Sailing to the Afterlife
Boat-Burials in Iceland and Scotland

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Abstract

This paper compares Viking Age boat-burials in Iceland and Scotland. The aim is to show whether the custom can be considered the same in both regions, or whether each has its own characteristics. The basic issue of identifying boat-burials is dealt with. A total of seventeen sites are considered in the analysis, that is, ten in Iceland and seven in Scotland. However, only fifteen were found to provide enough information to be securely identified as boat-burials. From these fifteen sites seventeen boat-burials are included in the analysis. The analysis compares size, frequency of discovery, number of human occupants, animal remains and grave-goods from the boat-burials. Despite the fact that the burials from these regions are for the most part very similar to their counterparts, they do show signs of distinct regional characteristics.
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1. Introduction

A Boat-burial, or “bátkumlí” as it is known as in Icelandic, is an interesting burial custom that was practised widely in the Viking world. The Norse buried people from different walks of life in boat graves, though most were reserved for those of high status. Boat-burials are most prominent in Scandinavia (Müller-Wille, 1974) but examples of the practice are found outside Scandinavia in the British Isles, Russia, and even here in Iceland. The evidence for this practice is not only archaeological. A contemporary eye-witness account has survived in Ibn Fadlan’s description of a Scandinavian boat-burial on the Volga river (Montgomery, 2000). His description may be exaggerated for religious reasons but there is consensus that what he witnessed was at least some sort of boat-burial. There is also the story of Baldr’s funeral. When he died the other gods put him to rest in his ship Hringhorni (Sturluson & Faulkes, 1995, p. 49). Boat-burials are generally viewed as being characteristic of Late Iron Age burial customs in Scandinavia and the Viking Age Scandinavian settlements, however, the custom is also found in Anglo-Saxon England (Müller-Wille, 1974) – where Snape and Sutton Hoo are the most prominent examples (Filmer-Sankey & Pestell, 2001; Carver, 1998) – and in different cultures at different times around the world, in Ancient Egypt for example (Ward, 2006).

Viking Age ship burials are best known from the great finds in Scandinavia, like Oseberg or Gokstad in Norway, and Vendel or Valsgärde in Sweden (Müller-Wille, 1974, p. 193). These burial sites are however only the tip of the iceberg of a widespread and usually more modest rite custom commonly practiced all over the Viking world. This paper will compare and contrast the boat-burial tradition as practiced in Viking Age Scotland and Iceland. Both were immigrant communities of Norsemen in 9th and 10th centuries (Jón Viðar Sigurðsson, 2008, p. 571; Barrett, 2008, p. 411) and it is therefore interesting to look in more detail at both the prevalence and specific form of the boat-burials in these two regions, to shed light on and identify differences in the development of burial traditions in new societies.
1.1. Aims

All boat-burials share a basic characteristic: they include a boat. At first sight boat-burials appear to have the same variation as non-boat-burials: one or more individuals, variable numbers of grave-goods of different types and quality, with remains that might be cremated or not. Can a boat be considered simply as one of the grave-goods or is there more to it? The emphasis will be put on defining the characteristics of the Icelandic burials and comparing them to the burials from Scotland. How many boat-burials are in each region and what is their proportion in relation to all types of burials practiced there? Do they share similar traits? What types of grave-goods do they contain? What is the size and structure of the boats, are they similar? The aim is to build a secure evidence base and identify the features that seem to be meaningful in terms of reconstructing the tradition and possible variations to it. In order to achieve this, the first task is to establish which burials can be securely identified as boat-burials. Often the remains of a boat are unequivocal but in several cases, especially those represented only by antiquarian reports, the evidence is difficult to judge. The paper begins by considering the Icelandic evidence, which is easier to tackle due to the presence of a comprehensive catalogue of all Viking Age burials, where the problem of identifying boat-burials from that corpus has already been considered by previous scholars. This provides a framework against which the paper will compare the patchier Scottish material.
2. Bátkuml / Boat-burial

Viking Age burials occur both as cremations and inhumations. Cremation was the most common form of burial in Norway and parts of Sweden. Cremated remains were either placed into pits or put into some type of vessel (e.g. bag, urn) or even spread over the ground. In inhumations the body was either placed directly into the ground, or placed inside a coffin, chamber or even a boat. As in Denmark, inhumation was the rule in Iceland and Scotland and Scottish and Icelandic boat-burials are therefore always also inhumations. Boat-burial was however rare in Denmark (Müller-Wille, 1974, p. 197).

In the Viking era, the practice of burying the dead in boats or even ships is well known. The ship was not always a grand or large vessel, in fact, smaller boats are more common and this has been noted to have been generally the case in Iceland (Kristján Eldjárn, 2016, pp. 275-282).

Boat-burial was practiced in Scandinavia since the earliest period of the Iron Age. The idea behind this tradition is often believed to be that the boat served as a vessel to carry the dead to the afterlife or that there would be a need for the boat in the next world (Richards, 2005, p. 22). In Scandinavia, stone structures were sometimes erected that resembled boats, and the builders might have believed that this allowed them to sail to the afterlife without receiving a traditional boat-burial (Richards, 2005, p. 22).

In 1974, Michael Müller-Wille noted that at least 300 cemeteries containing some 420 boat-graves had been found in northern and north-western Europe (Müller-Wille, 1974, p. 187). These numbers have without doubt increased since then but to date a similarly comprehensive survey has yet to be carried out. A closer look will now be taken at boat-burials from Iceland and Scotland.

3. Icelandic boat-burials

Most Icelandic boat-burials are only identified by rivets, as is the case with many boat-graves found around the world. Rivets are metal pins that are used to fasten two or more plates or pieces together, these being wooden planks in the case of boats (Müller-Wille, 1974, p. 187). These rivets are often similar to the ones used today; their form and use has not changed much over time. In 1890, Gustafson argued that the rivets found in graves must come from boats, irrespective of what type of burial they are found in, whether inhumations or cremations (Gustafson, 1890). To Kristján Eldjárn, however,
this was not the only explanation, since rivets can be used for many other things, such as shields and coffins, that could explain their presence in non-boat-burials. In his *Kuml og haugfé*, originally published in 1956, he discussed the boat-burials found in Iceland at length (Kristján Eldjárn, 2016, pp. 275 - 282). He dealt with the problem of identification given that the number of boat-burials is not certain. In fact, many of the early reports are not very reliable, the graves were often dug in haste, found during modern construction work and the archaeological work sometimes targeted only the skeletal remains, potentially missing surrounding features.

The debate often revolves around whether the presence of rivets truly indicates a boat in a grave or just some objects with rivets in them, like coffins. This debate is quite prevalent in Iceland in cases when rivets are the only indication of a boat-burial. In 1956, Eldjárn counted at least four and possibly six boat-burials that had been found in Iceland at that time. Five new burials were discovered after Eldjárn’s publication, bringing the total to eleven, with the possible addition of two more that still have yet to be fully excavated (Kristján Eldjárn, 2016, pp. 275 - 282; 497 - 499). The most debated possible boat-burials in Iceland are Laugarbrekka and Hafurbjarnarstaðir. Both have been described as a boat-burial whereas some claim the opposite, and where Glaumbær is also considered an arguable candidate although more frequently accepted. The other sites all have unequivocal boat-burials where the shape of the boat has been preserved and recorded. The boat-burials mentioned in *Kuml og Haugfé* and these new finds will now be discussed in detail. The survey begins with the unequivocal burials, listed in chronological order of discovery (chs. 3.1 – 3.7), and ends with the more problematic identifications (chs, 3.8).

![Figure 1: Image showing the location of both known and debatable boat-burials in Iceland](image-url)
3.1. Dalvík (Brimnes), Svarfaðardalshreppur

The boat-burial found at Brimnes, in the modern town of Dalvík, was the first unequivocal boat-burial excavated in Iceland. A Viking Age cemetery, situated on the coastline, was excavated there by Daniel Bruun and Finnur Jónsson in 1909 (Kristján Eldjárn, 2016, p. 163; Bruun & Finnur Jónsson, 1910). A total of fourteen burials were found at the site including one boat-burial, named Burial 4. The reports and images provided by Bruun and Jónsson are considered quite detailed for that time (Kristján Eldjárn, 2016, p. 163; Bruun & Finnur Jónsson, 1910).

