century, based on the archaeological evidence the Norse settlement in northern and western Scotland was established by c. the mid-9th century (Barrett, 2003, p. 76-77).

The nature of culture contacts between the Norsemen and the populations already inhabiting the Scottish territory has also been the object of a lively debate. Following Barrett (2003, 2004), a nuanced and regionally variable view, based on several lines of evidence, is here adopted. The archaeological, onomastic, historical and genetic evidence[12] seemingly attest that both hostile and peaceful interactions were involved in the Scandinavian settlement of

[10] The lack of indigenous written material from the Viking Age, except for runic inscriptions, makes the medieval corpus of Old Icelandic literature a useful tool in trying to better interpret the archaeological evidence. Literary and historiographical texts, nevertheless, need to be critically analysed taking into consideration not only the possible bias of the author(s), but also the creation and development dynamics behind the production of a piece of literature, since literary texts addressing the past can often say more about their time of production than about the past events they refer to.

[11] "Old customs." This term is used in the Old Icelandic medieval sources to refer to pre-Christian beliefs and practices.

[12] Cf. Barrett (2003, p. 98-99, and 2004, p. 216-217) and Jesch (2015, p. 33-36) for important considerations to account for in the interpretation of the linguistic and genetic evidence of the Scandinavian influence on different areas of Scotland.

Scotland, with different chronologies and outcomes depending on the region and context, based on a spectrum of possible contact scenarios.[13]

This reasoning is also valid concerning the conversion of Scandinavian Scotland, traditionally dated to c. 995 CE in *Orkneyinga Saga*. Like settlement, Christianisation was a gradual process happening over a certain period of time, and not an instantaneous development as transmitted by institutional sources, which raises the likely possibility that at least some Norse settlers in certain areas converted early on due to contacts with indigenous Christian people (cf. Gräslund, 2003, Morris, 2003 and Jesch, 2015, p. 139-141).

Data and methods

Time, space and materials

The time frame of this research spans the duration of the Viking Age, conventionally dated c. 750-1050 CE in Europe. The main geographical area under investigation is that of the territories part of present-day Scotland, islands included, with comparative evidence drawn from Norway, Iceland and the rest of the British Isles.

The vast majority of the graves analysed were discovered and excavated during the 19th and early 20th centuries, and great part of the evidence is only extant in the form of antiquarian accounts, although some sites were the subject of more recent and detailed excavations.

Approach to the material evidence

The material evidence at the core of this study has been approached with a comparative methodology to allow for the identification of similarities and differences between the aforementioned territories, devoting special attention to regional and contextual variations.

[13] Regardless, onomastic, literary/historical and genetic evidence represent the fossilisation of the end results of the process of settlement, and thus the development of said process remains obscure, although various hypothetical models have been put forward by scholars through time (cf. Barrett 2003, 2004).

Following an intersectional approach, this research relies on a context-based analysis of each burial based on pre-established criteria.[14]

Representativity of the material

Depending on several factors, taphonomic processes can often result in the loss of all or part of the faunal remains. This is particularly relevant concerning Scotland, where the soil can be quite acidic, and erosion represents a threat for several archaeological sites. Furthermore, the non-rigorous nature of antiquarian excavations and the fact that some sites were likely disturbed before discovery increase the possibility that part of the evidence did not survive.

Another issue is represented by possible burials of Scandinavian settlers or their descendants in unfurnished graves. Isotope analysis and ancient DNA studies can help shedding light on these otherwise "invisible" burials, but both techniques are not free of caveats.[15] In light of this, a distinction should be made between cultural affiliation and ethnic origin, since the ethnicity of a person does not automatically imply a specific cultural affiliation, which can change through time. Furthermore, the distinction between "Scandinavian" and "indigenous/Christian" burials can sometimes be hard to determine, considering that the presence of personal items is not unheard of in early Christian graves as well (cf. Halshall, 2000, p. 270, Hadley, 2001, p. 16 and Gräslund, 2012, p. 639-640). Nevertheless, animal depositions clearly represent an inherently non-Christian burial custom.

Results

Viking-Age graves with animal remains in Scotland

Among a total number of c. 125 Viking-Age graves from c. 60-70 sites recorded so far in Scotland (Harrison, 2019), only a striking minority of min. 15 burials (possible ones included),

[14] Namely dating, animal remains, grave goods, grave form and typology, human remains, orientation of the grave, and the position in the landscape in connection to sea visibility.

[15] In the case of ancient DNA and mitochondrial DNA studies, for examples, only a limited gene pool can be traced, and the comparison of ancient genes with those of modern populations can raise problems related to the interference of mobility and migration patterns (cf. Barrett, 2003, p. 91 concerning Scandinavian Scotland).

spread among min. 10 sites, produced animal remains. The majority of these sites are located in the Northern and Western Isles, with only two examples from Mainland Scotland, and none from Shetland (Figure 1).[16]

[16] The following survey represents a concise version of the results presented in the original dissertation.

