Shedding Light on the Matter: An Exploration into the Regional Orientation Patterns of the Brochs and Duns of Iron Age Scotland

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The primary aim of the paper is to present, examine and interpret the full range of the available doorway orientation patterns of the Iron Age broch and dun structures that are scattered throughout the various regions and landscapes of Scotland. Differing orientation patterns within these regions are illustrated through distinct regional conformities to certain cardinal points of the 16 point compass and offer the potential for variation. Sectioning Iron Age Scotland into three distinct regions (The Northern Mainland and Isles; The Western Isles and Skye; and Argyll and the Inner Isles), the author attempts to combat the concept that an E/SE orientation majority existed throughout Iron Age Britain by presenting regional variation with regards to orientation conformity. The differences across Scotland also present the possibility that differing social models existed throughout Iron Age Scotland, something that is also demonstrated by the variations in architectural complexity.

Key words: Broch, Dun, Iron Age, Scotland, Orientation, Lightscales.

Introduction

The heterogeneous character of the Iron Age monuments scattered across the dramatic coastal landscapes of Atlantic Scotland have long inspired intense debate within archaeological circles. In particular, the possible purpose and role of the broch and dun monuments has been discussed in great detail. In order to contribute to those discussions, the author has noted the available entrance orientations from all the brochs and duns located throughout Scotland and examined them in depth – an area of research not previously fully extended this far north. The examination of regional orientation patterns presents the possibility of providing potential variations, illustrated through distinct regional patterning and conformities to certain cardinal points. Rather than use the term Atlantic Roundhouse, the author has chosen to use the terms broch and dun in order to maintain a sense of regional disparity. The Scottish Iron Age is a period particularly lacking in regional studies and thereby requires a range of new and original models tailored to the particular needs of its Iron Age record. To introduce the topic for discussion, a brief overview of the two different types of site in question is necessary.

Introducing the Brochs

Categorised separately from the other Iron Age structures of Scotland (e.g. the dun and the wheelhouse) by their size, architecture and to a large extent, their geographical location, it is their considerable variation in building style and material culture which has created a web of tangled interpretations and inspired a long and complex source of debate and disagreement. The unique simplicity of their monumental expression and their massive proportions in comparison to the smaller dun structures found most numerously in the west has stimulated this debate, and as such, the broch has long dominated the scholarship of Atlantic Scottish Iron Age studies.

The term ‘broch’ is only applied to those structures that show key architectural features traditionally defined by MacKie (1965) as a complex and developed architectural form using the technique of hollow-wall building, in combination with a range of specific structural devices, such as intra-mural galleries and cells, to create a stable drystone tower while retaining the basic roundhouse form. As one of the more impressive innovations of the Scottish Iron Age, these circular, drystone thick- and hollow-walled towers are found most numerously in the Northern Mainland and Isles, with fewer numbers found in the Western Isles and Skye. Specific brochs such as Howe, Gurness and Midhowe on Orkney and Crosskirk, Nybster and Keiss Road in Caithness, possess external buildings, perhaps used as secondary villages with the main central tower acting as a village foci. This is a feature unique to northern Scotland and is not seen in any other region. There are of course many other well-known examples of broch
structures to be found outside the Northern Isles (e.g. Dun Carloway, Lewis, Dun Troddan and Dun Telve in Inverness-shire), however these are isolated single structure broch settlements with fully developed towers rather than possessing contemporary or indeed secondary broch villages.