Burial 4 measured 7 meters long, 1.5 meters wide and 50 centimetres deep. The grave had been dug in the shape of a boat and had preserved some of the remains of the wood used to build the boat. The prow of the boat was directed towards the northeast, indicating a northeast-southwest alignment of the boat. A number of small rocks had been placed in the stern of the boat and around it. The size of the boat was also evidenced by rows of rivets - a total of 52 whole rivets and 70 iron fragments. Although wood was preserved it was only in small pieces, scattered around the grave. Based on its size, the boat is speculated to have been a six-oared boat (Kristján Eldjárn, 2016, pp. 166 - 167).

The skeletal remains found inside the boat had been placed at the aft, but the remains were so badly preserved that not much could be said about the orientation of the body. Bruun and Jónsson believed however that the body was buried sitting up against the stern of the boat, since the remains of the skull were found against the bulwarks of the boat whereas the rest was at the bottom of the boat. They also noted that the remains were of an adolescent but a proper determination of sex could not be made (Kristján Eldjárn, 2016, p. 166; Bruun & Finnur Jónsson, 1910, bls. 76-80). Laying at the feet were bones of a dog and at the prow a horse skeleton was discovered. With the horse remains there was a buckle. Nothing else was found in the boat, and is
it likely that this grave had been disturbed in antiquity (Kristján Eldjárn, 2016, p. 167). It cannot be said with certainty whether objects had been removed from burial but it does not seem unlikely since almost nothing was found there, not even everyday household items.

3.2. Dalvík (Böggvisstaðir), Svarfaðardalshreppur

Another boat-burial was found in 1937, not far away from the boat-burial at Brimnes, in the adjacent property of Böggvisstaðir, situated some three hundred meters south of the Brimnes cemetery. This burial was also located on the coastline. The burial was discovered during trench digging for a water pipeline which resulted in a part of the burial being cut through before excavation could begin. The burial was excavated by Matthías Próðarson in the summer of 1937 and was the only one excavated, although four or five burials are believed to be in the area, in contrast to the large Brimnes cemetery close by (Kristján Eldjárn, 2016, p. 162).

The burial was marked by two piles of stones found at each end of the burial. When these piles were removed it became apparent that this had been a boat-burial. A circa 1-meter wide band of lightly-mixed soil stretched between the two forming a point at each end, in the shape of a boat. The fact that this was a boat-burial was made even more apparent by the presence of rivets and remains of nails found scattered throughout the burial. The boat measured 6.45 meters in length and 1.15 meters in width, but no measurements of the depth were recorded. The alignment of this burial was the same as at Brimnes (northeast-southwest) with what was believed to be the prow pointing towards the northeast. Most of the rivets were in the south end of the boat, the part that was covered by a pile of rocks and was undamaged by the trench. Along with the rivets found in the south end there were also wood remains seen as dark streaks in the soil. A total of 27 whole rivets were found and around 100 iron fragments (Kristján Eldjárn, 2016, p. 163). This is similar to the Brimnes boat, with fewer whole rivets but almost the exact same number of total finds (122 for Brimnes and 127 for Böggvisstaðir). The number of discoveries and the comparable size is a good indicator that these boats might have been quite similar.

No human remains were found in the boat, but some pieces of a horse skeleton were found in the north end, with the skull in the prow. Nothing else was found in the grave but a piece of iron was said to resemble a part of a sword blade with a wooden
The grave seemed to have been disturbed in antiquity, with only the horse left undisturbed (Kristján Eldjárn, 2016, p. 163). The possibility of disturbance was suggested by the position of the stone piles. One covered the southern end of the boat while the other was beside the opposite end. If a body was originally buried in the boat and then removed, the stones at the northern end would have had to be moved in order to open the grave.

3.3. Kaldárhöfði, Grímsneshreppur

Kaldárhöfði is the first Icelandic boat-burial associated with a rich archaeological assemblage, and was excavated in 1946 by Kristján Eldjárn (Kristján Eldjárn, 1948, pp. 25 - 44). The boat-burial was discovered at the shores of Lake Úlfljótsvatn and was made possible by rising water levels, creating an islet that was then exposed to erosion and eventually noticed by a mindful fisherman. The grave was marked by a very low-lying mound of stones. The mound had grown smaller but the excavator estimated that it had not been higher than one meter. It is also worth noting that this burial is one of only two known boat-burials found inland in Iceland, all the others being located either on the sea shore or at least close to it (the location of burials can be seen in Figure 1 above. The other burial shown is Glaumbær, described below). The grave was so close to the bank of the lake that when excavation began the water flowed into the burial and caused some damage. The flooding caused rocks to fall on the westernmost part of the grave which damaged some artefacts, while others might even have washed away in the process (Kristján Eldjárn, 2016, pp. 87 - 88).

Almost no skeletal remains were found. Based on the weaponry disclosed in the grave, the location of artefacts, a few fragments of bone and black streaks in the soil that resembled a foot, Eldjárn inferred that the grave could have included a male adult. Two canines from a child (7-8 years of age) were also found by the bank of the lake. Using this information, Eldjárn concluded that the grave had kept two individuals, one child and one adult male, where the adult male was buried on his back with the head facing the western end. Since the water had washed over the western part of the grave, Eldjárn thought it likely that the teeth of the adult had been washed away (Kristján Eldjárn, 2016, pp. 88 - 89). At the time this was probably a very reasonable conclusion but today we would most likely consider these observations as incomplete data. Based on this evidence, the number of occupants in the grave could be considered unknown.
though given the placement of artefacts it is safe to assume that at least one is present. Eldjárn’s reasoning for the absence of skeletal remains however seems very likely, namely, that they had been completely eroded by the soil (Kristján Eldjárn, 2016, p. 89).

The burial at Kaldárhöfði is not only distinguished from the other burials by the fact that it was found inland, it is also the only burial where the skeletal remains are not placed inside the boat. Moreover, the boat at Kaldárhöfði is buried next to the bodies as any other artefact would be, which might relate to the boat’s small size, measuring only 2.80 meters in length and 80 centimetres in width. The boat was on the north side of the supposed skeletal remains and was identified by 80 to 90 fragments of iron, with attached remains of wood. Nothing is left of the boat other than the pattern marked by these fragments.

The boat was however not the only artefact found in this burial. A large assemblage of grave-goods lay between the boat and the supposed skeletal remains. These included several weapons and some everyday items. The number of weapons is also a factor used to argue that the grave had held more than one person (Kristján Eldjárn, 2016, pp. 89 - 91). The artefacts found were: a sword, two spear-heads, five arrowheads and the remains of the sixth, two axes, a belt buckle, strap-end, silver wire, two jasper fragments, a shield-boss, fragments of a second shield-boss, a fish hook, an iron hook, a lead sinker, two knives, two flint fragments, iron fragments and textile fragments (Kristján Eldjárn, 2016, p. 590). Some of these artefacts will now be described in some detail following Eldjárn (Kristján Eldjárn, 2016, pp. 89 - 91):

The sword that is one of the best-preserved in Iceland. Eldjárn considered it to have been on the right side of the adult male, aimed down from the waist.

One spear-head was likely on the right side of the man, by his feet, with the point facing downwards. Remains of a shaft were visible in the soil.

Arrowheads, five whole and a piece of the sixth. Two of which cling together, associated with visible remains of leather, likely from a quiver.

An axe, now broken because of the water and falling rocks.

A belt buckle made from bronze. The accompanying strap-end had remains of leather. The man was likely wearing a leather belt. The buckle was found where the man’s waist would have been, according to Eldjárn’s reconstruction.

Two shield-bosses, one whole and one fragmented. The whole boss was located outside the east end of the boat, as if resting against its side.
Another spear and axe. These two are smaller than the other weapons and might have belonged to the child if this was in fact a double burial, as is indicated by the two sets of weapons. Both the axe and the spear were found north of the boat. The spear looks to have been slipped under the side of the boat.

