

STAGING POSTS

Thinking through the Orkney archipelago

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ABSTRACT: The Orkney Archipelago, around 10 miles off the north coast of Scotland, has seen 6000 years of human settlement, with many archaeological artifacts offering significant insights into the formation of a deep-rooted island culture. The various transfigurations of this island culture to present-day Orkney indicate how external influences shape cultural inheritances, yet how this culture retains fundamental qualities; of imagination, resourcefulness, and territorial interconnections. This issue of how we negotiate the complexity of archipelagic relations is presented through a framework of process-based terms, of formations, transfigurations, constellations, aggregations, and tensions. This framework offers a degree of conceptual specificity, bringing focus to processes of relation change, movement, and interaction, across varying spatial and temporal scales. Underpinned by observational fieldwork, what emerges in this study is a sense of island life, bringing light to cultural and environmental processes, often most intensively manifest around strategic staging posts.

KEYWORDS: Orkney Archipelago, staging posts, relational change

Formations

One of the interesting deep-time histories of the Orkney Archipelago, comprising 70 islands off the north coast of Scotland (Figure 1), is that it was once part of a vast lake, named by geologists as Lake Orcadie. This lake existed nearly four hundred million years ago, during the Devonian geological period. Set within the Laurussia continental land mass, sitting south of the equator, with mountains and vast desert plains, Lake Orcadie was comprised of landforms that now lie across northwest Scotland, through Orkney and Shetland, to western Norway.

On nearing Orkney via the southwest ferry route from Scrabster, towering, stratified sea cliffs made up of layers of sedimentary rocks (Figure 2), provide evidence of the cyclic sedimentation of Lake Orcadie, offering the first geological indicator of Orkney's deep time. Alongside sedimentary strata, evidence of the fluvial movement of sand and gravel river deposits, dunes, and sediment accumulation, are registered in Orkney's geological formations. Other formations evidence the life that lived in and around Lake Orcadie, including fossil fish, fragments of scale and bone, fossil remains of plants, and stromatolites, as the fossil remains of blue-green algae.



Figure 1 - Map of Orkney indicating places mentioned in the study (author's map 2023).

This combination of fossils indicates that Lake Orcadie played a significant role in the evolution of early life, as an evolving assemblage of water, plants, animals, and oxygen, animated by fundamental processes of seasonality, bio-diversification, photosynthesis, and sedimentation, amongst other biosphere forming processes. Evidence of continental tectonic drift, and volcanic and glaciatic action tell of subsequent geological periods, shaping the landform we see today. Allied with sea level stabilising about 6000 years ago, we arrive at an Orkney archipelago where human settlers would begin to lay down their own assemblages of life.



Figure 2 - Sea cliffs on Orkney's west coast showing layers of sedimentary rocks and the force of the Atlantic (authors photo 2016)

Both Orkney and Shetland personify what Giles Deleuze refers to as “continental islands” that are separated from a continent through the erosion of the sea, isolating the islands from the mainland, as distinct from the second island formation, “oceanic islands” he defines as emerging from the earth’s volcanic activity (Deleuze 2004). In some ways this conceptualisation is inaccurate. In the Holocene period, post-ice age changes created rapid sea level rises, estimated at 60 metre rises from 17000 to 7000 years ago. This significant rise separated the now islands from the mainland, where gradually lower-lying land was submerged, leaving higher ground as the set of islands we see today.

In the last 6000 years, the sea has risen around another 20 metres, meaning the first settlers on Orkney may have settled or moved across areas now submerged. Erosion from the sea did play a part, but mainly chiselling away around the island’s coastline. Regardless of this inaccuracy, in ‘Desert Islands’, one of his first published papers, the point Deleuze makes is that islands are the product of various relations between earth and water, while humans imagine them into being, out of experiment with separation. This conceptualisation conjures the deep time that both precedes and will extend beyond human imagination, and from this “desert,” humans imagine islands into being. Deleuze describes that:

it is no longer the island that is created from the bowels of the earth through its liquid depths, it is humans who create the world anew from the island and on the waters (Deleuze, 2004, p.10).

Orkney folklorist Walter Traill Dennison conjured a time when the seas would retake the islands:

Yes, our island home is doomed. In a few short ages the lobster and the crab will crawl on our cold hearthstones; whales and fishes will disport above where our chimney tops now reach; sea-weeds and limpets will grow on our gravestones, and our graves be nowhere' (Traill Dennison, 1896, p.89).

As if proof was needed, Dennison's gravestone, on the low-lying island of Sanday, is in a cemetery enclosed by sea defence walls, protecting against storm surges and coastal erosion. Written over 100 years ago, Dennison's vision of catastrophic environmental changes highlights that for islanders the impact of climate and sea level changes was already part of a cultural formation particularly felt on islands.

To trace deeper cultural formations in Orkney, one starting point does not begin with an island in itself. Eynhallow Sound is a seaway, lying between the island of Rousay and Mainland Orkney (Orkney's largest island is called Mainland), alongside a set of smaller islands, including Wyre and Gairsay. The Eynhallow Sound has many historic sites dispersed around both sides of the sound, pointing to the formation of a society that was not divided by the sea, but very much connected by it.