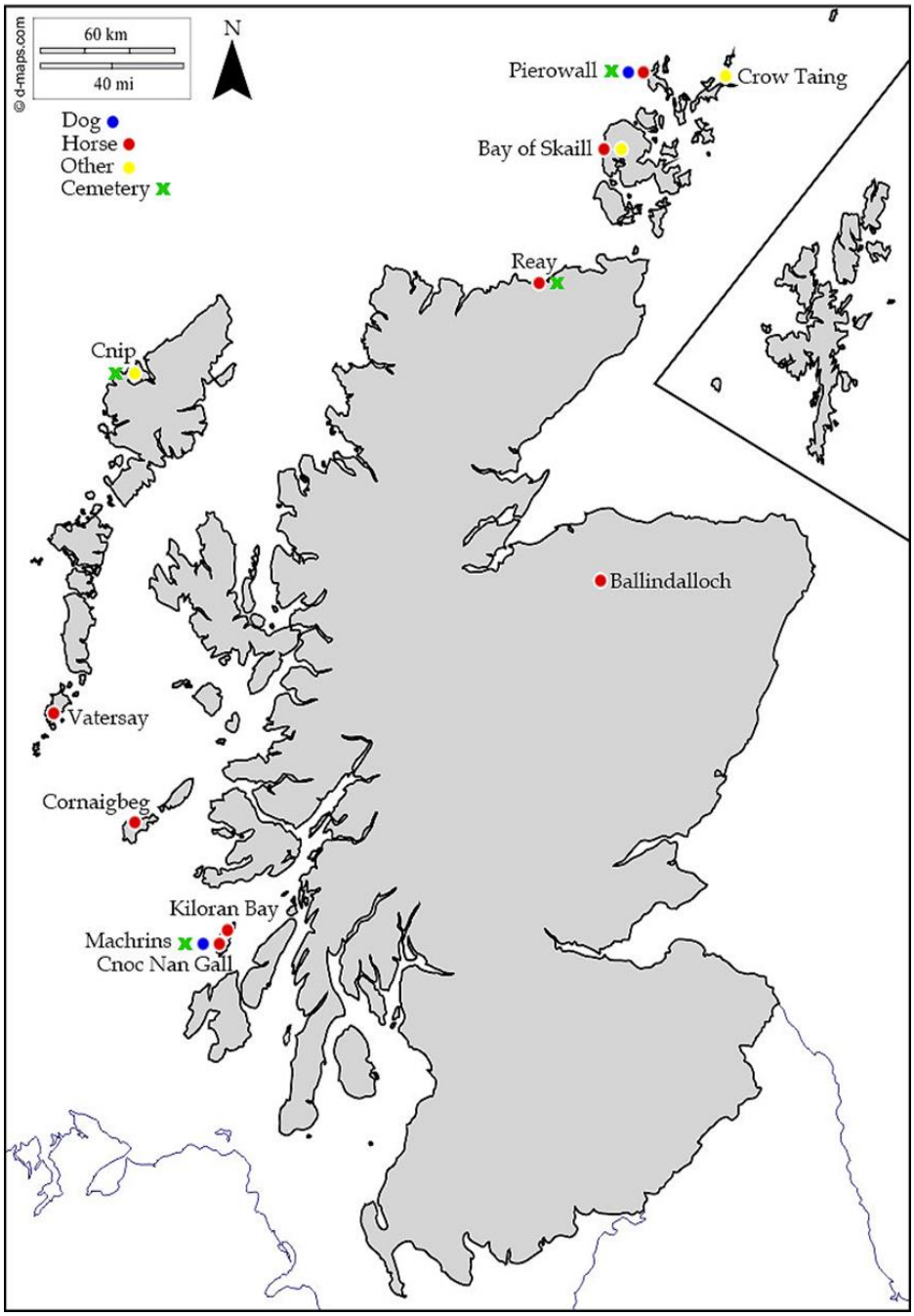

Figure 1. Geographical location of Viking-Age graves with animal remains from Scotland, including possible ones, with references to the species represented. Blank map © d-maps.com, additions by me.

Min. 7 graves have been recorded in the Western Isles (Table 1), with min. 4 on the island of Colonsay associated to the presence of a cemetery at Machrins and Cnoc nan Gall suggested by other finds from this area.

Table 1. Viking-Age burials with animal remains in the Western Isles

Burial	**Dating**[17]	**Animal remains**	**Grave goods**[18] **Y/N and grave form**	**Human remains and sex**	**Orientation and landscape**	**Additional information**
Machrins, Colonsay, Inner Hebrides	Mid-9th to mid-10th century.	Horse	Yes; Boat burial, turf-covered mound, inhumation	None, male (based on grave goods)	N-S; Sand dunes, sea visibility	Cemetery; Excavated in 1891
Cnoc nan Gall, Colonsay, Inner Hebrides	Mid-9th to mid-10th century	Tooth of a small horse/pony	Yes; Possible boat burial, sand mound, inhumation	Upper molar of a young adult, sex undetermined[19]	Unknown; Sand dunes, sea visibility	Cemetery; Excavated 1902
Machrins, Colonsay, Inner Hebrides	709-1020 CE	Dog, ≤ 6 y/o, head on skeleton's knees[20]	Yes; Long cist + headstone, inhumation	Possibly female, > 40 y/o[21]	NE-SW; Sand dunes, sea visibility	Cemetery, earlier settlement nearby; Excavated 1977-78

[17] Following Graham-Campbell and Batey (1998: 154) in their attribution of a general dating of mid-9th to mid-10th century to the great majority of Scottish Viking-Age graves, the burials analysed in this work that lacked datable material or were poorly recorded have been assigned to this time frame to provide a more accurate chronology of animal depositions on the territory. This broad attribution does not exclude, although, the possibility of earlier or later burials.
[18] Personal items included in this category.
[19] 13-15 or 17-19 years old (Ritchie, 1981, p. 279).
[20] Ritchie, 1981, p. 276-277.
[21] Ritchie, 1981, p. 276.

Kiloran Bay, Colonsay, Inner Hebrides	Late-9th to early-10th century	Horse, 6-8 y/o, lying on its side[22]	Yes; Boat burial, stone chamber, sand mound, inhumation	Male, > 40 y/o, crouched on the left side[23]	E-W; Along the coast, sea visibility	Excavated 1882-83
Cornaigbeg, Tiree, Inner Hebrides	Mid-9th to mid-10th century	Horses[24] (?)	Yes; Unknown, Inhumations	Multiple individuals[25] (?)	Unknown; Likely sea visibility	Poss. cemetery in the area; Discovered before 1794
Cnip Burial D, Lewis, Outer Hebrides	Late-8th to early-10th century	Cattle molar[26]	No; Grave-pit, stone kerbing, inhumation	Male, ≥ 40 y/o, supine[27]	N-S; Sandbank, sea visibility	Cemetery,[28] older monuments nearby; Excavated 1992
Vatersay, Outer Hebrides	Viking Age (?)	Horse	Yes (?); Unknown, inhumation	Supposedly male[29] (?)	Unknown; Likely sea visibility	Discovered 19th century

[22] Graham Campbell and Batey, 1998, p. 119-120.
[23] Graham Campbell and Batey, 1998, p. 119-120.
[24] '*Skeletons of horses*' (Sinclair, 1794, p. 402).
[25] '*Skeletons of men*' (Sinclair, 1794, p. 402).
[26] Found in the upper fill of the grave (Dunwell *et al.*, 1995, p. 734).
[27] Dunwell *et al.*, 1995, p. 732, 739.
[28] Consisting of both furnished and unfurnished burials.
[29] '*Norse warrior*' (citation reported by Graham-Campbell and Batey, 1998, p. 83).

A total of min. 6 possible graves with animal remains are recorded in Orkney (Table 2), with min. 4 attested in the cemetery of Pierowall, on Westray.

Table 2. Viking-Age burials with animal remains in Orkney

Burial	**Dating**	**Animal remains**	**Grave Goods Y/N and grave form**	**Human remains and sex**	**Orientation and landscape**	**Additional information**
Links of Trenabie, Westray	Mid-9th to mid-10th century (poss.)	Dogs[30] (?)	Yes; Graves in the sand, inhumations	Supposedly multiple individuals (?)	Unknown; Along the coast, sea visibility	Cemetery; Discovered before 1688
Links of Trenabie, Westray	Viking Age (?) Iron Age (?)	Horses, Dogs[31]	Yes; Possible mound and stone cist, inhumations	Supposedly human remains	Unknown; Along the coast, sea visibility	Roman glass vessel among grave goods[32] Discovered 1774
Pierowall Links/ sand of Gill, Westray	Mid-9th to mid-10th century	Horse	Yes; Sand dunes (?), possible boat burial, inhumation	Male (based on grave goods)	Unknown; Along the coast, sea visibility	Cemetery; Excavated 1841
Pierowall Links grave T7,[33] Westray	Mid-9th to mid-10th century	Small horse, Partial dog	Yes; Seemingly under the flat ground, inhumation	Headless male skeleton (based on grave goods)	N-S; Sand dunes along the coast, sea visibility	Cemetery, grouping with graves T6, T8 and T9 Excavated 1849
Pierowall Links grave T8, Westray	Mid-9th to mid-10th century	Partial horse	Yes; Seemingly under the	Partial skeleton, sex unknown	N-S; Sand dunes along the	Cemetery, grouping with T6, T7 and T9

[30] '*Dogs*' (Wallace, 1883, p. 30).
[31] '*Bones of horses and dogs*' (RCAHMS, 1946: 355).
[32] Graham-Campbell and Batey, 1998, p. 129.
[33] After Thorsteinsson (1968); also valid for the following entries on graves T8 and T17.

			flat ground, inhumation		coast, sea visibility	Excavated 1849
Pierowall Links grave T17, Westray	Mid-9th to mid-10th century	Partial horse	Yes; Beneath a sand dune, possible boat burial, inhumation	Partial upper skeleton, sex unknown	Unknown; Sand dunes along the coast, sea visibility	Cemetery; Excavated 1863
Bay of Skaill, Mainland	9th century or later	Horse, Small birds, Fish, Unknown animal[34]	Yes; Long cist, inhumation	Male (based on grave goods)	NW-SE; Along the bay, sea visibility	Grave on a pre-existing midden or settlement mound; Excavated 1888
Crow Taing, Sanday	9th or 10th century	Unidentified animal bone on a knife	Yes; Grave form not discernible, inhumation	Near complete adolescent,[35] sex unknown	NE-SW; Along the coast, sea visibility	Rodent and fish bones found in soil samples; Several archaeological features in the area; Excavated 2015

Only two sites on mainland Scotland are associated with animal remains (Table 3).