This find is among the most impressive in Iceland, and may be the most significant boat-burial with regard to the extent of grave-goods. There is a clear distinction between the Dalvík burials on the one hand and Kaldárhöfði on the other in terms of the grave-goods. It could be imagined that if not disturbed, the Brimnes and Böggvisstaðir boat-burials would have been proven equally spectacular. Considering the location and size of the boat it seems it was a fishing boat used on the lake nearby.

Since Eldjárn’s theories on the number of individuals is strengthened by the artefacts and it being the only interpretation, the burial will be included as a double burial.

3.4. Vatnsdalur, Patreksfjörður

The word that might best describe the Vatnsdalur find is disarray. The burial was discovered when a potato-field was being prepared in a sand dune 4-500 meters from the old homestead. A bulldozer commissioned to straighten out the dune had encountered a pile of stones and while trying to remove them the driver noticed bone fragments in the trail left by the machine that appeared to be human. Looking at the area afterwards the locals saw clear signs that something had been buried there (Þór Magnússon, 1966, p. 5).
When archaeologists Þór Magnússon and Gísli Gestsson arrived at the scene, the first thing they needed to do was collect all the bone fragments and artefacts scattered on the surface. Looking at the bones it was quite apparent that these were human remains, even though some had been crushed. The bones found were mostly vertebrae, ribs and long bones. They did not only find bones, however, a scatter of rivets was also found over the whole area, suggesting that this could be a boat-burial. When excavation of the burial itself began, a second level of disarray became apparent. The skeletal remains found inside the grave were widely scattered and could not be matched to one another until they had all been collected and brought to a specialist. It was however clear that these bones belonged to more than one person. At first, the shattered state of the human remains was believed to have been caused by the bulldozer but further investigation revealed that the burial had been disturbed in antiquity (Þór Magnússon, 1966, p. 8).

The only remains of the boat were the rivets. They had been moved out of place at the east end of the burial by the bulldozer but at the west end they were still in place. Judging from their placement and some marks left by decomposing wood visible in the soil, the boat was estimated to have been 6 meters long and 95 centimeters wide. The burial was aligned east to west with the prow seemingly pointing west (Þór Magnússon, 1966, p. 10; 15). No definite number of rivets is mentioned in Þór Magnússon’s report, but according to Sarpur, the database of Þjóðminjasafn Íslands, there are in total 480 rivets and fragments preserved from the site (Þór Magnússon, 1966; Kristján Eldjárn, 2016, pp. 115 - 118; Rónagli, Vatnsdalur, n.d.).

Analysis of the skeletal remains showed that seven individuals had been buried in the boat, three female and four male, and even one dog (Jón Steffensen, 1966). This is quite different from the usual one or two found in boat-burials, in relation to which Magnússon argued that the additional corpses had been moved there at a later date. Magnússon believed that originally only one female had been buried in the boat and then moved to this grave and interred on top of the woman, possibly when other graves in the sand dunes began to become uncovered by wind erosion (Þór Magnússon, 1966, p. 28).

Many artefacts were discovered at the site but not as many as might have been expected from the given number individuals found therein. Which is one of the reasons as to why Magnússon thought that only one individual had been buried there originally. The only items that might indicate an original presence of more than one person are the
three combs found in the grave, which is unusual for a single burial, though not entirely unheard-of (Þór Magnússon, 1966, p. 28). It cannot however be determined which artefact belongs to which individual and no accurate positions of either could be recorded. It is possible that if the bodies had been moved between graves, the artefacts that belonged to each individual would have been left behind at the original burial site or reclaimed. Moreover, most of the artefacts found in the boat are of types frequently associated with female burials. The artefacts found were: thirty beads, a Thor’s hammer of silver, a copper-alloy bell, fragment of a Cufic coin, a pendant, a copper-alloy chain, a copper-alloy pin, a small piece of lead with an inlaid cross, two arm-rings, a finger-ring, two combs, a fragment of a third and fragments of a comb-case, fourteen lead weights, a small wooden pin, a knife, a perforated white pebble, a round perforated piece of bone and fragments of copper alloy and iron (Kristján Eldjárn, 2016, pp. 116 - 118). Two whalebone pieces were also discovered that are believed to have been nailed to the bulwark of the boat. These two pieces are considered quite strange and are not usual for Viking Age boats. Magnússon believed they would have been used to shield the bulwark from fishing lines, since they have grooves likely caused by rope or string (Þór Magnússon, 1966, p. 16).

3.5. Litlu-Núpar, Aðaldælahreppur

Figure 4: An image of the boat-burial at Litlu-Núpar during excavation (Adolf Friðriksson et al., 2007, p. 1)

The first boat-burial found in recent times (after 2000) was discovered at Litlu-Núpar in Aðaldalur. A burial was first discovered at this site in 1915 but some 89 years later, in 2004, the site was revisited and two further burials were discovered, establishing the
The cemetery was the subject of excavation and research from 2004-2010 (Adolf Friðriksson et al., 2007, p. 6). The boat-burial was discovered in 2007. The burial was 7 meters in length, 1.8 meters in width and 60 centimetres in depth, with the boat likely being slightly smaller (6.5x1.15x0.45). Most remains had disintegrated and very few actual wood remains were reclaimed. The grave had been dug facing northwest-southeast in what was clearly the shape of a boat, with rivets stretching in rows clearly indicating a boat-burial. A total of 223 iron nails and rivets were found. Because this is quite a recent find, the location of the rivets are recorded in much more detail than the burials mentioned above. The rivets were aligned in rows from keel to rim, and from stern to prow (Adolf Friðriksson et al., 2007, p. 9). The boat is almost exactly the same size as the Brimnes boat and is also believed to have been six-oared (Adolf Friðriksson et al., 2007, p. 9).

The burial had been disturbed in antiquity. This was most visible in the northern central area where none of the artefacts are believed to have been found in situ. The partial remains of three individuals were found in the boat, two males and one female. Their original position within the grave could not be seen but they are believed to have been buried side by side with their heads toward the northern end of the boat. Since the grave had been disturbed it is possible that it originally contained more artefacts. The only artefacts that remained were a bead made of jet or lignite and a small hexagonal copper alloy bell. The bell was broken and decorated with ring-and-dot motives and is of the same sort as the bell from Vatnsdalur, mentioned above (Roberts & Elín Ósk Hreiðarsdóttir, 2013, pp. 115 - 120).

Graves with both horses and dogs were found adjacent to the boat-burial. Given that that horse and dog graves often accompany or are part of human burials of this kind, it was speculated that these graves belonged with the boat-burial. Also, post holes were found both by the boat-burial and another burial at the site, thought to indicate some sort of structure over the burials (Roberts & Elín Ósk Hreiðarsdóttir, 2013, p. 126).

3.6. Hringsdalur, Ketildalahreppur

The boat-burial at Hringsdalur came to light in 2008 at a burial ground that was originally discovered in 2006 when human bones and artefacts were exposed by the wind erosion of a sand dune. Yearly excavations were carried out from 2007 to 2011,
and the boat-burial was the last of four graves investigated at this site (Adolf Friðriksson et al., 2015, pp. 5 - 6).

When excavation of the fourth burial began it quickly became apparent that it was a boat-burial. The first indication of this was the presence of stones that formed a sort of pavement that was aligned northwest-southeast, resembling the shape of a boat, narrow at the ends. Under these stones was a fill of mixed soil. Rivets where found in this fill and below it, confirming that this was in fact a boat-burial. The cut for the boat measured 4.3 meters long, 60 centimetres wide and 20 centimetres deep. However, it is likely that these dimensions only reflect the lower part of a larger vessel. The main reasoning behind the larger vessel theory is the sheer number of rivets found in the burial, totalling 500 iron fragments. Not all of the fragments are rivets but rather a mixture of nails, nuts and fragments. No remains of wood were discovered but the shape of the cut and the number and distribution of rivets is consistent with a boat-burial (Adolf Friðriksson et al., 2015, p. 9).