At Swandro on the northern side of the sound on the island of Rousay, one can walk through an impressive array of archaeological sites running through 5000-6000 years of settlement. Alongside Neolithic Broch's, there are Iron Age buildings (Figure 3), including the remains of a smithy forge, intermingling with Norse halls, and medieval farmhouses, while in the higher ground, 19th century crofts lay abandoned, giving testament to the throes of the Highland Clearances, when sheep were deemed more profitable than tenant farmers. This assemblage of Pict, Anglo-Saxon, Norse, Scots and others, points to the formation of Orcadians as a kind of interwoven people, or as Orcadian poet George Mackay Brown put it, "the "people of Orkney today are a mingled weave" (Mackay Brown, 1981, p.7).

What can be observed around Eynhallow Sound is the formation of early settlements and human activity, providing many clues as to an ever-emerging social assemblage. Flagstone is a constant resource and technological innovation is evident from the earliest periods (See Watts, 2019 for an alluring journey into Orkneys technological past and future); social hierarchy and status is expressed; produce from sea and land provides sustenance; the ocean is the place of networked sea roads for incomers and trade; ornamentation and accumulation are modestly expressed; symbolism and ceremony are ingrained.

The formation of settlements does not follow any simplistic, linear, or chronological sequence. For instance, stratified sedimentary geology presented a readymade building resource known as Old Red Sandstone (also known as 'flagstone'). This natural building material can be found in every period of Orkney's buildings, as though built forms have emerged from the island's geological strata, where on some buildings it is often hard to distinguish where natural strata ends and built structure begins. From the impressive remains of Neolithic Broch's, through to new buildings today, flagstone remains a natural resource and a key expression of Orkney's architectural vernacular.



Figure 3 - An Iron Age Broch reconstruction at Swandro. It is estimated that around 12 Broch's once lined the shores of Eynhallow Sound (author's photo 2014)

In contrast, the extraction of peat as fuel, which endured for centuries, is no longer in common practice. Up to the 19th century, peat offered a valuable resource, mainly as fuel for heating homes, but also in iron production, smoking meat, and other agricultural uses. Peat is not prevalent in Orkney, but some islands, including Rousay, Hoy, and Mainland have sizeable peatlands. Like other fuel-based resources, such as fish oil for lamps, the 20th century brought alternative forms of energy, of oil, gas, and electricity. Now peatland is protected, as this once-valued fuel source is increasingly recognised as playing an essential role for carbon capture in the battle against climate change.

Thinking through formations in this non-chronological way highlights the range of constituent entities, all with their own relationality and temporality. This non-linear and non-chronometric understanding of time foregrounds multi-temporality and transfiguration, which, according to archaeologist Cyprian Broodbank, is “made and remade by people” (Broodbank, 2000, p.33). As historian David Weinczok (2023) contends, the early settlements around Eynhallow Sound were not the “remote” or “simple” places that modern writers often describe such places as, but sophisticated and productive centres home to “imaginative, resourceful, and well-connected communities”. In this sense, we can start to

identify cultural inheritances, as the formation of a collective identity that contextually recharges itself both from within and from outside influences.

Transfigurations

As with many islands, Orkney is a place of stories, myths, and folklore, much of which draws from its oceanic setting. Written around the 13th century, the *Orkneyinga* saga is a fusion of myth, legend, and history, belonging to the genre of ‘Kings’ Sagas’ within the broader Nordic period of Icelandic saga literature, a group of histories of the kings of Norway. Using Orkney as its main setting the narrative introduces some of the most powerful figures of Norse Britain, in particular Earl Magnus the Martyr, the revered saint who is commemorated in the 12th century St Magnus Cathedral in Kirkwall (the capital of Orkney). Today, these ancestors remain in the minds of Orcadians, while underlying the formation of Orkney’s Norse heritage.

The *Orkneyinga* saga portrays how Orkney was a major staging post for Norse incursions into Britain and further afield, via sea roads leading west and south. It depicts the settlement of Orkney and Shetland by Norse incomers, firstly as marauding Vikings, then subsequently as influential Earls, often in conflict between each other, or between the islands and Norwegian kings. It also depicts the significant transition from paganism to Christianity, dramatically depicted:

King Olaf summoned the jarl Sigurd the Stout and said, "I want you and all your subjects to be baptised. If you refuse, I'll have you killed on the spot and I swear I will ravage every island with fire and steel. (Orkneyinga saga, p.37).

This event may be more myth than actual history, but certainly during King Olaf’s time Christianity spread across Nordic regions, including Orkney.

Orkney and Shetland were Norwegian and Danish colonies for over 500 years until ownership defaulted to the Crown of Scotland in 1472. A genetic survey carried out in 2005 indicated a Scandinavian ancestry of 30% for Orkney (Goodacre, et al 2005), while the name Orkney is a corruption of the islands’ Old Norse name Orkneyjar, generally taken to mean Seal Islands (Towrie, 2004). To further signal Orkney’s Norse identity, the island’s flag features a blue and yellow Nordic cross on a red background, a pattern usually associated with the flags of Scandinavian countries.

