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Introduction: Island textiles and clothing

Siún Carden
University of the Highlands and Islands, UK
Siun.Carden@uhi.ac.uk

Abstract: This special thematic section of Island Studies Journal explores textiles and clothing from an island studies perspective. While there are many examples of textiles and clothing associated with particular islands, an explicitly island studies approach to them has not been fully developed. Such an approach offers the scholar of textiles and clothing a comparative perspective on disparate examples, and invites investigation of ‘island-ness’ beyond its frequent use in branding for a limited range of ‘heritage’ products. Within island studies, the often-remarked combination of materiality and symbolism in textiles and clothing provides insight into ‘island-ness’ in the round, encompassing environments, economies, communities and cultural imaginaries. This section includes work on the pânu di téra of Cape Verde, cloth circulation in Madagascar, and textile craft and the creative economy in Shetland.

Keywords: clothing, crafts, dress, islands, textiles

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There are many varieties of textiles and clothing that are associated with islands in one way or another. Certain islands are synonymous with types of cloth, such as Harris tweed (McClellan, 2017), Maltese lace (Markwick, 2001) and Fair Isle (Butler, 2015) or Aran knitting (Carden, 2014; 2018a). Others are home to specific garments, such as the pânu di téra of Cape Verde (Nolasco, 2018) or the ‘island dress’ of Vanuatu (Cummings, 2013). Island-dwellers participate in the globalised textile industry as workers and consumers, act as “heritage entrepreneurs” through textile craft (Rodgers, 2011; see also Zorn, 2004), and are periodically invoked as inspiration for international fashion brands (e.g. Alexander McQueen©, 2017). However, an explicitly island studies perspective on textiles and clothing has not been explored. An island studies approach to this topic—that is, one that centres and problematises the significance of “island-ness” (Baldacchino, 2004, p. 272)—is worth pursuing. For a scholar of textiles, the many examples of textiles linked with particular islands invite consideration in comparative perspective, and investigation of their “island-ness” beyond its usefulness in romanticised branding. For a scholar of island studies, the often-remarked combination of materiality and symbolism in textiles (Miller 2005) offers a way to approach island-ness in the round, encompassing environments, economies, communities and cultural imaginaries.

Both islands and textiles have been theorised in terms of borders, edges and liminality. Baldacchino (2004, pp. 273-274) suggests that ‘island-ness’ is marked by two characteristics, namely ‘locality’ (a sense of a discrete, bounded place) and an often overlooked ‘externality’ (“the filter, broker and interface of/for the island with the rest of the world”), and that the importance of these two characteristics is inversely proportional to the size and population of the island in question. The idea of ‘islandness’ as a sense of place that is dominated by its own continuous edge, which provides containment and connectivity, resonates with work on textiles and clothing as boundaries that both separate and communicate. For example, Entwistle (2000, p. 327) observes that “Dress lies at the margins of the body and marks the boundary between self and other, individual and society”, and Miller (2005, p. 6) describes
clothing as “the carapace that conducts and connects […] rather than separates our sense of what lies within and outside ourselves.” Similarly, Pajączkowska (2005, p. 229) argues that textiles act as “neither object or subject, but as the threshold between.” If islands are places dominated by their edges, textiles and clothing can be thought of as all edge, acting as mediating surfaces with no ‘inside’ of their own.

Another point of overlap in writing about islands and textiles is the long association of islands, craft and the pastoral. Harling Stalker and Burnett (2016, p. 195) point out that the “doctrine of islands” as “either places to escape to or to escape from,” both otherworldly and hyperreal, echoes escapist fantasies about craft and the pastoral (Adamson, 2007). This contributes to the frequent positioning of island textiles and clothing as ‘craft’ items in contrast to the global textile and clothing industry. However, as Carr and Gibson (2016, p. 311) argue, the conceptual boundaries between craft processes and mass manufacturing are ill-defined and not always helpful. Moreover islands are not, of course, pastoral sanctuaries from global economic forces and islands and islanders are deeply shaped by and active in international industries, including textile and clothing manufacturing, design and distribution. The Shetland knit textile sector offers an example of how inadequate simple distinctions between craft processes and industrial production can be: throughout the 20th century knitwear was a major local industry, exporting to international markets, while reliant on a combination of hand and machine techniques, and home and factory production (Laurenson, 2013). This industrial history fuels Shetland’s appeal to an international, online-mediated community of leisure hand knitters, who enable a growing craft tourism sector in the islands, and an intensified heritage gaze on even the islands’ contemporary textile practices (Carden, 2018b, forthcoming).

As Price and Hawkins (2018, p. 10) ask, “for whom is making a hobby, done as an amateur, or as part of an everyday vernacular? For whom is making labour, work, a way to make a living? [...] These lines are blurred, tense and often co-productive.”

In the context of the UK and Ireland, the first kind of ‘island textiles’ that come to mind are well-known textile ‘traditions’ such as Aran and Shetland knitting and Harris Tweed. In each of these cases, the relationship between the textile product and its place of origin is emphasised in images and narratives through which a small island identity and related national identities are co-constructed. For example, the design history of Aran knitwear is shaped by transatlantic Irish migration and tourism, and a narrative about a drowned Aran islander fisherman whose family identify his body by his patterned jumper resonates with the journeys of ancestral tourists to the island of Ireland (see Carden, 2014). As a symbol of Irish nationhood, the Aran jumper offers a material shorthand to make political claims about what Ireland is or should be. During the successful 2018 campaign to repeal the eighth amendment to the Irish constitution, legislation to remove the bar to abortion, the Irish comedian Aisling Bea performed in an Aran jumper spray-painted with a crossed-out figure 8. Shetland knitting such as Fair Isle colourwork has been incorporated within Scottish national branding (Peach, 2007) while simultaneously associated with the Shetland Islands’ locally celebrated Nordic connections and distinctive ‘sub-brand’ (Grydehøj, 2011; Highlands and Islands Enterprise, 2014). Harris Tweed has been used to represent Scottishness (Black et al., 2015), upper class Englishness, and Britishness in general (McClellan, 2015). All these textiles are enlisted into the construction of complex national and diasporic identities as symbols of the rural, remote, authentic and resilient (among other things). They are each linked to a mythologised historical narrative of textile production as part of a subsistence economy, which is embedded within their contemporary presentation as design classics and souvenirs.

The original impetus for this special thematic section was the editor’s curiosity as to how the UK and Ireland’s cluster of island-related textile crafts relates to examples elsewhere in the world, and to other kinds of textile products and practices, from utilitarian non-clothing textiles such as ropes and nets to the international garment industry, patterns of re-use and the contested drive towards a circular economy. While not all of these issues are addressed or
exhausted within this section, the articles included offer a variety of ways to think about textiles and clothing from an island studies perspective, demonstrating the potential of this approach to enrich the study of both textiles and clothing and islands “on their own terms” (McCall, 1994; Baldacchino, 2008). The articles gathered here demonstrate that island textiles and clothing in disparate contexts—Cape Verde, Madagascar, and the Shetland islands—do possess certain common roles, as objects of exchange (whether through gift or trade networks), part of the symbolic apparatus of nationhood and mediators between the transnational and the intimately local, even familial. However, even in these few articles, the range of practices involving island textiles and clothing and the approaches with which they can be studied is striking. The articles by Nolasco (2018) and Ducros (2018), which examine island textiles and clothing in the context of colonialism (whether Portuguese colonialism in Cape Verde or French colonialism in Madagascar) particularly demonstrate the importance of the ongoing discussion within island studies (among other subject areas) about the far from finished work of decolonising the field (Baldacchino, 2008; Nadarajah & Grydehøj, 2016; Grydehøj, 2018). As well as the issues of insider and outsider voices and fraught categories of ‘islanders’ and ‘mainlanders’, following the thread of textiles and clothing reveals the complex place of islands within overarching global power relationships, both historically and in the contemporary world.

In ‘Designing national identity through cloth: pánu di téra of Cape Verde’, Nolasco (2018) examines the changing role of a particular type of fabric once used “as a form of currency” and an important part of an international trade network in “both goods and enslaved people.” Nolasco traces the development of the pánu di téra as a symbol of Cape Verdoan nationhood post-independence, and draws on her empirical research in Cape Verde to discuss craft and commoditisation in the context of contemporary globalisation and tourism.

In her article ‘Reclaiming islandness through cloth circulation in Madagascar’, Ducros (2018) presents a historiography of Malagasay textiles, from gifts of cloth forming “the ultimate diplomatic conduit” to the mass production and cheap labour of the contemporary globalized apparel industry. Demonstrating how “cloth is useful for underscoring processes of local-global integration,” Ducros argues that while Anglophone historians have often struggled “to place the island of Madagascar” within its Indian Ocean context, textiles scholars have “had no difficulty placing the island at the center of intricate centuries-old networks.” She suggests that an island studies approach to Malagasay textiles offers a way to attend to “relationalities, circulations, and diplomacies that go beyond cloth itself.” In doing so, Ducros makes a case for the relevance of the so-called ‘Great Island’ for island studies, in whose literature it has rarely featured.

In ‘Craft, textiles, and cultural assets in the Northern Isles: innovation from tradition in the Shetland Islands’, McHattie et al. (2018) present findings from and reflect on their ‘Innovation from Tradition’ workshops, which employed a design innovation methodology positioning “local people as central drivers of innovation.” Organised around the themes of “practice, place and people,” their research on craft and the creative industries advocates an asset-focused approach to the “unique opportunities, resilience and rich history” of island communities. McHattie et al. approach island textiles as part of the creative economy, locating them within a UK research and policy context that is primarily focused on the urban. While the discourse of the creative industries and creative economy is often preoccupied with geographical proximity as a catalyst for economically productive creativity (as seen in the notion of ‘creative’ hubs, clusters, quarters, etc.), it forms an increasingly important part of the economic and policy context of even small island textile producers in the region.

Hemmings (2015, p. 12) observes that “attention to the complex narratives of multiple cultural influences told by textiles has gone somewhat unnoticed outside the field of textile scholarship.” Overall, this special thematic section suggests that it is worth paying attention to island textiles and clothing in order to trace some of the complex narratives of multiple
influences that constitute “island-ness”. Contemporary concerns about climate change, automation and inequality add urgency to work on ‘geographies of making’ (Carr and Gibson 2016; Price and Hawkins 2018) and alternative perspectives on the global fashion and textiles industry (Fletcher 2016). Island studies has more to add to these conversations.

References


Designing national identity through cloth: \textit{pánu di téra} of Cape Verde

Ana Nolasco  
Research Unit in Design and Communication, Universidade Europeia Lisbon, Portugal  
Centre for Comparative Studies, University of Lisbon, Portugal  
analascosapopt@gmail.com

\textbf{Abstract:} This article analyzes the way in which \textit{pánu di téra} shapes the history of Cape Verde. \textit{Pánu di téra} is a cotton fabric that began to be produced in the archipelago in the mid-fifteenth century, the technique having been brought from Africa to the islands by Guinean slave weavers. It was later used as trading currency for the acquisition of slaves from Africa’s West Coast to be sold in Brazil, migrating there as well. Following their independence in 1975, \textit{pánu di téra} will came to be a testimony to the islands’ African heritage, and a symbol of Cape Verdean identity. It is in the context of the re-Africanization process led by the PAIGC (the African party for the independence of Guinea and Cape Verde) following independence that a valorization process begins which, in conjunction with opening markets and growing tourism, culminating in the establishment of \textit{pánu di téra} as a trademark of Cape Verdeanhood. With this process in mind, I analyze the effects of globalization in an island context and the possible forms of resilience to it.

\textit{Keywords:} Cade Verde, fashion design, globalization, identity, \textit{pánu di téra}, textiles

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\textbf{Preliminary dilemmas}

\textit{Pánu di téra} distinguishes itself from other African fabrics by its blend of aesthetically developed yet unusual and complex patterns that combine an Islamic or Hispano-Moorish influence with a weaving technique of African origin, practically identical to that used by the ManjakPapel (Carreira, 1983, p. 139) woven from multi-coloured cotton thread. Traditionally, the predominant colours are indigo blue and white. This fabric has shaped the history of Cape Verde, especially during the period from the 15th to the 17th centuries, with production falling during the 18th century. Highly valued along the west coast of Africa, the cloth was an integral part of the commercial trade in both goods and enslaved people, and played a role in increasing the demand for slave labour in the archipelago. The fabric had a symbolic significance, and was used during ceremonies and as a sign of social status. It further acquired a political significance, which changed over time, from the colonial period to the present day.

In the age of globalization and tourism, a renewed gaze on \textit{pánu di téra} makes it the symbol of a unique identity: not quite European, not quite African, but Cape Verdean. In contrast to an identity-eroding tendency towards faceless mass production—and the consequent loss of traditional values—this new gaze, which fuses new influences with traditional techniques and innovative designs, could open pathways for revitalization and sustainable development. The \textit{pánu di téra} has thus always been caught up in a whirlwind of transnational exchange: having served as an important catalyst of the slave trade that triggered...
the process of globalization, having served as a form of currency that facilitated the circulation of goods and people, and now, due to an influx of tourists and an erosion of diversity, having become a symbol of Cape Verdean identity.

Such was the background and motivation behind this investigation. However, two methodological problems were apparent from the outset. The first issue is that, by adopting the prism set by the field of island studies for the analysis of material and immaterial culture, I presuppose a relationship between and among geography, landscape, and culture, with island specificity being reflected in the myriad material and subjective objects that make up the cultural fabric. This assumption raises the following questions: What is distinct about island spaces, treated here in a broad sense, encompassing the memory of interactions between humans and landscape? And, given this, can Cape Verde be described as a particular instance of islandness?

The second dilemma is: Who is best suited to relating this? One of the cornerstones of cultural liberation and the epistemological decolonization of the mind as described by Amílcar Cabral (1967, p. 225) is “the writing of one’s own history” and liberation from Western ethnocentrism, a challenge which was also discussed in other former Portuguese colonies, for example by the Mozambican philosopher Ngoenha (1992). This decolonization of the mind was never, however, fully completed: Inocência Mata (2014), an author from São Tomé and Príncipe—an archipelago previously under Portuguese dominion—highlights the continued predominance of imperialist structures in academic circles, as well as the danger of ironing out differences through the concept of ‘Lusophony’. In the same vein, Cape Verdean writer Odair Varela (2009) has denounced the predominance of the European scientific model, inherited from colonialism, in the emerging Cape Verdean academic milieu.

In the field of island studies, the challenge of epistemic decolonization laid down by Nadarajah and Grydehøj in 2016 has since become a guiding principle of the discipline, despite the controversy that sometimes arises from the many different conceptions of decolonization and the equally numerous visions of how it might be achieved (Grydehøj, 2018; Androus & Greymorning, 2018). Nonetheless, if, to cite one of its founders, the discipline was created with the objective of carrying out the “study of islands on their own terms” (McCall, 1994)—which is to say that studies should not simply be undertaken ‘with’ or ‘for’ islanders, but ‘by’ them (Baldacchino, 2008, p. 37)—throughout the field’s development, a number of authors have highlighted the essentially relative nature of islands, which always exist in relation “with the sea, other islands, mainlands, and the activities that span them” (Grydehøj, 2016). Although it is a controversial issue, due to the very porosity of the definition of the term ‘islander’ (Baldacchino, 2008, p. 37), many authors argue in favour of a debate enriched by a plurality of voices, so long as it is aware of the pitfalls and traps set by colonialism (Baldacchino, 2008; Grydehøj, 2018). In this context, the priority would seem to be situating the place of speech at the heart of the power relations that constitute it (Grydehøj, 2018).

How should authors of Portuguese nationality (such as myself) approach the history of regions marked by Portuguese colonization? In what way, and where from? Am I, from a continent and a former metropolis, equipped to explore and ‘reveal’ the relations of shape and feeling of an island way of life, by definition private and intimate, and its implications and place in collective history?

Imagined from the outside, islands are often represented as ‘immaculate’, ‘virgin’ with no trace of humans—as places to start over, to be reborn. This image is itself the projection of two dreams: that of possession and conquest—leaving a mark on a pure smooth beach; and that of the demiurge, where a person, following a second birth, might be afforded the possibility of reinventing himself or herself. It is, in essence, the idea espoused by Deleuze (2002) in Desert Islands, the “pristine source” archetype of the island that underlies the descriptions of the Fortunate Islands since Hesiod and Homer.

In this article I do not claim to reveal the essence of immaterial Cape Verdean culture, as though it were hiding, waiting for me to bring it to light. I have tried—in line with the
strategy proposed by Minh-ha’s (1992) “speaking nearby”—to create empathy with my object of study in order to reduce my distance from it, accepting subjectivity and incorporating—as far as possible—the voices of research participants, including them in the text through interviews. In this context, I accept my own subjective stance on the islands as an “impassioned” wandering, recognizing and trying to avoid the pitfall of considering the islanders as passive and involuntary “objects of the gaze” (Minh-ha, 1992, p. 39).

The intertwining of the threads of history and those of the panu di téra

We shall seek in this article to outline the history of panu di téra (‘cloth of the earth’ in Creole), and how it weaves into the history of Cape Verde itself, acquiring an important role in the triangle of trade among Africa, Europe, and Brazil. As a form of currency, it accelerated the flow not only of people but also of dress codes, attitudes, music, and other aspects of culture. Benefiting from the strategic position of the islands, lying close to the African continent and on the route to Brazil, the cloth was part of the engine of the accelerating trade of material and immaterial goods and enslaved people.

Cape Verde is located in the North Atlantic, and although it is isolated from the Western African coast, it is sufficiently close—about 450 km away (Amarante, 2012, p. 21)—to be considered part of the Sahelian climate. It possesses an exiguous continental surface (INE, 2015) and around half a million inhabitants. While it is considered to have been uninhabited until its discovery by the Portuguese in 1406, some Cape Verdean historians have postulated the existence of previous inhabitants resulting from shipwrecked Wolof, Lebus, or Felupe tribespeople from the neighbouring peninsula of Cape Verde in modern Senegal (source of the archipelago’s name), the islands having been known to Arab geographers as early as the 11th century (Veiga, 1997, p. 23). The archipelago was subsequently colonized by Portuguese settlers and maintained by African slaves of diverse origins, mainly from Guinea (Veiga, 1997, p. 21), becoming an important commercial hub in the slave trade between Central Africa and Brazil. Slaves were generally kept in such a way as to not allow people of the same ethnicity to mix, a custom that led to the birth and institution of modern Cape Verdean Creole.

In a similar manner to that observed in other Atlantic islands such as São Tomé and Príncipe as well as the Antilles in the Caribbean and Mauritius in the Indian Ocean, creolization in Cape Verde emerged from a process of subjugation and violence, and the internalization of the mechanisms for preserving social hierarchy common in Europe. A social habitus was thus established at the linguistic level, a diglossic relationship, i.e., one of status inequality between one or more varieties of the same language (Pyndiah, 2016, p. 488). Societal stratification was thus established on a foundation of racial logic inherited from colonialism. While in the 15th and 16th centuries the elites were made up of white settlers and lower nobility, these were replaced in the 17th century by a second elite—the ‘sons of the earth’—comprised of white and mixed-race merchants made wealthy by trade with Guinea. The adverse effects of insularity, the arid climate, and other negative aspects of Cape Verde led to a decline in white settlement and a dwindling attentiveness to colonial administration. By the 19th century, a third elite therefore emerged, the brankus di terra, made up of mixedrace and black individuals, adopting the name after replacing whites in administrative positions (Shabaka, 2013, p. 12).

In this context, and in order to emphasize the weight of their contribution to this story, it is important to shed light on the way in which slaves were not passive objects of domination. Weaving techniques, for example, were brought to Cape Verde by African cotton weavers enslaved for the quality of their work. Between 1460 and the first half of the 16th century, investment centred mainly on bulk cotton production destined for Spain, Portugal, and the African coast (Carreira, 1983, p. 23). Indigo, together with cotton, was “the fundamental base of Cape Verdean cloth, and even African cloth in general” (Carreira, 1983, p. 56). Brought to Mozambique from India, the pigment travelled to the islands of Cape Verde at the end of
the 16th century, its introduction likely implying the arrival of slaves already proficient in processing this dye (Pereira, 2015, p. 66).

According to Carreira (1983, p. 23), a Cape Verdean expert who constitutes an essential reference in the study of the archipelago’s textiles, the reinvention of the geometric patterns of Moorish and Hispanic influence introduced by the Portuguese created a set of patterns more elaborate and complex than that which existed at the time in the area between Senegal and the Gulf of Guinea. Carreira (1983) suggests that as the predominant dyeing technique in this region involved indigo dye, the most similar cloths to those from Cape Verde (aside from woollen blankets from Mopti, Niafunké, and Goudan) are the simpler cotton textiles from the Ivory Coast. This assessment has recently been contested by Alberto da Costa e Silva (2011, p. 17), who argues that these geometric patterns were already known in Western Africa through the influence of the Berbers long before the arrival of the Portuguese in Cape Verde, a hypothesis seemingly proved by the archaeological discoveries of 11th-century Tellem cloths in the cliffs of Bandiagara in Mali.

What is certain is that Cape Verdean cloth rapidly became the preferred choice of clan leaders, who went as far as to stipulate the obligatory inclusion of “cloth work” in their commercial transactions, for the reason that “He who did not possess cloth from Cape Verde often found it difficult to acquire slaves” (Pereira, 2015, p. 29). Commercial go-betweens operating frequently in the regions of Liberia and Senegal in the ivory, glue nut, and slave trades imposed similar demands on their European partners as part of their negotiations for the same reason (Pereira, 2015, p. 64). The demand was such that it led to an increase in the demand for slaves in order to deal with cotton production. In 1582, the slave population of Cape Verde’s Fogo and Santiago Islands was nine times that of whites, with the island’s demographics consisting of a total of 13,700 slaves, 1,608 whites, and 400 free Africans (Andrade, pp. 97-107, p. 40), a mix which favoured the emergence of a Creole population (Pereira, 2015 p. 66). According to a number of authors, including Carreira (1983, p. 52), this evolution reveals how the quality of Cape Verdean cloth played a decisive role in the increase in slavery, with profound consequences for Cape Verdians themselves.