In addition, the remains of a single adult male were found in the boat. The burial is believed to have been disturbed in antiquity but parts of the skeleton appeared to be in their original position, suggesting that the body had been placed in the right side of the boat possibly with the head facing the southeast end. Not much else was found in the burial, the only remaining grave-good being an iron knife, with a copper alloy decoration, found beneath the right arm of the body. The lack of artefacts is also an indicator that this burial was disturbed in antiquity (Adolf Friðriksson et al., 2015, p. 10).
3.7. Dysnes, Arnarneshreppur

Dysnes is the most recent boat-burial site in Iceland and the only cemetery with two boats in such close proximity – at Dalvík (Brimnes and Böggvisstaðir, mentioned above) there are more than 300 m between the boats. Excavation at Dysnes began in the summer of 2017 so the project is still in the research stage, the final report expected to be published in the summer of 2018. However, preliminary reports have been published and a summary article (Roberts et al., 2018; Hildur Gestsdóttir et al., 2017), which give a detailed description of what was found at the site, but final interpretations are pending.

The Dysnes cemetery is located right on the sea shore, and had been partly damaged by coastal erosion. Both boat-burials are on the edge of the shore and had been truncated by the sea. In one of the burials, *Kuml 116*, the boat was 6.5 meters long and 1.7 meters wide, which is a very similar size to at least two if not more boats mentioned above. The boat was relatively well preserved compared to other boat-burials found in Iceland. Wood remains showed the position of both planks and battens and the rivets were ordered in regular rows on both sides of the grave. The burial was aligned NNE-SSW and included the remains of a single individual, an adult male. A total of 400 rivets were found, many of them with wood attached. The male individual was not the only occupant of the grave, the skull of a dog and vertebrae from a horse were also found in the filling. It is not certain if they were originally part of this burial, since it had signs of being disturbed in antiquity. A shield-boss and an iron knife are amongst the finds, but the reports state that there are more artefacts which are still under analysis (Roberts et al., 2018, p. 8; Hildur Gestsdóttir et al., 2017, p. 97).

The other boat-burial was only three meters from the first one. This burial, or *Kuml 124*, was even closer to the sea bank and the whole eastern side of it had fallen into the sea. Because the eastern part of the boat was missing its width could not be determined but it is believed to have been around 6 meters long. The *Kuml 124* boat had the same alignment as the other boat-burial (NNE-SSW) and the same number of rivets, 400, though they were not as neatly distributed as in *Kuml 116*. These rivets also had wood attachments which however were not entirely consistent with the boat, especially the smaller ones, possibly indicating that they belonged to artefacts other than the boat. This burial also included the remains of a single individual, likely an
adult male, and one rib from a small mammal, possibly a dog (Roberts et al., 2018, pp. 9 - 10; Hildur Gestsdóttir et al., 2017, pp. 97 - 100).

Further artefacts are noted in *Kuml 124*. Among other things, the artefacts include a sword, a shield-boss, a spear-head, another possible spear-head and a single green glass bead. The sword was block-lifted since it was fragmented and other smaller artefacts might therefore also be included in the block (Roberts et al., 2018, pp. 9 - 10; Hildur Gestsdóttir et al., 2017, p. 100). All abovementioned information derives from a preliminary report meaning that more artefacts and information will in all likelihood be revealed in the final Dysnes report.

### 3.8. Debatable

Some researchers believe that the presence of great numbers of rivets in a burial is almost always a sign of a boat (Gustafson, 1890). Nevertheless, the presence of rivets has often been observed in graves that are clearly not boat-burials. Rivets were used for items other than boats, such as shields and even coffins. If rivets are the only indication of a possible boat-burial this evidence should be taken with a grain of salt. This is the case for three of the Icelandic graves that are sometimes but not inarguably considered among boat-burials.

#### 3.8.1. Glaumbær, Reykjadalur

One Icelandic burial that is not universally accepted as a boat-burial was found at Glaumbær. The site was discovered during road construction in 1915. At the site, antiquarian Matthías Þórðarson found six burials, but only two of them included human remains. The second burial discovered at the site was believed to have kept a male adult buried with his dog. The burial was 4 meters in length and 70 centimetres wide, which are unusual dimensions for a burial. In the bottom of the burial a 5.5-meter groove was visible in the soil, which might have been made by the keel of a small boat. The burial was all out of order and the artefacts had been scattered widely. The skeletal remains were in the northern end and a total of 25 rivets were found scattered all over the grave. The presence of these rivets, and their location, paired with the impression found at the bottom is what informs the argument that this was in fact a boat-burial. Not much else was found in this grave. The grave-goods include: dog bones, a spear-head fragment,
three iron fragments (which might be from a sword as they all fit together) and fragments of wood (Kristján Eldjárn, 2016, p. 205).

The first burial found at the site contained a horse and is believed to be connected to the boat-burial. This is due to its close proximity (2-3 meters) and a 2.5-meter long depression found between them. This depression included wood remains and has been suggested to have held the remains of an oar (Kristján Eldjárn, 2016, p. 205; 281).

This is the other boat-burial located quite far inland (See figure 1 above). Despite the fact that Litlu-Núpar is not directly at the shoreline it is quite closer than the two discussed above, but unlike Kaldárhöfði the Glaumbaer burial, is not on a freshwater lake either. There is however a fishing lake nearly 4 km north of the site (Kristján Eldjárn, 2016, p. 281).

Kristján Eldjárn suggested that the rivets could have come from a coffin, and a shield has also been mentioned as a possibility. Without a shield-boss however this theory is considered unlikely (Kristján Eldjárn, 2016, pp. 280 - 281). As the small number of rivets can be explained with reference to the haphazard nature of the excavation (Kristján Eldjárn, 2016, p. 280), and given that the dimensions of the grave and the groove are difficult to reconcile with other possibilities, Glaumbaer is most often listed among the Icelandic boat-burials (Müller-Wille, 1974, p. 204; Kristján Eldjárn, 2016, pp. 280 - 281). This consensus will be followed here.

3.8.2. Hafurbjarnarstaðir, Miðneshreppur

The second debatable find is from the well-known cemetery at Hafurbjarnarstaðir. It was originally excavated in 1868 by Ólafur Sveinsson, after some burials had been exposed by erosion earlier in 1828 and again in 1868. Later, in 1947, the site was fully excavated by Jón Steffensen and Kristján Eldjárn. The grave that was believed to have been a boat-burial was unaffected by these blowouts, and was successfully excavated in 1868. The burial was 4.4 meters in length and 1.25 meters in width, aligned east to west. At the west end of the burial, the remains of two individuals were found, one adult male and a teenager of unknown sex. The bodies were aligned with their heads pointing west. There were also the remains of a horse in the burial, at the east end, and a dog resting close to the skeletons (Kristján Eldjárn, 2016, p. 96). Only four whole rivets were restored from the burial but the excavation report indicates that some rust particles
and pieces of rivets were also found. These items were either not kept or could not be recovered, since they did not make their way to the national museum (Kristján Eldjár, 2016, p. 277). Some artefacts were found in the burial, including: a spear-head, a bridle-bit, a sword, a shield-boss, a comb and a comb-case, a whetstone, an axe, a buckle and an iron cauldron (Kristján Eldjár, 2016, p. 96).

The very small number of rivets recovered from the site is the main reason for scepticism about its status as a boat-burial. The size of the burial, coupled with one researcher’s claim that the burial was pointy (“oddmyndað”) at both ends, could however be consistent with a small boat (Kristján Eldjár, 2016, p. 97). A boat of this size is not unimaginable considering the Kaldárhöfði find (Kristján Eldjár, 2016, pp. 87 - 91). It is safe to assume that if more rivets or fragments would have been found and recovered that this burial could have been considered a boat-burial with fair confidence, but with so little information this claim cannot be confirmed. However, judging from the evidence presented above it will be considered a boat-burial.

### 3.8.3. Laugarbrekka, Breiðvíkurhreppur

The third debatable boat-burial was uncovered in 1794. The excavation was carried out by the local parish priest. He had originally noticed 24 small mounds in 1793. The priest provides no description of this dig until in 1817, when he sent a report to the Antiquities Commission. There he described how he found wood remains, 10–12 rivets and a spear-head. Little else is known about this burial and none of the artefacts have been preserved. The priest even described how he had displayed the items for quite some time at his house and how they had all been lost or destroyed by the time he wrote his report (Kristján Eldjár, 2016, pp. 104 - 106).