The spoken language of Orkney has been transfigured several times. Iron Age Orkney and Shetland were inhabited by the Picts, believed to speak an ancient Brittonic language. Under the influence of Nordic settlers from 800AD the common language in Orkney and Shetland gradually shifted to Old Norse, which subsequently evolved to Norn, as a set of dialects particular to the Northern Isles. Orkney was governed by Norway until it was annexed to Scotland in 1472, shifting the preferred use of language to Scots English through standardisation in religious, educational, and legal systems. However, while increasingly marginalised, Norn remained a spoken language through the 19th and 20th centuries, influencing the formation of what is Orcadian Scots, as an insular Scots dialect with a degree of influence from the Norn language.

Nowadays, you’ll hear a range of English and other foreign accents, indicating the extent of incomers settling in the islands. However, it is still common to meet islanders who speak with the distinctly softer cadence of the Orcadian dialect, often punctuated with words

particular to Orcadian Scots. There has been a range of initiatives to help conserve and promote Orcadian Scots. For instance, in 1992 the Orkney Language and Culture Group was formed to promote the Orcadian language, producing educational works, such as *The Orkney Dictionary* (Flaws & Lamb, 1997), while the Institute for Northern Studies based in Kirkwall, has the remit to research and promote Orkney and Shetland culture and heritage. Building on historical research by Orcadian scholar Hugh Marwick, Nynorn (New Norn) was launched around 2006, devoted to the reconstruction and revival of Norn, working from the premise that ‘no language can be completely dead’ (Nynorn,online).

Norse influence is also found in retained customs, in particular Udal Law, a near-defunct Norse-derived legal system, which is now only found in Shetland and Orkney, where Scottish Courts have intermittently acknowledged its supremacy in property cases up to the present day. The major differences from Scots law include shore and land ownership rights, contributing to a cultural value for shared ownership and responsibility for land, foreshore, and inland waters. The ownership of the foreshore is given expression within the morphology of Orkney’s key urban settlements, observed in the many domestic slipways found in coastal settlements, especially Stromness (Figure 4) and St Margaret’s Hope.



Figure 4 - Stromness waterfront indicating the Udal culture of foreshore ownership, with slipways and landing piers historically used by traders. The Orkney flag is a common sight across the archipelago (author’s photo 2023)

Deleuze called for the archipelago to be seen as “a world in process” rather than in stasis (1997, p.86). Thinking through transfigurations focuses on processes of change, yet within a sense of consistency with formative cultural inheritances, of imaginative, resourceful, and well-connected communities, gradually changing over time. Transfigurations can be widespread in terms of changes to language, customs, symbolism, resources, or other aspects of island culture, but can also be spatially pronounced through morphological, material, or infrastructural developments, intensively expressed as aggregated components of larger settlements. Whatever the case, thinking through transfigurations involves tracing the nature and scope of substantive changes to island life and culture.

Constellations

The simplest definition of an archipelago is a group or chain of islands. However, many island scholars have sought to advance beyond simpler conceptualisations of archipelagos, opening up appreciation of islands as set within spatial interconnections and movements rather than static territorial form (Massey, 2008; Soja, 2009), or as Jonathan Pugh suggests, thinking through constellations (Pugh, 2013). While transfigurations focus on processes of change, thinking through constellations emphasises territorial relations. Observed in Orkney, the archipelago operates through a constellation of predominant staging posts, which have extensive networks operating at varying territorial scales. For instance, through the 18th and 19th Centuries, Orkney experienced significant transfigurations through increasing mechanisation stemming from the Industrial Revolution, alongside burgeoning colonial trade, resulting in the expansion of its territorial interests. Reflecting Orkney's strategic position, in 1750, the celebrated cartographer Murdoch Mackenzie pioneered accurate coastal charts of the British Isles using Orkney as his initial context:

how very serviceable it would be to a great part of the trading nations in Europe to have the Orkneys rightly navigated, a chart of these Islands as a journey, migration, or route, where rest, resources etc can be gathered. is here proposed.
(Mackenzie [1776] 2010, introduction).

This transfiguration of territorial interests saw the establishment and growth of Orkney's modern-day constellation of main settlements; with the city of Kirkwall as the cultural capital and with the towns of Stromness and St. Margarets Hope as secondary cultural centres. From its early days, Hudson Bay Company ships regularly called into Stromness, using the islands as a staging post for supplies and to hire labour before setting sail across the Atlantic. By the late 18th century, three-quarters of the Hudson Bay Company's workforce in Canada were Orcadians, and such was the draw and subsequent drain on the islands' resources that not all welcomed the company. Writing in the Old Statistical Account for Orphir, a scattered settlement and parish on Orkneys Mainland, the Reverend Francis Liddell complained that:

instead of offering an honourable service to their King and country, or staying at home to cultivate their lands, and protect their wives, their children, and their parents, for the sum of £6 per annum hire themselves out for slaves in a savage land. (Liddell [1797] 1978, p.406)

Today, the building that was once the stores of the Hudson Bay Company is now home to the Pier Arts Centre (PAC), containing one of the most significant art collections outside of any major urban centre in the UK. In many ways PAC (Figure 5) plays on the continuation of mercantile usage, seeing this as a specific cultural function, which art critic Mel Gooding describes as “a place of landing and lading, storing and trading”, where ‘now works of art, in themselves goods (in every sense), take their place in this human history of dynamic exchange’ (Gooding, 2010 p.17). This conceptualisation highlights a keen sense of how islands act as staging posts, as strategic points of exchange, whether that be for basic resources or works of modern and contemporary art.