In 1613, a shortage in coin minting led to an economic crisis of such proportions that use of cloth as currency spread from external transactions involving Cape Verde to the remuneration of its public officials (Carreira, 1983, p. 102). By 1680, the standard European iron bar was valued at two pieces of Cape Verdean patterned cloth called barafula (a rough variety), while 30 bars could be exchanged for a slave (Duncan, 1972, p. 218). The barafula consisted of strips of dyed cloth sewn together in a crossed white-indigo pattern, falling within the wider category of pânu di téra ‘simple and light cloths’, linear weave fabrics of limited use (Carreira, 1983, p. 107). ‘Needle cloth’, so called due to the use of needles for its finishes, consisted of strips of white cloth dyed pale blue or red a posteriori (Carreira, 1983, p. 114). ‘Cloth of labour’, meaning all fabrics of a more elaborate nature (panos de obra in Portuguese), was sewn from black and white cotton thread as well as multicoloured silk thread, forming objects, human figures, houses, and geometric shapes (Carreira, 1983, p. 119). ‘Worked animal cloth’ (pano d’obra bicho in Portuguese), receiving its name due to its similarity to the skin of some animals (boa constrictor and crocodile), was part of the latter category.

It is important to emphasize the role of slaves in the flow of material and immaterial goods, not only from the mainland to the islands but in the opposite direction as well. Cape Verdean fabric dressed not only the Guinean elites but also those of the Gold Coast (presentday Ghana) and the Niger Delta (Carreira, 1983). The significance of the fabrics is testified by a map of Africa by John Sudbury in 1626, which depicted the Senegalese in Cape Verdean garments (Pereira, 2015, p. 68). Other accounts bear witness to the arrival of pânu di téra to Brazil, likely by the hands of slaves: Two paintings by Albert Eckout, completed during the Dutch occupation of Northern Brazil, portray an African woman wearing a pânu di téra skirt tied by a red cloth to her waist, and an African man wearing a loincloth of the same fabric (Pereira, 2015, p. 70). The impact of its use can still be felt today in the fashionable attraction of black and white colours in certain regions of Africa. The people of the Niger
Delta produce a fabric, the *pelete bite*, frequently white and black in colour and with patterns closely resembling those of *pânu di tära*, and funeral attire in Southwestern Nigeria is also traditionally black and white (Pereira, 2015, pp. 75–76). In Cape Verde, the cloth was commonly used for symbolic purposes. It was traditionally offered to the bride as part of the marriage proposal, but was also used to wrap the bodies of the deceased and as a sign of mourning (Pereira, 2015). It also functioned as an external sign of social distinction due to its high price, and indicated, when worn around the head, the elevated status of the wearer (Mendes, 2009, p. 84).

In the 18th century, the cotton and weaving industries began to decline. Two main factors contributed to the culture’s downfall: the monopoly policy pursued by the Portuguese crown and the settling in Cape Verde of the *Grão-Pará e Maranhão* Company in 1755. This company secured exclusive rights for the sale of *pânu di tära* as well as for the extraction of *Roccella tinctoria* (lichen used in the production of dyes) in Cape Verde, the Azores, and Madeira. The company successfully monopolized the slave market in the archipelago, Guinea, the Amazon, and Maranhão (Mendes, 2009, allowing it to double the price of slaves, prompting a labour shortage in and the subsequent abandonment of cotton farms and mills. Other factors contributed to this downfall directly or indirectly: multiple droughts and ensuing famines; the disastrous Treaty of Methuen between Portugal and England in 1703, which guaranteed the protection of English textiles in exchange for that of Portuguese wines in English markets, eschewing other commodities; and, finally, the Industrial Revolution and the spread, from 1850 onwards, of cheap American white cotton fabric known as *paulino*.

### The role of *pânu di tära* in the construction of Cape Verdean identity

Because of its value as a manifestation of African cultural heritage, the use of *pânu di tära* as a garment was restricted on the islands by Portuguese colonial power, especially in the early and mid-20th century (Almeida, 2003, p. 61). For the same reason, following Cape Verde’s independence in 1975, the African Party for the Independence of Guinea and Cape Verde—the party that came to lead the Republic of Guinea-Bissau and Cape Verde simultaneously from 1975 to 1980—deployed *pânu di tära* within the framework of the re-Africanization process, using it as a symbol of Cape Verdean resistance in the face of colonialism.

During this period, material culture became the repository of hope for the flowering of a creativity that had been repressed under colonial rule. This revival of local crafts was spurred by a comment made by the Brazilian anthropologist Gilberto Freyre (1953) in his book *Adventure and routine: suggestions from a trip in search of the constants of Portuguese character and action*. Having visited Cape Verde in 1951 at the invitation of the then-Minister of Overseas, Admiral Sarmento Rodrigues, the author remarked on the “non-existence of popular crafts on the archipelago” (Venâncio & Silva, 2010; translation my own). It must be pointed out that Freyre had been the author of the luso-tropicalist theory, outlined in *Casa-Grande & Senzala* (*The Mansions and the shanties*) (1953 [1933]), according to which the Portuguese possessed a genetic tendency towards miscegenation. This theory was later adopted by the Portuguese dictator Salazar during the 1950s as a way of legitimizing the exploitation of the colonies in the face of growing international pressure towards decolonization, using it as the foundation for an ideology of assimilation.

Set against this backdrop, from 1975 to 1991, crafts became an “integral element of the national construction of the first Republic, built under the aegis of Africanism” (Rovisco, 2017, p. 10). With the goal of preserving Cape Verdean traditional weaving techniques, the artists Bela Duarte, Luisa Queirós, and Manuel Figueira created, in 1976, the Resistance Artisanal Production Cooperative, which became the National Centre for Crafts the year following, aiming to boost the weaving and tapestry sectors. From 1978 to 1983, under the leadership of Manuel Figueira, the National Centre for Crafts was characterized by its experimentation, counting a number of experienced weavers among
the members of the team (Rovisco, 2017, pp. 8-10). Some of the works produced during this time are exhibited today at the Museum of Traditional Art located in the old National Centre for Crafts and demonstrate the then-innovative application of pánu di téra to various objects, such as lamps, upholstered chairs, and garments.

From this period onwards, without any identifiable point of origin, the use of pánu di téra shirts as a public statement of Cape Verdean identity began emerging among intellectuals, artists, and members of the political elite. Generally, the purposeful acquisition of articles of ‘interest’ on account of their price or history is an inherent pleasure of the acquisition of rare or unique items. I refer here to the historical legacy that such pieces carry, given that these textiles are not associated with sacred rituals, as are certain textiles among Yoruba women in parts of Nigeria (Asakitikpi, 2007, p. 106). The pursuit, judgement, and element of choice implicit in the acquisition of such an item invests it with the memory of that moment of choice, attributing to it what Kurlinkus (2014), based on the book Emotional Design, by Donald Norman (2004), designated as a ‘narratability’, i.e., a story connected to the here and now, to a specific place and time—to the duration of its fabrication and the moment of its acquisition.

The use of pánu di téra is typically intended as a statement of belonging to or having an appreciation for Cape Verdean culture, as well as support for the authenticity embodied in the craft. Therefore, compounded with the sensory appeal of texture and style, the acquisition is the fruit of an affective decision that justifies the perceived value. Because identity is something under permanent construction, negotiated between the projections cast onto us by the other and by that which we hope to give of ourselves, clothing becomes especially significant as an interface between public self-representation and the intimate manner in which one experiences that self-representation, defined by Turner (1980) as “social skin”. Pánu di téra became in this way a means of communication, the ‘brand’ of Cape Verde. The following section sheds light upon the change in attitude towards pánu di téra brought about by the shifting flow of the circulation of goods, information, and people, now pushed predominantly by tourism, as well as upon the way in which the global and the local intertwine in this context.

**Globalization and pánu di téra**

Identity currents in Cape Verdean society oscillate between tendencies influenced by two movements. The first of these is called the claridosos, a literary and intellectual movement born in 1963 and connected to the publication Claridade (‘Clarity’ in English), which seeks its roots in a Creole vision of what it regards as a Cape Verdean essence of mixed European and African components, ignoring the racial conflicts that persist in the archipelago. The second of these is the Africanist movement, which believes these roots can be found in the African cultural matrix alone.

Following the first open elections in 1991, the current advocation of a creolist discourse as a means of upward social mobility was articulated alongside the rise in tourism, and since then market expansion has gradually gained hold (Almeida, 2011; Moassab, 2013). Traditional crafts and pánu di téra in particular have become a brand and a symbol of the nation, connected by some to Creole culture (Filinto, 2005).

In this context, the evolution of traditional crafts has, since the start of electoral democracy, been connected to a movement of national identity construction that, according to the anthropologist Eduarda Rovisco (2017, p. 10), is marked by an “amplification of deAfricanising processes” linked to the “progressive growth in tourism and immigration.” Tourism has become the country’s main source of income, representing 20.97% of the GDP in 2014 and about 60% of that year’s revenues in services (Amarante, 2012, p. 39).

However, the articulation of global and local processes is felt differently across the different islands of Cape Verde. The islands of Sal and Boavista have suffered most from the negative effects of intensified tourism after investing heavily in the sector. Focusing on Boavista, in 2015, 90% of available rooms for rent belonged to four hotels owned by foreign
entrepreneurs or corporations (Rovisco, 2017, p. 12). This situation led to disastrous conditions for immigrant workers in the construction sector and the emergence of a neocolonial social hierarchy. As noted by Rovisco (2017, p. 20), “the growth of tourism and immigration from the CEDEAO (Economic Community of Western African States) constitutes a new framework for the re-affirmation of Cape Verdean culture [whose] components strikingly resemble those at the source of the long process that created them: black slaves and white masters.”

Albeit on a smaller scale, the growth of tourism on the island of Santiago favoured the growth of the souvenirs market seeking to correspond to a ‘Cape Verdean’ or ‘African’ stereotype, notably through the spread of the application of pánu di téra to garments such as T-shirts and, more commonly, accessories such as wallets or jewellery, targeting tourists in particular. However, the lack of historical acquaintance with pánu di téra renders most tourists incapable of distinguishing the authentic cloth from cheaper industrial knock-offs or stamped fabric from Senegal, with the result that ‘Cape Verdean’ visual identity becomes subsumed by ‘Africa’. In the course of fieldwork, I visited one of the stores run by the Artisan Association of Santiago, located on a pedestrian street in central Praia, the Cape Verdean capital, where a variety of smaller items (agendas, wallets, necklaces, earrings, sandals, T-shirts, etc.; see Figure 1) displaying applications of pánu di téra, some genuine others not, constituted the main body of sales.

![Figure 1: Items displaying applications of pánu di téra.](image)

Concomitant to this overwhelming production is a generalized loss of sense of belonging and rootedness, generating a fetishized longing for or nostalgic projection of a lost paradise, accompanied by the production of commercially interesting substitutes. Indeed, in some African contexts, ethnicity is rapidly becoming a global marketing strategy for adding value by associating products with an authenticity derived from local tradition (Comaroff, 2009). This process of heritage commodification is most flagrant in island settings, especially on smaller islands, “unwittingly, the objects of what may be the most lavish, global and consistent branding exercise in human history” (Baldacchino, 2012, p. 55). An element of local exclusivity is attached to the island’s identity: “Fair Isle sweaters, Guernsey cows, Shetland ponies, Texel sheep, Barbados rum, Gozo cheese, Islay Whisky, and Trinidad hot sauce” (Baldacchino, 2012, p. 59).

Appadurai (1996) has pointed out the importance of consumption for identity construction in modern society. In the large commercial complex of global culture, identity construction is increasingly linked to the individual’s consumption profile: what we wear, what we eat, and where we buy have become the distinguishing features of an identity around which our self-image constructs itself, as the self-images of others are reflected back to us. Appadurai’s analysis could, in certain contexts, become problematic, as it seems to overlook the potential for manipulation in neoliberal consumption practices denounced by authors such as Bauman (1998) and Wright Mills (1953). Nonetheless, having already described global neoliberal forces in the form of tourism, I now aim to analyze the other side of the situation, i.e., local forces and the ways in which these appropriate or assimilate those articulated by the global.
In this context, politics and consumption meet in the construction of a national identity turned registered brand. However, the loss of substance or authenticity brought about through the merchandising of culture is not linear, but is location dependent: while ethnicity branding can have ambiguous effects, it can also help strengthen local economies. Traditional weavers in particular have benefitted from the demand for their products. I visited the Centre for Arts and Crafts of Trás di Munti (CAO), Tarrafal, in the northern portion of Santiago. Four young weavers work full-time there during the dry season to produce the traditional thin strips of black-and-white patterns using conventional methods (Figure 2). We spoke to one of them, Rosilda Furtado, who was taught the craft by an experienced weaver when she was in her 20s. Like many other weavers, she built her loom herself from natural materials: wood, stones, and sticks tied together by rope. The loom’s accessories are also traditional: brush, pedal, pulley, shuttle, caruru (item that holds the thread in place), lathe, and treadles. According to Rosilda Furtado, tourists make up the majority of her customers.

![Figure 2: Weavers at the Centre for Arts and Crafts of Trás di Munti.](image)

In Calheta, also in Santiago, I met with Vito, another weaver, who produced textiles with various patterns and with wide strips in bright blues, greens, and reds. Vito works from home during the hours not spent in the fields and sells his products in local markets directly to the Cape Verdean public and to tourists. When I visited his home, he was able to set up his loom in his yard in a matter of minutes, among wandering chickens and passing goats, a testimony to the advantages of this ancestral construction technique, and the nomadic lifestyle of its original inventors. By his own account, he was taught the practice by his uncle at the age of six and began working immediately thereafter. Vito fits the profile of the most typical weaver, working from his home, with no official workshop, and generally producing the simplest type of cloth, the animal cloth, which is among the most marketable types. The fact that today we find a generation of young men and women working the craft constitutes another change to pánu di téra, along with its dimensions, colours, and shapes, demonstrating that tradition is not static but is alive.

**Collaborative design and pánu di téra**

The isolation of islands from the mainland naturally contributes to the preservation of artisanal traditions. However, due to the many hours of labour involved and the low profit obtained, these traditions often face challenges to their sustainability. One possible way of combatting
the loss of traditional craft is for designers and craftspeople to collaborate on the creation of added value that makes production—inherently expensive due to the manual labour it entails—sustainable. This is the case, for example, for the traditional laces of the Azorean islands of Pico and Faial, which received the international ‘Women’s creativity in rural life’ prize from the World Summit Foundation in 2008. To shore up the dwindling number of lace weavers, the Regional Centre for the Support of Arts and Crafts (Centro Regional de Apoio ao Artesanato or CRAA), under Sofia Medeiros, has launched several initiatives promoting shared artist and craftsperson residencies. Another similar case is that of the knitting technique of Fair Isle, a small island in the Shetland archipelago. Despite the efforts of some artisans and designers, a report released by Weave Consult at the request of Shetland Islands Council points to “a lack of investment in, and focus on design” as one of the major factors threatening this tradition (Scott & Marr, 2012, p. 24). This is not the fate of all traditional textiles, however, as some are saved by their iconic status, such as the Harris Tweed from the Harris Islands, updated by designers such as Chanel and Vivienne Westwood—who has come to revisit the fabric with each new exhibit since her ironic stab at the aristocratic use of tweed in her 1987-88 ‘Harris Tweed’ collection.

I shall cite Fátima Almeida as an example of the renewal of pánu di têra in Cape Verde. I met with the stylist in her workshop, which she decided to close in early 2017 and to instead devote to sporadic exhibits, which better fit her work rhythm. Fátima had set out on her career as a designer late in life, after having left her previous profession and studied textile handicraft in Portugal in order to pursue the dreams she had held in her youth. Fátima chooses to always work with the same artisan, Mr. Henriques, a weaver from Sã Catarina, from whom she orders her latest designs. This partnership, Fátima says, led to the incorporation of wider strips and novel colours in her work, relative to her use of black and blue alone at the time she started designing.

This collaboration between designer and artisan is part of an emerging trend in fashion design internationally. Clark (2008, pp. 428-432) offers a number of examples. The Brazilian designer Carlos Miele, alongside his work in global fashion design, has had a standing collaboration with Coopa Roca (Craft and Seam Work Cooperative of Rocinha Ltda) since 2000, using local artisanal techniques such as the fuxico, the nozinho or south Brazilian crochet. The American designer and co-founder of the Alabama Project, Natalie Chanin, has resorted to sewing and padding techniques from the time of the Great Depression, incorporating materials recycled by artisans in her hometown of Florence. This practice is part of what is referred to as ‘slow fashion’, a term introduced by the fashion critic Angela Murills to describe a movement characterized by an emphasis on face-to-face interaction and social responsibility, focusing on the creation of long-lasting pieces with added value.

It follows that the manufacture of these pieces, like those produced by Fatima Almeida, is expensive, since the materials—pánu di têra, for example—and the pieces themselves are elaborately artisanal, inevitably raising their price as well as the social status they convey. Each sequin on the red dress shown on the right-hand side of Figure 3, for example, was sewn on by hand, with the dress being intended for special occasions. Another factor that hinders textile production and thereby contributes to raising prices includes lack of raw materials, even cotton, on the islands. Such materials need to be imported, generally from Dakar. There is also a labour shortage, given that the artisans depend on their work in the fields for sustenance. In my view, association with quality design is the only means of rendering affordable the labour that is necessary for preserving the weaving techniques that go into pánu di têra.
Figure 3: Garments by Fatima Almeida.
Among Fátima Almeida’s favourite examples from her own work is a men’s shirt series, which became a registered brand. What pleases her about this collection in particular are the unique “fine details” incorporated into each piece (see on the left-hand side of Figure 3). The shirts are made of linen and possess a classic elegance, with ‘ivory collars’, a simple cut that does not stifle body movements, and with occasional finishes in pánu di téra, which vary from piece to piece. Her pieces evoke both African and European styles of dress. The dress shown in Figure 4, for example, is inspired by the caftan, worn in countries like Senegal, Mali, and Nigeria: the fabric, 100% cotton, is white, and its forms are more sober: short sleeves—avoiding a bell-bottom shape—and the dress, of white-stamped fabric, falls vertically with two lateral openings, hinting at the shapes beneath and permitting the wearer greater mobility. The dress’s neckline is square, slightly asymmetrical, with a pánu di téra application that links with two thin stripes on the sleeves. While the caftan is traditionally worn with a head wrapping, here a cap with straight edges is suggested, with a thin strip of red pánu di téra appliqué. In contrast, the men’s shirts that update traditional models as well as the red gala dresses (Figure 3) are more in line with European clothing, despite the application of traditional Cape Verdean craftwork.

**Island-mainland connections**

Islands have porous and flexible cultural contours, are open to external influences and consequently hybrid in nature. As seen particularly in the case of Cape Verde, they are also agents for change on the continent: pánu di téra, besides presenting a testimony to African influence on the archipelago and having a historical association with slavery and oppression, is an indicator of the island’s influence on the African continent and Brazil.

The existence and traffic of panú de téra on the west coast of Africa is indisputable, a fact to which many documents from the period—including traders’ reports, records in historical archives, and personal correspondence—bear witness. Many of these sources are analyzed in António Carreira’s (1983) seminal work *Panaria Cabo-verdiano-guineense*, but can also be found in more recent studies, such as Shabaka (2013), Silva (2011), and Duplessis (2015; 2010). As for the presence of pánu di téra in Brazil, there are a number of reasons to believe that this textile fell into the category of panos da costa, the name given to cloths imported to Brazil from the west coast of Africa (Torres, 2008): the high volume of trade in cotton fabrics (Duplessis, 2010, p. 21); the aforementioned Eckhout portraits from the mid-17th century, showing an African woman and man, wearing a skirt and loincloth respectively, made from a fabric identified as pánu di téra (Pereira, 2015, p. 70); the description of panos da costa given in 1852 by James Wetherell, British consul in Bahia, who lived there for 15 years. The Bahian fabrics described by Wetherell correspond to pánu di téra in their colour, dimension, and strips, characterized in a recent study as being “all blue […] achieved with indigo, showing a tendency for grey” (Torres, 2004, pp. 6–7). Although these characteristics are not exclusive to Cape Verde’s pánu di téra, given that these colours are also found in fabrics from Sudan to the Gulf of Guinea, George Roberts (1726, p. 437), an English slave trader, reports the trading of these cloths between Cape Verde and Brazil and states of the island of São Nicolau that “they make the best cloth and cotton quilts of all islands but they are too good for the Guinea trade, but do well for that of Brasil, for which the Portuguese were wont to touch there.” Therefore, even though Eckhout’s portraits present allegorical elements supporting the colonial discourse of the time (Oliveira, 2006, pp. 115-138), we can, through the intersection of these different sources, consider it plausible that the panos da costa included pánu di téra.
Final considerations

At the beginning of this text, I asked whether it was possible to retrieve something specific to the ‘insular’ place, defining from the outset place as the sedimentation of memories and gestures as well as of the interrelations of people and landscape that transforms space into a place. It appears to me that the intertwining of the history of pánu di téra with that of Cape Verde itself—its role in the increased flow of slaves between Africa, Europe, and Brazil; its adoption by the PAIGC during the post-independence Africanist movement; and its more recent appropriation as a symbol of Cape Verdaean identity—shows us how the insular place is constantly reimagined, becomes a cultural landscape “where imagination takes forms of reality” (Suwa, 2007, p. 6). Although this can also be said for continents, it may be even more true of islands, subdued by the projection of escapism on the one hand, and aspiring, on the other, to the unknown beyond the horizon. Here we witness the so-called ABC (amplification by compression) effect, one of the five characteristics of islandness identified by Baldacchino (2017, p. 2016).

Cape Verdaean identity is, in this way, constantly being rebuilt. In the words of Manuel Veiga referring to Jorge Barbosa’s poem ‘Povo’, “what the poet means to tell us is that Cape Verdaean identity exists, but it isn’t static, it’s a continuous becoming (Veiga, qtd. in Barbosa, 1989, p. 31). This is a becoming that swings in response to two calls: the telluric call and the escapist call (Baptista, 1993, p. 179). This feeling is directly connected to the island condition at the same time that the representation that is constructed from this feeling, through material and immaterial culture (such as poetry or pánu di téra), both literally and metaphorically shapes the landscape itself. Like mirrors facing each other, geography and imagination meet: “In this sense, the ‘island’ is a work of imagination derived from lived experience and memory in which the island landscape is a product of natural and human environments interacting with each other” (Suwa, 2007, p. 7). In the same way as each individual reinvents his own childhood by creating a narrative—one out of many possible others—with which he identifies in the present moment, so can it be said that national identities are continuously created retroactively though discourse, in which their citizens are active participants. These are Anderson’s (1983) ‘imagined communities’, which emphasize tradition, are capable of giving history a sense of continuity by creating bridges between past, present, and future (Hobsbawm & Ranger, 1983). In this context, western fetishism of an African ‘other’ can lead to the resurrection and reinvention of tradition, by fomenting pride in national culture and even raising the sustainability of diminishing activities. The process of the production and consumption of physical or immaterial goods is a complex one that does not exclude reversibility: As Comaroff (2009, pp. 25-26) notes:

For those tourists […] the native ‘other’ in this drama might serve as a fetish […] But, if we believe the likes of Kruiper or the Xavante dancers or the Hainan islanders, it also appears to (re) fashion identity, to (re) animate cultural subjectivity […] How so? Because the producers of culture are also its consumers, seeing and sensing and listening to themselves enact their identity—and, in the process, objectifying their own subjectivity, thus to (re)cognize its existence.