Haakon Shetelig identified Laugarbrekka as a boat-burial in his research paper on Icelandic burials (Shetelig, 1937, p. 8), probably due to the boat rivet theory since no boat was found. Daniel Bruun, Kaalund, Finnur Jónsson and Eldjár however, asserted the opposite (Kristján Eldjár, 2016, pp. 275-278; Bruun & Finnur Jónsson, 1910). The Laugarbrekka find is the least documented of all the ones considered here, with the weakest actual evidence supporting an interpretation as a boat-burial. Therefore, this find will not be considered a boat-burial in this study.
Recently, two new possible boat-burials have been discovered in Iceland. They are yet to be excavated and are only known from test trenches that produced large numbers of rivets. These are not definitive boat-burials so they will not be included in this study. One is at Geirastaðir in Mývatnssveit (Kumlabraekka (Kristján Eldjárn, 2016, pp. 498 - 499)) and the other at Syðri-Bakki in Arnarneshreppur (Kumlholt (Kristján Eldjárn,
2016, pp. 497 - 498). It is noteworthy that the second site is on the same property as Dysnes, only 700 meters south of that site.

4. Scottish boat-burials

Due to the nature of documentation in Scotland a definitive number of boat-burials has not been established. Many finds that may have once been boat-burials are only known from antiquarian reports, with no actual artefacts preserved. Less emphasis is put on the number of rivets in the archaeological literature for Scotland unlike in Iceland, the documentation mainly recording their presence. In 1998, James Graham-Campbell and Colleen E. Batey published a survey of Viking Age archaeology in Scotland, describing the principal burial sites known at that time, including boat-burials (Graham-Campbell & Batey, 2001). The survey refers to several sites that may have served as boat-burials but these claims remain uncertain due to insufficient documentation. This study only includes the Scottish boat-burials considered definitive, either by Graham Campbell & Batey, or from more recent finds. Here the unequivocal burials, listed in chronological order of discovery (chs. 4.1 – 4.5) will be first, with two problematic identifications listed at the end (ch. 4.6).

Other locations of possible boat-burials worth mentioning, but not included, are:

Cárn a’Barraich, Ornsay: a burial discovered in 1891 possibly uncovering the burnt remains of a boat or at least part of a boat. The burial would be the only cremation among the boat-burials, but the documentation is too insufficient to include on the list of definite boat-burials (Graham-Campbell & Batey, 2001, pp. 113 - 118; Ornsay, Carn A’ Bharraich, n.d.).

South Mires, Sanday: “Another boat-grave may have been found at South Mires, in the 1790s ... the find is known only from a single reference.” (Graham-Campbell & Batey, 2001, p. 56). The missing documentation and the single reference are not considered sufficient enough in order to identify the site as a boat-burial.

Cnoc nan Gall, Colonsay: rivets, human tooth and a horse’s tooth were discovered in an eroding sand dune at the site in 1902. This site has not been excavated and the only aspects indicating a boat-burial location are the rivets (Graham-Campbell & Batey, 2001, p. 91; Colonsay, Cnoc Nan Gall, n.d.). Documentation for this discovery is insufficient and will therefore not be included.
Huna, Caithness: the site was originally documented in 1935 but more recent surveys of the area seem to suggest this was misidentified as a boat-burial (Batey C. E., 1982; Graham-Campbell & Batey, 2001, p. 68; Huna Hotel, n.d.).

None of these sites are discussed further in the survey of Graham-Campbell & Batey and the insufficient documentation means it is not possible to include them in this analysis.

4.1. Machrins, Colonsay
The second boat-burial discovered at the island of Colonsay, the other being Kiloran Bay (mentioned below), was excavated in 1891 by Sir John M’Neill. Not much information is provided about this burial other than it was disturbed in antiquity, by the burrowing of rabbits or possibly by grave-robbers, and the fact that it was thirty feet long, or 9.14 meters (Graham-Campbell & Batey, 2001, p. 90).

Although little information has survived about the grave itself it did include artefacts: a sword, an axe, a spear, portions of shield-bosses, an iron-handled pan, a plain horse-bit, an amber bead, a penannular brooch of bronze and a bronze pin. There is no mention of human remains but the burial did include a horse (Graham-Campbell & Batey, 2001, p. 90).

Looking at M’Neill’s very short report from 1892 it becomes more apparent how the site came to be considered a boat-burial. Despite their failure to record the evidence, the excavators were clearly in no doubt that what they were excavating was a boat-burial, the observation likely facilitated by its shape and a “free sprinkle” of rivets (M’Neill, 1892, p. 62).

„Continuing the trench northwards, the sand was found to be freely sprinkled with boat-rivets of the characteristic shape, and in the bottom lay a mass of material like mortar or cement, softened by the percolation of rain-water from the surface. This material was familiar to the explorers from former experience, and undoubtedly formed the boat's cooking hearth—portions being found adhering to many of the rivets.“ (M’Neill, 1892, pp. 61-62)
4.2. Westness, Rousay

The first grave discovered in Westness was found in 1963 when a farmer was burying a dead cow. Excavations at the site, directed by Norwegian archaeologist Sigrid Kaland, were carried out between 1968-1984 and revealed 32 graves. The site revealed two actual boat-burials and also some oval-shaped graves that had been lined with slabs possibly to symbolise boats (Graham-Campbell & Batey, 2001, p. 136), which is a practice known in Scandinavia. An unfinished boat-shaped setting was also found at the beach edge, but it was not a burial (Graham-Campbell & Batey, 2001, p. 137). The two boat-burials found at the Westness burial ground were the first to be excavated in Scotland using modern methods.

The Westness burials provide much more detailed information due to the modern excavation methods applied. However, since Kaland never published her reports on the finds, the description must rely on information provided Graham-Campbell & Batey. The burials are discussed as a group in their description but some distinctions are made between each. As is the case in most boat-burials, the wood had completely rotted away but size dimensions could be measured using the rows of rivets. The boats were similar in length, with one measuring 5.5 meters and the other 4.5 meters. Using the rows of rivets, it could be determined that the larger boat had consisted of four strakes and the smaller of three (Graham-Campbell & Batey, 2001, p. 137). They are believed to have been four-oared boats, based on both their size and build, which can be contrasted with the six-oared boats from Brimnes and Litlu-Núpar, (mentioned above) who were both slightly larger.

After the boats had been placed in the ground by digging a hole and stabilized using stones and clay, a burial chamber was constructed by filling both the prow and stern with stones. This placement of stones can also be seen in Böggvisstaðir in Iceland (mentioned above) possibly representing a similar arrangement. Both burial chambers had the remains of adult male skeletons, along with weapons and tools (Graham-Campbell & Batey, 2001, p. 137).

The grave-goods include an assortment of artefacts, and both boat-burials contained very similar items: a sword, a shield, arrows, a whetstone and a strike-a-light found in both boats. One boat also carried a spear, an axe, some farming implements and a fishing weight (Graham-Campbell & Batey, 2001, p. 137). It is clear that these
were very similar burials consistent with the emerging picture of similarities between boat-burials in general.

4.3. Scar, Sanday

The boat-burial discovered at Scar in 1991 is probably best known in all of Scotland. It was discovered when human remains and rivets started eroding out of a sandy cliff. The excavation was very comprehensive and was performed using modern methods similar to the ones applied at Westness a few years earlier. Almost exactly like in Westness, the sequence of events leading up to the burial could be traced thanks to advances in methodology. The boat had been dug in the sand with an east-west alignment, and as is common with these types of burials, the boat had been stabilized by filling in the gaps with stones. A burial chamber was then constructed by filling only the east end of the boat with stones, unlike at Westness, where both ends had been filled. The other end of the boat, the west end, kept the remains of three individuals, an adult male, an adult woman and a child, accompanied by a rich assortment of artefacts. The Scar site offered no indication of a mound construction, instead it might have been covered with planks or even have stood open for some time until it rotted away, similar to the Oseberg burial in Norway, where the mound is believed to have only been half covered over an unknown period of time (Price, 2008, p. 267; Graham-Campbell & Batey, 2001, p. 139). When excavation began, almost half of the boat, parts of both the male and child skeletons, and possibly some artefacts had been lost to the sea (Graham-Campbell & Batey, 2001, pp. 138 - 139).