The structural complexity of the broch is therefore missing in the simple drystone walled enclosure that is the dun, noted previously to be a permanently occupied enclosed settlement inhabited by some form of large social grouping (Alcock and Alcock 1987; Barrett 1981; Nieke 1983; 1984; 1990: 135). Although portrayed as simple, they are however a very diverse class of monument, possessing a variety of ground plans which include the possible roofed ‘dun houses’ (Harding 1984) perhaps more akin to the broch, as well as the much larger ‘dun enclosures’ (Harding 1984) which were almost certainly unroofed and were more like the much later Irish ring forts (Henderson 2000: 123; 2007: 166). Indeed, many duns actually have the same characteristic architectural features as brochs – galleries, cells and stairs – but are regarded as duns to retain a regional differentiation which is appropriate to uphold for the purposes of this paper. A small proportion of the few duns that have been excavated have produced Early Historic material (imported pottery, metalwork) (cf. Alcock and Alcock 1987; Neike 1984, 1990) and this has led to the assumption that the dun is a first millennium AD phenomenon. However, until radiocarbon dates are obtained, we should not apply this date to all drystone dun structures throughout the differing regions of Scotland, including both the smaller roundhouse and the enclosure types.

A Wide Focus: Previous Orientation Studies

The recent focus of scholarly research into regional studies has thus far revealed three distinct cultural zones within Atlantic Scotland: the Northern Mainland and Isles, Argyll and the Inner Isles, and the Western Isles and Skye (Henderson 2007: 150), and in this paper, the author will focus upon these three distinct zones (Fig.1). Each region presents significant differences in the material culture and architecture of the brochs and other Iron Age structures and even within smaller geographical areas, distinctions in architecture and material culture occur (Henderson 2007).

Most of the questions regarding the regionality, the chronology and the contemporaneity of the brochs and duns depend largely on the evidence gathered through excavation (Ballin Smith & Banks 2002: 219). However, it is well known that few brochs or duns have ever been excavated as far as their original foundations – an exception to this is Kiess broch, Caithness (Heald and...
Jackson 2001) – and this fact demands that archaeologists discuss these structures with the limited evidence acquired from the beginnings of broch studies a hundred years ago or more. It is this lack of evidence from excavation for the Scottish Iron Age which has led scholars to explore other approaches to the archaeological record. One such method which has the potential of revealing regional differentiation is the study of doorway orientation patterning. Recently, Rachel Pope’s (2007) research has pointed out the general weaknesses in contemporary orientation research, by which this study was influenced.

The Big Picture

Out of the 1,276 sites recorded in the author’s dataset, only 588 had discernable entrances and this is believed to be a sufficient number for examination (Fig.2). Out of these, 190 are brochs and 398 are duns. A general eastern preference is noted, with a total 58 percent of sites orientated between NNE and SSE (the eastern arc). The western arc accounts for 32 percent with the additional 10 percent shared between due N and S. With regard to Oswald’s statement of ‘a strong bi-modal tendency (to the E/SE’ (1997: 89), it is a surprising discovery to find that the orientations of the E, ESE and SE (the E/SE arc) only account for 36 percent of the entire set. This essentially leaves a high proportion (64 percent) of the set to be orientated outside of the E/SE arc. Obviously therefore, a single cosmological model based on a supposed bi-modal tendency towards E/SE stretching across Britain – thereby including Scotland – is unfounded and there is indeed far more variation than both Parker Pearson’s (1996, 1999) and Oswald’s (1997) studies suggest, as Pope (2007) has previously stated.

By utilising information acquired from Canmore within the Royal Commission on Ancient and Historical Monuments of Scotland database inventories, this paper attempts to present, examine and interpret the range of doorway orientation patterns of the brochs and duns throughout the various regions of Iron Age Scotland. By taking the advice of Armit et al. (2001: 14) and Pope (2007: 223), who call for further research on regional differences, a brief investigation and interpretation regarding the regional orientation patterns of the brochs and duns follows and illustrates distinct regional patterning and conformities to certain cardinal points.
Narrowing Down: Comparing the Brochs and Duns