In the same way, pánu di téra became a means of performing Cape Verdaean identity. However, in the context of pánu di téra, if incentives are not provided and mass tourism is not controlled, the overflow of low-quality pánu di téra products could, led by tourism-driven demand, contribute to a cultural devaluation or hollowing out: in Comaroff’s (2009, p. 20) words, “this is why ‘ethnic tourism’ is frequently said to ‘destroy […] that which it seeks’.” In order for pánu di téra to justify its price and for the activity to be afforded a degree of continuity, it will be necessary to develop partnerships between designers and artisans that...
innovate while maintaining quality. In other words, it is possible for pánu di téra to play a part in the reaffirmation of Cape Verdean culture and the strengthening of local ties. The garments and accessories produced by Fátima Almeida are one example of such partnerships. They attribute a cultural specificity to the pieces, whilst also operating a return to their production. As unique objects, they are not disposable copies of a model—the embodiment of an idea or stereotype. This attitude is in line with that of “slow fashion” in the way in which it mobilizes local material culture, its transparent production system, the absence of intermediaries between producer and consumer, and, finally, the production of long-lasting products prized for their uniqueness.

Another question I faced as I set out on this study was whether I, as a mainlander, was qualified for an incursion into island studies, and could legitimately speak about the immaterial culture of Cape Verde, particularly given my Portuguese nationality, that of the archipelago’s former colonizers. Taking into account that the founding challenge to this discipline was framed by Grant McCall (1994) as the study of islands “on their own terms,” the best way to not distort the voice of the other seems to me to be to clearly identify the voice of who is speaking. This is what I have attempted to do by explaining my particular stance and motivations at the beginning of the text, inviting the reader to undertake a critical reading of this text and complete its lacunae. The strategy of “speaking nearby” (Minh-há, 1992) implies respect for the other and for diversity, as well as recognition of imperfection. It is aligned with a phenomenological approach to the world, open to whatever appears.

In the same way, I consider that—under the homogenizing pressures of tourism and wider globalization, and that of the tendency for greater adaptability, which erases from the product the process of its manufacture and its historicity—an approach to identity derived from phenomenological tradition could constitute a form of preservation of a true and creative cultural diversity.

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Reclaiming islandness through cloth circulation in Madagascar

Hélène B. Ducros
helenesgeog@gmail.com

ABSTRACT: Perceived as neither Asian nor completely African, often also neglected by island studies, Madagascar long remained the preserve of Francophone scholarship, absent from Anglo-American historical accounts of an Indian Ocean world. This paper examines the place of Madagascar in the literature at the intersection between Indian Ocean studies and textile studies to argue for its relevance in island studies. While decades of historical research have struggled to create a space for the island state and have not made its ‘islandness’ relevant, the paper shows that scholarship focused on Malagasy cloth has successfully re-placed the ‘Great Island’ in an Indian Ocean world and the larger global order, also making it easier to integrate it into a field of island studies that evolved to lend more attention to spatial and relational forces.

Keywords: cloth, Indian Ocean world, islandness, islands, Madagascar, textile

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Introduction

‘La Grande Île’ (the Great Island), Madagascar, is a massive, elongated block (590,000 km²) lying in the most southern waters of the Indian Ocean—part of an area sometimes dubbed its “southern complex” (Campbell, 1989)—between the 12th and 24th parallels south, far from the ocean’s fulcrum. At its centre, north-south mountainous highlands with peaks over 2,500 m dominate its narrow littoral, facing 6,000 km of ocean to its east to reach Indonesia and 400 km to reach Africa to its west at the Mozambique Channel’s narrowest point. Madagascar is a biodiversity hotspot enjoying one of the highest rates of fauna and flora endemicity in the world, of which lemurs have become emblematic, and its history of original human migratory settlement remains subject to hypothesis, with recent studies confirming Austronesian and Bantu contributions (Pierron et al., 2017), yielding 18 cultural groups with diverse customs, beliefs, and agricultural techniques, yet one unified language with Malayo-Polynesian roots. Such is the paradox of the “continent-island” (Vérin, 1990). Madagascar has challenged scholars because of its diversity amidst unity (Middleton, 1999) and its cultural and geographic ambiguity between Africa and Indian Ocean Rim. In historical studies, this “world apart” (Brown 1994, 1978), “paradise of ecologists” (Dahl, 1999), and “living museum” (Brown, 1994; Murphy, 1985) has been annexed to either Indonesian or African worlds, but often forgotten in between. Madagascar’s liminality has hindered its regional and global representation, leading scholars to give it irregular and incomplete attention, which has fostered an inward focus and often failed to integrate the island into global perspectives.

When Madagascar was ‘rediscovered’ in the Anglophone literature (Brown, 1978), explanations about this disregard were evoked. Various internal and external factors contributing to the gap have been debated among scholars of the Anglo tradition but also across traditions, in a dialogue between Francophone and Anglophone scholars. Pointing to the legacy of French colonialism in keeping the island “a well-guarded Gallic secret” and Malagasy Austronesian origins as “an anomaly in the western Indian Ocean-Africa region,” historian Gwyn Campbell (2005, p. 1) concluded that “most historians have considered Madagascar in historical isolation,
an island museum largely unrelated to its immediate region.” This quote encapsulates the dilemma of Madagascar’s separateness in past historical scholarship and historians’ difficulty at placing Madagascar in a wider field of inquiry. The island faces a conundrum in its scholarly representation stemming from its topography, political geography as a large island state, unique cultural and linguistic origins, and historical trajectory, none of which can be neatly categorized as they overlap across various classical scholarly divisions of spaces and cultures.

One fundamental factor in crafting a place in the world for Madagascar is, of course, the fact that it is an island—the fourth largest in the world in size—a condition which accentuates the imagery of in-betweenness and mystery that it often elicits in popular culture. The islands of the southern Indian Ocean have been the focus of a rich literature, whether La Réunion, Mauritius, Zanzibar, or the Seychelles. However, in turn envisaged as an island, an archipelago (Covell, 1987), a little continent (Middleton, 1999), or even an eighth continent (Tyson, 2000), Madagascar is not easily labeled by scholars as part of a clear geographical system. The result is a confusing configuration which excludes Madagascar from relevant fields of research, including island studies, which has largely ignored it, as if the island state’s ‘islandness’ was uncertain. Indicative of this neglect is that, as of August 2018, the three largest journals devoted to island studies (Island Studies Journal, Shima, and the Journal of Marine and Island Cultures) have yet to feature a dedicated paper on Madagascar. Like for other islands, language barriers between various island studies communities (Grydehøj, 2017), as well as colonial, postcolonial, or indigenous positionality (Luo & Grydehøj, 2017), have likely also played a role.

In the face of this indifference from Anglophone island studies, this paper reviews the ways in which historians have contributed to Madagascar’s exclusion from or inclusion within an Indian Ocean region and proposes that textile studies research in fact allows for its repositioning not only in the region but as an ‘island’ part of an oceanic world. This historiography focuses on the history of trading networks and the circulation of commodities as a way to apprehend the interrelation between a place and its outside, especially useful in an island context where locality and externality are in constant tension with each other (Baldacchino, 2004; Moles, 1982), where ‘routes’ take precedence over ‘roots’ (Dodds & Royle, 2003), where the meanings of lived experience diverge or converge (Hay, 2006), and dynamic form prevails over static binaries of mainland/island and core/periphery (Pugh, 2013).

In Madagascar, cloth has been traded since precolonial times. Considered the “object of trade par excellence” in the Indian Ocean (Rajaonarimanana, 2010), whether imported or woven locally with cotton, silk, or other natural fibers, textile is revealing as an entry point into the question of trade and globalization in Madagascar because it accounts for both local production ‘vita gasy’ factors and the symbolism of cloth in local cultures. At the same time as cloth production and everyday uses express identities in the local context, the trading and exchanging of cloth participate in the construction of Malagasy identities on the island as well as within a wider Indian Ocean region and beyond. Thus, examining the historical representation of textile traditions and the mobility of cloth in and out of Madagascar helps us better understand the island’s historical position globally.

As a method, historiography constitutes a review of the “way history has been and is written—the history of historical writing” (Salevouris & Furay, 2015, p. 255). Historiographies seek to unveil “how individual historians have, over time, interpreted and presented specific subjects” (Salevouris & Furay, 2015, p. 255), even as their writings have been complemented or superseded by others. The purpose here is to identify patterns in the way the history of the Indian Ocean has been told, engaging the literature from the past to better understand the present. Hence, this article first briefly surveys how Madagascar has been envisaged in a selection of major historical works focusing on the region. A more interdisciplinary literature on Malagasy textiles is then explored to question whether it might fill gaps. The paper seeks to demonstrate that textile studies have successfully made a place for the Great Island in both regional and global history, and that the history of Malagasy cloth is influential in lending Madagascar its place in island studies.
Is Madagascar ‘island’? Is it an ‘African’ island?

Islophiles agree that in the collective imaginary islands often embody the ultimate voyage: remote, inaccessible and mysterious lands of exile, banishment, and isolation, but also exclusive sites of life experiences and auspicious paradisiacal return to simpler ways à la Gauguin. Geographic inaccessibility and boundedness is surely what prompted Germans during the Second World War to devise the unrealized plan of sending Jews to Madagascar. This projected forced exile was described as a “death sentence,” “super-ghettoization,” or “murderous decimation,” and a precursor to genocide (Jennings, 2018). Meanwhile certain Jews had contemplated Madagascar as an alternative Jewish homeland (Jennings, 2018), reminding us that, as prison or exile destinations (Luo & Grydehøj, 2017), islands have often ambiguously served to exclude people as well as provide safe havens. As an “absolute place” of sensations or “endless voyage of initiation” (Bock-Digne, 2003), the island persists as a hybridized and microcosmic space in which myth and reality meet. Across cultures, islands fascinate, cast an “island lure” (Baldacchino, 2012). Beyond this emotional appeal, further theorization explains how islands inform global considerations. François Pelletier (2005) advances a series of reasons, including spatial and relational factors: islands are at the heart of the finitude debate and central to capitalistic flows; they have been revalued geopolitically by postcolonial nation-states; their maritime authority supersedes territorial reality, challenging continental approaches to the world as transport technology has brought them out of isolation; and metropoles prize their human scale and multiculturalism as places of métissage. Interdisciplinary ‘nissonologists’ (a neologism from the Greek νῆσος, “island”, first advanced by Moles in 1982), i.e., island researchers, have attempted to characterize islandness and grasp islands’ representations, symbols, cultures, practices, and significance as well as develop conceptual tools to apprehend islands’ social organizations and territorial dialectic. Although the scope of island studies has widened to include more types of islands, much of the island literature has focused on small developing islands in selected parts of the world (Grydehøj, 2017). At work as well is the fact that, as a relatively young theoretical framework, island studies has been driven and shaped by individuals embedded in their own island-related backgrounds and geographies of predilection, with associated pertinent foci. Although Madagascar is an island state, its size precludes its participation in the global network for Small Island Developing States (SIDS) and the Alliance of Small Island States (AOSIS), to which relatively close neighbours the Comoros, Mauritius, and the Seychelles belong. Together, though, the islands of the southwestern Indian Ocean might be envisaged as parts of an Indian Ocean ‘archipelago’, thereby doing away with expected island dichotomies (Pugh, 2013), as an ‘aquapelago’, a space of interaction between societies, land, and oceans (Hayward, 2012), or an ‘Indianoceania’ shaping a community of destinies (Jauze, 2016). Indeed patterns of island-to-island circulations have existed there historically, highlighting dynamic, fluid, and multiple processes of cultural and political relationality at the heart of the recent ‘spatial turn’ in island studies, which focuses on interconnectedness and mobilities (Pugh, 2013) and the correlated ‘relational turn’ (Hong, 2017), which focuses on circulations in island studies. However, some question whether Madagascar should be treated as an island at all, its area exceeding that of many continental states (Pearson, 2003), rendering an outward gaze unnecessary. Sarah Fee (2005, p. 88) goes as far as to conclude that islandness is irrelevant to Malagasy identity because most Malagasy “live quite literally with their backs to the sea, largely unaware of what an island is, or the fact that Madagascar happens to be one,” echoing Françoise Péron’s (1993) explanation that on large islands the general population may be conscious of living on an island but individuals ignore or forget it. A “continental island” (Vérin, 1990), of which the island character is merely accidental (Germanaz, 2005), Madagascar is thus challenged in its islandness. The islandness uncertainty is further complicated by concerns of continental referents. In spite of the recent focus on archipelagic forms doing away with mainland/island binaries
islands often remain defined by alterity with reference to continental or external gazes (Bernardie & Taglioni, 2005), especially when finding their place in regional scholarship. Early French writings depict Madagascar as “the great African island” (Locamus, 1896) or “the queen of African islands” (Buet, 1883), thus dependent on Africa geographically and geologically. Since then, Francophone scholars have often studied Malagasy issues in terms of their connection to Francophone African ex-colonial possessions in a postcolonial political and historical regional logic (“l’Afrique et Madagascar”). Certain Anglophone scholars also see Madagascar as an African island; for example, art historians “firmly position […] Madagascar within the dialogue of African arts and culture” (Green, 2003a, p. 82). Yet others have not included it in their analysis even when focusing on the East African littoral. For example, Jonathon Glassman (1995) succinctly links the Swahili Coast to the Mascarenes through trade, but skips over Madagascar. Some avoid the question by not discussing Madagascar specifically, but placing its island neighbours—the Mascarenes—in Africa, based on historical continuity (Northrup, 1995), while others explicitly uphold that all western Indian Ocean islands are African, including Madagascar (Sellström, 2015), with the Comoros sometimes constituting a hyphen with the African continent (Newitt, 2003). Nevertheless, the French colonial experience and the island’s post-independence political engagement placed Madagascar in an equivocal position where the African and Indian Ocean spheres overlap but also separate. Is Madagascar a “world apart” (Brown, 1978) because it is neither here nor there, neither African nor Asian (Campbell, 2005; Deschamps, 1961)? Or is Madagascar a hybrid geographical anomaly, weaving in and out of the boundaries of Asia and Africa? “Geographically it is in the vicinity of the African continent, but culturally and linguistically it is part of Asia” (Dahl, 1999 p. 2).

**Madagascar in the economic, political, and cultural history of an Indian Ocean world**

Sometimes completely overlooked, at other times recognized as African, it has been noted that “in many classical historical overviews on the Indian Ocean, the island of Madagascar literally does not figure on the map” (Fee, 2005, p. 85). Classical cartography also often excludes Madagascar from an Indian Ocean world by annexing it to the African continental plate as a southern appendage. Similarly, in Mervyn Brown’s (1978) key Anglophone text in Malagasy studies, he refers to Madagascar as “a world apart” within the oceanic region. While in appearance conforming with the theory of insular hard-edgedness (Hay, 2006), Brown’s comment may be less based on Madagascar as an island than on other characteristics (distant geographic location and cultural uniqueness). Indeed, although distance alone does not explain separateness (Pungetti, 2012), until the 19th century, four to nine months of travel were necessary to reach Madagascar from Europe, and regional inter-island passages were difficult due to unfavourable winds (Bock-Digne, 2003), making it rather inaccessible from far or near points of origin. Even in works entirely dedicated to the Indian Ocean, it is not rare, as Sarah Fee (2005) observed, for Madagascar to be completely excluded or be merely mentioned in a list. However, Gwyn Campbell (2005) provided one successful attempt at reconciling the African and Indian Ocean overlap by arguing for an “African Indian Ocean region,” precisely including places previously discounted in the literature (Madagascar, but also Mauritius, La Réunion, and the Comoros). Nonetheless, the characterization of the Indian Ocean as a unified thalassological region has not met with universal acceptance (Vink, 2007).

The gap in scholarship was perceived as early as 1938 by Sonia Howe in a pioneering English-language history of Madagascar (before that, the only texts in English had been 19th-century accounts by missionaries). Howe’s (1938) *Drama of Madagascar* highlighted the island’s significant role in global history, albeit decrying the relation between Madagascar and Europe as the very source of its ‘drama’. Convinced of the power of trade for Madagascar to build its place in the world, Howe asserted that rather than politics, it is the island’s position on the
route to India, regional trade, and the circular movement of commodities to and from Europe that granted it importance in the region and beyond it. She was ahead of her time as scholars have continued to study trading relays to apprehend island spaces and interior-exterior relationships (for example, Germanaz, 2005; Sellström, 2015). In the first part of the 20th century, Howe’s work is not only unique in its approach but also represents the sole Anglophone voice in the scholarship on Madagascar in the era following the French conquest (Deschamps, 1965, p. iv). In the early 1960s, at the time of Malagasy independence, Hubert Deschamps (1965, p. 8; translation my own) explains this neglect:

Situated at the crossroads of the influences of Oceania and Africa, Madagascar is precisely at the centre of the planetary zone that has been disdained by classical history. No general history of it exists but only detailed works based on European enterprises or the Merina kingdom during the 19th century.

In spite of sporadic and specialized works, such as Kent’s (1970) on 16th- and 17th-century kingdoms (overall ill-received by French specialists of the region for its problematic way of dealing with the African-Indonesian question), few works made their mark until Mervyn Brown (1978), who took Madagascar out of oblivion in the Anglophone literature with Madagascar Rediscovered, a title indicative of where Madagascar had been relegated to prior scholarship. Deschamps’ (in Brown, 1978, p. iv) foreword blames French colonization for this neglect.

The great tradition of English writing on Madagascar [...] was to a large extent abandoned by British writers and historians after the French conquest. They consciously withdrew from the cultural scene as they had withdrawn from the political scene by the treaty of 1890.

Later, Campbell (2005, p. 1) would agree that “historians of mainland Africa and of other Indian Ocean countries have largely respected the Gallic tradition. Consequently, they have excluded Madagascar from the scope of their research and publications.” Campbell condemns how Anglophone scholars partitioned Africa into regions of study, excluding or only marginally including Madagascar, while also not demarcating their studies enough from the French tradition.

The new edition of Brown’s (1995) book, published as A History of Madagascar, implied an evolution in the scholarly landscape in Anglophone literature since his 1978 opus. The ‘rediscovery’ of Madagascar had been completed. Starting in the 1990s, the literature on the region would indeed gather some level of momentum. During that time, not only did an increasing number of Anglophone works come to complement the larger volume of Francophone studies, but scholarship in Malagasy also emerged (Schraeder, 1995). However, Madagascar still did not appear in significant ways in works by Anglophone historians that focused on the greater Indian Ocean region. The Indian Ocean in World History (Kearney, 2004) mentions Madagascar only three times in passing. In Pearson’s (2005) The World of the Indian Ocean, 1500–1800, Madagascar is barely mentioned at all, although Pearson (2003) had earlier included it when framing a new historical geography of the Indian Ocean with a definition of a unified region that included littoral and island societies and focused on circulation as a basis for unity. In highlighting the history in the ocean (over an outsider’s perspective on history of the ocean), Pearson returned agency to local communities and created a more fluid and dynamic space of inquiry. Like Kearney, Pearson discussed Madagascar when addressing the southern Indian Ocean, especially issues of settlement and cargo trade routes, noting the island’s role as supplier of slaves to French plantations in the oceanic region. Indeed, discussions on slavery in the region is often where Madagascar does appear, notably in accounts of island-island slave and related commodity trading (Allen, 1999; Alpers et al., 2007; Fee, 2011). However, none of these works gave Madagascar a significant role in the Indian Ocean world.
Focusing on geopolitical history, Bowman and Clark (1981) highlighted Madagascar’s involvement within networks of France’s former colonial territories (policy, trade, cultural influence, research, military bases) with close ties to other Francophone islands in the region (Mayotte, La Réunion, Mauritius, and the Scattered Islands [Îles Éparses de l’océan Indien]). It is within this Franconésie (Toussaint, 1981) that Francophone scholars (mostly French at the time) envisaged Madagascar as an object of inquiry. In the late 1980s, Maureen Covell (1987) placed Madagascar in the wider context of Cold War ideological rivalries and global socialist development paths. She suggested that Madagascar lost political significance because of its non-alignment and a foreign policy entangled in ambiguous diplomacies, from refusing access to its ports for warships, to relying on both the West and Russia for aid. Despite increased commitment to the OAU and non-aligned movement, Madagascar failed to influence the South-South diplomacy network, even though it promoted inter-island cooperation. Whereas Howe had advanced the idea that it was trading routes that put Madagascar on the world map, 50 years later trade seems less significant, only summarily included in Covell’s (1987) discussion when she accounts for failed efforts of successive governments to assert the island’s global role by capitalizing on its geographical location on the oil shipping routes from the Persian Gulf to Europe (via the Mozambique Channel) since alternative routes had emerged. Nevertheless, spanning several decades, the historians Howe, Covell, Kearney, and Pearson all mention trade and trading networks as one essential way to place Madagascar in the history of the region. Whether a passage, a relay post, a partner in trade for various commodities from slaves (Campbell, 2007; Worden, 2007) and bonded labour (Alpers, 2007) to cloves or cotton, Madagascar is a force in regional commodity exchanges from the 18th century onward.

This short historiography has unveiled historians’ struggles to position Madagascar in a global historical context, culturally, politically, and economically in the Anglophone tradition, causing Madagascar to often remain a liminal space in the Indian Ocean. Excluded from this historiography of Anglophone texts have been those historians who occasionally published in English but clearly emanate from the Gallic tradition, such as Philippe Beaujard, who, like other French historians and anthropologists, has explicitly interrogated Madagascar’s position in macro-history. Campbell’s African Indian Ocean context captures the hybridity of this geographical and historical space. The construction of this oceanic space serves the investigation of economic exchanges to highlight the relational flows that make Madagascar an ‘island’. Via trade and markets, Madagascar has been deeply implicated in the Indian Ocean world for centuries (Campbell, 1989; Campbell, 2018; Fee, 2010; Sanchez, 2017). In particular, as early as the slave trade, cloth became a traditional staple of foreign trade in the Indian Ocean African region (Campbell, 2005; Fee, 2011). The history of cloth mobility within the Indian Ocean emphasizes an intricate web of actors along complex routes, and that, in Madagascar, textiles are central to multi-centred movements of people, objects, practices, and financial capital.