The boat was 7.15 meters long based on the outline of the rivets and wood fragments. This boat was quite a bit larger than the ones found at Westness and is believed to have had five strakes or possibly six, compared to the three or four of the Westness boats. Based on the size of the boat, it was in all probability six-oared, like the ones found at Brimnes and Litlu-Núpar (Graham-Campbell & Batey, 2001, p. 139).

The man had been buried on his back at the west end of the boat, but his skull and much of his upper body was lost to the sea. At least some of the artefacts originally accompanying the man had survived, including a sword, a quiver of arrows, a set of twenty-two whalebone gaming pieces, a comb, lead scale-weights and possibly a shield (Graham-Campbell & Batey, 2001, p. 139; 140).
The child had also suffered from the erosion, and had been buried on its back next to the woman. The woman had been buried in the part of the boat furthest from the eroding edge but unfortunately an otter had made itself comfortable in the burial chamber. The otter had caused some damage to both the skeletal remains of the woman and her surroundings. It is by the woman that most of the artefacts were recovered. The best known and studied of the artefacts is the whalebone plaque positioned at her feet, leaning against the wall that had been raised at the other end of the boat. This plaque was in remarkably good condition and has become the signature piece of this burial. Other artefacts accompanying the woman had all been placed on her right side. These include a gilt-bronze equal-armed brooch, a sickle, a comb, two spindle-whorls, an iron weaving-sword, shears, a needle-case and a Maplewood box. No artefacts seem to have been buried with the child, but it cannot be ruled out that they had washed away (Graham-Campbell & Batey, 2001, pp. 139 - 140).

4.4. Wick of Aith, Fetlar

Wick of Aith is best known from local legends, where it is believed that a giant or Viking had been buried there in his boat (Graham-Campbell & Batey, 2001, p. 64). The site is thought to have been originally excavated in 1878 and the supposed discovery of iron rivets was the only previously known indication that this had been a boat-burial (Batey, 2016, pp. 39 - 40).

In the 1960s, the site was revisited by a local land owner. He discovered some 40 rivets that further suggested that this was in fact the location of a boat-burial (Batey, 2016, p. 40).

More recently, however, in 2002, the TV show Time Team visited the site and it was fully excavated by the show’s crew under the supervision of Magnar Dalland. Through this process the site was identified as a boat-burial, involving the discovery of 250 rivets and lines of wooden strakes. The artefacts had however been disturbed in previous excavations of the site and the proper length of the vessel is therefore hard to measure. The dimensions are speculated to have been between 6 and 8 meters judging from these finds, but a definitive number cannot be given. Not much was discovered within the boat and the only surviving artefact was an oval brooch. There were no human remains found at the site but the brooch has been used to conjecture that the burial was intended for a female. Due to the amount of missing data, the site was in all
probability disturbed in antiquity. Despite the lack of valuable artefacts recovered from Wick of Aith, it is still considered interesting because of its location, as the only boat-burial discovered in Shetland (Batey, 2016, pp. 40 - 42).

Further information about the site is expected from Batey in the near future and will hopefully shed more light on the project and the burial.

4.5. Ardnamurchan, Swordle Bay

The most recent boat-burial discovery in Scotland was in Ardnamurchan. It is the only intact boat-burial excavated on the Scottish mainland. It was excavated in 2011 after a low-lying mound was recorded as the area was being a surveyed. When excavation began, it quickly became apparent that the site was a possible candidate for a boat-burial. After the mound was opened, archaeologists discovered that the mound had formed naturally but a cut had been made through its centre. The cut revealed a significant amount of both large and small stones, placed in a boat-shaped setting, similar to the Hringsdalur burial. This stone setting was 5.2 meters long and 1.7 meters wide, and was orientated WSW-ENE (Harris et al., 2017, p. 193).

While excavators dug through the stones they discovered a spear-head and shield-boss. These artefacts are located very high up in the burial and were possibly deposited there as the burial was sealed shut. At least one of these items shows signs that lends itself to the definition of “performative elements”, where the spear was broken and then deposited in the grave. There are also signs of damage to the shield-boss but it is uncertain when this occurred (Harris et al., 2017, p. 198).

Beneath the stone setting the remains of a small rowing boat were discovered. 213 whole rivets were all that remained of the boat, all recovered in situ along with a few others that had been disturbed. No wood remained other than pieces attached to the rivets. Using this information, the boat was measured to have been approximately 5.1 meters in length, so slightly shorter than the stone setting (Harris et al., 2017, p. 194).

Numerous artefacts were discovered in the burial. The only human remains consisted of two teeth, the rest probably decayed. An estimation based on the location of the remains sets the head in the boat’s western end (Harris et al., 2017, p. 193). Using this location, all the other artefacts were positioned around the body. The artefacts included:
A large iron ladle by the head in the western end of the boat. The ladle bowl kept a hammer, a pair of tongs and some organic remains.

Various artefacts on and around the body. A single ringed copper-alloy pin located where the neck is believed to have been. A rim of a copper-alloy drinking horn lay on the south side of the head. Centrally in the grave, possibly on the body, a whetstone, a flint strike-a-light and an iron sickle were found.

At the edge of the boat’s north-western side was a sword. The tip was missing and it had been bent into an s-shape. This might indicate intentional damage similar to the spear head found earlier at the site.

A broad-bladed axe was found at the east end, possibly at the feet of the body.

And lastly a “closely packed selection of rivets” was found in the east end. They are believed to have been deposited together and are not part of the boat (Harris et al., 2017, pp. 194 - 198).

4.6. Debatable

Similarly, to Iceland there are quite a few sites that are so poorly recorded that it is unclear if they are in fact boat-burials. A number of such sites have already been listed in the discussion above but two uncertain identifications merit a more detailed discussion.

4.6.1. Kiloran Bay, Colonsay

The burial at Kiloran Bay was discovered in 1882 and was partly excavated the same year by Malcolm M’Neill. The excavation was then completed in 1883 by William Galloway. the remains of an adult male skeleton were found in the first year inside a stone setting along with some artefacts, mainly rivets. Further excavation the following year revealed the remains of a horse and even more rivets. The stone setting around the burial was almost perfectly rectangular according to Galloway’s drawing of the site. However, Graham-Campbell and Batey refute Galloway’s presentation and suggest that the stones in the drawing are shown to be more neatly placed than they had originally been. The grave had been disturbed in antiquity by erosion, rabbit burrowing and possibly even grave-robbers. Two of the stones from this structure were engraved with a simple cross. There has been debate about the origin of the stones, however, this issue will not be discussed in detail here. In short, some argue that the crosses indicate that
grave was of a mixed pagan and Christian tradition but others believe that they were the remains of early Christian grave-markers moved to the burial site. There is no doubt however that the grave was in all other aspects pagan (Graham-Campbell & Batey, 2001, p. 118).

Many artefacts were recovered but only some of them had their position within the burial accurately recorded. The remains of rivets, nails and other iron fragments were discovered inside the stone setting, but no number is provided (Graham-Campbell & Batey, 2001, p. 119).

The male skeleton had been placed in one corner of the stone setting, laying on his side. At his back lay his weapons. These included a sword, an axe, a spear, a shield, a couple of arrows and an iron-handled pan.

A pair of scales were found in front of the body together with a set of lead weights. All the weights have decorative mounts except one.

A set of bronze harness-mounts and four ornamentals studs were found at the opposite end of the remains.

Horse remains were discovered just outside the east end of the stone setting. With the horse was an iron girth-buckle found beneath its belly.