As the director of PAC, Neil Firth once told me, there is nothing worse than a quiet port. Orkney has certainly experienced plenty of periods of economic inactivity, quiet ports, and widespread deprivation on the island's population. Census records indicate a population

peak in 1861 of 32,225 people, yet over the next hundred years, this dwindled to a population low of 17,077 in 1971. The 2019 North Orkney Population History Project (NOPH) explored changes in population, economy, settlement, and land use in six of the northernmost Orkney Islands (Westray, Sanday, Papa Westray, Eday, North Ronaldsay and Faray). The study identified several contributing factors to the decrease in population, including the demise of the kelp industry due to increased government tariffs around the 1840s, agricultural downturns due to colonial markets opening up around the 1880s, followed by a gradual transition from small-scale tenant farming to large-scale mechanised systems through the 19th and 20th centuries. Depopulation largely involved out-migration, mostly to mainland Scotland, North America, Australia and New Zealand, although other factors, such as decreasing fertility rates, also play a part (Jennings, Sparks & Murtha, 2019).

Since the 1970s the population has gradually increased, with oil and gas industries providing economic upturns in the 1970s and 1980s, as part of the broader ‘oil boom’ in North Sea production. More recently marine renewable industries are driving a new sense of prosperity. Based in Stromness, the European Marine Energy Centre (EMEC) is central to a campus of marine industry and research. Walking along Stromness high street you can experience many signs of prospering times; the ambiance of building renovations (Figure 6); new housing developments; fishing boats being replaced by specialist marine energy service vessels; more young people studying at the marine campus; a vibrant high street with high quality goods; people with leisure time, and so on, presenting an aggregation of economic upturn, which has seen further population increase, now estimated around 22,500.



Figure 5 - The Pier Arts Centre incorporates a visual experience that frames works of art alongside external views of the surrounding harbour and townscape (author’s photo 2014).

The population increase since the 1970s is concentrated around Orkney’s constellation of main settlements, in particular Kirkwall and Stromness, indicating a pattern of population centralisation and increasing urbanisation evident in these places. However, for all the new house building that is evident, the provision of housing to meet the increasing population, which is expected to grow further in the coming years, is a major challenge. Equally, across the archipelago sustaining populations on smaller and more remote islands remains a constant struggle. In the 19th century around 50 islands had permanent populations, now only around 20 have permanent residents, with an increasingly ageing population that places

pressure on available services. So, while Orkney's ports may be experiencing a period of increased activity, the pressure to adapt to a growing population, with changing demographics, is evident.



Figure 6 - A comparative view of building renovations in Stromness, also indicating the transition from fishing to service vessels, alongside scaling up of marine activity, in the background (author's photos 2012, 2020)

What seems consistent in Orkney's narrative, is that the sea is the constant horizon of new possibilities. This aligns with Hayward's (2012) idea of broadening our understanding of the archipelago as a group of islands, to that of the aquapelago. Around Orkney, there is as much happening in and on the sea as there is on land. New maritime industries are vying for both marine and terrestrial spatial resources while competing with an array of existing industries; oil and gas; fish farming; transportation channels for cargo, cruise and inter-island ferries; a burgeoning leisure industry, including marinas, dive centres, and sea safaris. This array of activities indicates that marine spaces significantly contribute to Orcadians' sense of identity and livelihood.

Shifting attention to the aquapelago highlights that a constellation is not only made up of points, or staging posts, but the range of infrastructural networks, land/sea interconnection points, and particular marine conditions that make the constellation operational. For instance, in 2023 the Orkney Harbour Authority proposed ambitious plans to launch a £230 million infrastructure vision, with the development of deep-water quaysides as a primary objective. While many of the existing maritime staging posts will benefit from investment, the plan concentrates significant investment in a new marine industrial hub, the Scapa Deep Water Quay. This development indicates the scaling up of operations, introducing a new infrastructural hub into Orkney's existing constellation of marine staging posts while increasing the archipelago's capacity to accommodate larger service and tourist vessels through deep water quays.

The constellation of Orkney's main staging posts is networked within broader constellations of trade, energy production, and tourism. For instance, there are 20 lease-based offshore wind farms around Scotland's coast, creating a major economic incentive for island and coastal ports to feed into this fast-growing North Sea infrastructure and supply chain. The recently developed deep water quay at Hatston, located a few miles from Kirkwall, allows access for very large cruise liners (Figure 7), with an estimated 125,000 visitors passing

through since it started operations three years ago. Through this development, Orkney has joined a constellation of cruise liner ports around Europe, joining the likes of Copenhagen, Cork, Bergen, and Amsterdam, in providing anchorage for these huge tourism vessels.