Table 3. Viking-Age graves with animal remains on mainland Scotland

Burial	**Dating**	**Animal remains**	**Grave Goods Y/N and grave form**	**Human remains and sex**	**Orientation and landscape**	**Additional information**

[34] '*One of the leg-bones of a horse*' (Watt, 1888, p. 284) at the foot of the grave, bones of small birds, jaw of a fish, '*small knuckle-bone of some animal*' (Watt, 1888, p. 284) at the head of the grave.
[35] 12-17 years old (Dunbar and Roy, 2018, p. 87).

Reay Links, Caithness	C. 10th century.	Horse(s)[36]	Yes; Grave form not discernible, inhumation	Female (based on grave goods)	Unknown; Sand dunes along the coast, sea visibility	Possible cemetery, circular building nearby; Excavated 1913 (1926, 1927)
Ballindaloch, Moray	Viking Age (?) Iron Age (?)	Horse[37]	Yes; Grave form unknown, inhumation	Human skeleton, sex unknown	Unknown; C. 32 km inland, no sea visibility	Possible Iron-Age shield boss and horse bit among the grave goods; Discovered 1829

The overview of ascertained and possible Scottish graves with animal remains (cf. Tables 1, 2 and 3) highlights the presence of only two recurrent species across the Western Isles, Orkney and mainland Scotland: namely horses and, to a lesser extent dogs, in one instance both within the same grave. Only a small number of burials produced bones of animals of different species.

Only inhumations are attested in the corpus of evidence, containing the remains of individuals of both sexes and of different ages. With one exception, all the graves are located by the coast with sea visibility. Both individual graves and cemeteries are attested, with different grave forms represented, including boat burials and stone cists. The orientation of the graves, when known, is variable. Finally, older monuments and other archaeological features are present in the area surrounding some of the graves. It is evident that the antiquarian nature of the discoveries – together with coastal erosion - limited the detail and reliability of the information available on some of the burials listed above.

[36] Astragalus (ankle bone) of a horse and '*quantities of horses' bones*' (Edwards, 1927, p. 207) in the area.
[37] '*Skull and bones of a horse*' (Wilson, 1863, p. 154).

Comparative evidence: British Isles, Norway, Iceland

Expanding the view to the rest of the British Isles, the same trend characterising Scottish Viking-Age graves can be identified, with animal remains representing a rare occurrence among Scandinavian furnished burials. Horses and dogs are the most common species. However, the English and Manx evidence also attests the presence of other domesticates such as cattle, pig and goat/sheep, as well as animal remains deposited in cremation graves (Owen and Dalland, 1999, p. 167, Harrison, 2008, p. 579-586). In Ireland as well it appears that animal depositions were rare, with the evidence of whole individuals limited to horses only. Food offerings are also rarely attested within the Irish material (Harrison and Ó Floinn, 2014, p. 277-279).

In contrast, the presence of animal remains of different species in Norwegian Viking-Age furnished graves is a common occurrence all over the country (Leifsson, 2012, p. 185, see also Jennbert, 2011). Both cremations and inhumations are attested, as well as several burial types ranging from mounds and cairns to ship burials, found both in cemeteries and as individual graves (Sikora, 2003, p. 98-101 and Leifsson, 2018, p. 41-53). Despite the traditional association between horses and male burials, Leifsson (2018, p. 54-55) underlines how horses and horse gear actually figure in similar proportions in both male and female graves in Norway. Horse depositions in Norwegian contexts were usually associated with ideas of male power, aristocracy and military activity during the Merovingian Period, with a shift in symbolism and gender dynamics during the Viking Age that saw the association of horses with social status, and, for the first time, female burials as well (Jennbert, 2011, p. 66-67 and Leifsson, 2018, p. 56-57).

Horses and - to a lesser extent - dogs represent the most common species found in Icelandic Viking-Age graves. The two taxa commonly co-occur within the same grave (Leifsson, 2018, p. 276). Only inhumations are attested on the island, where the burial customs can be considered uniform all over the country, with less species variability concerning animal remains compared to Scandinavia (Leifsson, 2012, p. 184-186). Beside horses and dogs, in fact, the only other species encountered in ascertained Icelandic burial contexts is pig, found in only

3 graves in total (Leifsson, 2018, p. 282). Horses are found both in association with human remains and as individual animal graves. Riding equipment is also often part of the grave goods. The sex distribution attests that in Viking-Age Iceland it was common practice to bury these animals with both women and men of different ages. Concerning dogs, these animals were buried predominantly as whole bodies with both male and female individuals, generally placed at the feet of the deceased, but never without a human body (Leifsson, 2018, p. 274, 276-277).

Discussion

Away from home: the Scottish evidence in context

Despite the importance of contextualisation and regional variability, some general considerations can be made regarding differences and similarities between Viking Scotland and the homeland.[38] Unlike in Norway, only inhumations are attested in Scotland. This is valid also for Scottish Viking-Age graves without animal remains, with the exception of only five or six identified cremation burials (McGuire, 2009, p. 118). This might be due to multiple factors, both practical and ideological: it has been suggested, for example, that contacts with Christian populations influenced the Scandinavian settlers in their general preference for inhumation burials (see Sikora, 2003, p. 93). At the same time, the treeless nature of areas like Orkney and Shetland could also be accounted for the lack of cremations, considering the significant amount of wood required to burn a body (cf. Graham-Campbell and Batey, 1998, p. 144). Grave forms are also less variable in Scotland.

The location of the graves in the landscape also appears to be less varied than in the homeland, with the majority of the burials located along the coast. Comparing the evidence with Thäte's (2009) study on burial locations in Scandinavia, it appears that the preference for areas close to older monuments and waterways was maintained in Scandinavian Scotland, for

[38] Unless otherwise specified, the comparison refers to Scottish graves with animal remains only.

the most part. Not much can be said about the close proximity to major roads, but to an extent this preference can be seen in the coastal location of most of the graves, with the sea being the main transportation route for the Norsemen in the region. Unlike in Norway (and Iceland), the Scottish graves including animal remains do not appear to be in proximity of contemporary Norse settlements and farms, although older structures are often found nearby (McGuire, 2016, p. 78).