There were other items found within the grave that did not have their location recorded, such as a silver cloak-pin, an iron horse-bit and some knives. After a re-examination was performed on some of the miscellaneous pieces of iron found around the grave the hinge from a chest or casket was also identified. Some of the nails and rivets are now believed to have come from the object that this hinge belonged to (Graham-Campbell & Batey, 2001, pp. 119 - 120). After the excavation had finished and the wind had dried and blown away the sand within the stone setting, three Anglo-Saxon Stycas (coins) were discovered. The location of these coins was not recorded but they might have belonged to the scales and weights (Graham-Campbell & Batey, 2001, p. 118; 119).

The fact that the stone setting was only 4.6x3.1 meters in size, and that the horse remains were located outside the setting, has led to speculation that the horse was originally placed in the stern or prow of the boat. Using this information, and assuming that the enclosure was centrally placed within the boat, the boat’s length was estimated at around 11 meters. There has been some discussion as to whether the boat was capsized over the burial, but with many conflicting descriptions of the burial and so
little surviving information, this assertion cannot be proven (Graham-Campbell & Batey, 2001, pp. 120 - 122).

This is the only burial discussed here with a rectangular stone setting. The fact that the placement of the boat and even its presence within the burial is not certain means that not much else can be said about it. However, given that all documentations of the site define it as a boat-burial, and the fact that it is generally accepted as a boat-burial, similar to Glaumbær, it will be included as such here (Colonsay, Kiloran Bay, n.d.; Graham-Campbell & Batey, 2001, pp. 118 - 122). If the estimation of its size is accurate it would make it the largest boat of all the ones discussed here.

4.6.2. Pierowall, Westray

Various research teams took part in excavations at the cemetery of Pierowall in 1839–1864. Many burials were found but the documentation and preservation of the discoveries is very chaotic. It was only when Faroese archaeologist Arne Thorsteinsson performed a detailed revaluation of the material from Pierowall that a clear picture began to emerge. Thorsteinsson concluded that at least seventeen burials had been found at the site, three of which were possible boat-burials (Thorsteinsson, 1968).

The first possible boat-burial is Thorsteinsson’s Grave 6. This burial was discovered sometime between 1839 and 1849. The burial was that of a single individual with his head pointing north, buried with an axe and half a shield-boss. The argument pointing to a possible boat-burial was based on the scattered iron remains found in the grave. Regardless, it is impossible to ascertain if these remains were rivets or what kind of object they were associated with, boat or otherwise (Graham-Campbell & Batey, 2001, p. 133; Thorsteinsson, 1968).

The second burial was Grave 16, discovered in 1855. This grave is believed to have been a rich one, but as no report was made of the excavation this claim is based only on the surviving artefacts. The artefacts are: a knife, part of a second knife, a sickle, an iron-key, a bronze drinking-horn, a baked clay bead and an undisclosed number of iron rivets. The rivets have wood attachments which is the main reason for considering this as a boat-burial. With so little to go on there is no way to say for certain if this was a boat-burial or not. It is impossible to preclude that the rivets derived from another type of wooden object (Graham-Campbell & Batey, 2001, p. 134).
Grave 17 is the third possible boat-burial from the site. It was excavated in 1863 and contained the remains of a human skeleton and a horse. Not many artefacts were found in the burial but 21 iron rivets were recovered, three of which have attached wood. Like Grave 16, the presence of the rivets is the only indication of a boat-burial, and as in that case, it cannot be ruled out that they derived from some other object. Other artefacts found were: two iron buckles, miscellaneous iron fragments and half a bone button (Graham-Campbell & Batey, 2001, p. 134).

The Pierowall graves share many similarities to the Laugarbrekka find in Iceland (mentioned above). They were excavated by amateurs and very poorly documented. As only a handful of rivets support the case for boat-burials this identification must be considered questionable and these burials will therefore not be included in the discussion below.
5. Discussion

Figure 7: Image showing all the locations discussed above, boat-burials marked with blue and rejected burials marked with orange. Dalvík (1), Kaldár Höfði (2), Vatnsdalur (3), Litlu-Núpar (4), Hringsdalur (5), Dysnes (6), Glaumbær (7), Hafurbjarnarstaðir (8), Laugarbrekka (9), Pierowall (10), Kiloran Bay and Machrins (11), Westness (12), Scar (13), Ardnamurchan (14), Càrn a’ Barraich (15), South Mires (16), Cnoc nan Gall (17), Huna (18) and Wick of Aith (19).

Provided the limited scope of the information about the Laugarbrekka and Pierowall burials, it is not safe to include them in a list of definite boat-burials. The same also applies to the even more poorly documented burials that are listed in the beginning of chapter 4. Ruling out these burials, we are left with Glaumbær, Hafurbjarnarstaðir and Kiloran Bay as the other debatable locations. It is not unlikely that the early excavation work at these sites, Glaumbær being excavated in 1915, Hafurbjarnarstaðir in 1868 and Kiloran Bay in 1882, might have missed some of the rivets that possibly belonged to a boat. The missing rivet theory might also be the case at Laugarbrekka, Pierowall and the other Scottish sites previously rejected, however, these remaining burials are considerably better documented, with features other than rivets pointing towards a boat-burial, and are generally accepted as such, as will be done here.

The missing rivet theory is strengthened by the fact that unequivocal boat-burials excavated in similar times still reveal a much lower number of rivets then those of the same size excavated in recent times. Dalvík and Dysnes providing a good example of this. The Dalvík burials only produced 122 and 127 rivets and fragments out of the 7 and 6.45 meter boats, while Dysnes produced 400 from each of its 6 and 6.5 meter boats. As a result, judging from size, rivets, wood remains and other possible
features (e.g. soil impressions) there is a total of ten reasonably well-attested boat-burials in Iceland and seven in Scotland.

What follows is an analysis of the data presented in the previous sections, arranged in graphs to highlight similarities and differences between the two countries. The data is compiled in two separated charts to show these differences. The data behind this analysis can be found in the Appendix below.

**Figure 8: Chart showing the amount and percentage of boat-burial discoveries in Iceland**

Fig. 8. shows very clearly that there is an increase in the frequency of boat-burial finds after 2000 in Iceland. In 2000, Caroline Paterson (26.4.2000) informed Adolf Friðriksson that there had been at least 120 Viking Age burials discovered at that time in Scotland. She however also informed him that this number should be taken with caution since documentation about many finds in Scotland is very limited (Kristján Eldjárn, 2016, p. 291). Paterson’s information can be used to establish an assumption ratio for boat-burials, meaning that the five boat-burials discussed earlier (chs. 4.1 - 4.3 and 4.6.1), excavated before 2000, would provide a ratio of 4,17%. This is somewhat higher than the ratio in Iceland, but still considered a very low ratio. However, as only two boat-burials have been excavated since 2000 in Scotland it is quite unlikely that the change after 2000 is as drastic as in Iceland, though this cannot be said for certain given that the exact number of burials after 2000 in Scotland is unknown.

These low ratios in both regions before 2000 might be an indication that early excavation work simply was not advanced enough to properly identify boat-burials. This is also suggested by the many cases of debatable locations that could in fact have been identified as boat-burials if not for the inaccurate descriptions and deficient
excavation work. The chance of identifying those sites as boat-burials has simply been missed, which is why these sites are not included in the boat-burial assemblage analysed here. If we could include the sites rejected in the beginning of chapter 4 (four sites), and still exclude Pierowall, as was done with Laugarbrekka in Iceland, the ratio for Scotland would change drastically, from the very low 4.17% to a considerably higher 7.50%. And the ratios for both regions would increase further if Pierowall and Laugarbrekka were also included.

Figure 9: Two pie charts showing the distribution of the number of individuals buried in boats

The pie charts in Fig. 9 show the distribution of the number of individuals discovered in boat-burials. The total number of individuals discovered in boat-burials in Iceland is 19 while Scotland has 7. A single individual is most common in both regions, with Scotland only having one known burial with more than one occupant. Iceland is more diverse, but as mentioned above, Vatnsdalur might have originally been a single burial with the six other individuals added later. It is noteworthy however that none of the Scottish burials are double burials while two have been discovered in Iceland.