**Telling the history in Malagasy cloth**

*Kanga: The Cloth that Speaks* (Zawawi, 2005) exposes the way cloth accompanies women throughout life on the Swahili Coast. Focusing on the arrival of the *kanga* (a rectangular piece of printed cotton usually worn by women and sometimes men) in the Indian Ocean in the 20th century and the relationship between material culture and history, Zawawi documents regional cloth exchanges along the Swahili Coast and its expansion to the Comoros and Oman. The presence of the *kanga* in the region is already evidence of cultural flows through Arab and Indian merchants’ mobilities since the 12th century. In fact, “textiles were a major commodity transmitted between Indian Ocean societies” (Barnes, 2005, p.1). It will be shown now that textile studies scholars have been efficient at granting Madagascar visibility in the Indian Ocean region, within which the island has been at times importer or exporter of cloth, and sometimes both simultaneously (Fee, 2011; Sanchez, 2017). Given its portability,
divisibility, and function in identity making, cloth is useful for underscoring processes of local-global integration. It links to land, agrarian concerns, and labour, while also straddling the intangible world of signs since it constitutes a highly symbolic cultural medium. Apprehending material culture in the legacy of the “social life of things” (Appadurai, 1986), textile studies bridge many disciplines to investigate the role of textile production, consumption, and circulation. Malagasy textile traditions deserve attention to illuminate how the interweaving of material and intangible culture on the island has created regional ties historically since “the changing networks of the Indian Ocean textile trade have served as circuits of material communication, transmitting cultural values embodied in cloth, defining and redefining identities and relationships” (Davidson, 2012). Borrowing Pearson’s (2005) concept of “history in”, over “history of”, this paper now seeks to unveil the history in this special commodity to ask what social and historical processes are entrapped in Malagasy cloth through which the island may be integrated into spatial and relational flows in the region.

In 1983, the interdisciplinary conference Cloth and the Organization of Human Experience examined the social life of cloth and apprehended it as symbol, communication, exchange means, political instrument, genderization tool, and commodity (Weiner & Schneider, 1989). The temporal dimension of cloth and labour required in production were also addressed to conclude that “the language of cloth speaks not only to the creation and dissolution of personal and social identities but to wider issues of long-distance trade, colonialism, revolution, and nationalism” (Schneider & Weiner, 1986, p. 179). Production, use, and mobility of cloth across geographical and social spaces over time allows access to regional history through Maurice Bloch’s (1971) concept of semi-durability, which connects the lifespan of cloth with human activity. People have produced cloth from the earth and have agency in the decision to retire it from circulation (e.g., burial shrouds in Malagasy highlands). Cloth intersects with life stages in its ceremonial and symbolic uses as well as everyday intimate utilization (Allerton, 2007), and carries histories and traditions across generations and landscapes. Looking at cloth through this lens reveals the history in cloth, i.e., historical processes that are ‘interwoven’ into its production, exchange, and consumption: processes that transcend the mere materiality of, for example, the kanga (on the Swahili Coast) or the lamba, its equivalent in Madagascar.

Since John Mack’s (1989) well-documented overview of Malagasy textile techniques, the Anglophone literature on Malagasy textiles has remained the preserve of a few specialized scholars. Fee’s research is among the most comprehensive works dedicated to the history and circulation of Malagasy textiles. She shows that the movement of cloth made a significant imprint on the history of the African Indian Ocean region through complex interactions between imported and locally produced cloth and consequent cultural appropriations and transformations occurring in local societies, for example, through her accounts (Fee, 2011, 2010) of the Malagasy akotifahana (fancy figured silk cloth) and soga (imported factory-made cloth). In Madagascar’s highlands, the lamba refers to the cloth traditionally worn as the primary article of women’s clothing, with wide ranges of daily use, from protection against the weather to an indication of mourning (Fee, 2002). Both Fee and Rebecca Green (2003a, 2003b) are interested in the versatility of lamba uses. However, Green focuses on uses and meanings of expressions of identity encapsulated in inscriptions appearing on lamba hoany (‘proverb cloth’) and the messages communicated through motifs, with less explicit concern with a wider regional or global context, aside from allusions to imported cloth from India and the outsider-insider dichotomy embedded in cloth.

Also standing out are two major books published in the early 2000s in art and cultural history. The first, Objects as Envoys: Cloth, Imagery, and Diplomacy in Madagascar (Kreamer, 2002), accompanied the Smithsonian exhibition, Gifts and Blessings: The Textile Arts of Madagascar, which examined the relationship between Madagascar and the West since the 19th century, based on Queen Ranavalona III’s gift of cloth to American President Grover Cleveland. The book seeks to “contextualize and explain the significance of this exchange, deftly interweaving
discussions of cloth production, international diplomacy, and popular representations of Madagascar and the Malagasy people in Europe and the United States” (Kreamer, 2002). The second volume, *Unwrapping the Textiles Traditions of Madagascar*, published under the aegis of the UCLA Fowler Museum of Cultural History (Kusimba et al., 2004), aimed at reviving the interest in Malagasy textile traditions by introducing the island’s local cloth cultures. Although the book accounts for local commercial relationships and cultural influences with the outside world, whether an African, Indian Ocean, or Western world, it does not underscore the presence of significant networks between the island and other places in the way attempted by *Objects as Envoys*. The remaining literature on Malagasy cloth can be organized according to the time periods covered, distinguishing between precolonial and colonial networks.

Chapurukha Kusimba (2004) contends that there exists little knowledge of precolonial production and use of textiles in Madagascar because Western travelers and missionaries were uninterested in local technology. However, Etienne de Flacourt (1658) did provide an invaluable source of information through his detailed description of textile production and uses in the 17th century. Clarence-Smith (2005) provided a modern detailed account of precolonial textile production and trading in the Indian Ocean region, including Madagascar, assessing that, compared to other places, Madagascar had possessed a vibrant and diversified textile economy as early as the 17th century, one that included diverse fibers, looming techniques, and colours, even fostering competition among Europeans over high-quality Malagasy cottons. In the following centuries, domestic cotton constituted a thread tying together the various regions of the island, as cotton was grown in the northwest, woven in the highlands, then sold as cloth in the coastal areas. Through one common economic enterprise, different local geographies and cultures found themselves vertically integrated. Clarence-Smith (2005) notes that, starting in the 18th century, specialization took place in the highlands where many women of all social ranks became full-time weavers, especially as techniques used in the early 1800s (e.g., the treadle loom) contributed to the development of textile industries in the region. Clarence-Smith’s description suggests that before the arrival of industrially produced textiles in the 1840s, local textile production in the Indian Ocean, and notably in Madagascar, was thriving. Textile markets benefitted from established shipping and financial networks, and Asian and European merchants were instrumental in diffusing technologies and savoir-faire throughout the region. Thus, precolonial Madagascar was already integrated into regional and global textile markets.

Campbell’s (2005) economic history provides another account of cloth mobility (between 1750 and 1895), covering cloth production from agriculture and looming to the confection of natural dyes. His is a history of cloth centred on the Merina kingdom, while Kreamer and Kusimba decentralized Malagasy textile studies to include other populations. Cloth was imported from Indian and British manufacturers via Mauritius until the 1830s when US cotton imports arrived in Madagascar. American cotton producers adapted to the sophisticated preferences of elite Malagasy clients in the imperial Merina market and customized their designs accordingly (Campbell, 2005). Cotton trade from South Africa to Southwest Madagascar also boomed during those years. British cotton cloth and clothing constituted the main exports from Natal to Madagascar during 1877–1894 as Madagascar consumed at least 23% of all Natal’s cotton exports, and up to 60% in the period 1885–1888. In quantifying cotton cloth imports of different origins in 1864–1890, Campbell shows an active cloth market linking Madagascar and Western trading partners (American and British). However, figures do not account for local production during the period. In fact, local cotton was coarser and often mixed with other fibers. Cheaper and more durable, this cotton was exported to the Mascarenes’ plantations for labourers’ garments (Campbell, 2005).

Fee (2005) confirms that the 19th century witnessed a shift in the trading flows of cloth in the Indian Ocean region. Until then, Arab and Portuguese merchants had exported raffia cloth to Iraq, Yemen, East Africa, and Mauritius, while Arab and Indian merchants imported
luxury cloth into the island. This changed as Malagasy cloth became more prestigious. Cheap cloth would be imported henceforth (Fee, 2005). By 1920, cloth manufacturing was common and local “cloth was woven from tree bark, leaves, raffia, hemp, cotton, and silk, all of which grew wild and required little human attention” (Campbell, 2005, p. 31). While these types of textiles were more commonly traded locally, a market for silk also existed. Although one variety of wild silk is endemic to the island, it is the British who introduced the Chinese mulberry silk in the 1820s (Fee, 2005), and silk quickly acquired an enduring symbolic value because it was sought after by local elites. In late 19th century, the cloth market became further integrated into global financial networks as “foreign traders competed to extend credit to Malagasy merchants to stimulate purchases, notably of imported cloth” (Campbell, 2005, p. 301). Cloth trade thus gave rise to complex relationships reaching in and outside of the region and had significant ramifications for the Merina kingdom’s economy as a whole, but also for foreign capital circulating in the African Indian Ocean region. However, the French colonial intervention at the end of the 19th century, along with other local, regional, and global factors, would create an imbalance in local cotton markets (Campbell, 2005).

In the transition period to colonial times, Deslandes’ (1906) précis on raffia explains that the fiber had been exported to the Mascarenes since 1860 as coarse cloth used to dry sugar and craft bags for green coffee, sugar, or arrowroot flour exports, while raffia rabanes (matting) were also exported to Europe as early as 1875. Local weavers created designs to please European clients, showing raffia to be at the centre of trading networks that connected Europe with the Indian Ocean region. Surprisingly, although Locamus’s (1896) book was meant as a state-of-the-island on agricultural and industrial matters, he did not account for cloth in his discussion of either agricultural products or industrial products, aside from one short allusion to raffia and silk worms. Stating that “agriculture does not exist in Madagascar” (Locamus, 1896, p. 115), he delved into meat products, fisheries, railroads, minerals, and taxation. Nonetheless, French administrators considered cloth trading in policies when they imposed tariffs on US cloth to protect markets. Soga, an unbleached inferior-quality, factory-made cloth, then became the main cloth import in the southern region (Fee, 2004).

The historiography of textile trade during the colonial period is scarcer than that of the precolonial period because of a lack of primary sources. At the time, French chroniclers seemed more interested in documenting agricultural production and spinning/weaving, rather than trading. Textiles elicited less interest from the colonial administration than did rice, cloves, sugar, tapioca, tobacco, the building of infrastructure, and the provision of utilities. While records show a 9000-tonne sisal production in 1953 (all by European farmers), cotton fiber records no output. By 1954, the only licensed cotton-weaving company produced 640 tonnes of cotton cloth. By 1955, there are two, both European-owned (Boiteau, 1958). By 1960, cotton production is entirely absorbed by local textile industries and does not constitute an export crop (Brown, 1994). But twenty-five years after independence, cotton products would constitute a main export (Covell, 1987). The economic accounts for textiles in Madagascar, while limited, reveal nonetheless that the island, through complex trading networks and capital markets, is indeed a significant part of not only an Indian Ocean world but also a global economy.

Economies and markets constitute only one aspect of cloth’s significance and circulation in Madagascar. Evidence shows that Malagasy people culturally appropriated imported foreign cloth and imbued it with their own meanings and interpretations, linguistically via renaming, and socially via the selection of particular cloths for specific rituals and everyday uses (Fee, 2011, 2004). In Malagasy society today, textiles take on symbolic value with social and political meanings. “Textiles are important goods that, through circulation, are transformed into valued symbols of relationships forged between individuals and among families and communities” (Kreamer, 2002, p. 18). Furthermore, the channel through which cloth circulates is often the act of gifting since “the ultimate gift, from a Malagasy perspective, is cloth” (Kreamer, 2002, p. 18).
The gift of cloth to outsiders takes on critical social and political dimensions and must be understood on several levels. The most visible level is that of the physical gift. But the invisible aspects of gifting may be more crucial because, for centuries, Madagascar has used objects “to create and maintain relationships and to represent, both internally and externally, something of the complex identities of the island’s diverse peoples” (Kreamer, 2002, p. 17). Cloth represents the ultimate diplomatic conduit, sometimes even containing tacit messages of political and social resistance. For example, the 1886 gifting by Queen Ranavalona III of two pieces of silk cloth to President Cleveland acquired diplomatic functions for its timing, which was not accidental but part of an effort to position Madagascar vis-à-vis the influence of looming French colonial rule (effective from 1896) (Arnoldi, 2002). This signified not only respect and engagement toward the USA, but also political resistance against French and other European colonial aspirations, which the Merina kingdom had defied earlier when it switched from European to Arabic dress, although this has been interpreted more as a demonstration of rejection of European influence than an embracing of a wider Indian Ocean identity (Feeley-Harnik, 1984, ctd. in Fee, 2005).

Cloth is thus deeply significant socially and culturally in Madagascar. Many rituals, notably those associated with the cult of the ancestors and re-burial ceremonial practices such as the fahamadina among certain groups, incorporate cloth (lamba mena) as a central source of symbolism. Cloth weaving patterns and colour palettes acquire an array of meanings and social functions (Fee, 2011), which often constitute signs of recognition across regional identities (Bloch, 1971). Unwrapping the Textile Traditions of Madagascar (Kusimba et al., 2004) covers unique local traditions, textile techniques, and technologies as well as the intangible functions of cloth, highlighting its social and political power. It offers a remarkable overview of the various ways in which Malagasy populations include cloth in local symbolic rituals, from highlander Betsileo and Merina, to the people of the Southwestern region (Bara, Mahafaly, and Tandroy), those of the Southeastern region (Antambahoaka, Temoro, Tefasy, Tesaka, and Tanosy), and the Sakalava in the West. Genderization has also occurred in cloth (Fee, 2011) as its precolonial production had altered the division of labour in households, as when women started weaving exclusively, to the detriment of other social and economic activities (Clarence-Smith, 2011), which may not indicate diminished status historically since control over wealth-producing weaving in precolonial times had already positioned women in prominent roles politically (Kusimba, 2002, p.19). Through cloth, Malagasy women had exerted economic and political power over the region and were early global actors, although it is also suggested that, post-1820, women diversified their activities as a consequence of Merina laws that placed economic pressure on populations (Campbell, 2018).

Proving long-lasting regional interconnectedness, the techniques associated with textile production and patterns reproduced in cloth have taken Madagascar out of isolation (Fee, 2011). Highlanders’ spinning techniques have been adapted from East African practices (Ethiopia, Kenya, Sudan, Zimbabwe); uses for raffia recall those in continental Africa (Fee, 2005); and Malagasy weavers have also incorporated, modified, and renamed striping styles borrowed from India, Oman, and Zanzibar, as well as Middle Eastern carpet motifs. Fee (2005) also suggests that the use of natural dyes could have been adapted from Yemenite, Filipino, and Indonesian ikat customs. In the historical context of this multi-directional, multi-layered, and multi-sited movement of cloth in and out of Madagascar—a flow in which many regional actors find a place—Madagascar is not only very present but well integrated into complex circulatory networks, whether material or intangible.

Conclusion

The Anglophone historiography of the Indian Ocean, i.e., the way its history has been told, shows decades of historians overall struggling to place the island of Madagascar within that oceanic space, thus keeping it on the margins of the history of mobile flows in the region,
and consequently outside of island studies by the same token. Meanwhile, in contrast, scholars in textile studies have had no difficulty placing the island at the centre of intricate centuries-old networks of commodity trading, power production, and cultural and symbolic exchange, linking the local with the global, and thus validating Madagascar’s significance in participating in an oceanic space where land–ocean–society relationships are key operators in co-crafting and sustaining an Indian Ocean space. In spite of the island’s distant location from the ocean’s fulcrum, cloth has indeed embedded Madagascar within this ‘aquapelago’ through global-scale commodity and financial markets long before European control. Cloth not only challenges the argument that it is the colonial period that signified Madagascar’s switch from the local to the global scale (Jarosz, 2003), but it also helps the large island reclaim its relevance in Anglophone island studies, especially since that field has experienced a relational turn and allowed relationality to be practiced across disciplinary currents. The history of Malagasy cloth trade and textile-based cultural exchanges provides strong evidence that Madagascar has been dynamically implicated in local, regional, and global histories in significant ways. Today, to see the most important collection of 18th-, 19th-, and early 20th-century Malagasy cloth, it is not to Antananarivo that one must fly but to Chicago, where the Field Museum possesses a generous inventory of textiles collected in Madagascar by Ralph Linton in 1927. Indeed, cloth has been at the centre of not only commercial systems but also cultural and political networks, sometimes quite distant on the map. Cloth is one way for Madagascar to reclaim its islandness as it triggers closer examination of the island’s relationships with other islands in the region and places beyond, and invites cross-pollination with other ‘studies’ fields.

The textile sector continues to be relevant in Madagascar and has taken the most globalized form of all. The Malagasy textile industry must be considered in the context of the African apparel industry, the quest for cheap labour, and the AGOA agreements (renewed until 2025), which trigger large foreign investments to the sector. Here, too, regional interconnection is tangible as investments once directed to Mauritian export processing zones have been redirected toward Madagascar. Today, the drawbacks of the textile sector’s dependency on these zones have led to more vertical integration in the sector so as to include cotton agriculture, transformation activities (spinning, weaving, and embellishment), and apparel production. Moreover, COTONA, the main Malagasy cotton-weaving company based in Antsirabe, now maintains textile and apparel operations in Mauritius as part of the multifaceted Socota group that is headed by one of the most economically powerful families in Madagascar—a family whose ancestors came from India to settle on the island in the 19th century, here again validating an Indian Ocean sphere historically. Recently, it is with Socota that the French Embassy signed a convention to co-finance scholarships for Malagasy university students to study in France. Once more, although indirectly, textiles accentuate systems of oceanic and global relationalities, circulations, and diplomacies that go beyond cloth itself.

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References


Craft, textiles, and cultural assets in the Northern Isles: innovation from tradition in the Shetland Islands

Lynn-Sayers McHattie
The Glasgow School of Art, Scotland
l.mchattie@gsa.ac.uk

Katherine Champion
University of Stirling, Scotland
k.m.champion@stir.ac.uk

Cara Broadley
The Glasgow School of Art, Scotland
c.broadley@gsa.ac.uk

ABSTRACT: This article explores design innovation approaches in the creative economy in the Northern Isles of Scotland, specifically, the Shetland archipelago, focusing on the textiles sector. Shetland has a rich history of craft work, including Fair Isle knitting and lace making. We contend that the value of cultural assets in contributing to the creative economy is underexamined and that there is a paucity of understanding of the innovative potential of craft and creative practitioners in the region. The insights presented are derived from Innovation from Tradition workshops, which aimed to reframe the creative economy within an island context, elicit knowledge surrounding local cultural assets and explore the innovative capabilities of creative practitioners. We reflect on how a design innovation approach allowed us to garner the collective wisdom held in communities and foreground the focal themes of practice, place and people.

Keywords: craft, creative economy, cultural assets, design innovation, Shetland Islands, textiles

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Introduction

The Shetland archipelago is located 100 km north of Scotland, and the capital Lerwick is almost equidistant from Bergen in Norway as it is from Aberdeen in Scotland. It comprises about 300 islands and skerries, of which 16 are inhabited, with around 80% of the archipelago’s population of 23,200 living on the main island (called Mainland) (National Records of Scotland, 2017). Traditionally the island economies have been reliant on agriculture and fishing, having received an economic boost over the past three decades as a result of public spending funded by the oil and gas industries. More recently, tourism has constituted an important source of income. Tourism has had a profound impact economically, socially and culturally on many island communities (Macleod, 2013). Shetland also has a rich history of craft work, including the internationally recognized traditions of Fair Isle knitting and lace making (Matarasso, 2012; Scott & Marr, 2012). Despite this, it has been acknowledged that there is a lack of in-depth research on the creative industries and the region faces particular innovation challenges, including dispersed working communities and
the attendant lack of technological infrastructure that can limit opportunities across the 
creative economy (HIE, 2013). Furthermore, within creative economy policy and academic 
research more broadly there has been a tendency to focus on global centres or formerly 
industrial cities in the process of restructuring, with a lack of attention on non-urban and, 
indeed, island-based creative activity. Islands are frequently characterized as remote and 
peripheral and therefore their communities often denied centrality (Grydehøj et al., 2015).
As Alexander (2016, 2015) further asserts in relation to migration decisions within the Scottish 
islands, applying mainland models to island contexts risks obscuring the patterns we can see 
and understand.

The findings presented in this article are drawn from a series of Innovation from 
Tradition workshops, which aimed to better understand the creative economy specifically in 
island contexts, towards reimagining the innovative capabilities of craft and creative 
practitioners. In developing and delivering the workshops, we applied a design innovation 
approach. Building upon Frayling’s (1993) comparisons of research - into, through and for -
art and design, our approach conceptualizes innovation through design as applying design 
methods and tools as interventions to bring about change in contextually located situations, 
and innovation of design as challenging established disciplinary principles and approaches in 
order to develop cultural assets and build creative capacity and capability. In turn, a design 
innovation approach is inspired by the democratic, inclusive and creative tenets of 
participatory design (Ehn, 2008; Sanders & Stappers, 2008) as guiding principles for bringing 
together a diverse range of people with a shared interest or collective motivation, such as 
design practitioners, design researchers, multidisciplinary experts, entrepreneurs, end users, 
people and communities, and supporting them to collaboratively address a complex set of 
challenges through stages of exploration, ideation, and iteration (Norman & Verganti, 2014). 
Sanders and Stappers (2014) assert that these practices allow for insights and ideas to be shared, 
developed and applied to inform new products, services and systems that respond to 
participants’ experiences and aspirations. Positioning local people as central drivers of 
inovation, design innovation is aligned to an asset-based approach to identify existing skills, 
talents, and capabilities from within communities that may be hidden or inefable (Foot & 
Hopkins, 2010; Baker, 2014). In so doing, as McAra-McWilliam (2009, p. 70) suggests, 
“apparently disparate resources – intellectual, physical, social and material – can be usefully 
related to one another to create motivational, distributed enterprises within a regional ecology 
of cultural and economic activities.” Characterized by tenets of inclusivity, collaboration and 
collectivity, a design innovation approach uses flexible and bespoke methods and tools to 
elicit dialogue around local cultural assets and foreground creative opportunities for enhancing 
societal wellbeing and economic regeneration.