With one exception, all the graves analysed contained personal items and/or grave goods, although some notably less than their Norwegian counterparts. Horse fittings were also present in some cases. The lack of particularly rich and monumental burials with a vast array of grave goods on the Scottish territory is probably influenced by migration patterns and mobility, considering that the wealthiest social strata expectedly had less reasons to migrate in search of riches and land. The extant evidence, however, has also often been affected by coastal erosion, construction works and the nature of antiquarian excavations, leading in some cases to the loss of all or part of the grave goods and/or personal items. Insular artefacts - and especially pins - are attested in both geographical areas (cf. Glørstad, 2013).

Flexed and extended inhumations are recorded in both regions, with the bodies of people of either sex and different ages positioned supine or on their sides. Both single graves and cemeteries are present in the two areas, but no multiple burials with animals nor individual animal graves have been found in Scotland as of yet. Furthermore, considerably less species variability is attested in Scotland, with only horses and dogs recorded among the non-intrusive material (see further down). Significantly enough, these two species are the two most common taxa found in graves in Norway - and Scandinavia in general - together with livestock and birds of prey, the latter both absent from the Scottish material. This seems to underline the special position horses and dogs had in human-animal relationships both in the Scandinavian homeland and in Scotland.

In common with Scotland, the territories of present-day England, Ireland and Isle of Man were already inhabited at the time of the Norse settlement. Across the British Isles animal depositions in Norse graves represent a rare occurrence, but in some cases include more

species variability. The English and Manx evidence also attests cremations with animal remains (cf. Owen and Dalland, 1999, p. 166-172 and Harrison, 2008).

Among the shared traits of Scottish and Icelandic animal depositions is the lack of cremations and less variability in burial customs, even though in Iceland indigenous burial practices were translated into a predominantly uninhabited land,[39] thus resulting in different settlement dynamics not influenced by culture contact with indigenous peoples. Like in Scotland, horses and dogs are the only taxa intentionally deposited in Icelandic Viking-Age graves of both male and female individuals, with the exception of pig. Unaccompanied horse graves, although, are also present in the Icelandic records. The low frequency of boat burials and the lack of wooden coffins are characteristics that the Icelandic burials share with the Scottish ones (Eldjárn and Friðriksson, 2000, p. 610), likely related to the scarcity of wood in Iceland already during the Viking Age. This most likely also had a major influence on the general lack of cremations in both areas.

Despite starting from a cultural practice broadly shared across Norse world, it is evident that funerary traditions were developed, adapted and personalised within the homeland and western settlements alike, resulting in different combinations of elements bestowing a regional and independent quality on the burial practices of Viking Scotland.

What's in a grave? Interpreting the evidence

Western Isles: The vagueness, lack of certainty when it comes to the dating, and the absence of any official record do not allow us to draw any conclusions about the Vatersay burial in the Outer Hebrides, except that it could represent a possible Viking-Age inhumation. The Cnip cemetery was, on the other hand, the object of modern recorded investigations, and the material evidence preserved. The cattle molar found in the upper fill of Grave D (cf. Dunwell et al., 1995), an unfurnished inhumation, is here considered as a most likely example of intrusive material, since no other animal remains were found in the actual grave or the rest

[39] With the exception of the so-called *papar*, Irish monks, in southern Iceland.

of the upper fill. Furthermore, the inclusion of a single tooth in an otherwise unfurnished grave would represent a quite unusual combination in the context of culturally Scandinavian burial customs. It is likely, instead, that the cattle tooth ended up in the upper fill when the grave was covered up, probably coming from another context.

The evidence from the Inner Hebrides proves to be substantial enough to provide a glimpse into the Scandinavian burial customs in the region. Out of all the burials documented for this area, only the record for Cornaigbeg is too vague and old to allow us to go beyond the suggestion of a possible Viking-Age burial ground with furnished inhumations seemingly accompanied, in some cases, by horses. Better documented is the significant evidence from the island of Colonsay. The possible burial ground(s) in the area of Machrins and Cnoc nan Gall - suggested by additional grave finds in the area – is linked to the presence of two horses and one dog from three distinct burials. Given that the two burials including a horse are recorded in antiquarian accounts, the only information on the animals themselves is the presence of a supposedly whole horse skeleton in one grave, and the fact that the horse in another was either a small adult or a pony. The fact that the human tooth associated to the latter find was that of a juvenile/adolescent suggests the possibility that that specific horse was chosen based on the size of the person meant to ride it. However, it is impossible to determine whether the animal could have been ridden by the human in real life, or if it had rather been chosen symbolically.

More data is available on the small dog from a third grave, since it was excavated in modern times. The fact that the animal did not show signs of disease or butchery, and was well-fed in the day prior to its death, suggests that it was a healthy dog specifically killed to be put in the grave of who was most likely its owner. This, of course, does not exclude other more functional roles for the animal; its size as a modern Welsh corgi suggests that it might have been a herding and/or watch dog, in addition to being a pet of sorts, as well as a symbolic indicator of the social status and personal qualities of the deceased. The presence of a healed fracture can indicate harsh life conditions, while at the same time testifying to a certain amount of care for the animal (cf. Ritchie, 1981, p. 276-277).

The boat burial from Kiloran Bay is one of the richest Viking-Age graves in Scotland. The presence of a boat, the significant array of grave goods and the presence of a horse all

testify to the social status of the deceased, as well as his connections to the Norwegian homeland and the Irish sea, and his military and mercantile identities. The age of the horse and its healthy status at the time of death suggest the possibility that the animal was ridden and owned by the deceased or his kin, considering that a healthy, adult animal was specifically selected to be put in the grave. This also indicates that the deceased and/or his kin were wealthy enough to afford losing a horse in its prime. Although the cause of death of the animal is unknown, a possible glimpse into its final moments could be evidenced by the damages inflicted to its hind right leg, most probably to immobilise the animal by cutting the hamstrings, although it cannot be excluded that the wound was the result of involvement in warfare (cf. Graham Campbell and Batey, 1998, p. 120). Multiple, non-mutually exclusive roles and meanings can be glimpsed at in the horse remains from Kiloran Bay, involving practical, symbolic and probably emotional links between the deceased and the animal. Its healthy condition suggests that the horse was well-taken care of. This in turn can be linked to his practical involvement in riding (as further indicated by the presence of horse fittings on the animal) and physical labour, for which a healthy individual was necessary, but also its ties to the social status of the owner and cosmological ideas. At the same time, the choice of this specific specimen could have also been determined by emotional attachment and the fact that the animal was a favoured one by the owner, or even his own personal horse.

Orkney: the inhumation from Crow Taing, although investigated in recent times, does not allow to say much about human-animal relationships in the area, as the unidentified animal bone fragment on the knife's blade, and the rodent and fish bones found in the soil samples, most likely represent intrusive material, possibly from a nearby midden, rather than intentional depositions (cf. Dunbar and Roy, 2018), especially considering that rodents are not normally found in Viking-Age graves in Scandinavia, and fish is rarely deposited as a food offering. Furthermore, the lack of grave goods and personal items other than the knife itself seems to exclude the possibility of a wealthy burial, and the lack of animal remains would be consistent with the picture.