Figure 7 - View of a cruise liner moored at Hatston deep water quay, with inter-island ferry in the foreground (author's photo 2023).

The main tourist attraction is UNESCO-designated world heritage sites running through Orkney's "Neolithic heart", described by UNESCO as being "unparalleled amongst Neolithic settlement sites in northern Europe" (UNESCO, 1999). However, the limitations of road networks, alongside the physical impact of so many tourists, are placing considerable strain on these sites and the transport networks that interconnect them. On one visit to the Ring of Brodgar (Figure 8), an immense henge of standing stones built 5000 years ago, the horde of tourists emanating from fleets of coaches, allied with restricted access to the standing stones, undermined my experience. Now, like many islanders, I carefully plan any visit to these sites or the congested roads around them.



Figure 8 - View through standing stones at the Ring of Brodgar to a fleet of coaches and large groups of package tour tourists kept on a designated pathway. Access within the stone circle is now restricted (author's photo, 2023).

By thinking through constellations, it is evident that Orkney's main staging posts continually respond to changing territorial opportunities, of networks of trade, energy, and tourism that bring economic opportunities to the archipelago. As such, staging posts are most often the focus of major investments, seeking to continually enhance the island's network capacity in response to varying territorial opportunities. However, constellations are not only about operational matters. As indicated, artworks and other creative entities respond to the archipelago's territorial imagination, while trade and infrastructure respond to resourcefulness and innovation. In this way, constellations are as much culturally as economically driven, underpinning the island's cultural identity. Yet, as in the case of tourism, not all network developments are entirely welcome, especially when they place strain on internal networks while dislocating locals from their cultural heritage.

Aggregations

Alongside transfigurations and constellations, varying scales of aggregate relations can be observed. Thinking through aggregations places focus on processes of transition, exploring staging posts and broader patterns of change aligned with what Elaine Stratford describes as “sites of abstract and material relations, dependent upon changing conditions or fluid cultural processes” (Stratford, et al 2011 p122). Many aggregations have already been mentioned, such as the array of cultural formations around Eynhallow Sound, the transitions observed in Stromness, or the operational developments for marine industries, amongst other relational changes. In periods of intense transfiguration, including those Orkney is currently experiencing, aggregate relations can be in states of high transition.

In Orkney particular aggregations can be observed through the transition of infrastructural assemblages around Lyness on the island of Hoy, and the nearby small island of Flotta. Allied to its historic trade links with North America, Orkney was important in both World Wars, acting as the base for the North Atlantic naval fleet, with hundreds of ships and thousands of service personnel located around the strategic maritime centre of Scapa Flow. As Manuel DeLanda (2016) points out, when thinking through assemblages, the military is a perfect example of assemblages within assemblages, as a hierarchy of highly organised, operational parts, nested in larger assemblages of organisation. For instance, the harbour at Lyness, on the island of Hoy, was transformed into a vast anchorage for the fleet, supported by an extensive military infrastructure, including piers and quaysides, fuel supply, engineering platforms, and a mass array of personnel huts, canteens, and leisure facilities, all overseen by a radio control station (Figure 9) sitting near the top of a hill about a mile south of Lyness.

The aggregation of these operational assemblages made Lyness the heart of military operations for the North Atlantic fleet while being nested in the expansive coastal defence infrastructure around the UK's North Sea coastline. Today, Lyness retains traces of this military infrastructure, largely organised around the Scapa Flow Museum (Figure 10), presenting a curated aggregation of various artifacts that chart Orkney's military involvement in both World Wars. Beyond the museum, there are some remnants of military buildings, while the local cemetery offers a harrowing insight into the names and ages of those who lost their lives, including many young men, some only 15 years old, killed on the training ship *HMS Royal Oak*. Torpedoed on the 14th of October 1939 by German submarine U47, that event stands out as the most tragic act in Orkney's wartime story. Walking to the now abandoned radio control station, one encounters a scattering of various small derelict military buildings, before reaching the large concrete monolithic structure of the station, from where the views across Scapa Flow are impressive. For what was once an aggregate

component relationally central to a vast military infrastructure, as the hub of military telecommunications, this abandonment means the station is now dislocated from the museum’s curated narrative. With entrances sealed up, it is now an eerily entombed structure.



Figure 9 - The now abandoned radio control centre located on a hillside outside of Lyness (author’s photo 2018).



Figure 10 - Scapa Flow Museum, with the recent café extension to the right side of a former pumping station that now contains the museum’s main exhibition (author’s photo 2023).

In contrast, the museum now has a new café extension, a bright windowed space, offering Wi-Fi connection, coffee, and other aggregate trappings of contemporary café culture. For Lyness, investment in the museum offers a connection within Orkney’s tourist networks. However, while other harbours can offer deep water quaysides, the conditions around Lyness are limited, meaning it will struggle to compete for incoming commercial interest. As Wilson Harris sees it, limbo is an archetypal symbol of “sea-change,” characterised by dislocation and change (Harris, 1995, p.379). For now, while the stage has been set, the main characteristic of transition Lyness conveys is one of limbo, albeit the museum does attract many tourists.