This approach was embodied within the Innovation from Tradition workshops held in 
Shetland in autumn and winter 2016. The paper begins in the next section by exploring some 
existing understandings of the craft economy, introduces the Shetland archipelago as the 
context for this research and highlights the specific focus on the textiles sector. We then 
present the model of engagement with the craft sector, focusing on the design innovation 
approach undertaken in the Innovation from Tradition workshops, emphasizing the benefits 
of the asset-based, participatory and material aspects of this engagement. We argue that design 
innovation approaches have a role to play in examining and understanding the complex 
characteristics of craft production within an island context, and therefore can help support 
practitioners to identify collective challenges and opportunities surrounding the development 
and sustainability of their work.
Innovation from Tradition

“Innovation from Tradition is a new approach to creative production that includes the past in the creation of present and future opportunities for islanders, particularly in terms of new ideas.” (McAra-McWilliam, 2017).

The craft economy
Craft has recently been enjoying a resurgence (Jakob & Thomas, 2015; Luckman, 2015, 2013, 2012). Frayling (2017) notes this is linked to the current economic climate and new modes of craft as production and the significance of craft as meaningful work (Crawford, 2009). Part of the reason for this, according to Sennett (2009), is that for human beings, craftsmanship, that is, the skill of doing things well, is the main source of human dignity. In his view craft is the combination of acquiring knowledge and skill from expert practitioners whilst experiencing it through practice. In this manner craft can be understood as the practice of making things as well as we can (Frayling, 2017) based on an active and practical engagement with both the material and social worlds (Sennett, 2009). Adamson (2013, p. 172) positions craft as a mode of working whereby the knowledge exists in the practice through which tacit and practical knowledge are transformed into material form and are a “living part of a larger mechanical system.” This re-emergence of craft into public debate sees craft increasingly recognized as a growing industrial sector with benefits linked to educational, cultural and economic policy agendas (Jakob & Thomas, 2015). There is growing interest from policy makers who view craft as a stimulus to develop local and regional economies, skills and materials in relation to wider networks (Luckman, 2015, 2013; Marksuen, 2007; Nesta, 2007; Yair, 2011). Craft in this way is positioned as a conduit to the revitalization of local economies and as training mechanisms that support the creative economy: networking, apprenticeships, skills, training, mentoring, supporting micro-businesses, promoting new markets and fostering innovation (Jakob & Thomas, 2015). A recent report (KPMG, 2016) commissioned by the Crafts Council asserts that craft skills and knowledge have a further potential of driving growth and innovation in other parts of the economy.

Shetland cultural identity
We contend that heritage and tradition underpin the production of cultural goods in Shetland, whereby culture is intrinsic in the mix as a feature of the total island (MacLeod, 2013) identity. From the beginning of Shetland’s recorded history, the Northern Isles are considered to have a Norse culture. Shetland was integrated into the Norwegian state in about 875 and the Islands remained under Scandinavian rule until the mid-13th Century. Shetland passed over to Scotland in 1469. Due to Shetland’s rich cultural heritage Shetlanders in the main relate to a Scandinavian, rather than Scottish, sense of culture and view themselves as a separate cultural identity with a distinct heritage and tradition. Grydehøj (2010, p. 78) posits that:

“Tradition usually centres on ‘customs, rituals and expressive form’ and heritage on ‘monuments, groups of buildings and sites’ […]. Tradition is thus an exclusive quantity: entrance into tradition requires a position in its genealogy, requires becoming part of the community of interlinking people that turns geography into place.”

Textiles as cultural goods play a significant role in connecting communities to place based narratives and their symbolic production. Textiles have a rich tradition in Shetland as an expressive form from raw material manufacture, fibre and yarn production to hand and machine knitting, Fair Isle and fine lace, and weaving. Whilst the sector is small it provides cultural significance and value beyond its economic contribution, through its relations with tourism, growth of the creative industries and in providing employment (Scott & Marr, 2012).
The sector is predominately knitwear (garments and accessories) and characterized by SMEs, micro-businesses, sole traders and outworkers. It is dominated by micro-businesses, with over 70% sole traders having a turnover of less than £25,000 per annum (Scott & Marr, 2012, p. 15) with the majority of these heavily reliant on local and tourist markets.

Significantly, in recent years, the production capacity of the knitting sector has declined, with a decrease in the numbers of skilled knitters and linkers. Notably, what has changed is the environment in which knitters operate. A 1984 study observed “near 2000 people knitting at home […] supplementing their incomes, attracting earnings […] and continuing a craft which has contributed favourably so long to maintaining Shetland’s home based family and community spirit” (Scott & Marr, 2012). Recent estimates suggest around half that number of home workers due in part to an ageing workforce and low wage rates. This has led to a reduction in production capacity and skills, or what we term process wisdom (McAra-McWilliam, 2017) in the sector, which together with a lack of investment in and focus on design (Scott & Marr, 2012) presents a particular innovation challenge. More broadly within the creative economy, longstanding challenges around the craft sector continue to persist, including the provision of business training and business support services; raising public understanding of the skills, time and effort that go into creating craft objects and appreciation of their true value; the ability to reach prospective clients for niche or particularly expensive works; and the identification and development of markets both at home and overseas (DCMS, 1998). There is also a tendency to denigrate craft work with high proportions of informal labour, issues around measuring the sector and a view of the sector as hobbyist (Luckman, 2018; The Crafts Council, 2015). A further tension around negotiating authenticity and nostalgia within rural creative work with a rich heritage whilst also supporting innovation has also been identified, and chimes with what Luckman (2012, p. 8) terms the “the hegemony of the rural idyll.”

Harnessing collective wisdom

Our overarching aim is to explore the innovative capabilities of craft and creative practitioners in an island context, with a focus on textiles, towards repositioning understandings of an island creative economy. Whilst much has been written, *inter alia*, on Fair Isle knitting and gender in Shetland (Abrams, 2006) and knitting from a textile history perspective (Blackman, 1998), we are interested in the practice of knitting beyond an historical perspective and situate knitting as a material practice and textiles as a form of cultural production. Textile practices, such as knitting, are important sources of island identity, cultural appreciation and deep process wisdom. In this manner knitting embodies a complex system of cultural meanings that confer to aesthetics of practice, place as location and articulate a nexus of social relations. To speak of knitting is to speak of a mode of cultural production and describe it not simply as a reflection of some essentialist culture but as an arena for the constant process of negotiating the meanings that constitute culture and in so doing is intrinsic to the fabric of Shetland life. Rather than presenting a unified, hegemonic position, textile practices reflect an ongoing dialogue between the past, the present and the future through a multitude of countervailing cultural meanings (Thompson & Haytko, 1997).

Innovation from Tradition was predicated on better understanding collective wisdom, what we refer to as the stock of shared knowledge and practices held in common by groups or communities, such as those populating non-metropolitan regions and islands, as a resource for innovating or revitalizing their way of life. This conception does not ignore or seek to diminish the socio-cultural variety of island communities (Macleod, 2013), a critique sometimes levelled at those selecting to research them with a perception that they are home to a discrete, self-contained and somewhat homogeneous group of people. Communities can imbue island sites with traditional importance (Grydehøj, 2010) and cultural meaning. From patterns, styles and motifs through to techniques, objects, practice and execution, the
development of textiles as cultural assets is rich in tradition. Innovation from Tradition sought to harness the collective wisdom in communities as a form of shared cultural capital. Whilst Innovation from Tradition may be viewed as paradoxical in nature, this collective wisdom can contribute to economic production, social organization and cultural identity.

Innovation from Tradition built on the team’s experience of using design-led approaches to promote the creation of innovative business ideas, processes and models (Broadley et al., 2016; Johnson et al., 2016; Kearney & McHattie, 2014). By engaging with the craft practices of making and the materiality of design tools as artefacts, the project encouraged engagement and provided space for innovation towards enhancing and sustaining the creative economy in non-urban geographies. As well as arguing for the innovative potential of craft and creative practitioners, we contend that, despite a characterization of non-urban areas as challenged, rural and remote, and islands as the ultimate non-urban areas, these contexts can offer creative opportunities to develop economic production, social networks and cultural capital in new and innovative ways.

Design innovation: a methodological approach

Bridging our disciplinary concerns and methodological stance, the design innovation approach draws from Participatory Action Research (PAR) (Chevalier & Buckles, 2013). Centred on the relationships formed between researchers, practitioners, communities and organizations, PAR draws from experiential learning and domain-specific expertise to offer a framework for conceptualizing new knowledge and insights for innovation within research contexts (Howard & Somerville, 2014). Whilst originating from the field of organizational behaviour and prevalent across the social sciences, PAR is often adopted in participatory design studies, in which the design process entails iterative cycles of action and reflection in response to dialogue and interactions (Howard & Somerville, 2014; Bilandzic & Venable, 2011). In this project, a flexible PAR framework allowed us to bring together a multidisciplinary team of designers, craft and creative practitioners, researchers, and regional development agents to identify collective resources towards reframing future innovation opportunities.

Participatory design: what it is and what it could be

Designers and design researchers working in participatory design employ creative, generative, visual, and participatory methods – including collaging, sketching, 3D modelling tasks, prototypes and design games – as ways of engaging with participants and telling, making, and enacting to envisage the future (Brandt et al., 2012). Steen (2011) positions participatory design as a practice in which designers and researchers devise methods to engage with users and stakeholders to understand their experiences and consider how these can be enhanced. Following Dorst’s Frame Creation model, critical engagement with existing situations within the design context can illuminate both “significant influences on their behaviour and what strategies they currently employ” and “practices and scenarios that could become part of the solution” (Dorst, 2015, p. 76). Such activities build on primary knowledge and expertise (“what is”) to imagine preferable scenarios (“what could be”) (Steen, 2011, p. 50).

Vaajakallio (2009) has evaluated the generative nature of collaborative design activities and proposed that this fundamentally social and embodied practice originates from the dialogue that emerges when participants enact and describe their existing experiences through creative, expressive methods. In developing notions of context-specific participatory design methods, there is a need for designers and researchers to immerse and embed themselves within the geographical setting in which their projects are situated, allowing them to develop rich and authentic understandings of the social, cultural, political and economic conditions that characterize each unique design context.
An asset-based approach
In the context of public service reform and achieving a more equal society in Scotland, practices of co-production emphasize the role of local government agencies in actively supporting individuals and communities to participate in a democratic process and contribute their experiences and ideas to design and develop responsive new services, systems, and forms of delivery (Housden, 2014). Aligned with this vision and having been adopted across areas of public health improvement, community development, and social services (Garven et al., 2016), an asset-based approach “values the capacity, skills, knowledge, connections and potential in a community” (Foot & Hopkins, 2010, p. 17) as a means of reframing future opportunities (Baker, 2014; Glasgow Centre for Population Health (GcPH) and Scottish Community Development Centre (SCDC), 2015). Emphasizing the role of individuals, communities, and organizations as rich resources of knowledge, experience, and skill that can contribute to enhancing society and eventually lead to less dependency on professional services, asset-based approaches “focus on nurturing engagement and relationship building to enable strengths, capacities and abilities to be identified and developed for positive outcomes” (GcPH & SCDC, 2015, p. 15). In turn, asset-based approaches use flexible, appreciative (Whitney & Trosten-Bloom, 2010) participatory activities such as asset mapping, conversation cafés and community walkabouts to strengthen positive dialogue and articulate connections within communities and services (GcPH & SCDC, 2015).

With a focus on emergent interaction, the fluid nature of our design innovation approach allowed for specific methods, tools, and techniques to emerge from our immersion in the Shetland Isles creative economy context and these were shaped by our interactions with the participants and stakeholders. We now go on to discuss the methods used in the Innovation from Tradition workshops that were designed with the aim of eliciting dialogue around these local cultural assets.

Innovation from Tradition workshops
Focusing on Scotland’s Northern Isles (the archipelagos of Orkney and Shetland), the Innovation from Tradition pilot series of workshops were delivered in partnership with the regional development agency, Highlands and Islands Enterprise (HIE). These were a series of two interlinked workshops (with a three-week intervening period), which aimed to explore and inspire innovation and future opportunities for the islands’ craft and creative industries sectors. The workshops foregrounded questions around the role design can play in innovating craft practices and in enabling and sustaining the creative economy in rural geographies.

Preparatory Scoping
Considerable time, planning and collaborative work was involved in designing the workshops. Scoping visits were initiated around a year in advance of the workshop delivery to engage with gatekeepers and intermediaries from cultural institutions as well as craft and creative practitioners. In tailoring the workshop approach, a number of key decisions were made. Firstly, it was decided that, rather than a sole focus on textiles, the workshop scope would be extended to include a broad range of craft and creative industry activities. This was based on the aspiration for cross-sectoral knowledge exchange. Secondly, there was a strong emphasis during the planning process (driven particularly by the regional development agency gatekeepers who were familiar with most of the participants) on the workshops providing an opportunity for capacity building and professional development to address issues of confidence amongst participants.
The workshops
At the workshops carried out in Lerwick, the main town in Shetland, during autumn and winter 2016, there were 18 participants drawn from a range of craft and creative industries including textiles, design, architecture, soap making, jewellery, film and media and print making. Through a series of interactive sessions, the participants were introduced to working with design innovation tools and processes that could be used to build up thoughts on how innovation challenges could be defined, understood, and addressed; were encouraged to experiment with alternative ideas; and explored how to develop genuinely innovative concepts.

The intention was to create an intensive and immersive experience, purposefully constructed to encourage reflection on and sharing of existing assets and resources. Facilitators and experts in relevant fields supported participants throughout the workshops in addition to challenging positions and perspectives. The workshops were designed to be a valuable experience in and of themselves and included elements of continuous professional development, for example, including advice on pitching and presenting as well as contributions from industry specialists in the field of craft, innovation and creative practice and experts on creative industries support and funding.

Wisdom Wall
In order to support participants through stages of exploration, ideation, and iteration in the workshops, we recognized the importance of developing design tools that reflected the local context of craft and creative practices in the Northern Isles. One such tool was the Wisdom Wall. Participants were asked to complete Wisdom Wall cards (Figures 1 & Figure 2) during the workshop to share existing assets and resources. These cards were themed as follows:

- People (organization or location): Who and where? What makes them inspiring?
- Projects: What and where? What makes it inspiring?
- Practices (skills, industries or interests): What is it? What is it being used for?
- Place: Where is it? What makes it inspiring?
- Technologies: What is it? What is it being used for?
- Materials: What is it? What makes it valuable?
- Wildcard: Any other suggested resources that do not fit the above categories.
Figure 1: Wisdom Wall cards were provided to participants to categorize and capture their knowledge and insights into existing resources that could be useful in inspiring ideas around innovation of the craft and creative sectors in Shetland.

Figure 2: Once completed, the Wisdom Wall cards were clustered by participants to represent potential new configurations of resources.

These were then tessellated by participants and clustered around key themes or related areas. By adopting an asset-based mindset, the Wisdom Wall cards mobilized the skills, talents, knowledge, and connections from within communities and organizations situated in Shetland and supported participants to reframe these in response to future innovations.

Participant voice
During the workshops, the project team recorded key aspects of the discussion in written notes and participant quotes. The materials including the Wisdom Wall cards and other design artefacts were preserved and photographed to form an assets archive (Figures 1 & 2). The Wisdom Wall elicited a rich range of responses and revealed in conversation with participants what they regarded as valuable collective assets and the participants’ voice is threaded through the initial insights sections.
Initial insights

From the synthesis of these resources and reflections from the field notes, three emergent focal themes (practice, place and people) were highlighted as the loci of concentration from the set of seven Wisdom Wall cards and the excerpts from the participants’ discussions. These three themes resonate with the findings of Burnett and Harling Stalker (2016) in their research into the experiences of cultural workers in Scottish island communities, which found them balancing cultural heritage and tradition, with new interpretations of islandness across people, place and practice. Through connecting practice as process wisdom, place as living wisdom, and people as a meshwork (Ingold, 2013) of collective wisdom, we now proceed to outline the initial insights from the workshops as a shared stock of assets and a form of collective cultural capital.

Practice: process wisdom

We position practice as a form of materiality that exemplifies deep process wisdom through craft technique and creative expression. Existing research accounts have identified the complex interplay between material practices and socio-economic and cultural histories of island communities. Such historical accounts are extremely valuable in challenging traditional views of material practices (for example knitting) and, importantly, how they have integrated women into the market (Abrams, 2006). It is axiomatic that island craft techniques, practices and processes are historically located. For example, Fair Isle knitting is inextricably linked to history and heritage on the Shetland island of Fair Isle. Workshop participants mentioned “mending, grafting, linking” as key knitwear manufacture and hand knitting skills in Shetland. They also mentioned “outworkers and home machine knitters” as a less visible, but important traditional Shetland skills base and one they feared was at risk of being lost. The term ‘heritage knitting’ (Turney, 2009) is used to describe resurrections in traditional styles, motifs and patterns, and their presentation, construction and promotion through the objects themselves, largely influenced by the landscape, upon which it could be argued much of the textile production in Shetland is based. The notion of heritage knitting draws on craft revivals heavily imbued with notions of nostalgia: In this sense the past is addressed with a sense of loss and nostalgic longing, but often the past was a constructed place of myths, legends, chivalry and harmony, which was created and recreated through literature and the imagination (Turney, 2009).

This turns attention to the way in which rural landscapes in particular and specifically those in Shetland have been situated as sites of consumption through heritage tourism and commoditization, with much of the textile production aimed at the tourist market, including visiting cruise liners. Participants noted that “there has definitely been more (tourism) in the past couple of years” (Creative Practitioner, Shetland Workshop Discussion). Small islands in Northern Europe are often closely associated with a sense of the rural idyll whose signs and symbols relate to particular craft practices, products and lifestyles (Prince, 2017). As a heritage product the landscape is consumed as an extension of a wider social and cultural milieu. This mythological landscape in Shetland includes knitting on two levels: firstly, Fair Isle as part of the iconography and iconology linked to the past, and secondly as vernacular commoditization. The vernacular pertains to a combination of geographic conditions, including locally available materials, environmental concerns, skills, knowledge and local know-how, community beliefs and patterns of behaviour, as well as regionally specific history, tradition and symbolism (Turney, 2009). Tied to the tourist quest for authenticity the commoditization of culture by the means of souvenirs is ubiquitous across island communities (Grydehøj, 2008; Harling Stalker, 2013; Macleod, 2013). Harling Stalker (2013, p. 118) in her exploration of the craft policy of three Atlantic Canadian islands argues that those making crafts on the islands were seen as “producers – disembodied economic entities – that must
meet the demands of a marketplace, or craftspeople that must perpetuate a romantic ideal to be sold to tourists.”

In the Innovation from Tradition workshops participants identified a tension within their practice between creating commoditized products for the tourist market on one hand whilst also aspiring to create higher value products that communicate the value of hand skills to consumers on the other. As Luckman (2012, p. 89) has shown, this often means that practitioners make:

constant trade-offs between the ideal work people wish to be doing and ‘bread and butter’ work, for example, less expensive, higher turnover items for the tourist trade […] studio craft producers who were willing to make less challenging and, for them, less interesting but cheap items if it also meant being able to sustain the more rewarding and expensive quality original art pieces.

Innovation from Tradition provided both a provocation and a platform to reimagine creative practice and shared cultural assets. Creative practitioners are invested in their island communities and their rurality on a number of levels, contributing to community resilience through building cultural capital in diverse ways (Roberts & Townsend, 2015). We posit that this systemic approach could alleviate the time-poor nature of portfolio workers in the creative industries and open up time and space for innovation. One practitioner explained during the workshops that her “vision is to position Fair Isle as a luxury item and bring back the manufacturing of Fair Isle [knitwear] to Fair Isle – from using the local [sheep] clip and spinning we can create bespoke and limited edition artisan Fair Isle, which in turn employ local knitters and encourage young apprenticeships” (Creative Practitioner, Shetland Workshop Discussion). By repositioning away from the lower value tourist market towards higher value exports, she identified a means by which she could maintain authenticity, develop the local skills base and build a more economically viable business.

**Place: living wisdom**

Geographical context is fundamental, not incidental, to innovation (Asheim & Gertler, 2006) and the process of learning through doing. The best way to convey and exchange such knowledge or process wisdom is through demonstration and practice, such as the master-apprentice relationship in which observation, imitation, correction and repetition are employed (Polyani, 1966). This process is at the heart of craft technique and practice in island contexts. As already touched upon, the participants explained during the workshops that one of the assets they were concerned about was “the loss of traditional hand skills” and they articulated concerns about the “retention of craft techniques.” Craft practices, which imprint uniqueness into materials, are inherent within the craft and creative processes in island communities.

A deep connection with place exists in the work of practitioners in the creative sector in the Northern Isles. The relationship with the landscape is connected to a creative community of practice (Wenger, 1998) within a geographical context exemplified by shared values, language and culture. In this manner learning through doing can be enacted within a collective social, organizational and cultural context. It is these social processes that are embedded within the physical and environmental character of the islands. Participants reflected on the importance of the natural assets of the islands and island life, invoking ideas around calmness and contemplation alongside wildness and remoteness. Within the Wisdom Wall cards and their reflective conversations, participants spoke of being “surrounded by nature,” “the northern lights” and the inspiration of the “vivid light and colours.” Inspired by the landscape and light, they explained how they used “shapes, textures, patterns and colours” reflective of the islands “to inspire” their textiles and other creative practices. The
islands were viewed as a locus of skills and activities connected to cultural heritage. One participant, a Fair Isle knitter, described how “the landscape and the geography is embedded in the tradition of Fair Isle […] inspired by tradition – crafted for life” (Textiles Practitioner, Shetland Workshop Discussion).