A more likely animal deposition is represented by the burial in the Bay of Skaill, although its discovery in antiquarian times, the damaged nature of the find and its position on

top of an older settlement mound or midden (cf. Morris et al., 1985) complicate the picture. If the large animal bone found at the foot of the grave really was the leg-bone of a horse, as suggested by the antiquarian Watt, it might be indicative of a horse deposition rather than be intrusive material derived from the settlement mound. In fact, although horse meat was consumed during the Viking Age, especially in Iceland, horses are not commonly found as disarticulated food offerings in graves, and at least some layers of the settlement mound likely pre-date the Viking Age (Morris et al., 1985, p. 89). Given the lack of dating for the bone, although, it cannot be exclude a priori that it may indeed represent a deposit from the midden. The bird and fish bones also found in the grave most likely represent intrusive material coming from the settlement mound.[40]

The evidence from the furnished graves at the cemetery of Pierowall, despite their discovery in antiquarian times and difficulties in the interpretation of the records, most likely indicates the presence of multiple intentional animal depositions in the area. Nothing certain can be said about the possible burial of a man and a horse discovered in the sand of Gill in 1841, but grave T7 produced the remains of a human, a rather complete small horse with bridle bit in its mouth and a partial dog; grave T8 contained the partial remains of a human and a horse with a bridle bit in its mouth, and grave T17 held a partial human and a horse (cf. Thorsteinsson, 1968). Furthermore, possible additional burials with animal remains are attested in vague antiquarian accounts mentioning the presence of bones of horses and dogs in furnished burials at the Links of Trenabie, north of Pierowall Bay, although the state of the records does not allow for any further considerations. Unfortunately, the lack of detailed descriptions of the individual graves and the absence of faunal remains for zooarchaeological analysis make it impossible to study each individual burial in detail and draw specific conclusions. Nevertheless, the available records strongly hint at the presence of a Viking-Age cemetery along Pierowall Bay with furnished inhumations and multiple burials with horse

[40] See above for considerations on fish in Viking-Age graves. Watt's (1888) notes on the bones belonging to small birds seemingly exclude the presence of birds of prey, the bird species most commonly found in Viking-Age graves in Scandinavia. Although other winged animals appear as depositions in the homeland, e.g. poultry, it seems unlikely that the bird bones from the Bay of Skaill represent an intentional burial deposition, especially considering the settlement mound beneath the burial.

and/or dog remains. The association of animal bones with grave goods and possible boat burials links the presence of these animals with the status and identity of the deceased, while the bridle bits found in the mouths of two horses hint at their central role in riding, either materially or symbolically. The small horse from grave T7 could raise the question of its symbolic meaning as a representant of its species rather than as an individual animal if the specimen was too young/small to be ridden in real life (cf. Leifsson, 2018), but the lack of detailed information on the age and size of the human as well as the horse renders this type of investigation impossible. Still, the evidence seems to attest multiple levels of interpretations linked to horse remains tied to their multiple roles and functions in life as well as in death. The presence of a dog, like in the burial from Machrins, also allows for multiple interpretations and meanings, with its possible statuses as a pet of a wealthy individual, a herding/hunting/watch dog and also a player in cosmological beliefs.

Mainland Scotland: the vagueness and uncertainty of the burial of a man and a horse from Ballindalloch makes it impossible to determine whether it dates to the Iron Age or the Viking Age, as a sketch of a shield boss is the only remaining evidence. Furthermore, the inland location at c. 32 km from the coast would make the presence of Viking activity in the area stand out compared to the rest of the evidence discussed in this article, although waterways are present in the rivers Avon and Spay in the vicinity.

The cemetery at Reay produced at least one grave supposedly containing horse remains, although the state of the records makes it hard to determine with certainty which specific burial(s) the animal bones came from. Furthermore, only one astragalus (ankle bone) of a horse is extant as evidence of the faunal assemblage, despite the reports of several other bones lying in the area, making it hard to draw any specific conclusions on the state of human-animal relationships in the area.

Despite being located in different geographical areas, the Scottish graves containing animal remains present a rather homogeneous picture of limited variations in burial customs compared to Scandinavia. With the exception of the ambiguous site of Ballindalloch, all the burials are located along or close to the coast, and excluding intrusive material the only species represented are horses and dogs, the former present in higher numbers. In all the graves with

ascertained depositions of horse and/or dog remains no more than one specimen per species was present. The lack of details on several burials makes it hard to address regional/local differences in the grave-good assemblage, age and sex of both humans and animals, and possible species/sex/age/area distribution of the finds.

Human-Animal relationships and burial customs in Viking Scotland

The general scarcity of Viking-Age graves with animal depositions on the Scottish territory is striking, considering the recurrence of this practice in Scandinavia during this period. Although the representativity of the evidence has likely been affected by coastal erosion and the nature of antiquarian investigations, this is not enough to explain the paucity of animal depositions on the territory. Grave goods and personal items in Scottish graves are a rather common occurrence, and one would expect several of these graves to also include faunal remains, in line with the Norwegian homeland. The fact that this is not the case implies an active decision not only of individuals, but also the community - or better, communities - they were part of. Within this context the choice to bury exclusively horses and dogs with the dead represents a significant adaptation of the imported burial customs, which saw these animals - although representing the species most commonly found as whole bodies - often accompanied by livestock and other domesticates and wild animals. This choice also seems to deviate from burial practices in the rest of the British Isles, but shows several similarities with Icelandic burials. Furthermore, the evidence from Viking and Late Norse settlements in Scotland, collected by Cooke (2017), attests the presence of several animal species, included cattle, sheep, pig and cat, taxa commonly found in Scandinavian graves, and that the settlers could clearly avail themselves of in Scotland as well. Their presence in middens and the records of butchery and cut marks indicate that these species were used for consumption and resource production, but were evidently excluded from burial customs.

Moreover, looking at the contextual information of the Scottish graves it appears that other elements of the Scandinavian burial tradition were imported by the settlers into the new land, although with less variation and evidently leaving the custom of cremation behind. It appears, then, that the reason(s) behind this significant shift in human-animal relationships

lay in the new regional and socio-political setting the Scandinavian settlers encountered in the northern part of the British Isles, including a new type of landscape and exploitable resources, different climatic conditions and, most importantly, different peoples already inhabiting the land, both at the time of the settlement and for centuries before then.

The presence of Insular - local or not - artefacts in several Scandinavian graves, hoards and settlements, as well as the strategic position of Caithness and the Northern and Western Isles on the westwards sailing, raiding and trading network routes of the Vikings together with the historical mentions of attacks in different areas of the region, all attest the inevitable interactions between the Scandinavians and the indigenous populations of Scotland and the rest of the British Isles, be they peaceful or not.

Migrant settings contribute to changing and reshaping people's identities and perceptions of themselves, resulting in a spectrum of new hybridised ethnic, cultural and personal identities reflected in spheres like burial practices and their materiality (McGuire, 2010, p. 2-3, 2016, p. 65 and Glørstad, 2013, p. 152-153). In this context, the grave and funerary rituals can be used to shape, negotiate and display identities, as well as to create cultural memories within a social group (cf. McGuire, 2010, 2016). Far from being fixed, these new and old identities are continuously merged together and manifested in different ways in different contexts. Personal, social, ethnic and cultural identities are, in other words, fluid and plural, negotiated on the base of contextual circumstances. The identity of the deceased in burials, then, is only one manifestation of the individual's identities in life, one fossilised during the funeral following the will and beliefs of the people burying the dead as well as, supposedly, the deceased themselves.