When compared by structure type, the brochs and duns present striking dissimilarities (Figs. 3 and 4). The brochs appear to be orientated in an uneven arc from east through the south to west, with a tendency on the E/SE arc, which make up 45.8 percent of broch orientations, a large proportion. Conversely, only 33.7 percent of brochs are orientated within the western arc, with 12.6 percent facing due-west. These percentages dispute Parker Pearson and Sharples’ (1999: 17) account that at least half the brochs are oriented west whilst also disputing Parker Pearson (1999: 45), who states that more than half face west, as Pope (2007: 212) has previously noted. When comparing type, 59.5 percent of broch sites are orientated within the eastern arc as well as 56.8 percent of duns. The western arc is equally similar with the duns’ 33.9 percent compared with the brochs’ 33.7 percent. Although this suggests little distinction, the duns actually form a much wider range across the sixteen cardinal points and their weighted majority towards the overall NE (84 percent) and SW (74 percent) orientations distinguish them from the brochs and suggest a possible difference in function and purpose, but more importantly, it provides the potential for regional variation.

Considering functionalist reasoning behind differing orientation, the most obvious concern could be assumed to be the provision of light and the avoidance of the wind. Regarding light, the sun cycle is, during all seasons, from the east through the south to the west, thus a northern doorway would never admit any direct light and this accounts for their small percentage of the overall set (4.8 percent). A southward doorway would be expected to maximise daylight (Oswald 1997), yet due south is strictly avoided accounting for 3.8 percent of the dataset. The reasoning for this N/S deficiency is argued by Parker Pearson (1999: 43) and Parker Pearson and Richards (1994: 47) to be the result of a focus on the rising and setting sun of the equinoxes and solstices, yet this need not be the case. Figure 5 illustrates the seasonal location of the rising and setting sun. At the time of the midsummer solstice in June, the sun rises in the NE and sets in the NW. Every day after that, the sun rises and sets a little further south and by the time of the autumn equinox, the sun rises due east and sets due west as it also does in spring. It continues to rise and set ever southward until, by the winter solstice in December, it rises in the SE before setting in the SW. After that day, the sun rises and sets a little further south and by the time of the autumn equinox, the sun rises due east and sets due west as it also does in spring. The rising and setting sun of the solstices and equinoxes thereby account for any direction in the eight point compass which is not due N/S. Yet if the brochs and duns had no openings (e.g. windows) other than the single doorway to allow light to directly enter the house (Hingley 1992: 14), it would be
functionally illogical to orientate a doorway due south as the sun is always highest in the southern sky and would not directly illuminate the interior as effectively as a doorway orientated between the other points of the east-south-west arc. Many sites are thus merely orientated toward the low sun either in the morning or afternoon – depending on the time of year and the location and latitude of the given site, as will be explored.

Any orientation within the east-south-west arc, excluding due south, would admit direct sunlight into a roundhouse throughout the majority of the year. With this in mind, the bulk of broch orientations (76.8 percent) are found within this arc, thereby suggesting that rather than equinoxes or solstices, it is more likely that the majority of broch inhabitants favoured direct light from the low sun throughout the majority of the year. Illustrating a striking contrast, only 60.3 percent of duns are to be found within that same arc and when considering points outside that arc, 18.1 percent of the entire dun dataset is orientated NE compared to 7.4 percent from the overall broch dataset. The reasoning behind this is that there is a clustering of NE orientated sites located within the Argyll region of Scotland. Many sites in Argyll are focussed toward distinctly illogical but cosmologically significant referents; that being the midsummer sunrise of the NE and the midwinter sunset of the SW of which the duns also have a higher ratio of 3:1 over the brochs.

With regards to climatic considerations; by facing directly opposite the prevailing SW winds (Pope 2007: 213), it may be that a NE orientation is avoiding such a wind, after all, as Lamb (1981: 55) contends, the Iron Age may have witnessed ‘an extraordinarily great prominence of westerly winds, unequalled in any other period we know about’ and its effects were emphasised by the general openness of the landscape (Armit 1996: 19). Considering this, a NE orientation is not as functional as a SE which would admit more light and would not be affected by the northern arctic winds. Thereby, we may consider the possibility that there is a more cosmological interpretation to be found.