There was a strong sense of Shetland as a place brand, and this was linked to the creative products and services developed there. Participants identified a recent trend for all things Shetland from an interest in island life to the television show *Shetland* (2013–) and argued that there was a cachet associated with the islands. As one participant explained “so many people are interested in Shetland and it’s one of those things, we kind of laugh about it here, the boat almost sails itself” (Textiles Practitioner, Shetland Workshop Discussion). A trend has been identified, particularly amongst Northern European cold-water islands, for greater conformity in how culture is commodified and sold as each island takes part in a quest to differentiate itself as a unique location often in precisely the same ways (Grydehøj, 2008). In her study of the cold-water island destination Bornholm in Denmark, Prince (2017) found that, rather than being imposed, such images were negotiated and constructed by the artists involved as well as policy actors. Whether passively experienced or actively sought after, it is clear that island tourism is frequently driven by a trend to commoditize culture. This experience chimes with the work of Burnett and Danson (2004, p. 391) in relation to food production in Scotland who noted that “the somewhat simplistic representation of rural Scotland within economic policy discourse contrasts with a rather more ‘messy’, amorphous and complex Scottish rural reality.” Amongst participants there seemed to be a relatively bottom-up and organic conception of a Shetland brand without any reference to existing promotional materials or branding campaigns, perhaps significant given the academic critique of past exercises relating to a lack of local involvement in such processes (Grydehøj, 2008). The workshop participants were keen to be involved in such interventions in future and saw a role for themselves in working with Promote Shetland and other actors reminiscent of the more complex stories of negotiated and constructed representations of Bornholm (Prince, 2017). Place identity was seen as something to be capitalized on and taken advantage of, although, as mentioned in the previous section, the exploitation of upturns in tourism was held in tension for creative practitioners and they acknowledged this limited the products they produced.

As well as the richness of assets within the islands, participants were keen to mention the outward facing links that their location in the Northern Islands allowed them to have. In contrast to some of the characterizations of the islands’ remoteness, craft practitioners living there connected with textiles collaborators from the US, Norway and Scandinavia. Participants were also keen to mention Shetland Wool Week, an eight-year-old, nine-day series of events and workshops, which takes place across the islands every September, bringing a global profile of visitors and generating more than £700,000 for the local economy in 2017 (Shetland News, 2017). Participants described it as “bringing together textiles companies in Shetland” and “presenting a united front for visitors.” As one participant explained, “before the introduction of this annual event, September would have been a period that would traditionally have been the quietest time of year, it is now our busiest time of year” (Creative Practitioner, Shetland Workshop Discussion). These outward connections and promotion of Shetland were also driven by online and digital networks used for networking, sales and image building. As one practitioner noted “on my blog I am getting about 10,000 views a month […] I don’t think I could do any of that without social media” (Creative Practitioner, Shetland Workshop Discussion).

**People: collective wisdom**

Things, geography, communities, and people are formed in the meshwork as knots or bundles of social relations (Ingold, 2013). It is the nexus of social relations and social interactions that
is of interest within developing cultures of innovation. Complex and intangible social contracts and cultures of reciprocity were extremely important within the activities of the participants. This links in part to the role and importance of tacit knowledge, which is the kind of information that is difficult to transfer to another person by means of writing it down or verbalizing it. As an early proponent explained, tacit knowledge reflects the fact that we know more than we can tell (Polanyi, 1966). Effective transfer of tacit knowledge generally requires extensive personal contact, regular interaction and trust. This kind of knowledge can only be revealed through practice in a particular context and transmitted through social networks. For example, one of the collective assets identified by participants on the Wisdom Wall was “the tradition of knitting instruction in primary schools” that had continued up until 2010 before funding cuts. More recently, the Peerie Maakers (young knitters) initiative had introduced intergenerational knitting-focused projects in schools and after-school clubs. The rich and heterogeneous networks and relationships of the participants, identified on the Wisdom Wall, were characterized by deep ties enabling this exchange of tacit knowledge, but perhaps also leading to difficulties in articulating the true value of their practices and exchanges.

These insights point towards the role of a design innovation approach in underpinning the examination and understanding of the complex characteristics of craft and cultural production within an island context. The time spent in developing the networks and engaging with stakeholders was also drawn upon by participants as a key strength, with one commenting:

Certainly, I felt that those hosting the workshop had an appreciation of tradition generally and a strong will to further the development of ideas in many directions. The innovation factor not necessarily having to be a radical departure from some of Shetland’s dearly held heritage, more an expansion of it (Creative Practitioner, Shetland Workshop Feedback).

Echoing our model of engagement’s initial phases of scoping, network building, and designing appropriate methods, tools, and techniques, there is a need for design researchers to immerse themselves in the contexts and locations they are investigating, work together with local gatekeepers to broker buy-in from the wider community and provide support in managing expectations, dedicate time and space to develop trust with groups, allow for flexibility and deviation in the activities that they coordinate, and design approaches that encourage expression and voice (Ssozi-Mungarua et al., 2017). One participant described how the Wisdom Wall cards helped her “realise that we shared the same needs and views” and the will “to get together and work for a common cause” (Creative Practitioner, Shetland Workshop Feedback). As artefacts created purposely for the Innovation from Tradition workshops, the Wisdom Wall cards enabled craft and creative practitioners to materialize and share their knowledge of local resources and collective cultural assets and to consider how these could be enhanced, reframed, or reappropriated to support the development and sustainability of their own work and its contribution to the creative economy of the region.

There was a significant interest in sharing knowledge and experiences amongst the group rather than a sense that to do so would be problematic for competition. In framing community-based collaborative design as a form of action research in rural communities, Ssozi-Mungarua, Blake, and Rivett (2017) propose that a focus on harnessing collective skills of groups foregrounds the position of research participants and promotes mutual learning and cohesion amongst partnerships. Community-based participatory design connects with publics – groups of people constituted by their connections with a shared issue (Ehn, 2008) – in order to build a network of individuals that may not otherwise exist as a cohesive entity, whilst attending to the social constructs and relations that characterize and permeate these groups (DiSalvo et al., 2012). Manzini (2015, p. 11) proposes that products, services, and models that address societal needs and foster new collaborations “emerge from the creative recombination.
of existing assets (from social capital to historical heritage, from traditional craftsmanship to accessible advanced technology), which aim to achieve socially recognized goals in a new way.” By blending the creative and inclusive principles of participatory design with an asset-based mindset, the design innovation approach strengthened the relational nature of the Innovation from Tradition workshops, allowed participants to coalesce around shared challenges and supported them towards establishing themselves as a meshwork of collective wisdom and a community of practice (McHattie et al., 2013).

Conclusions, limitations, and future research

This article has outlined the rationale for a design innovation approach focused on articulating the value of the collective wisdom and innovative capabilities of island-based craft and creative practitioners. Using such an approach, we developed and carried out a series of workshops with people, practitioners and professionals active in the craft and creative sector in Shetland. By engaging craft practices of making and the materiality of artefacts, such as textiles, we brought diverse groups of people together and rather than focusing on the deficits and challenges faced in working in island locations, this work sought to explore the unique opportunities, resilience and rich history of the island communities. The findings we present are limited in the sense that the Innovation from Tradition workshops were undertaken as an exploratory pilot series. The article contends that a combined approach emphasizing asset-based inquiry (Garven et al., 2016) and participatory design principles (Brandt et al., 2012; Sanders & Stappers, 2008; Ehn, 2008) can stimulate innovation, which may contribute to more socially equitable models of cultural and economic capital within the creative economy of the Northern Isles of Scotland. Further research will aim to develop future insights around the intersections of practice, place, and people and further investigate the role of a design innovation approach in supporting collective cultural capital and the systemic development of the creative economy within a regional ecology of cultural and economic activities.

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Entangling (non)human isolation and connectivity: island nature conservation on Ile aux Aigrettes, Mauritius

Lisa Jenny Krieg
University of Bonn, Germany
lisa.krieg@uni-bonn.de

Abstract: This article discusses the Mauritian offshore islet and nature reserve Ile aux Aigrettes as an example of how the tension between isolation and connectivity of small islands plays out in the context of nature conservation. Combining approaches from island studies, anthropology, and geography, and based on ethnographic fieldwork and interviews, the article enquires into how ‘pristine’ nature on Ile aux Aigrettes is produced. It shows how the selective mobility of humans, animals, and plants is part and parcel in producing a seemingly isolated island, e.g. in the case of visiting scientists, species translocation, and invasive species. This shows how the production of the isolated ‘pristine’ island is dependent on global connections and flows. Isolation and connectivity of islands, I argue here, depend on each other, and are significantly co-constituted by nonhuman mobilities. Nature conservation on Ile aux Aigrettes will be looked at as a reference towards an ideal past or a utopian future, protected as signifiers for a world in socio-ecological balance.

Keywords: boundaries, ecological destruction, island laboratories, Mauritius, nature conservation, nonhuman mobility, small islands

Introduction

So what if I said, we are here today in a laboratory of the planet. [...] Think about this. If you extrapolate the human population density of Mauritius to the rest of the land surface of the planet you’ll get 100 billion. That is to say, we are at the extreme of the extreme. We are, in a way, a window to the future.
—Vincent Florens, TedEx Plaines Wilhelms, 26 April 2018

Against the backdrop of a history of ecological destruction under the rule of three colonial powers, conservation efforts in Mauritius have recently centred on the many small offshore islets. In attempting to isolate these islands from global flows and invasive species, much work is invested in ‘island restorations’, such as in the case of the Ile aux Aigrettes nature reserve. But what does it mean to restore an island landscape? Whereas one could suppose that islands are particularly well suited for controlled conservation in relative isolation (Baldacchino, 2007; Mountz & Briskman, 2012), islands also commonly feature as exemplary relational sites and meeting points in circuits of global flows (Pugh, 2013, 2018; Schnepel & Alpers, 2018; Stratford et al., 2011), and thus challenge ambitions for complete control. How does the particular island setting exert its influence on attempts at its restoration? And which role does the (im)mobility of humans, plants, and animals play in this context?

In recent years, debates about the consequences of anthropogenic ecological destruction during the so-called era of the ‘Anthropocene’ (Crutzen & Stoermer, 2000) have heated up
often, nature conservationists and politicians try to solve conflicts about biodiversity loss and habitat destruction by drawing boundaries between spaces labelled as ‘natural’ and ‘cultural’ (Buller, 2004; Carter & Palmer, 2016); this is equally true in the case of endangered species on small islands. Social scientists criticize this reproduction of the nature-culture dichotomy, which they largely abandoned in favour of approaches focusing on hybridity and entanglement (Cronon, 1996; Descola, 2013; Latour, 2011; Whatmore, 2002). In practice, however, separating wild, natural spaces from domesticated, cultural sites is still influential and widely manifest as the practical solution to complex dilemmas (Pooley et al., 2016), as this article will also illustrate.

This is also the case in the Western Indian Ocean, a region severely impacted by ecological destruction (Cheke & Hume, 2008; Florens, 2013; Walsh, 2007). Deeply embedded in transoceanic trading relations, people and goods with them animals and plants have travelled and circulated between the various coasts and islands, often with severe impacts on the native flora and fauna (Fuller et al., 2011). On Mauritius, many species have gone extinct since human settlement of the Mascarene Islands started in the late 16th century, the dodo being the most emblematic of these (Roberts & Solow, 2003). Besides habitat loss, ‘invasive species’ are considered as the main threat to island wildlife. With continuous industrialization and urbanization on Mauritius, accompanying population growth, and an increasing participation in global flows, threats to native wildlife have recently become even more severe, causing increased conservation efforts by non-governmental, governmental, and international organizations (Cheke & Hume, 2008).

Since the 1980s, nature conservationists on Mauritius have begun to focus conservation efforts on the many offshore islets, attempting to isolate them from globalized flows of plants and animals in order to protect native species (MWF, 2018a). One of the most prominent examples is Ile aux Aigrettes, a small offshore island that has thus been set aside and restored (Cheke & Hume, 2008; Florens, 2013), receiving much international praise as an exemplary conservation success, and as a refuge for endemic species saved from the brink of extinction (Aspinall, 2016; Florens, 2013).

In this article, I discuss the Mauritian offshore islet and nature reserve Ile aux Aigrettes as an example for how the tension between isolation and connectivity of small islands plays out in the context of nature conservation. The attempt to protect Mauritius biodiversity, and to restore a ‘whole island’ to the image of a ‘natural’ past prior to human disturbance is explored, shedding light on the selectivity of isolation and connection. While the mobility of some, such as autonomous visitors and invasive species, is limited, the mobility of others, such as eco-tourists, scientists, and translocated species, is actively supported. This demonstrates how the production of the isolated ‘pristine’ island is dependent on global connections and flows. Conversely, the image of the pristine island contributes to global flows by activating international networks to support the island restoration. In this interaction, the sometimes-conflicting images of the biodiverse island and the pristine island are looked at as carriers of social values, as references towards an ideal past or a utopian future, protected as signifiers for a world in socio-ecological balance, giving rise to the hyperobjective island of the present.

The history of species circulation, extinction, and conservation on Mauritius

Historically, the Indian Ocean has been a focal point of circulations of people, goods, plants, and animals, as many of its islands are located along trade routes between Africa and Asia (Fuller et al., 2011). Human trading activities have shaped this region, including its fauna and flora (Fuller et al., 2011; Walsh, 2007), and it is still strongly embedded in relations of circulation (Schnepel & Alpers, 2018; Verne, 2012, 2017). Since the arrival of humans on the Mascarenes in the 16th century, a massive replacement of the native fauna and flora through
habitat destruction and introduced plants and animals has taken place (Cheke & Hume, 2008; Florens, 2013, p. 41). New animal and plant species have been introduced for their economic value, or reached the islands unintentionally alongside humans (Fuller et al., 2011).

Three colonial powers (the Dutch, the French, and the British) ruled Mauritius consecutively, until the island gained its independence in 1968. Each of these periods was characterized by different developments concerning both the destruction and the conservation of the island’s wildlife, as Cheke and Hume (2008) have illustrated in detail in their book on the ecological history of the Mascarenes.

The Dutch took the first steps towards an over-exploitation of the island’s flora and fauna during their rule of Mauritius. Dutch sailors were allegedly the first to set foot on Mauritius in the late 16th century, and they consequently used it as a trading post and stop-over for ships to restock their supplies (Oostindie, 2008, p. 202). The sailors exploited native plants and animals on their visits, released livestock such as pigs, goats, and chicken to multiply and provide supply for later visits, and brought with them the first invasive species such as rats, all of which caused damage to native species (Cheke & Hume, 2008, p. 76). Later, Dutch settlers also started cutting forests and exporting ebony in large quantities (Grove, 1996, p. 132). Smaller offshore islets, like Ile aux Aigrettes, provided refuges for species that had already disappeared from mainland Mauritius over the course of time (Cheke & Hume, 2008, pp. 76–81).

When the French took control over Mauritius in 1715, these developments were boosted through an intensified industrialization with sugarcane and coffee plantations based on slave work, and increased imports of exotic animals and plants (Grove, 1995, p. 173; Oostindie, 2008, p. 207). Early conservation focused mainly on stopping unregulated hunting and woodcutting, in order to ensure food security for the starving island population (Grove, 1995, p. 449). Ile aux Aigrettes supposedly received its name during this period, by virtue of being the last home of a species of egrets, which were by then already extinct on the mainland, a fate shared by many bird species (Cheke & Hume, 2008, p. 81, p. 92, p. 97).

The British rule of Mauritius, starting in 1810, saw a further increase in sugar plantations, slave trade, and later indentured labour (Pyndiah, 2016, p. 489). The island’s population grew drastically during the 19th century, land use intensified, and invasive species proliferated. In 1872, legislation to protect mountain and riverine forests was put in place (Cheke & Hume, 2008, pp. 116–129, p. 136), and, in 1951, the first official nature reserves were established (Safford, 1997, p. 186). But only after becoming independent in 1968 did nature conservation become a real concern during the 1970s and 1980s, after ecological research and conservation projects in cooperation with UK and New Zealand-based scientists and organizations increased knowledge about the sensitive Mauritian fauna and flora (Cheke & Hume 2008, pp. 163-164, p. 227). During the 1980s and 1990s, several spectacular conservation successes occurred by saving a number of species, such as the Pink Pigeon and the Echo Parakeet, from the brink of extinction (Florens, 2013).

Ile aux Aigrettes’ history is deeply embedded in Mauritius’ colonial history. It was used as a military base by the British during the Second World War (Jackson, 2001, p. 72). Some buildings and remnants of cannons from this period remain on the islet today. Formally, Ile aux Aigrettes became a nature reserve in 1965, but much of its native vegetation was damaged by woodcutting and invasive species. Alien introduced species such as rats, shrews, and non-native reptiles were widespread and hindered the regeneration of the forest (Cheke & Hume, 2008, p. 245). Serious conservation efforts on Ile aux Aigrettes began in 1986 with attempts to build up the native plant communities under the auspices of the Mauritian Wildlife Foundation (MWF) (Cheke & Hume, 2008, p. 245). In 1991, rats were successfully eradicated, which led to a spectacular regeneration of native ebony trees (Cheke & Hume, 2008, p. 245). Since 1998, the island has been open for tourists to learn about the island’s flora and fauna on guided tours (MWF, 2018b). Other offshore islands, such as Round Island
and Gunner’s Quoin, are the focus of similar conservation activities, as native plants and animals also survived there (Florens, 2013, p. 43).

**Islands and boundaries in mobile worlds**

In the Anthropocene, the issues of ecological destruction and biodiversity loss are tied to major social anxieties and dystopian visions (Robbins & Moore, 2013). Facing these challenges leads to heated debates about the ‘right’ way to manage nature. This often means separating ‘natural’, wild spaces from ‘cultural’ or ‘domesticated’ spaces. Such boundaries serve to protect valuable wildlife from intrusions of the cultural, and vice versa, safeguarding cultured spaces and humans from intrusions of the ‘wild’ (Buller, 2004; Carter & Palmer, 2016; Collard, 2012; Hinchliffe, 2010; Hinchliffe et al., 2005; Whatmore & Thorne, 1998). Even though this dichotomy is criticized in scholarly literature (Cronon, 1996; Latour, 2011; Whatmore, 2002), it is still influential and widely manifest in practice. The central question underlying these management attempts is: whether, and how, should humans manage nature? What should we protect, where, and how?

The nature–culture dualism, and with it the conceptual separation of wild/natural and cultural/domesticated spaces, is difficult to uphold. It is questioned especially through the reconceptualization of places as sites of hybridity and entanglement, which illustrate the impossibility of the categorical separation between nature and culture (Descola, 2013; Whatmore, 2002). Examples of such sites are nature reserves, supposedly spaces where natural wilderness is protected in its most pristine and untouched form, where human management and population control, however, question their status as ‘purely wild’ (Braverman, 2014). On the other hand, supposedly ‘wild’ animals, such as foxes or wolves, regularly move into cities or rural ‘domesticated’ spaces, where they find suitable habitats and create conflict, illustrating that supposedly cultural spaces cannot be kept ‘clean’ of wild intruders (Buller, 2004; Carter & Palmer, 2016; Hinchliffe et al., 2005). Wild and domestic animals, which conservationists attempt to keep from hybridizing, have been shown to be genetically mixed in many instances (Buller, 2004; Ritvo, 2017). In attempts to manage nature and separate the wild and the cultured, material and immaterial boundaries play an important role (Hinchliffe et al., 2013). As fences and barriers (Hinchliffe et al., 2013), as perceived boundary zones between rural countryside and wild areas (Buller, 2004), or as taxonomic categories (Ritvo, 2017), these boundaries are never impermeable. As permeable boundaries or “contact points” (Hinchliffe et al., 2013, p. 535), they allow for selective mobility and contain within them the potential to break down.

Islands have an interesting position in this debate. Due to their distance from the mainland, islands are always already isolated, and insulated, in some way, with the water surrounding them forming a ‘natural boundary’ (Hay, 2006, p. 22). This natural isolation suggests that islands, especially small ones, can be easily controlled, which is manifest in the many islands that are used e.g. as detention centers and quarantine stations (Mountz & Briskman, 2012; Potter, 2007). Islands can also appear as especially suitable for trying out new nature conservation measures, lending themselves to experimentation in controlled isolation (Baldacchino, 2007). On the other hand, islands have been considered as key sites of relationality, embedded in manifold connections to other places, and to take an essential part in flows of people, goods, and ideas (Bjarnason, 2010; Hay, 2006; Pugh, 2018; Schnepel & Alpers, 2018). With the notion of ‘archipelagos’ (Pugh, 2013; Stratford et al., 2011), island scholars criticize the simplified oppositional relation of isolation between island and mainland. Instead, thinking of islands as archipelagos emphasizes the significance of ubiquitous island-island relations.

Thus, islands are tied up in a discourse of ambivalence between isolation and connectivity, where it is helpful to reconceptualize islands as entities with “molten edges” (Morton, 2017, p. 71)—boundaries that are both real, but cannot be pinpointed or separated.
from that which surrounds them. This discourse becomes more acute when the vastly distributed yet intangible ‘hyperobjects’ (Morton, 2013) that characterize the Anthropocene come to interact with these molten entities. Such human-made, “boundary-disrespecting” (Pugh, 2018), potentially destructive phenomena, like climate change or the global flows of species introductions, address both the isolating and relational aspects of molten edges and are typical for the Anthropocene. Reaching islands through flows of connectivity, these phenomena play out in particularly urgent ways on islands due to their relative isolation (Pugh, 2018). This ambivalence is additionally complicated in the context of nature conservation, when islands become sites that need protection, and when they are entangled in the separation of spaces through boundaries. Here, redemptive narratives of ‘solving’ the ecological crisis of Anthropocene by ‘restoring nature’ clash with claims that nature has ‘ended’ and been replaced through hyperobjects (Morton, 2007, 2013, p. 39), and that the forces of the Anthropocene are out of control (Chandler & Pugh, 2018, p. 2).

Methods and field sites

The data for this article was collected in August/September 2017, during a period of multi-sited ethnographic field research in the Mascarenes, embedded in a larger research project. This larger project focused on animal mobilities, and particularly the mobility of a genus of small geckos (Phelsuma) as a terrarium pet, a protected species, and an invasive species. I was following Phelsuma geckos (and the humans caring for them) over several sites in Germany, La Réunion, and Mauritius—resonating with Marcus’s (1995, pp. 109-110) take on multi-sited ethnography, when I came to visit Ile aux Aigrettes. Fascinated by the island restoration process taking place there, and the manifestations of (non)human mobility and isolation, I started to inquire more deeply about the island. I contacted nature conservationists and rangers, conducted interviews and informal conversations, and visited the islet with a tourist guide as well as with a ranger in the context of an ethnographic ‘go-along’ (Kusenbach, 2003). I conducted expert interviews with nature conservationists working at MWF, private institutions, and the University of Mauritius. These interviews each lasted between 60 and 90 minutes, and addressed questions and challenges of nature conservation on Mauritius, with a specific focus on invasive species and the island context, and problems that cannot be solved sustainably. Some of these experts were chosen and contacted prior to field research, others through ‘snowball sampling’ (Noy, 2008).