Within this context, the inclusion of horses and dogs in a low number of graves sets these burials aside from the rest of the Scottish evidence, sending a stronger signal of Scandinavian Norse cultural affiliation, status and identity expressed through the imported practice of animal depositions on top of the inclusion of personal objects, grave goods and the adoption of other burial customs from the homeland. This appears particularly relevant in the case of cemeteries like Pierowall and Machrins/Cnoc nan Gall, where the signal is virtually expanded across a large part of the local community. However, this practice was negotiated

and adapted to the new context, limiting the species selection to horses and dogs and actively excluding other taxa. This idea is strengthened by the fact that the animal remains would have become invisible once the grave was backfilled, hence underlining the importance of the funeral itself as the moment when the identities, status and personality of the deceased, as well as the beliefs and values of his/her social group, were determined and cemented in the memory of the members of the community witnessing the event (cf. Halsall, 2000, p. 270). In this sense, following Price's (2010) emphasis on Viking funerals as a drama, the presence and killing of living animals by the grave undoubtedly provoked intense emotions in the viewers, and at the same time sent a strong message to the spectators about the social status, cultural milieu and cosmological beliefs of the deceased, a message hard to forget. Furthermore, given the general geographical distribution of the graves along the northern and western coasts of Scotland, it is conceivable that their position was also meant to broadcast a message of Norse affiliations and identities to the other Scandinavians seafaring along the maritime route connecting Scandinavia to the Irish Sea, and stopping by one of the Norse settlements on the Scottish territory, either through physical visibility or through word of mouth.

On the other hand, new hybridised identities are nevertheless visible even in graves containing animal remains, expressed by the integration of Insular artefacts and materials into the life and identities of the deceased. Of course the presence of Insular objects does not necessarily imply a peaceful and equal interaction as the source of these artefacts, but nevertheless, even the inclusion of foreign items derived from raids and warfare still implies a certain level of negotiation and re-shaping of the personal identity of the person buried with them, as well as its acceptance by the living community. Thus, "being a Norseman" cannot be considered an attribute with a fixed meaning shared across the whole Viking world, but rather a negotiable identity based on contextual circumstances; in this sense, belonging to a Scandinavian cultural milieu and showcasing it did not exclude the possibility of hybridisation, adaptation and inclusion of new elements into traditional practices.

How did this affect human-animal relationships in Norse Scotland from the point of view of burial practices? Clearly, the picture provided by the archaeological evidence is not a black-and-white scenario. As for the Scandinavian homeland, the presence of animals in a

grave had multiple functions and meanings both related to the humans and the animals themselves. Ideas of social status, identities, ethnic and cultural affiliations, cosmology and beliefs were likely all tied in the selection and deposition of horses and dogs specifically. At the same time, the animals chosen to accompany the deceased in the grave were living beings with their own personhood (cf. Aaltola, 2008) that interacted with humans on a daily basis, and thus more than mere symbols and/or reflections of economic and practical strategies or cosmology. A spectrum of different roles and relationships tied a certain species to a given human community, while some individual animals likely also had an emotional link with certain people. Emotionality cannot be excluded as an important determining factor in the selection of which specific animals to kill and bury with the deceased. This appears particularly relevant for horses and dogs, species bound to form a lasting connection with humans as life companions involved in several everyday life activities and physically present in the life of their owner(s) for several years in a mutually-dependant relationship. This likely also influenced the decision to exclusively include horses and dogs in burial customs on the Scottish territory.

On a more general level, the scarcity of Viking-Age graves with animal remains in Scotland might be the evidence of a gradual change and adaptation of burial practices and mortuary symbolism as well as new attitudes towards animals among some members of the Norse communities on the territory, likely influenced by the new geographical and socio-political context as well as by contacts with indigenous Christian peoples. This new setting likely influenced which customs from the homeland were translated into the new land, and created different contexts where it was felt necessary to display a stronger Scandinavian cultural identity (cf. Barrett, 2003), with changes and adaptations in specific ritual practices possibly related - at least at the beginning – more to symbolic, mundane values than spiritual ones. Considering conversion as a gradual process tied to local socio-political circumstances and individual attitudes, a period of syncretism instead of sudden cultural break before the official top-down institutionalisation of the Church is to be expected, especially in contexts involving culture contact (cf. Gräslund, 2003, Morris, 2003 and Maldonado, 2011). With this premise, the general paucity of graves containing animal remains could be linked to the slow

process of changing burial customs and hybridisation of ritual practices in a migrant context, with a possible shift in primary meaning when animal remains are indeed present, prioritising signalling status, connections and cultural affiliations over cultic and cosmological meanings associated with the presence of certain animal species in a given grave.

Conclusions

On the background of Barrett's (2003, 2004) study on the different regional long-term results of the Norse settlement of Scotland, the evidence of animal depositions in graves appears to be a relatively spread-out phenomenon. At the same time, its rare occurrence sets it apart as a niche custom tied to local coastal communities along the sea route from Scandinavia to the Irish Sea and prominent individuals, and not the Norse community as a whole.

In a migrant context, with changing and mixed identities being negotiated on a personal level, the inclusion of horses and/or dogs exclusively is the result of active choices in order to send a specific, not predetermined, message. With the exclusion of livestock, generally considered as food offerings for the afterlife, the emphasis is being placed on social status and affiliations, personal histories and beliefs, and possibly emotional ties as well to instil in the memory of the living society witnessing the funeral, channelled through presence of horses and dogs in different local contexts. Multiple, non-mutually exclusive roles in life for each species can also be hypothesized. At the same time, other people identifying themselves as culturally Norse decided to abandon the inclusion of animals as a whole while maintaining other shared customs in their burial rituals, hinting at a complex scenario where attitudes towards certain animals and certain practices were changing based on new personal social, political, economic and religious dynamics locally determined.

The migrant context of Viking-Age Scotland represented a productive setting for the adaptation and reinvention of imported funerary practices to convey new meanings and new identities, reflecting the personal histories and the individuality of the settlers, their

descendants and the people gravitating around them, and leaving space for the continuous re-negotiation and redefinition of human-animal relationships.

Acknowledgments

I would like to thank Dr Charlotta Hillerdal from the University of Aberdeen for supervising and supporting this research project.

Bibliography

Primary sources

COOKE, S. *How the Vikings Inhabited Scotland*: A Social Zooarchaeological Approach. Unpublished PhD thesis, 2017, University of Aberdeen, University of the Highlands and Islands.

DUNBAR, L. and ROY, M. "A Viking-age inhumation from Crow Taing, Sanday, Orkney." *Scottish Archaeological Journal*, 2018, 40.1, pp. 83-99.

DUNWELL, A. J., COWIE, T.G., BRUCE, M. F., NEIGHBOUR, T. and REES, A. R. "A Viking Age cemetery at Cnip, Uig, Isle of Lewis." *Proceedings of the Society of Antiquaries of Scotland*, 1995, 125, pp. 719-752.

EDWARDS, A. J. H. "Excavation of graves at Ackergill and of an earth-house at Freswick Links, Caithness, and a description of the discovery of a Viking grave at Reay, Caithness." *Proceedings of the Society of Antiquaries of Scotland*, 1927, 61, pp. 196-209.