What can also be observed at Lyness is the speed of change. Pelamis 2, one of the first wave power prototypes tested in Orkney, is now quietly anchored at one corner of the Lyness quayside. When I first visited Orkney some 12 years ago, Pelamis 2 (Figure 11) was the emblem of innovation, of wave energy devices heralding the future of marine renewables. Since then, Pelamis 2 has been superseded by increasingly efficient wave energy devices, while tidal energy devices, often using technologies aligned with wind turbines, have become the new objects of innovation. For now, Pelamis 2 adds to the sense of limbo at Lyness, with Orkney Island Council seeking tenders for its disposal, which for some, feels like a sad ending for a device that played an emblematic role in promoting marine renewables.



Figure 11- Pelamis featured prominently in media campaigns promoting marine renewable energy. It is now awaiting to be dismantled (authors' photo 2023)

The process of aggregation observed at Lyness can be related to DeLanda's idea that "assemblages are made up of parts that are self-subsistent and articulated by external relations, so that a part may be detached and made a component of another assemblage" (DeLanda, 2006, p.18). For instance, at a broad temporal scale, Lyness is tentatively interlinked as a tourist centre, while left in a state of limbo, being largely detached from maritime activity. The museum presents a curated narrative, of which some elements, such as the radio control station, remain detached and abandoned to an uncertain future, while Pelamis 2 has similarly been detached from marine energy, and now partially made a component of maritime history, albeit more by accident than by design.

While Lyness presents a sense of limbo, the nearby island of Flotta offers a different perspective. Flotta transitioned through the re-appropriation of military fuel infrastructures to become re-attached as an oil terminal. Nested in a constellation of global energy networks, Flotta Oil Terminal (Figure 12) operates as a staging post made up of an aggregation of highly operationalised parts; a deep water anchorage to transfer various fossil fuels, including crude oil, liquefied natural gas and liquefied petroleum gas; networked sub-sea pipes linking the North Sea oil fields of Claymore, Golden Eagle, and Piper; the production and distribution of around 2.6 billion barrels of oil, distributed via an average of 50 oil tankers each year. A tall flare stack dominates the night seascape, offering an almost constant reminder of the oil terminals' presence across Scapa Flow to Orkney's mainland.

The imposition of oil industries on islands such as Orkney and Shetland, has divided opinion. Certainly, oil production brings all the economic benefits that help to sustain island populations, especially in earlier periods when the island's economy was struggling. More

recently there are commitments to continue production in existing oil fields until 2030, while in 2023 the UK government announced opening a new oil field, Rosebank, 130 kilometres west of Shetland, which will produce an estimated 300 million barrels of oil. How many million tonnes of carbon dioxide emissions will be the outcome of further oil production is certainly one point of contention. For islanders the presence of large-scale industries, in particular the oil industry is divisive.



Figure 12 - View from Lyness to the Flotta Oil Terminal. The flare stack is less noticeable in daylight, but just visible to the right side of the terminal (author's photo 2023).

This divisive presence was dramatised in George Mackay Brown's celebrated novel, *Greenvoe*, (1970) in which the fictional island of Hellya remains unchanged for generations until the mysterious Operation Black Star project threatens to change everything. The nature of the Black Star project is never revealed, leaving readers to ponder whether it refers to the formative imposition of Oil and Gas fields, or possibly plans to mine uranium around Stromness, all happening around the time of its authorship. It may also relate to the aggregation of more insidious modern developments Mackay Brown refers to in other texts, "wireless and television, compulsory education, newspapers, the insidious notion that urban ways of life are necessarily superior to rural ways" (Mackay Brown, 1970 p.144).

While the military histories and economic might of oil infrastructures may seem powerful aspects of the island's story, they remain outside of the collective identity the island generally projects. For instance, no matter their historical significance as part of the North Sea defence system, many of the impressively brutalist-style military installations have been left to ruin (Figure 13). The outward projective identity of Orkney is an aggregation of deep-rooted histories, of farming and fishing communities, fusion with Norse culture, imagination, resourcefulness, and innovation. This indicates that by thinking through aggregations we may trace particular processes of spatial and technical transition, but at broader scales, we can also trace the aggregation of cultural values and distinguishing features that selectively form islanders' collective identity.



Figure 13 - Former military sea defences at Hoxa Head on the island of South Ronaldsay, which guarded the main southern entrance to Scape Flow (author's photo 2016).

Tensions

This process of selective identity was not lost on EMEC. In the early stages of introducing marine-based wave and tidal energy test machines, they used references to Norse mythology, with Aegir becoming the name of one of the first offshore wave power farms, referenced from the great Norse Sea god. In this way EMEC sought to appeal to local identity, working from within to propel Orkney into an age of renewable marine energy. From the growing resources of EMEC's marine campus come many tangential developments. For instance, alongside Orkney being used as a micro test site for electric car networks, more recently, Microsoft has utilised marine services to test prototype data centres. Placed on the seabed to provide natural cooling, while interlinked with renewable energy, this approach could offer a more sustainable infrastructure than land-based data centres.