More specifically, I focused on three different aspects in order to explore the ambivalence of islands in the context of nature conservation: 1) With a focus on conservation discourses, I followed the question about why islands (especially small ones) are considered as ideal conservation sites. I approached this aspect in four semi-structured expert interviews with conservation biologists working or having worked on Ile aux Aigrettes, and informal conversations. 2) A focus on conservation practice on islands led me to inquire about how these discourses are applied, and what the practical challenges of the daily routine look like. I tackled this aspect on ethnographic ‘go-alongs’ on Ile aux Aigrettes, once with a tourist guide, and once accompanying a ranger for an entire day. I also inquired about the conservation practice in many informal conversations with rangers, conservationists, students, and volunteers. 3) I was interested in how these issues emerge most strongly through specific animals, and their autonomous mobility. Therefore, this multi-sited ethnography was also inspired by multispecies ethnography, which is characterized by its “attentiveness to nonhuman agency” (Ogden et al., 2013, p. 16), and an opening towards nonhuman experience and entanglement (van Dooren et al., 2016). Practically, this meant that I was paying specific attention as to how the biology and ethology of specific animals were central for shaping the conservation reality of Ile aux Aigrettes. Particularly as invasive species, the mobility and agency of animals force humans to work with them.
Managing nature on Ile aux Aigrettes, or, creating isolation through connectivity

Waiting for the little boat at Point Jerome, I can see Ile aux Aigrettes, a little island, only 25 hectares in size, all covered by forest, just about one kilometre off the shore. Shallow, turquoise, clear waters separate it from the shore, white sand on the ground, an accidental colourful fish tugging on a piece of coral. The reef is further away, we won’t cross it. This would be a nice daily commute, I think, as the boat starts its engine, and the three of us hold tight and protect ourselves from the sudden cold wind on this otherwise sunny and hot day. (Excerpt from field notes 21.8.2017)

Ile aux Aigrettes is one of the prime examples of MWF’s island restoration program. Today, the islet is home to a thick forest of Ebony and Pandanus trees, of ferns and orchids. It hosts Aldabra giant turtles, Telfair’s skinks, Ornate day geckos, Guenther’s day geckos, pink pigeons, and endemic songbirds. But there are also a few less welcome inhabitants: crows, shrews, Malagasy birds, and tenrecs. As invasive species, they damage the carefully recreated ecosystem on the island. ‘Isolated’ or ‘insulated’ as this islet may seem, all surrounded by water, the mobility of plants and animals towards, from, and on the island is ubiquitous. Circulations of all kinds are managed, supported, initiated, suppressed, and reversed. Some species have been brought purposefully to the island, in the context of well prepared ‘species translocations’. Other animals move in on their own and make their way there in a less organized fashion and by unsupervised means of transport, e.g. as blind passengers on boats, or through the air.

Isolation and connectivity play out in different aspects of nature conservation and island restoration on Ile aux Aigrettes. In this section, I discuss empirical material from interviews and observations with respect to isolation and connectivity on Ile aux Aigrettes. Isolation is discussed from two perspectives: as the trope of the temporally isolated, original, and natural island; and in terms of the conservation work performed on Ile aux Aigrettes to create isolation, stop species mobility, and fight invasive species. Against this background, three different aspects of connectivity will be explored: the global flows of people, ideas, and technologies involved in the island restoration process; the mobility of species labelled as ‘invasive’ which are not wanted on Ile aux Aigrettes; and the purposeful translocation of species onto Ile aux Aigrettes.

Isolation and the active creation of boundaries: Ile aux Aigrettes as a ‘pristine’ island

“Visit Ile aux Aigrettes […] and travel back in time to discover what Mauritius would have looked like over 400 years ago, before the arrival of man and his devastating impact on the environment” (MWF, 2018c), advertises MWF guided tours to the island, which is otherwise not accessible to the public, only to scientists holding a permit. Tour guide Mary (name changed), a woman in her late 40s with a striking British accent and a big, slow smile, expertly steps off the rocking boat onto the jetty. She goes along with this narrative throughout the guided eco-tour, emphasizing time and again that this is what the forest would have looked like before everything was destroyed, “because of man’s callousness”:

The dark forest swallows us. Ebony and Vacoas trees. The trees are not very high, as the forest has only been planted around thirty years ago. But it forms a thick canopy covering the whole island, and the light and the open skies, the white sand and turquoise waters are soon forgotten, when shades of green and brown, and thick entanglements of branches, roots, and lianas, and the confusing play of light and shadows take charge. (Excerpt from field notes 25.8.2017)
Islands have frequently been connected to a different, slower, isolated temporality (Bjarnason, 2010), perceived as ahistorical ‘paradises’ (Hay, 2006), and turned into museums or laboratories during processes of colonization (DeLoughrey, 2007, p. 2). This is reinforced when ‘pristine’ nature is produced on islands, which positions the islands in a different, pre-modern temporality, separated from human influence, masking their participation in global processes and flows (Hennessy & McCleary, 2011).

**The temporally isolated, original, natural island**

Presented to visitors as a pristine patch of original nature, much work is necessary to maintain, or approximate, this state on Ile aux Aigrettes. The past, as it once was, cannot be completely recreated, also because some species have gone extinct, and knowledge is limited. Historical accounts, archaeological and biological research about species distribution and relations form the basis for an image of what ecologists consider an ideal, ‘pristine’ past (Jones, 2008, p. 244). When we follow the narrative of the pristine island back to those people who manage the island restoration process on Ile aux Aigrettes, to MWF’s ecologists working behind their desks in the organization’s headquarters in Vacoas, it soon becomes clear that this effort—despite the term ‘restoration’ assuming otherwise—is not about recreating a particular moment of the past. MWF’s ecologists know that time cannot be turned back. Charles (name changed), working at MWF as a leading conservation biologist, sits behind his computer where he writes hundreds of emails daily, when he talks to me about the island restoration program. Patiently, he tells me:

It is building, rebuilding, basically, rebuilding the vertebrate communities, the invertebrate communities and the plant communities […]. So there is more structure, there is more support and it is more resistant to invasion. […] [W]hat is natural, we don’t know! These systems have been so damaged and torn apart, so we don’t have a clear picture of what these systems were like before humans settled in Mauritius some 400 years ago. We got little snippets of information. We found a historical account of one species on an island that then tells us, because we know about this species, everything else that would be needed on that system to be supported. But yeah, what we are trying to do, is not restore places back to the way they were. That is an impossible task. What we are trying to do is […] build up that resilience as natural as it can be […]. And it is about supporting species to survive a longer term. (Interview C. 23.8.2017)

Charles denies that they attempt to recreate a *particular* past on Ile aux Aigrettes. Resilience, naturalness, and survival are the key terms in his explanation. As natural as it can be, in his words, it does not relate to a specific past, but is still implicitly opposed to human interference. The ‘re’-building of animal and plant communities also testifies to this past, and describes nonhumans connected with each other, but in some kind of isolation to humans, and thus implicitly relates to a *generalized* kind of unspecific past before the man-made, ecological destruction. This powerful image serves as a guiding principle. Resilience and survival, then, are directed towards the future. Guided by the past, conservationists protect or fight species on Ile aux Aigrettes in order to build up resilient communities of animals and plants, to create a natural island for the future. This ‘naturalness’, however, also describes species communities on Ile aux Aigrettes that can only be produced through human management.

The limited island perimeter offers ideal conditions for controlled insecurities, and for maximizing knowledge. Charles gestures energetically, enthusiasm sparkling in his eyes. “This is a lovely thing with island restoration. It’s that you are working in a relatively closed system and so the action that you take to remove an invasive species or to bring in a native species or an ecological analogue, you can see that impact quite quickly” (Interview C. 23.8.2017).
Small islands suggest the possibility of near-to-complete control, lending themselves to social and scientific experiments, as island scholar Baldacchino (2007, p. 166) writes: “Something about the insular beckons alluringly. It inspires a greater malleability to grand designs,” possibly what Charles calls a ‘relatively closed system’ that shows effects of your work. But how isolated is Ile aux Aigrettes really? And how well can it be controlled?

The intensive care invested in Ile aux Aigrettes is impossible to uphold for larger stretches of forest. And its ‘relative’ isolation does yield results. According to MWF’s ecologists, the island forest was restored ‘by 98%’ from a degraded to a native forest, which today is the last remnant of intact coastal vegetation (Interview C., 23.8.17; Jones 2008, p. 227). Thus, almost the complete forest has been cut and subsequently replanted, a simultaneously destructive and incredibly intensive effort. Populations of endangered species have been brought back from the brink of extinction, and become established on Ile aux Aigrettes, receiving international attention (Florens, 2013). The groundbreaking ecological restoration processes which take place on Ile aux Aigrettes resonate with Baldacchino’s (2007) view that islands, due to their ambivalent and paradoxical properties, are also sites of novelty. He writes: “It should therefore come as no surprise to us that islands, both real and earthy as much as concocted, or even those occupying the fuzzy space in between, stand out as sites of novelty, of coy experimentation, of deliberate or coincidental pathbreaking events” (Baldacchino, 2007, p. 166).

Creating isolation by fighting invasive species

However, the work necessary to create the isolated island state that is assumed as inherent, and communicated to tourists and visitors, is immense. Invasive species management is one of the highest priorities on Ile aux Aigrettes, and is the major way to create the ‘isolated island’. The issue of invasive species has been much debated in recent decades. On the one hand, alien introduced species are deemed one of the major causes for biodiversity loss, and are thus actively fought as ‘invasive’ (Leung et al., 2002; Pimentel et al., 2005; Simberloff, 2003). On the other hand, some ecologists point out the positive functions of introduced species as niche-fillers in damaged, ‘emergent’ ecosystems (Hobbs et al., 2009). Social scientists have argued that while invasive species are socially “productive” (Everts & Benediktsson, 2015, p. 134), the concepts are faulty, and the native-invasive dichotomy cannot be upheld, as it is impossible to pin down exactly in space and time when and where something is native or invasive (Warren, 2007). Additionally, the language surrounding invasive species is criticized as racist, as masking economic and political interests, and as fraught with normative ideas about nature and culture (Ogden, 2015; Robbins & Moore, 2013; Subramaniam, 2001; Wanderer, 2015; Warren, 2007).

On Mauritius, much of MWF’s efforts to prevent species mobility goes into political and educational work. Through the subcommittee of the National Invasive Alien Species Committee, MWF conservationists attempt to prevent imports of potentially invasive exotic species. Education activities in the bay area around Ile aux Aigrettes attempt to sensitize skippers that their boats can inadvertently provide transport for invasive species to the precious offshore islets. On Ile aux Aigrettes, fauna and flora are under constant close observation. The bigger reptiles are chipped, the birds ringed, and trees labelled as egg-laying sites. What is possible to count is counted, measured, and numbered. Invasive species like rats, shrews, crows, and even stray dogs are fought constantly. Specific solutions have to be found for every new trespasser. Dogs and tenrecs are captured and returned to the mainland. The eggs of the invasive Malagasy pigeons are destroyed. Grime-covered tiles and wax-balls mixed with insects and peanut butter are used to catch potential early signs of rats. Invasive weeds are cut. There are, however, exceptions when a species is ‘useful’ in some way, to other valued species, like Indonesian Banyan trees, which, as tour guide Mary explains, contribute habitat and fruits for birds and reptiles. Isolation, in the context of invasive species, is not a pre-
existing given on Ile aux Aigrettes, but a constant work-in-progress and a state that is never actually reached, but can only ever be approximated.

Isolation on Ile aux Aigrettes is present as the trope of the pristine island, temporally and spatially removed; and as the performance of a conservation policy and measurements aimed at stopping mobility of humans and nonhumans towards the islet. But the two are intertwined. The trope of the pre-modern island motivates MWF’s conservationists’ work and is present in their experience, supporting the imperative to work towards isolation. The presentation of Ile aux Aigrettes for tourists clearly guides visitors on a journey to the distant past, contributing to the image of a temporally isolated, pristine, pre-modern island supposedly separated from global processes (cf. DeLoughrey, 2007; Hennessy & McCleary, 2011). However, conservationists’ work on Ile aux Aigrettes is not quite seen as human interference, but rather as doing justice to inherent island qualities. Nature, on Ile aux Aigrettes, is actively produced, it is malleable, worked with like the “grand designs” that Baldacchino (2007, p. 166) spoke of. As such, the island restoration is also directed towards the future. Simultaneously, the processes to create isolation on Ile aux Aigrettes are also specific for the very present, the ecological crisis of the Anthropocene, a “time of hyperobjects” (Morton, 2013, p. 37). Many of the invasive species dealt with here are global phenomena, ‘hyperobjects’, that are, as species, vastly distributed: ship rats in particular have been counted among the 100 worst invasive species worldwide (Lowe et al., 2000, p. 7). Creating isolation from undesired species mobilities is thus also an engagement with hyperobjects in the present, while recreating the islet after a generalized past before ecological destruction performs a vision of a specific future after ecological destruction, making Ile aux Aigrettes a multitemporal endeavour.

Connectivity: many routes lead to Ile aux Aigrettes

Isolation on Ile aux Aigrettes is selective. While some humans and nonhumans are kept as far away as possible, the mobility of others is actively encouraged or necessarily accepted. This mobility concerns humans—mainly scientists—and with them scientific knowledge and ideas; and nonhumans, both as unwelcome travelers or ‘invasive species’, and as purposefully ‘translocated species’.

Human mobility

The mobility of people, ideas, and technologies is essential for producing and maintaining Ile aux Aigrettes in its current restored state. Ecologist Luc (name changed), who was among those who participated in restoring Ile aux Aigrettes’ forest from scratch in the 1980s, had studied before in France, worked with MWF for some time, and then continued to work on La Réunion. John (name changed) worked with MWF as a conservationist, did his PhD in the UK, and then worked on La Réunion, the Comoros, and Madagascar. Sarah is an intern at MWF from a New Zealand zoo, who came to Mauritius to learn more about bird rearing. Andy is a student from the UK, who participates in Durrell’s graduate conservation course on Mauritius to learn about innovative conservation techniques. “The work that is happening in Mauritius is having a global influence,” MWF ecologist Wilhelm told me (Interview W. 21.8.2017). Other projects worldwide employ techniques spearheaded on Mauritian islets. People who worked for MWF hold leading positions in nature conservation projects worldwide. Ideas and methods used in one place inspire projects in other places, on other islands. New Zealand, MWF employees tell me, is an example to learn from, with their strict biosecurity measures in order to manage invasive species. Hawai‘i is dealing with similar problems, I am told. MWF is sending delegations to the Caribbean, to inspire projects. Mixed field teams with conservationists from various Western Indian Ocean islands conduct island expeditions together, creating and sharing knowledge about the hyperobjects that have come
to replace ‘Nature’ (Morton, 2013, p. 39), and with which island ecologists have to interact: soil, microbiomes, wind, marine currents. As such, Mauritius, and Ile aux Aigrettes are prime examples of ‘archipelagos’, embedded in groups of islands for whom performed island-island relations are more formative than traditional island-continent dichotomies (Stratford et al., 2011).

Conservation on Ile aux Aigrettes is tightly embedded in international networks. Together with La Réunion, the Seychelles, the Comoros, and Madagascar, with people working or having worked there, with animals, and plants to be researched, projects and methods to be initiated and tested, they cannot be thought in isolation. In connection with places like the UK, Hawai’i, and New Zealand, these archipelagos span large distances, islands moving together with people and ideas circulating between them.

Nonhuman mobility

Walking through different forests and trying to attune myself to the agency of nonhumans, their shaping power seemed to me more and more like an unstoppable life force. The more I learned, the more the invasive species stood out. The lush forests in Mauritius mainland mountains started to appear aggressive after NPCS rangers taught me about the invasive Acacia and Guava trees that dominate the forest. The inquisitive stare of the invasive common mynah, a medium-sized, black bird, became more difficult to bear. This bird will go places, I thought to myself, and no one will stop it. (Excerpt from field notes, 28.8.2017)

Nonhuman mobility contributes essentially to shaping Ile aux Aigrettes. Animals and plants move as they live, calling into question notions of nativity and belonging. “Any attempt to define ‘alien’ and ‘native’ involves the drawing of lines,” says, rightly, Warren (2007, p. 433), in his critical discussion of different perspectives on invasive species. The separation between native and alien, he claims, is “flawed, contingent on the construction of fixed lines through fluid, hybrid spaces” (Warren, 2007, p. 439). In these fluid, hybrid spaces, everything moves: “Wherever there is life there is movement,” Ingold (2011, p. 72) states. The water surrounding Ile aux Aigrettes does not constitute an impermeable boundary for these plants and animals. Moving on driftwood, with boats, or through the air, various species, often already globally distributed, make their way to Ile aux Aigrettes and become ‘invasive’, hyperobjects interacting with the islands’ “molten” (Morton, 2017), blurred, boundaries.

Conservationists build up animal and plant communities on the island in order to be resilient towards external threats, such as invasive species, with some of the invasives becoming an unavoidable part of nature on Ile aux Aigrettes. The Asian musk shrews (Suncus murinus) are impossible to control. Their boundary crossings are grudgingly accepted. Telfair’s skinks (Leiolopisma telfairii), reptiles native to Mauritius, have been purposefully translocated to Ile aux Aigrettes in order to keep the shrew population in check through predation (Interview C. 23.8.2017, W. 21.8.2017). But if the island, and its animal and plant communities, are built in relation to potential or actual invasive species, can the island then be considered as isolated from invasive species? Rather, I would argue, specific invasive species and the constant nonhuman mobilities have then become an integral part of the islet. The separation of native and invasive, the central theme of the debate on invasive species (Warren, 2007), is further complicated when ‘the native’ is constituted and produced around and in constant relation to these hyperobjective invasive species, as is the trope of the ‘isolated island’ that is constituted while taking constant mobility into account.

The active ‘design’ of Ile aux Aigrettes is most strongly reflected in the species translocations. These ambitious projects come closest to Baldacchino’s (2007) experiments and grand designs, when species deemed necessary to fulfill certain missing functions are moved onto the island. Thus, most notably the Aldabra giant turtles were brought onto Ile
aux Aigrettes for their grazing and seed dispersal behavior. Once, giant turtles roamed Mauritius, but they are now extinct. The Aldabra giant turtles are originally from the Seychelles, so not even in the most liberal viewpoint in the native-invasive debate would they be considered native to Ile aux Aigrettes. Yet, they have established themselves on the island, much to the delight of the Mauritian and international conservation community, grazing, making paths, and supporting the germination of native plants with their excrements. Global networks of people and technologies have to be activated in order for such a project to succeed. Mauritian ecologist Ria (name changed), for whom the survival of native species is very close to heart, elaborates:

Lots and lots of studies [are] going there: disease screening, genetic studies […]. We are not just like, so, it can be like playing God, so, but no, we are actually doing a lot of research and we also know from first hand records that, you know, the Telfair’s skink was there. (Interview R. 28.8.2017)

The work that includes multiple people, scientifically produced knowledge, research, the particularities of the landscape, and the demands and needs of plants and animals has for her more to do with intense efforts and continuous vulnerabilities than with Baldacchino’s (2007) malleability and grand designs. Translocating specific species in order to fulfill functions and complement a community, alongside or opposite those nonhumans that travel on their own accounts as ‘invasive’, creates nonhuman communities on Ile aux Aigrettes born out of the participation of the island in global flows and processes, of entangling globally distributed hyperobjects with fuzzy, molten, island boundaries (Morton, 2013, 2017). International science, globalization, technological progress, and flows of capital and people between organizations allow for twenty-or-so giant turtles, native to the Seychelles, to be moved to Ile aux Aigrettes.

**Intertwined temporalities and selective mobilities on Ile aux Aigrettes: what should we protect?**

As mobilities are created and prevented, today’s Ile aux Aigrettes emerges from this interplay of isolation and connectivity as an entity with “molten edges” (Morton, 2017, p. 71). The perception of the island as isolated in space and time guides the restoration process, and is continuously reproduced—explicitly towards visitors, and implicitly as underlying guidelines in the restoration process. Isolation is a work-in-progress, and is created through much effort in maintaining material and immaterial boundaries. Political and educational work seeks to prevent hyperobjective alien species (Morton, 2013) from setting foot on the island. Hands-on work in the field—monitoring the island, capturing, killing, weeding—has removed unwanted trespassers from the island perimeter. Connectivity and mobility are inherent in and essential to this process. Movements of people between universities and organizations worldwide, of knowledge, ideas, and technologies over the internet, between institutions, continents, and islands, is a prerequisite to produce the restored Ile aux Aigrettes. The movements of plants and animals are a main constituent of the island, both as invasive species and as species translocations. As a site of ongoing nature conservation, Ile aux Aigrettes shows that connectivity and isolation on islands have to be thought together, depend on each other, and that the (im)mobilities of animals and plants significantly contribute to shaping island realities.

The intertwinement of vastly different temporalities on islands has been called a characteristic feature of the Anthropocene (Pugh, 2018). Resonating with this view, humans and nonhumans ‘make’ the island together on Ile aux Aigrettes, interweaving slow-paced processes like forest growth and turtle reproductive cycles with fast-paced processes of
knowledge circulation and human travel. Island relationality in the Anthropocene, Chandler and Pugh (2018, p. 4) claim, has however not been taken far enough. Thus, going a step further, maybe the processes that keep remaking Ile aux Aigrettes not only intertwine human and nonhuman temporalities, but are also intense entanglements between humans, nonhumans, and intangible but vastly distributed hyperobjects (Morton, 2013), such as global warming, invasive species, soil microbiomes, and digital technologies. These hyperobjects interact with the viscous, molten boundaries of small islands (Morton, 2017) in intense ways.

Going back to the initial questions that define the debates about the Anthropocene, I want to reflect on the question: what do humans protect when they protect Ile aux Aigrettes?

In the material presented above, two aspects stand out, two different kinds of islands that conservation measures address, intertwining different tropes and values: the biodiverse island and the pristine island. The biodiverse island includes the island biogeography and biodiversity: endemic species, ecological functions, species communities and ecosystems. Biodiversity protection is an international policy goal, fostered, e.g. by the international Convention on Biological Diversity, and island biodiversity is recognized to be of particular global significance (Whittaker, 1998, p. 33). For protecting Ile aux Aigrettes, biodiversity takes priority over nativity. Thus, Seychellan Aldabra turtles are transferred to the islet, and alien Banyan trees can stay, because they stand in productive relations to other species, and contribute to the island’s biodiversity. The image of the island as malleable and easy to control reinforces the performance of biodiversity conservation as complete, all-inclusive, as an ambitious act of intensive care that attempts to create something completely new—an island that can show the world what the future could look like.