GRAHAM-CAMPBELL, J. and BATEY, C. E. *Vikings in Scotland*: an archaeological survey. Edinburgh: Edinburgh University Press, 1998.

HARRISON, S. H. *Furnished Insular Scandinavian Burial*. Artefacts and Landscape in the Early Viking Age. Unpublished Ph.D. Thesis, Trinity College Dublin, 2008.

MANAVIAN, S. "Viking Burials in Scotland." *Microsoft Excel spreadsheet*. Personal correspondence, 2019.

MCLEOD, S. "Viking Burials in Scotland. Landscape and burials in the Viking Age." 2015. Accessed Spring 2019. https://vikingfuneralscapes.wordpress.com/.

MORRIS, C. D. EMERY, N. OWEN, O., RAINS, M. J. AND WATT, H. M. "Skaill, Sandwick, Orkney: preliminary investigations of a mound-site near Skara Brae." *Glasgow Archaeological Journal*, 1985, 12, pp. 82-92.

RCAHMS The Royal Commission on the Ancient and Historical Monuments of Scotland. Twelfth report with an inventory of the ancient monuments of Orkney and Shetland, volume 2: Inventory of Orkney. Edinburgh: H.M.S.O., 1946.

RITCHIE, J. N. G. "Excavations at Machrins, Colonsay." *Proceedings of the Society of Antiquaries of Scotland*, 1981, 111, pp. 263-81.

SIKORA, M. "Diversity in Viking Age Horse Burial: A comparative study of Norway, Iceland, Scotland and Ireland." *The Journal of Irish Archaeology*, 2003, 12–13, pp. 87–109.

SINCLAIR, J. *The statistical account of Scotland, drawn up from the communications of the ministers of the different parishe*s, volume 10th. Edinburgh: William Creech, 1794.

THORSTEINSSON, A. "The Viking Burial Place at Pierowall, Westray, Orkney." In: NICLASEN, B. (Ed.). *The Fifth Viking Congress*. Tórshavn, July 1965. Tórshavn: Føroya Fródskaparfelag, 1968.

WALLACE, J. A. *Description of the Isles of Orkney*. Edinburgh: William Brown, 1883.

WATT, W. G. T. "Notice of the discovery of a stone cist, with an Iron Age interment, at Skaill Bay." *Proceedings of the Society of Antiquaries of Scotland*, 1888, 22, pp. 283–285.

WILSON, D. *Prehistoric annals of Scotland*, volume 2. London and Cambridge: Macmillan & Co, 1863.

Secondary sources

AALTOLA, E. "Personhood and Animals." *Environmental Ethics*, 2008, 30, pp. 175-193.

ANDERSSON, M. *Kattalog – En studie av den Svenska tamkattens tidiga historia*. Unpublished Bachelor thesis, 1993, Lunds Universitet.

ANDRÉN, A. "Behind Heathendom: Archaeological Studies of Old Norse Religion." *Scottish Archaeological Journal*, 2007, 27(2), pp. 105–138.

ASHBY, S. P. "The role of zooarchaeology in the interpretation of socioeconomic status: a discussion with reference to Medieval Europe." *Archaeological Review from Cambridge*, 2002, 18, pp. 37-59.

BARRETT, J. H. "Culture contact in Viking age Scotland." In: Contact, Continuity and Collapse. *The Norse Colonization of the North Atlantic*. Turnhout: Brepols, 2003, pp. 73–112.

BARRETT, J. H. "Beyond war or peace: The study of culture contact in Viking-age Scotland." In Hines, J., Lane, A. and Redknap, M. (Ed.). *Land, Sea and Home*: Proceedings of a conference on Viking-period settlement. Leeds: Maney, 2004, pp. 207-218.

BARRETT, J. H. "The Norse in Scotland." In BRINK, S. and PRICE, N. (Ed.). *The Viking World*. London and New York: Routledge, 2012, pp. 411-427.

BARRETT, J. H., BEUKENS, R. P. and BROTHWELL, D. R. "Radiocarbon dating and marine reservoir correction of Viking Age Christian burials from Orkney." *Antiquity*, 2000, 74(285), pp. 537–543.

BRÜCK, J. "Ritual and Rationality: Some Problems of Interpretation in European Archaeology." *European Journal of Archaeology*, 2(3), 1999, pp. 313–344.

ELDJÁRN, K. and FRIÐRIKSSON, A. *Kuml og haugfé*: úr heiðnum sið á Íslandi (2nd edition). Reykjavík: Mál og menning, 2000.

GLlØRSTAD, Z. T. "Homeland—Strange Land—New Land. Material and Theoretical Aspects of Defining Norse Identity in the Viking Age." In: SIGURÐSSON, J. and BOLTON, T. (ed.). *Celtic-Norse Relationships in the Irish Sea in the Middle Ages 800–1200*. Leiden: Brill, 2013, pp. 151-170.

GRÄSLUND, A-S. (2003). "From Pagan to Christian - on the Conversion of Scandinavia." In: LEWIS-SIMPSON S. (Ed.). *Vinland revisited, the Norse world at the turn of the first millennium*: selected papers from the Viking Millennium International Symposium, 15-24 September 2000, Newfoundland and Labrador. St. John's, N.L.: Historic Sites Association of Newfoundland and Labrador, 2003, pp. 263-276.

GRÄSLUND, A-S. "The material culture of the Christianisation." In: BRINK, S. and PRICE, N. (dd.). *The Viking World*. London and New York: Routledge, 2012, pp. 639-644.

GRÄSLUND, A-S. "En hund begraven - Hunden från stenålder till medeltid." In: GRÄSLUND, A.-S. and SVANBERG, I. (Ed.). *Från renhållningshjon till modeaccessoar* - 10 000 år av relationer människa–hund i Sverige. Uppsala: Kungl. Gustav Adolfs Akademien för svensk folkkultur, 2014, pp. 31–48.

HADLEY, D. M. "In search of the Vikings: The problems and the possibilities of interdisciplinary approaches." In: GRAHAM-CAMPBELL, J., HALL, R., JESCH, J., and PARSONS, D. (Ed.). *Vikings and the Danelaw*. Oxford: Oxbow Books, 2001, pp. 13-30.

HALSHALL, G. R. W. (2000). "The Viking presence in England? The burial evidence reconsidered." In: HADLEY, D. and RICHARDS, J. (Ed.). *Cultures in Contact*: Scandinavian Settlement in England in the Ninth and Tenth Centuries. Turnhout: Brepols, 2000, pp. 259-76.

HARRISON, S. H. "Càrn A' Barraich, a neglected boat burial from Oronsay." *NARSS Seminar Series*. 5th March 2019. Aberdeen, University of Aberdeen.

HARRISON, S. H. and Ó FLOINN, R. *Viking Graves and Grave-Goods in Ireland*. Dublin: National Museum of Ireland, 2014.

HATTING, T. "Cats from Viking Age Odense." *Journal of Danish Archaeology*, 1990, 9, pp. 179-193.

HILL, E. "Archaeology and Animal Persons: Toward a Prehistory of Human-Animal Relations." *Environment and Society*, 2014, 4(1), pp. 117–136.

IREGREN, E. "Why Animal Bones in Human Graves - an Attempt to Interpret Animals Present in Iron Age Cremations in Sweden." In: SMITS, E., IREGREN, E. and DRUSINI, A. G. (Ed.). *Cremation Studies in Archaeology*. Padova: LOGOS Edizioni, 1997, pp. 9–32.