Figure 10: Two pie charts showing the distribution of the sex/gender of individuals buried in boats
The pie charts in Fig. 10. show that the distribution by sex/gender is much more aligned, with almost exactly the same percentage of male and female burials. It must be noted however that many of the skeletons have not been definitively identified as either male or female. These charts show quite clearly that male boat-burials are most common and, interestingly, that the only female burials are also accompanied by men. Only Vatnsdalur is a possible female-only boat-burial if the hypothesis is correct that the other six bodies were secondary. It should be noted that males dominate all Viking Age burials by 2:1 compared to females so the proportions in the boat-burials are not markedly different (Kristján Eldjárn, 2016, pp. 624 - 625).

Almost all the burials in Iceland were disturbed in antiquity, with the only exceptions of Kaldárhöfði and Hafurbjarnarstaðir. This is not the case however in Scotland, where about half of the graves had not been disturbed, at least not visibly. This is consistent with the figures for the grave-goods as can be seen below.
Considering the widespread disturbance of graves in Iceland it comes as no surprise that many of them are missing artefacts. As can be seen in the charts in Fig. 12, all the Scottish burials produced grave-goods in the form of weapons and/or everyday items, but only about half of the Icelandic burials did the same. The lack of artefacts is likely related to the disturbance but it cannot be ruled out that Iceland was less rich in weaponry and artefacts, resulting in fewer items finding their way into burials. Considering that the only two Icelandic burials estimated to have been undisturbed are also the two that produced some of the most remarkable artefacts – their swords being among the most spectacular in Iceland (Kristján Eldjárn, 2016, pp. 324 - 325) – it seems safe to attribute the difference to a greater prevalence of disturbance in Iceland. Not many swords have been found in Icelandic burials, but this does not necessarily mean that swords were not present in large quantities in Iceland. Grave disturbance might also account for more artefact types than swords and it is therefore likely that originally many of the Icelandic boat-burials were equally well furnished as the Scottish ones.

However, animal remains show a different pattern: they are found in about half of the Icelandic boat-burials but are almost completely absent from the Scottish ones, with horses found only at Kiloran Bay and Machrins. The horse remain difference is not very high however and only slightly exaggerated by the very low number of burials discovered (40% in Iceland and 29% in Scotland). The same does not apply for the dog remains. They are found in more than half of Icelandic burials but in none of the Scottish. This is particularly noteworthy as they are much less common compared to horses in regular burials (Rúnar Leifsson, 2017, p. 237; 278).

![Length of boats, Iceland](chart1.png) ![Length of boats, Scotland](chart2.png)

*Figure 13: Charts showing the length of boats discovered in burials, excluding Wick of Aith and Kiloran Bay*
Looking at the boats themselves it can be seen that the boat-burials in Scotland vary considerably in size. Wick of Aith and Kiloran Bay had to be excluded since no exact measurement is available, and only two of the five remaining boat-burials in Scotland fall into the same size range. In Iceland, however, the boats are mainly divided into two size ranges, with the very small boat from Kaldárhöfði being the outlier. All the boat-burials discussed here are considered quite small, with only one possibly having been longer than 8 meters, that is, Machrins (Although Wick of Aith and Kiloran Bay might belong to this category). It is interesting to note that the most prevalent category in Iceland, 6-7 meters, is completely absent from the Scottish assemblage. Most of the boats are around the 6-meter mark, both in Iceland and Scotland. This category of length (5-15 meters) that almost all the burials fall into, with Kaldárhöfði being the only exception, is the most common length of the Viking Age (Müller-Wille, 1974, p. 193). Boats that are measured in this category would have had three to seven pairs of oars, and were most likely only used on coastal and inland waters (Müller-Wille, 1974; Graham-Campbell & Batey, 2001, p. 150). It can be assumed therefore that most of these boats were used on coastal waters since almost all the burials are coastal or close to it (see figure 7.), with only Kaldárhöfði and Glaumbær being exceptions.
6. Conclusion

When excavating boat-burials many issues can become a hindrance to identification. In times when methods were primitive this was especially true and it is not unlikely that some boat-burials may have been missed in the past. Usually the only remains of the actual boats are impressions in soil and rows of rivets. Such remains can easily be missed especially if the rivets have corroded and no longer resemble anything other than iron fragments. Having considered the known boat-burials, and even some of the debatable cases, it seems probable that the confirmed locations only represent a part of the actual boat-burial assemblage. The rate of discovery in Iceland shows this to be the case (Fig. 8). It is therefore possible to argue that recent advances in methodology have increased the chance of boat-burials identifications. The total number of boat-burials discovered in Iceland after 2000 are as many as the ones discovered before 2000, a very drastic increase in the boat-burial ratio.

The data compiled in chapter 5 show that there are both similarities and some differences between the two regions. The most notable differences relate to the occupant, both animal and human, and the grave-goods of the burials.

Looking at the grave-goods, the disturbance of many of the Icelandic burials cannot be ignored and it seems that the artefacts recovered are not an accurate representation of what was originally buried, making the difference between the regions more apparent than real. The occupant of the grave however, human or animal, have quite an interesting difference. Almost half of the burials in Iceland contain both human and animal remains but almost none of the ones from Scotland. This difference can most notably be viewed in the ratio of dog remains found within the burials (Fig. 12), which are found in almost half of the Icelandic assemblages but in none of the Scottish burials. The high frequency of dogs in Icelandic boat-burials compared to regular burials is also noteworthy. A possible explanation for this could be that they were status symbols in Iceland at the time. The horse discovery ratio is however not as drastically different, with horses being found in 40% of Icelandic boat-burials and about 30% of the Scottish burials.

The lack of double burials in the Scottish assemblage is the most notable observation from the human remains. A double burial was common practice in the Viking Age, often even in boat-burials, and its absence in Scotland is therefore a surprise, and should be considered for further research. The difference between the
regions might however be exaggerated by Kaldárhöfði, whose identification as a double burial is mainly based on the teeth discovered (See chapter 3.3) – emphasising that few parameters means that variances are not necessarily significant.

The distribution between male and female should come as no surprise when similarities are scrutinized, since it follows the general pattern, namely, that male burials were considerably more prominent in that time.

The length of the boats from both Iceland and Scotland fall into the most common category of boat length for these types of discoveries. Again, Kaldárhöfði is the only exception, its small size being the likely reason why it was the only boat that accompanied the grave as any other artefact, rather than a vessel for the burial.

These two regions are undeniably quite similar, with only minor variations that may indicate cultural differences. The boat-burials in Iceland and Scotland are clearly part of the same tradition and have essentially the same characteristics. They provide us with much information about past life, both through studies of the boats themselves and their grave-goods. Boat-burials are a very low percentage of the total sum of burials (about 5%) and are some of the richest discovered. The discovery ratio in Scotland is considerably higher than that of Iceland, but this may be exaggerated by the fact that burials of lower status (normal) are less documented and are more likely to be indistinguishable from burials from other periods. This is a problem that Iceland has not had to face since there are only two periods, Viking Age and Christian. The Icelandic burials seem to have been more likely to succumb to disruption in antiquity, which explains the difference in the amounts of grave-goods recovered, with 80% of the Icelandic burials having been visibly disturbed but only about half of the Scottish. The dog remains within the burials is a factor that may be attributed to cultural differences, where more than half of the Icelandic burials included dog remains, but none of the Scottish.

The rate of discovery is what is undoubtedly of most interest when looking at these burials. However, in reviewing the data, it becomes clear just how unfortunate it truly is that a full overview, similar to Kuml og Haugfé, of the Scottish burials is not available. This is a sorely needed addition to Viking Age studies in Scotland and would simplify and strengthen further research into the period as a whole, not solely in the study of boat-burials.
7. References


Harris, Oliver J.T.; Cobb, Hannah; Batey, Colleen E.; Montgomery, Janet; Beaumont, Julia; Gray, Héléna; Murtagh, Paul. (2017). Assembling places and persons: a tenth-century Viking boat burial from Swordle Bay on the Ardnamurchan


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9. Appendix

A table showing the compilation of data provided in chapters 3 and 4.

<table>
<thead>
<tr>
<th>Boat Burials</th>
<th>Year of Discovery</th>
<th>Numer of Occupants</th>
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<th>Width [m]</th>
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### Possible boat burial

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Scotland

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