The Orientation Patterns of the Duns of Argyll and the Inner Isles

Oswald (1997: 93) notes that there are weak trends towards the midsummer sunrise across Britain. Dominated by the dun structures, the Argyll region of Scotland contains the vast majority of NE orientated sites within Scotland (Fig.6) and NE orientated sites account for 20.4 percent of the entire Argyll and Bute dun dataset in comparison to the 7.9 percent from the broch sites of Sutherland, Caithness, Orkney and Shetland. The very few brochs that do exist in the Argyll region seem to be generally orientated within the eastern arc. By taking a functionalist interpretation, a NE orientated house is somewhat illogical as the interior would receive direct sunlight through a very short period of the year – midsummer. A due east/west orientation on the other hand would receive direct sunlight throughout spring, summer and autumn, whereas a SE/SW orientated site would receive light throughout the year.

With regard to climatic considerations; by facing directly opposite the prevailing SW winds (Pope 2007: 213), it may be that a NE orientation is avoiding such a wind, after all, as Lamb (1981: 55) contends, the Iron Age may have witnessed ‘an extraordinarily great prominence of westerly winds, unequalled in any other period we know about’ and its effects were emphasised by the general openness of the landscape (Armit 1996: 19). Considering this, a NE orientation is not as functional as a SE which would admit more light and would not be affected by the northern arctic winds. Thereby, we may consider the possibility that there is a more cosmological interpretation to be found.

Roofed Dun Houses and Unroofed Dun Enclosures: A Difference in Orientation?

Considering the size range within the category of duns in Argyll, Harding (1984) has previously noted that any dun up to 15m or less in diameter could have been roofed, thus making a compact dwelling house. This he categorises as a dun house, as distinct from the larger, potentially unroofed dun-enclosures as noted before. To the strictly circular dun
houses which he illustrates, we might add the possibility that an oval dun measuring 15m on its short axis might have been covered by a hipped ridge roof rather than by a conical one (Alcock and Alcock 1987: 133). On this basis, Alcock and Alcock (1987: 133) note that only 66 percent of Argyll duns could have been roofed dwellings. From the author’s dataset, around 62 percent of duns in Argyll are actually below 15m in diameter (184 sites), leaving the remaining duns (104 sites) outside the 15m diameter range as possible dun enclosures; perhaps originally surrounding some form of internal dwelling.

If purely functional considerations, such as the provision of light or the avoidance of prevailing winds, were taken into account by the builders of the duns in Argyll, then we would expect dun houses (less than 15m in diameter) to orientate themselves accordingly; preferably within Pope’s (2007) E/SE orientation optimum in which both light and shelter are taken into account. The E/SE is indeed the most preferable direction for doorway orientation as it avoids the prevailing SW winds whilst also maintaining direct sunlight to enter the roundhouse for the majority, if not the entirety, of the year. The orientations of the unroofed enclosures on the other hand would be expected to form a random pattern without consideration of either light or climate, as we would expect for a house. Yet beyond the 15m diameter range, there remains a marked tendency to orientate NE (Figs.7 and 8) with a notable avoidance of due N, S and W. Even when we extend the diameter range to 17m there remains a trend to orientate NE (Fig.9).

Two thirds of the NW facing duns in Argyll are dun enclosures (with a diameter over 15m), and they demonstrate a tendency to orientate this specific structure in such a direction. The NW is also a functionally illogical orientation for any house, receiving little light and affected by northerly and westerly winds, yet it is a significant point of focus for solstices as the midsummer sun sets in this direction.

The orientations of ‘dun houses’ and ‘dun enclosures’ toward distinctive cosmological referents suggests that in Iron Age Argyll and the Inner Isles, there was a degree of focus – cosmologically based or not – on the NE, as well as the NW to a lesser extent. From this evidence, it could be argued that the solstices
were potentially marked as significant. This focus on the NE could however also be the result of a general orientation towards an as yet unknown landscape focus. The exploration of this is beyond the remit of this paper, yet it is certainly a phenomenon that warrants further investigation in the future.