IREGREN, E. and JENNBERT, K. "Nära kompanjoner i livet och döden." *Hundsport*: Svenska kennelklubbens tidskrift, 2014, 12, pp. 59-64.

JENNBERT, K. "Animal Graves - Dog, Horse and Bear." *Current Swedish Archaeology*, 2003, 11, pp. 139–152.

JENNBERT, K. *Animals and humans*: recurrent symbiosis in archaeology and Old Norse religion. Lund: Nordic Academic Press, 2011.

JENNBERT, K. "Certain humans, certain animals: attitudes in the long term." In: ANDERSSON CEDERHOLM, E., BJÖRCK, A., JENNBERT, K. AND LÖNNGREN, A-S. (Ed.). *Exploring the animal turn: Human-animal relations in science, society and culture*. Lund: Pufendorfinstitutet, 2014, pp. 183-192.

JENSEN, B. "Chronospecificities: Period-Specific Ideas About Animals in Viking Age Scandinavian Culture." *Society & Animals*, 2013, 21, pp. 208-221.

JESCH, J. *The Viking Diaspora*. London: Routledge, 2015.

LEIFSSON, R. "Evolving Traditions: Horse Slaughter as Part of Viking Burial Custom in Iceland." In PLUSKOWSKI, A. (ed.). *The ritual killing and burial of animals* - European Perspectives. Oxford: Oxbow Books, 2012, pp. 184–194.

LEIFSSON, R. *Ritual Animal Killing and Burial Customs in Viking Age Iceland*. Unpublished PhD thesis, University of Iceland, 2018.

LOUMAND, U. "The horse and its role in Icelandic burial practices, mythology and society." In: ANDRÉN, A. and RAUDVERE, C. (Ed.). *Old Norse religion in long-term perspectives*: origins, changes, and interactions. Lund: Nordic Academic Press, 2006, pp. 130-134.

MAGNELL, O. "The taphonomy of ritual bone depositions. An approach to the study of animal bones and ritual practice with an example from Viking Age Frösö, Sweden." In: EKROTH, G. and WALLENSTEN, J. (Ed.). *Bones, behaviour and belief* - The zooarchaeological evidence as a source for ritual practice in ancient Greece and beyond. Stockholm: ECSI, 2013, pp. 115-127.

MALDONADO, A. "What does early Christianity look like? Mortuary archaeology and conversion in Late Iron Age Scotland." *Scottish Archaeological Journal*, 2011, 33(1/2), pp. 39-54.

MANSRUD, A. "Flytende identiteter? Dyrebein i graver og førkristne personoppfatninger." In: ØSTIGÅRD, T. (Ed.). *Lik og ulik*. Tilnæmninger til variasjon i gravskikk. Bergen: Universitetet i Bergen, 2006, pp. 133-159.

MCGUIRE, E. L. H. *Manifestations of identity in burial*: Evidence from Viking-Age graves in the North Atlantic diaspora. Unpublished PhD Thesis, University of Glasgow, 2009.

MCGUIRE, E. L. H. "Sailing Home: Boat-graves, migrant identities and funerary practices on the Viking Frontier." In: ANDERSON, E., MADDRELL, A, MCLOUGHLIN, K. and VINCENT, A. (Ed.). *Memory, Mourning and Landscape*. Amsterdam: Rodopi, 2010, pp. 165-187.

MCGUIRE, E. L. H. "Move Along: Migrant Identities in Scandinavian Scotland." In PIERCE, E., RUSSELL, A., MALDONADO, A. and CAMPBELL, L. (Ed.). Creating Material Worlds: The Uses of Identity in Archaeology. Oxford: Oxbow Books, 2016, pp. 63-85.

MORRIS, C. D. "Christian Viking in the North Atlantic Region." In: LEWIS-SIMPSON, S. (ed.). *Vinland revisited, the Norse world at the turn of the first millennium*: selected papers from the Viking Millennium International Symposium, 15-24 September 2000, Newfoundland and Labrador. St. John's, N.L.: Historic Sites Association of Newfoundland and Labrador, 2003, pp. 305-318.

MORRIS, J. *Investigating animal burials*: ritual, mundane and beyond. Oxford: Archaeopress. 2011.

OMA, K. A. "Between trust and domination: social contracts between humans and animals." *World Archaeology*, 2010, 42:2, pp. 175-187.

OWEN, O. and DALLAND, M. *Scar*: a Viking boat burial on Sanday, Orkney. East Linton: Tuckwell Press in association with Historic Scotland, 1999.

PEDERSEN, A. "Ancient mounds for new graves - an aspect of Viking-age burial customs in southern Scandinavia." In: ANDRÉN, A. and RAUDVERE, C. (Ed.). *Old Norse religion in long-term perspectives*: origins, changes, and interactions. Lund: Nordic Academic Press, 2006, pp. 346-353.

PEDERSEN, H. "Knowledge production in the "animal turn": multiplying the image of thought, empathy, and justice." In: ANDERSSON CEDERHOLM, E., BJÖRCK, A., JENNBERT, K. and LÖNNGREN, A-S. (Ed.) *Exploring the Animal Turn*: Human-animal relations in Science, Society and Culture. Lund: Pufendorfinstitutet, 2014, pp. 13-18.

PRICE, N. "Passing into poetry: Viking-Age mortuary drama and the origins of Norse mythology." *Medieval Archaeology*, 2010, 54, pp. 123-156.

PRICE, N. "Dying and the Dead: Viking Age mortuary behaviour." In: BRINK, S. and PRICE, N. (Ed.). *The Viking World*. London and New York: Routledge, 2012, pp. 257-273.

PRUMMEL, W. "Early medieval dog burials among the Germanic tribes." *Helinium*, 1992, XXXII, pp. 132-194.

RUSSELL, N. *Social Zooarchaeology*: Humans and Animals in Prehistory. Cambridge: Cambridge University Press, 2011.

STEN, S. "Sacrificed animals in Swedish Late Iron Age monumental mound burials." In: EKROTH, G. and WALLENSTEN, J. (Ed.). *Bones, behaviour and belief*. The zooarchaeological evidence as a source for ritual practice in ancient Greece and beyond. Stockholm: ECSI, 2013, pp. 223-231.

STEN, S. and VETREMARK, M. "Storgravsprojektet: osteologiska analyser av yngre järnålderns benrika brandgravar." *Fornvännen*, 1988, 3, pp. 145-156.

THOMAS, J. "The future of archaeological theory." *Antiquity*, 89(348), 2015, pp. 1287–1296.

THÄTE, E. S. "Barrows, Roads and Ridges — Or Where to Bury the Dead? The Choice of Burial Grounds in Late Iron Age Scandinavia." In: SAYER, D. and WILLIAMS, H. (Ed.). *Mortuary Practices and Social Identities in the Middle Ages*: Essays in Burial Archaeology in Honour of Heinrich Härke. Exeter: University of Exeter Press, 2009, pp. 104–122.

ZACHRISSON, T. "Att vara katt i järnålderns Sverige - katten i foerkristen tid." *Svanslöst* - Medlemstidning för Sällskapet Pelle Svanslös Vänner i Uppsala, 2016, (2), p. 2.