Orkney is fast becoming a staging post for an international assemblage of entrepreneurial projects while being seen as a global centre for low-carbon innovations. This sense of collective innovation falls into what Godfrey Baldacchino describes as “the island as laboratory” (2018 p.278). In Orkney researchers and policy-makers, prospectors, and prototypes, have become actants in a malleable assemblage of a more transient population. While Orkney's transfiguration into a world-leading marine renewables centre may seem positive, from what started as a relatively low-key development some 20 years ago, the speed, scale, and variability of change are surpassing many islanders' expectations, for good or worse depending on who you talk to. Baldacchino suggests this leads to a state of tension between “openness and closure” (2016, p. 278), which in Orkney seems relative to whatever authority or organisation is making decisions within an increasingly complex assemblage of local, national, and international interests.

These varying scales of interests can be related to what Doreen Massey describes as ‘the dominance of territorially based democracy in a relational world’ (2005 p.181). For instance, the Scottish government approves leases for offshore wind farms meaning they bypass local authority planning, but directly influence regions vying for significant economic

opportunities. In turn, Orkney's Harbour Trust wields economic power through substantial investments in marine infrastructures but still requires planning consent by the Island Council. Add in an array of influential corporate and institutional interests and the assemblage becomes further complex. In this diffused structure of archipelagic governance, it often becomes unclear who makes decisions, and in whose interests, they are made.

Contentions between national, regional, and community interests became a significant point of tension in another recent development. To help conserve marine habitats the Scottish government proposed the implementation of a series of marine protected areas (MPA), resulting in particular activities becoming prohibited, including scallop dredging and bottom-trawling that damage seabed, while limiting forms of industrial activity in selected sites. Most of the sea channels between Orkney's islands were proposed designations for protected areas, creating significant implications for maritime industries operating within these areas or as part of future investments. Orkney Island Council delayed any decision on whether to accept the protected areas, but at the same time, coastal communities across Scotland made their feelings clear about the negative impacts on local economies, resulting in a hasty backtrack by the government. Being indefinitely suspended, the proposed policy is now in its own form of limbo.

The tensions between national, regional, and community interests can often be related to a moral-political question, of how aims to conserve and protect ecological resources come into tension with rural and island communities that traditionally rely on those same resources. It is a question of how communities can adapt to broad-scale environmental policies, often perceived as stemming from external decision-making, imposed by national governments intent on meeting particular targets, especially current environmental targets for climate action and conserving biodiversity.

This tension in decision-making can be observed in other parts of Orkney. Taking the interconnected ferries northwards, Papa Westray (known locally as Papay) is one of Orkney's smaller inhabited islands, with around 90 permanent residents scattered across the island. Land on Papay is fertile, sustaining its population through crofting. However, what is most notable when visiting this island is the ambiance; one of an almost constant cacophony of bird calls. Papay also holds a less than favourable reputation for being where the last Great Auk was killed in 1813, being the terminal blow for this flightless bird. The human-induced extinction of the Great Auk, through hunting across islands in the North Atlantic, is often cited by conservationists as highlighting the legacy of over-exploitation of ecological resources. What we see on Papay is an evident tension line, most palpably observed on the comparative border between the conserved wildlife reserve and adjacent farmland (Figure 14). The former characterises the rocky moorland that is Orkney's remnant ecological habitat, while the latter personifies deep-rooted agricultural practices, turning bog and rock into fertile fields for livestock and crops. Tension arises from this juxtaposition of local traditional farming and what is often perceived as "institutional" nature conservation projects, which attempt to ring-fence areas of landscape to enhance, or preserve, natural habitat (Vergunst 2011).

Across Orkney, the Royal Society for the Protection of Birds (RSPB) now manages over 8,000 hectares of land, with many designated as Sites of Special Scientific Interest (SSSI). However, the continuing claims to Udal heritage mirror the symbolic independence of small-scale landowners and farmers. This contributes to the islander's sense of identity, shaping the cultural landscape through deep-rooted values for common ownership and responsibility for land. On Papay this sense of common ownership became a point of tension when the RSPB

decided to limit local crofters' access to graze livestock on the northern reserve, bringing an end to centuries of traditional grazing practice. I have heard stories about local crofters, in an expression of distrust, burning an effigy of the local conservation warden, but those may only be stories. Eventually, Papay crofters forged an understanding with conservationists to manage the island as an ecological staging post, allowing grazing on the reserve, while enhancing all habitats across the island, forming an integrated approach. Yet, while this integrated approach has been positive, recent studies indicate a dramatic decline in seabird populations. When one ventures to the rocky cliffs at the north of the island one enters a bird reserve that seems devoid of any significant bird population, with some species, like once commonly spotted Kittiwakes, almost extinct on the island. Warming sea temperatures, increased storms, and overfishing are seen as the main contributors to the decline of marine environments and essential food chains for sea birds. Add in the devastating impacts of avian flu and the picture becomes ever the more drastic.



Figure 14 - This photo was taken on Orkney's mainland, indicating that the contrast between farmland and conserved moorland can be observed across the archipelago (author's photo 2012).