Considering the duns in Northern Scotland (those within Caithness, Sutherland, Orkney, and Shetland), there is an easterly focus (Fig. 10), with a slight tendency to orientate NE and SW. It is tempting to suggest the reasoning behind such orientation extended from Argyll to northern Scotland, but the numbers of confirmed duns in the North are far too low to conclusively demonstrate a true extension. Conversely, the orientation patterns of the brochs of the Northern Mainland and Isles show little conformity toward distinctive cosmological referents such as the NE/NW and thus present the possibility of a different model altogether, as will become apparent.

Western and Northern Broch and Dun Doorway Orientation Comparison

As a set, the brochs present a very different orientation model to the vast majority of duns that are located in Argyll. Most brochs have a single doorway (Armit 2003: 63) and out of the 523 brochs recorded in the author’s dataset, only 190 had discernable entrances. As already noted, a northern doorway would never admit any direct light, thereby accounting for their small percentage within the broch dataset (3.1 percent). A southward doorway would be expected to maximise daylight (Oswald 1997), yet due south is strictly avoided, representing only 3.7 percent of the dataset. With the usual exception of due south, orientation within the E-S-W arc would admit direct sunlight into a broch throughout the majority of the year and, as noted, the bulk of broch orientations (76.8 percent) are found within this arc. Considering
the northern brochs as a set (only brochs within Sutherland, Caithness, Orkney and Shetland), there is certainly a high tendency to orientate within the E-S-W arc which accounts for 80.3 percent of orientations in this zone (Fig.11). Within that percentage, 41.7 percent are orientated within the more southerly ESE-S-WSW arc. In comparison however, we find that the broch builders of the Western Isles and Skye (Fig.12) tended not to favour a southerly orientation, with a much lower 28 percent orientated within the southerly ESE-S-WSW arc in comparison to the 40 percent found within the more northerly ENE-N-WNW arc. The duns that are also distributed throughout the Western Isles and Skye also tended to favour a northerly orientation (Fig.13) with 36.6 of sites orientated within the ENE-N-WNW arc in comparison to the 26.8 found within the southerly ESE-S-WSW arc. This difference may be in part due to the latitude of northern Scotland and its islands in which the hours of daylight shrink to a brief midday window in the middle of winter, whilst midsummer daylight can last until almost midnight (Richards 1990: 121). We can therefore assume that savouring the midwinter sunlight over the summer ambience was a primary concern to a typical northern broch and a doorway orientated within the more southerly orientated SE-S-SW arc would have been a more logical choice as it provides protection against the harsh northern winter conditions. A SE-S-SW orientation somewhat protects against the northerly winds whilst providing the broch interior with maximum winter daylight; however the south can largely be affected by the SW winds and this fact accounts for the lack of SWW-SW-WSW (the SW arc) orientations both in the Western Isles and Skye (8 percent for the brochs; 7 percent for the duns), and in the Northern Mainland and Isles (7.6 percent for the brochs). An E/SE orientation actually provides the optimum protection from the northerly and prevailing SW wind whilst allowing some degree of direct light to enter the broch or dun throughout the year. If both light and climate have a role in influencing orientation, we could thus expect that this might have led to an E/SE tradition, especially on the Northern Mainland and Isles where the lack of sheltering forests and winter daylight would have accentuated the requirement for maximising both shelter and light. When we actually consider the brochs as a single group however, we find that an actual majority of sites (54.2 percent) are orientated outside the E/SE arc. This means that only 45.8 percent – less than half of the broch dataset – is orientated towards the E, ESE or SE (the E/SE arc). When considering the possibility of an E/SE broch tradition across Scotland, the data has already shown that this it is non-existent, but there are stark contrasts between regions. Although the northern broch builders generally preferred E/SE orientations which account for 47.7 percent, only 40 percent of the western brochs are found within the same arc, and a northerly E/NE orientation was preferred which account for 44 percent. In comparison however, the duns within the Western Isles and Skye preferred to orientate themselves toward the E/SE (36.6 percent) rather than the E/NE (31 percent). This is in striking contrast to the duns found within the Argyll and Bute region of Scotland just south of the Western Isles in which 41.8 percent of duns were to be found orientated E/NE in comparison to the E/SE which only made up 27.6 percent of the Argyll and Bute dun dataset.

As direct sunlight only enters the doorways of houses orientated within the ENE-N-WNW arc within the summer months alone, these results also suggest that the broch (and duns to a lesser extent) builders of the Western Isles were much keener to orientate their homes for the winter months only. In contrast, the Northern broch builders largely orientated their homes southerly to maximise available winter daylight. This confirms Pope’s (2007) conclusions that the E/SE majority presented by Oswald (1997) should not have been extended into all the diverse regions of Iron Age Scotland without consideration of the differing settlement trends found throughout Scotland.

As 83 percent of all broch structures are located in the Northern Mainland and Isles (including Sutherland, Caithness and the Orkney and Shetland Islands), the interpretation and significance of the orientations within this area alone will be the main focus of attention for the remainder of this paper.

The Northern Broch Analysis

The Northern Mainland (only Caithness and Sutherland) contains a large majority of broch sites orientated within the E-S-W arc (74.2 percent), with a tendency to orientate within the E/SE arc, accounting for 42 percent (Fig.14) compared with the minority of 31.2 percent which lie within the southerly SE-SW arc.
Only the Orkney Islands present what could be described as a standard pattern of orientation (Fig.15). The conformity towards the E/SE may be linked with Pope’s (2007) general shelter/light optimum for structure orientation, with E/SE orientations making up 73.9 percent of the Orkney set, a very high proportion indeed. Of course, orientation may also depend on whether the ground floor of a broch was a utilised space or not – an issue which may have differed across Scotland and requires further investigation that is currently outside the scope of this paper. The commonality of a scarcement ledge in most well-preserved brochs has led to the theory that the main living area was located above ground level on a raised timber floor (Sharples 1998: 38-40) although some scholars disagree (e.g. MacKie 2010). The E/SE orientation conformity towards the light/shelter optimum on Orkney does however suggest that the ground floor was indeed utilised as a living space, at least in Orkney. The fact that a high majority of sites on Orkney are located within the E/SE arc also suggests that the further north the brochs were built, the more important environmental concerns became. As an E/SE orientation permits sunlight to directly illuminate the interior of the broch throughout the year, the E/SE majority on Orkney suggests that the Orkney brochs were potentially occupied for the entirety of the year. In comparison, a high proportion of brochs within the Western Isles and Skye were northerly orientated and this suggests a summer habitation as an orientation within the ENE-N-WNW only permits summer sunlight to illuminate the broch interior. Either that or the Western brochs were indeed inhabited by those who dwelt within upper storeys without the requirement of direct sunlight to illuminate the lower storeys and who could therefore orientate their dwellings in a more random manner.

Orientation patterning on Orkney may of course also vary due to topographical necessities (Bourdieu 1977; Oliver 1987: 161-163) and it is Orkney’s flat topography (and Caithness to a lesser extent) which would have allowed the optimum uniformity of E/SE orientations in which the light from the low rising sun of winter, spring and autumn was not compromised by high terrain and would have entered the low doorways of the brochs. Although we would expect the same conformity from the Shetland Islands, they offer a distinctly dissimilar pattern of orientation (Fig.16) as only 37 percent of Shetland’s brochs are orientated within the E/SE arc. However, direct sunlight is still a concern as a very high majority of brochs are focussed within the E-S-W arc (88.9 percent) and a high proportion of these (40.7 percent) are found orientated within the more southerly SE-S-SW arc, indicative perhaps of the need to maximise winter sunlight in such extreme northern latitudes. Shetland’s brochs also present a couple of sites orientated due south – a direction of no obvious solar cosmological referent. In consideration of low light however, a due south orientation is made possible by Shetland’s extreme northern latitude and would have allowed low southern sunlight to directly enter the domestic interior in the depths of winter.