Nested within much broader ecosystems, Orkney's climate is influenced by the Gulf Stream, which itself has the Norwegian Current within it while being part of the more extensive North Atlantic Drift. These nested systems provide Orkney with its cool temperate climate, but according to some studies may also contribute to bird decline. Observed shifts in the Gulf Stream have moved plankton blooms further north, meaning birds have to fly significantly further to source food, which in turn, affects breeding levels, offering one further interpretation of seabird decline.

The decline of seabirds, alongside the range of potentially contributing factors, indicates how a small island like Papay can be caught in tension with many systems, between the differing interests of farming and conservation; the over-exploitation of ecological resources on land and sea; the extensive scales of anthropogenic impacts on marine life; or the shifting currents of climatic and oceanic systems. As but one example, it indicates the complex scales of tension the broader archipelago is set within. What can also be found on Papay is evidence of Orkney's deep-rooted tradition for farming. Knap of Howar, a Neolithic farmstead on Papay, which dates from 3500 BC, is possibly one of the first known permanent farming settlements and certainly the oldest preserved farming settlement in northern Europe.

While Orkney may project an outward identity of being an aquapelago, islanders are as much attuned to an internalised identity around land, farming, and community. Today, there are

approximately 1900 farms across the archipelago, with cattle and sheep being the main livestock, alongside pigs, goats, and poultry as secondary produce, while crops including barley, oats, and potatoes are common. The land is very fertile, with an estimated 80% of land farmed, employing around one-quarter of the island's workforce (Figure 15). Farms play an essential role in sustaining communities on smaller islands dependent on local self-sufficiency, while across the archipelago named farm sites have been dated to before the eighteenth century, some no doubt have deeper origins (Marwick, 1952), providing a sense that farming families have played a vital role in sustaining Orkney's population as a whole.



Figure 15 - View east across mainland Orkney indicating the widespread presence of farming in the island's landscape (author's photo 2023).

Visiting the annual West Mainland Agricultural Show in Dounby presents a grand assemblage of people and their families, an array of produce, machinery old and new, and prize livestock as the central feature. It is a show, but also a market, a staging post strategically located so livestock and produce can be moved quickly through land and sea networks onto external markets. Equally, the show is a network in itself; as the social gathering of the island's many farming families, presenting an aggregation of people, animals, produce, and technology. This points to the covenant between people, land, and creatures that underlies Orkney's farming traditions and sense of collective identity. For instance, before the main island on Orkney was called Mainland, it was known as Hrossy, meaning the Island of the Horses. From the 1930s onwards tractors gradually replaced horses, with the Massey Ferguson becoming a ubiquitous feature across rural Orkney, as one transfiguration towards the increasingly mechanised agricultural practices of today.

The internalised identity of 'everyday' Orkney rotates around a set of social settings that do offer a good quality of life; access to schools, supermarkets, natural surroundings, leisure facilities, community social events, festivals, and agricultural shows, low crime, relatively cheap housing and so on. It is a quality of life that has seen Orkney rated as the best place to live in Scotland in both 2013 and 2014 and in 2019 the best place to live in the UK, according to the Halifax Quality of Life survey. Yet even this perceived quality of life, measured by external indexes, comes into tension with the lived experience of many islanders. For instance, concerns around the provision of housing for a rapidly growing and centralised population, access to services on remote islands, the impacts of expansive tourism, and cultural dilution by an increasingly diverse demographic, are often discussed while being the

subject of local, and occasionally national, media reports. Only recently, the *Orkney News* reported on island communities facing a “housing crisis” (Orkney News, 2024). What this study highlights is that more broadly, the internalised sense of everyday life seems in constant tension with relational change, through economic progress, environmental pressures, spatial resourcing, and cultural transfiguration.

Conclusion

As evident in this study of Orkney, the complexity of archipelagic relations does not allow for easy interpretation. Through an extensive period of fieldwork, this study sought to identify a framework that provides a degree of conceptual specificity by thinking through the process-based terms of formations, transfigurations, constellations, aggregations, and tensions. While presented in sequential order, none of these processes are discrete, rather they are complex, entangled, and often occurring simultaneously. As presented, they have the potential to bring attention to processes of relation change, movement, and interaction, across varying spatial and temporal scales, while bringing emphasis to cultural values.

In summary: formations offer a logical starting point to consider the deep time of islands as physical spaces, from which the formation of deep-rooted cultural inheritances emerges. Through transfigurations these formations are open-ended, always transitioning, while varying to differing periods, scales, and speeds of change. Often this change responds to external territorial developments, where thinking through constellations brings focus to interconnections occurring across territorial scales. The aggregation of entities, parts, species, or other relational components supports network capacity at structural scales while informing selective identity. Tensions bring emphasis to the archipelago as a negotiated space, of cultural practices and interests, set within a pressurised environment.

Alongside this conceptual framework, considering staging posts brings emphasis to those places where cultural and environmental processes are often most intensively manifest, as spatial settings with a varying range of technological, material, ecological, and social settings, that sustain island life. Language, customs, laws, climatic currents, and other more elusive systems are also brought to light, often being distributed as widespread processes. In thinking through this combination of conceptual terms and staging posts, we move beyond generalisations of islands as the context of study, towards a more nuanced conceptualisation, where nothing is ever settled, bound, or isolated, but always moving forward, through processes of relational change.

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