Figure 15 Map with accompanying compass graph illustrating the site orientations and patterns of the brochs of the Orkney Islands. © Crown Copyright Ordnance Survey. An Edina Digimap/JISC Supplied Service.
Conclusion

Within this paper the author has attempted to present, examine and interpret a range of the available doorway orientation patterns of the brochs and duns, focusing particularly on three cultural zones of Iron Age Atlantic Scotland; Argyll, the Western Isles and Skye, and the Northern Mainland and the Northern Isles. Pope’s (2007) research, which explored the weaknesses in recent orientation studies that attempted to extend single cosmological models based on a tendency to orientate within the E/SE arc across Iron Age Britain, acted as a platform on which the author sought to explore regional orientation variance across Iron Age Scotland. First and foremost, the aim was to explore whether there was indeed an E/SE doorway orientation majority that could be extended into all the multifarious regions and landscapes of Iron Age Scotland. Out of the 1,276 duns and brochs located throughout Scotland, 588 had discernable entrances towards specific cardinal points and a high proportion of these were actually found to be orientated outside of the E/SE arc. By then narrowing down this dataset into structural types, the duns and brochs appear to be strikingly divergent from one another. Although the dun dataset forms a wide pattern across the entirety of the 16 point compass, a high majority of brochs are found to be located within the more southerly E-S-W arc, suggesting that the broch inhabitants favoured an orientation that sought direct sunlight throughout the majority of the year. This is because the sun cycle is, during all seasons, from the east through the south to the west and therefore an orientation within the E-S-W arc maximises the amount of daylight granted throughout the year.

The duns of Argyll and the Inner Isles, on the other hand, did not reflect the orientation pattern of the brochs, as both types of dun structure – dun houses and dun enclosures – focus orientation toward specific cosmological referents (NE, NW). This feature is notably lacking within the orientations of the Northern broch set of Caithness, Sutherland, Orkney and Shetland. The fact that a large proportion of dun enclosures – a type of site that may have enclosed an internal dwelling – were also focussed toward the NE also suggests a more ritualistic rather than functional purpose to orientation. This conformity of orientation towards the NE, and its possible cosmological associations, is also something dramatically lacking anywhere else in Scotland.

With regards to an E/SE majority, only the brochs upon Orkney present E/SE orientation conformity; an optimal orientation that permits year round sunlight to enter the roundhouse and protects against the SW wind, thereby suggesting that the brochs on Orkney were utilised throughout the year. The Northern brochs in general prefer a southerly orientation, perhaps due to the extreme northern latitude of Caithness, Orkney and especially Shetland. In comparison however, the brochs of the Western Isles tended to favour northerly orientation. We could interpret this by suggesting that the broch builders of the Western Isles and Skye sought to inhabit their homes only during the summer months when direct sunlight was able to enter the doorway whereas the northern brochs

Figure 16 Map with accompanying compass graph illustrating the site orientations and patterns of the brochs of the Shetland Islands. © Crown Copyright Ordnance Survey. An Edina Digimap/JISC Supplied Service.
sought sunlight throughout the year, especially during the winter months when low southerly sunlight direct illuminated the interior. It may also suggest however that those inhabiting the Western brochs lived above ground level and therefore the requirement for direct sunlight to enter the entrance was minimized, whereas the Northern broch builders may have sought to utilise their ground level as a living space which is demonstrated in their logical southward orientations.

It is by conducting the above analysis that this paper has attempted to shed new light on Scottish orientation research, and by which it is suggested that instead of a uniform E/SE orientation majority that spread throughout Iron Age Scottish society, there was actually wide spread variation that was in accordance with architectural distinctions. The author hopes to instigate further scholarly research into the orientation patterns of Iron Age Scotland.

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