The second island is the pristine island. This powerful image conceives of islands as somehow different ‘other’ spaces, outside of time and modernity, as nostalgia, a kind of paradise lost, a more natural and authentic place (DeLoughrey, 2007; Hay, 2006). Built on the assumption of oppositional spaces separated by boundaries, this aspect resonates with the discourse of wilderness and the nature-culture dichotomy (Cronon, 1996; Descola, 2013). In the case of an island nature reserve such as Ile aux Aigrettes, these discourses reinforce each other (Hennessy & McCleary, 2011). The trope of the natural, ahistorical island amplifies the narrative of pristine, original nature—into an inherent characteristic of the island which simply has to be rediscovered, restored, brought to light. Ile aux Aigrettes’ endemic, rare fauna and flora activates discourses and tropes of authentic, natural, and wild spaces, different from modern and urban, cultured spaces like most of mainland Mauritius today.

But, maybe, if we focus on the present, a third island will emerge, through the work invested in protecting Ile aux Aigrettes: the hyperobjective island. This island is inherently located in this specific moment, the present ecological crisis of the Anthropocene. Despite the utopian visions tied to Ile aux Aigrettes, it is difficult to call the endeavour of protecting Ile aux Aigrettes a hopeful, potential solution for the Anthropocene, as Chandler and Pugh (2018, pp. 3–4) criticise redemptive ecological narratives. Rather, I would argue, than restoring ‘nature’ on Ile aux Aigrettes, it is difficult to call the endeavour of protecting Ile aux Aigrettes a hopeful, potential solution for the Anthropocene, as Chandler and Pugh (2018, pp. 3–4) criticise redemptive ecological narratives. Rather, I would argue, than restoring ‘nature’ on Ile aux Aigrettes, the process of making and remaking the island is a way of negotiating with the boundary-disrespecting hyperobjects of the Anthropocene (Morton, 2013; Pugh, 2018). Intervening in the dynamics of connectivity, mobility, and isolation, through engaging with invasive species, gene pools, and digital technologies, activates these enormous global and intangible entanglements in a paradox way: by engaging with and acknowledging these uncontrollable and “too rich, too intense” (Chandler & Pugh, 2018, p. 5) relationalities, on a seemingly bounded place: a small island.

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References


Effective island brand architecture: promoting island tourism in the Canary Islands and other archipelagos

Arminda Almeida-Santana
Institute of Tourism Studies and Economic and Sustainable Development, University of Las Palmas de Gran Canaria, Spain
arminda.almeida@ulpgc.es

Sergio Moreno-Gil
Institute of Tourism Studies and Economic and Sustainable Development, University of Las Palmas de Gran Canaria, Spain
smoreno@dede.ulpgc.es

ABSTRACT: Tourism is the main industry in many islands around the world. Islands connect with each other and with mainland markets in a complex system of relations of competition and cooperation (coopetition). This article analyses islands’ cooperation strategies through the management of brand architecture and how visits to one island can influence visits to others. This paper aims to provide island destination management organisations with information on how islands can effectively design their brand architecture—inside and outside their own archipelagos—depending on mainland markets. The study includes in its analysis some of the main tourist islands and archipelagos in the world (particularly the Canary Islands but also Cyprus, Malta, Balearic Islands, Maldives, Caribbean, Azores, Madeira, Cape Verde, and Greek islands), with a sample of 6,964 tourists from the main worldwide tourism market, Europe, and an analysis of 16 European markets.

Keywords: archipelagos, Canary Islands, coopetition, destination branding, island brand architecture, island tourism, tourism marketing

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Introduction

Islands are integrated in a complex system of interactions, both between themselves and with mainland areas. This systematic relationship becomes even more complex in the case of tourism (Carlsen, 1999). This analysis focuses on the tourism industry, as it is one of the most important economic activities worldwide, representing 10% of world GDP, and 1 in 10 jobs in the global economy. In addition, tourism is the main economic activity of many islands around the world (Baldacchino, 2006). According to data from the World Bank (2014), 9 of the 10 countries most dependent on tourism—in terms of tourism income as a percentage of GDP—are small, developing islands.

Many islands share the characteristic of being highly dependent on tourism, attracting a significant volume of tourists from the mainland (Baldacchino, 2016), and also being tourist icons that generate dreams in the collective imagination of the population (Johnson, 2012). In fact, it has been suggested that islands have collectively become one of the most visited
destination categories in the world (Naidoo & Sarpley, 2015; World Bank, 2015). Knowing the importance of islands in terms of tourist flows and income, tourism on islands has received academic attention, enjoying growing and wide recognition (Baldacchino, 2016). However, it is still necessary to further enhance knowledge on how to design the image and branding of tourism destinations (Picazo & Moreno, 2017) and in particular for islands.

Nevertheless, the island studies literature has been dominated by ‘land-sea’ and ‘island-mainland’ approaches, paying less attention to island-island relations (Stratford et al., 2011). In order to achieve mutual benefit among islands that form a network of networks, it is necessary to develop an analytical and strategic management perspective. Thus, the relationships between islands can be considered from the perspective of a geographical group of islands (an archipelago), a global island network, or a systemic network including islands and the mainland (which is the source of most tourists to islands) (Warrington, 1994).

This study takes an integrated approach considering this latter perspective, since island territories can and should demonstrate collaborative behaviours in the new global scenario in relation to the home markets of their visitors. Thus, irrespective of their geopolitical situation (archipelagos, islands states, outermost islands, etc.), in tourism, islands are related to the markets of origin and other islands based on the holiday behaviours of the tourists themselves, who connect with these islands through their travels. It thus seems important to analyse brand architecture in island tourism.

When designing a brand architecture, many local, regional, national, and supranational territorial brands coexist in the tourism industry. These brands are interrelated and sometimes overlap. Thus, it is necessary for islands to develop and manage their brands in order to obtain a differentiated and strong position in the market. Tourist destinations face the challenge of structuring and organising a portfolio of brands that try to establish a valuable relationship between them, what has been called brand architecture (Harish, 2010). This is even more important for islands, where the geographic question is critical, since islands are peculiar not only in their biology, geology, and culture, but also in their complex economic system and in how they relate to other island and mainland economic systems (Gössling et al., 2005).

The strategic organisation of island brands could not only help avoid internal competition but could also achieve synergies and a multiplier effect that adds even more value to each island through brand and promotional actions. Additionally, greater competition among tourist destinations is an increasingly important trend (Mariani & Baggio, 2012). Thus, there has been more dispersion of tourists among many destinations, with a significant increase in promotional investment and competition between these destinations to attract the different markets of origin. Each year, island destinations are actively promoted to maintain or increase their tourism market share (WTO, 2014). The destinations could increase their profits as a result of efficient brand collaboration (Fyall et al., 2012); however, in the context of islands, this issue is relatively new (Blain et al. 2005; Okumus et al., 2013). Little attention has been given to the relationships between islands and the various mainland tourists who make multiple trips to islands (Butler, 2016; Sharpley, 2012).

It is difficult to manage brand architecture and know how to properly group islands in order to promote them in the tourist market. Islands can take an approach related to island consciousness and mainland unconsciousness, generating a complex reflection upon the focus/locus dichotomy (Hong, 2017). This decision generates problems and tensions between islands, and between islands and the mainland (Bertram, 2004). For example, the Canary Islands, the focus of the present study, is a territory that can be politically and administratively labelled at different levels: the Canary Islands as a political region that is an Autonomous Community of Spain (a region considered as an outermost region within the European Union); two different provinces (Las Palmas and Santa Cruz de Tenerife); seven islands in total (Gran Canaria, Tenerife, Lanzarote, Fuerteventura, La Palma, La Gomera, El Hierro).
There is also a more general geographical nomenclature that groups the Canary Islands with other nearby islands, under the Macaronesia umbrella (four populated archipelagos: Canary Islands, Azores, Madeira, and Cape Verde, with 42 islands in the North Atlantic Ocean, opposite the coasts of continental Europe and Africa). Macaronesian islands belong to three countries (Portugal, Spain, and Cape Verde) and are jointly promoted, for example in the cruise ship market, under the ‘Atlantic Islands’ brand. There are also additional possibilities for promotion under tourist brands that could be inspired by other factors (history, natural resources, culture, economy, etc.), either with other distant islands or with the mainland, as occurs in the promotion of nautical tourism between the ports of the Canaries and Morocco (mainland), under the brand ‘Naucam’ (Lam-González et al., 2015).

Bearing in mind the above, the aim of this study is to provide island policymakers with information on how islands could effectively design their brand architecture, inside and outside their own archipelago, depending on mainland markets. To this end, starting from the analysis of the world’s first tourism market (Europe), this aim requires an in-depth analysis of the brand architecture applied to island tourism. This analysis will allow us to answer the questions: What other island brands should we cooperate with? And moreover, in which mainland markets should we do so?

**Theoretical framework**

‘Island tourism’ has been discussed as a specific and differentiated form of tourism, as opposed to tourism to and on islands (Sharpley, 2012). Butler (2016) defends the existence of ‘island tourism’ as a specific type of tourism quite different from that of simply participating in a holiday that takes place on an island. The author defines ‘island tourism’ as “visiting a destination specifically because it is an island, and perhaps a member of an archipelago” (Butler, 2016, p. XIX). In any case, the importance of islands in terms of the total number of visited destinations, some tourists’ preference for islands over mainland destinations, and even the role of islands as ideal destinations is still to be identified and is, in fact, fundamental to analysing island tourism. Thus, this study first emphasises the need to address the importance of this topic, identifying islands’ share of the total number of trips made by mainland tourists and the preference for islands over mainland destinations (Cantallops & Cardona, 2015).

Many islands belong to a large network of island destinations that present themselves to tourists as a possible selection set of brands. Thus, islands can be connected on the demand side. Sharpley (2012) defends the need to deepen the understanding of how islands, which are part of this great network, are perceived and consumed by tourists. The development of complementary relations between islands produces synergies that benefit those who properly manage such cooperative relationships (Cannas & Giudici, 2016). Such relationships could be between islands belonging to the same archipelago or between different islands and archipelagos. Additionally, Hayward (2012) introduces the concept of the ‘aquapelago’ as “an assemblage of the marine and land spaces of a group of islands and their adjacent waters” that may appear “more fanciful in certain locations than others.” The literature, however, has paid little attention to archipelagos and their special challenges (Bardolet & Sheldon, 2008).

Butler (2016) outlines the existence of complexity and controversy in the relations between individual islands within an archipelago. However, few academic studies so far have specifically and systematically adopted an archipelago perspective towards a critical understanding of tourism branding, marketing, and management. Baldacchino (2016) argues that success in the tourism sector tends to generate more tourism, and in the case of islands, sometimes this happens to the detriment of the tourism potential of other islands in the archipelago, which fail to develop. The same reflection could be made in the case of several archipelagos. However, there is a gap in literature on the relationship between islands at a global level. That is, there are no studies that explore whether there can be a complementary
relationship between islands that do not belong to the same archipelago (Cannas & Giudici, 2016). In tourism, as in many aspects of life, one’s neighbour may not be one’s best friend, even if everyone belongs to the same family (Butler, 2016).

Recent literature on ‘coopetition’ strategies has emphasised that, in many cases, organisations tend to both compete and cooperate at the same time, thus generating the emergence of a new form of interorganisational dynamics (Brandenburger & Stuart, 1996). Tourism destinations’ evolution and management offer a fertile context for studying coopetition (Kylanen & Mariani, 2012; Sonmez & Apostolopoulos, 2000), a strategy highlighted by Mariani et al. (2014) for its contribution to the development and marketing of tourist destinations. As far as islands are concerned, given their condition of isolation from the mainland, and in many cases their proximity to other islands, this fact is even more pressing (Padilla & McElroy, 2007).

Destination branding represents a specific cooperation tool for dealing with growing competition in the tourism sector (Blain et al., 2005). Thus, joint branding between islands can help improve the economic value of the brand (Carballo et al., 2015). However, the literature has not paid specific attention to how island territories can develop their brand architecture (Conway & Timms, 2010; Hu & Wall, 2005).

**Branding and brand architecture**

Marketing efforts of tourism destinations are increasingly focused on branding, which is understood as the definition of unique values that describe a distinctive personality, a topic of growing interest in the literature (Datzira-Masip & Poluzzi, 2014). In the case of islands, and although these have a clear geographical delimitation of their territory (destination), the concept of a brand is much more subjective, and sometimes even idyllic, as it alludes to the image that the tourist has of an island or group of islands. Therefore, it is a subjective perception that each individual has of the destination and its system of relations with other territories and products (Moreno & Martín, 2015), and that the destination marketing organisations must manage if they want to be successful (Grydehøj, 2008). Agencies should prioritise geo-references with a view to strategically position the brand rather than to simply reflect the structure of target audiences (Strebinger & Rusetski, 2016).

In the area of tourist destinations, Blain et al. (2005), after a review of the literature, define destination branding as a set of activities that (1) support the creation of a name, symbol, logo, brand, or other graphic that easily identifies and differentiates a destination (Aaker, 2004; Keller, 2003); (2) constantly transmit the expectation of an unforgettable holiday experience that is only associated with the one destination (Laforest & Saunders, 1994); (3) serve to consolidate and reinforce the emotional connection between the visitor and the destination; and (4) reduce consumer search costs and perceived risk (Wernerfelt, 1988). Collectively, these activities create an image of the destination that has a positive influence on consumer choice (Arana et al., 2016). Thus, a final implication of the brand is increasing the probability that a consumer will visit a destination (Ekinci & Hosany, 2006).

Aaker and Joachimsthaler (2000), however, establish that brand architecture is an organised structure of a brand portfolio that specifies the roles of various brands and the nature of the relationships between them. The common brand, versus the use of many local brands, also provides substantial savings in communication costs and economies of scale (Iversen & Hem, 2008; Schuiling & Kapferer, 2004). Thus, brand architecture needs to be designed in a manner that minimises transaction costs (Strebinger & Treiblmaier, 2006). However, little research has been done concerning brand architecture (Dooley & Bowie, 2005; Harish, 2010), particularly in island destinations, where there is a dispute about differences and peculiarities of each particular island, and the advantages and disadvantages of a generic brand, as Grydehøj (2008) found in his study of a generic cultural brand for the islands in the Shetland archipelago. Similarly, Kuwahara et al. (2007) researched how a group of Japanese islands
have joined inter-regional networks linking disparate, non-metropolitan communities – a transperipheral network.

According to Datzira-Masip and Poluzzi (2014), in terms of tourist destinations, branding is a relatively new concept, and in addition there are few cases in which brand architecture has been meticulously planned, making it quite difficult to find examples of brand portfolio management models. According to Harish (2010), there are few papers that encompass both brand architecture and the individual destination brand, which clearly indicates the need to analyse brand architecture. Thus, island destinations should be a priority focus. Aaker and Joachimsthaler (2000), aware of the importance of correctly applying the concepts of branding and brand architecture at local, regional, and national levels, propose a range of models to manage the architecture of a brand portfolio: Branded House, House of Brands, Master/Sub-brand Relationship, and Endorsed Brands. As far as islands are concerned, there is an outstanding representation of sovereign states formed by islands and archipelagos (Baldacchino, 2007) as well as islands integrated into countries that have different brand configurations.

Datzira-Masip and Poluzzi (2014) apply these models to various tourist destinations. For the Branded House strategy, the authors refer to the case of the Maldives. In this model, the names of the individual islands are almost unknown; on the contrary, the islands are recognised by the characteristics they have in common, under the Maldives brand. In contrast, the House of Brands model is exemplified by the Balearic Islands, a destination formed by individual islands (Mallorca, Ibiza, Menorca, and Formentera), which are more known for their specific offerings than for the brand name of the archipelago – Balearic Islands. Datzira-Masip and Poluzzi identify the Master/Sub-brands Relationship model in Central America, where the brand identity created for the joint promotion of the Central American states depends on the attributes of their various nations. However, individual country brands have been designed in order to benefit from the promotion of the Central America brand, as is the case for the Caribbean islands. As for the Endorsed Brands strategy, the example is the model applied by some regions and countries like Norway, which take advantage of the knowledge of the name of the country and add it to its logo: Lofoten Islands, Norway. Thus, designing the right brand architecture is a complex decision, since the number of brands, the number of segments in which brands are marketed, and the degree to which brands compete with one another all influence “the strengths and weaknesses that the different brand architectures manifest in distinctly different risk/return profiles” (Hsu, Fournier & Srinivasan, 2016).

Nevertheless, recent frameworks used for measuring the brand equity of destinations have become much more tourist centric and focus on various aspects of destinations’ brand image, brand awareness, etc. (Yousaf et al., 2017). Pike (2005) studies the process of development and management of a set of interrelated brands, contributing to a better understanding of the challenges tourist destinations face when trying to put into practice the theoretical framework on brand architecture management. Pike concludes that the brand must (1) assign priority to the customer segments and target markets of each brand; (2) fill the supply and demand gaps between brands, without overlapping; and (3) define strategies to effectively address priority segments and markets. Thus, collaboration with other destinations is a strategy that is increasingly taking centre stage in the hospitality industry (Lee et al., 2006), where islands, considering their target markets, can implement this win-win strategy to help boost sales, develop brand image, and save marketing and advertising costs (Kim et al., 2007).

In any case, and after illustrating the definition of branding and brand architecture and its application to islands, it can be concluded from the literature that the debate about the best way to integrate local brands with regional or national brands, as well as with other geographically nearby brands or with other distant but similar characteristics (d’Hauteserre & Funck, 2016) remains open. There are, moreover, diverse ways of conceptualising and organising diversity in islands (Hong, 2017).
In the same manner, the previous literature suggests that the discussion of what criteria to follow in order to determine the union of islands that are part of a common brand must consider the behavioural patterns of tourists from the mainland (Jackson, 2006). “Tourism can be seen as part of a hinterland management system if it is driven by special concessions from metropolitan powers or else benefits handsomely from tourists from the same metropolitan site” (Baldacchino, 2006). In this paper, we present the results of a study of the metropolitan area. However, when designing the brand architecture, the study considers not only the mainland vision but also the particular interests of the islands. To summarise, the questions that arise are how island branding architecture should be designed, which islands should enter into coopetition with one another, and in which mainland markets they should do so.

Methodology

Population
Europe remains the world’s largest outbound tourism region, generating more than half of global international arrivals per year (UNWTO, 2015). For this reason, the target population of this study was European tourists aged 16 and over, from 16 of the main outbound European countries in terms of tourists: Austria, Belgium, Denmark, Finland, France, Germany, the Netherlands, Ireland, Italy, Norway, Poland, Portugal, Russia, Sweden, Switzerland, and the United Kingdom.

Sample selection
The work was done through Computer-Assisted Web Interviewing (CAWI), to a representative sample of the 16 aforementioned countries, from a database of panellists in each country. A random selection was made based on the variables of stratification of geographical area and province on the one hand, and, on the other, of gender and age, in order to guarantee the representativeness of the sample with the population of each country. Once the questionnaire was translated and pre-tested in the language of the potential tourists (12 languages in total), and relevant corrections were made to those questions that raised difficulties of comprehension, the fieldwork was carried out. The defined sample was of 8,500 tourists (500 from each country), and the actual sample contained 6,559 tourists – between 400 and 459 tourists per country. The selected sample was sent a personalised e-mail inviting them to participate in the study, with a link in the e-mail that led them to the online survey. In order to ensure the expected number of surveys during the three months of fieldwork in different countries, two reminders were sent to encourage response. Table 1 shows the percentage distribution of the overall profile of the sample.

The structured questionnaire included socio-demographic variables such as age, years of study, and travel behaviour (the last three trips made by the individual, a favourite destination of those visited, and an ideal destination). The analysis of the results focused on visits to islands, and specifically on the Canary Islands (Spain). In particular, which of the seven Canary Islands the tourists had visited, and the perceived image of the destination and the intention to visit them in the future. In this case, the specific sample of tourists who had visited at least one of the Canary Islands is 2,067 tourists.
Table 1: Tourists’ profile.

<table>
<thead>
<tr>
<th>Nationality</th>
<th>Total Tourists</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>423</td>
<td>6.07</td>
</tr>
<tr>
<td>Austria</td>
<td>403</td>
<td>5.80</td>
</tr>
<tr>
<td>Belgium</td>
<td>404</td>
<td>5.80</td>
</tr>
<tr>
<td>Denmark</td>
<td>405</td>
<td>5.82</td>
</tr>
<tr>
<td>Spain</td>
<td>406</td>
<td>5.83</td>
</tr>
<tr>
<td>Finland</td>
<td>411</td>
<td>5.90</td>
</tr>
<tr>
<td>France</td>
<td>402</td>
<td>5.77</td>
</tr>
<tr>
<td>Netherlands</td>
<td>403</td>
<td>5.79</td>
</tr>
<tr>
<td>Ireland</td>
<td>403</td>
<td>5.79</td>
</tr>
<tr>
<td>Italy</td>
<td>402</td>
<td>5.80</td>
</tr>
<tr>
<td>Norway</td>
<td>400</td>
<td>5.70</td>
</tr>
<tr>
<td>Poland</td>
<td>402</td>
<td>5.80</td>
</tr>
<tr>
<td>Portugal</td>
<td>459</td>
<td>6.59</td>
</tr>
<tr>
<td>Sweden</td>
<td>431</td>
<td>6.19</td>
</tr>
<tr>
<td>Switzerland</td>
<td>400</td>
<td>5.74</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>405</td>
<td>5.82</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gender</th>
<th>Total Tourists</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td>3453</td>
<td>49.58</td>
</tr>
<tr>
<td>Women</td>
<td>3508</td>
<td>50.40</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age</th>
<th>Total Tourists</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>from 16 to 24</td>
<td>1368</td>
<td>19.60</td>
</tr>
<tr>
<td>from 25 to 34</td>
<td>1395</td>
<td>20.03</td>
</tr>
<tr>
<td>from 35 to 44</td>
<td>1375</td>
<td>19.70</td>
</tr>
<tr>
<td>from 45 to 54</td>
<td>1406</td>
<td>20.19</td>
</tr>
<tr>
<td>from 55 to 64</td>
<td>1023</td>
<td>14.70</td>
</tr>
<tr>
<td>more than 64</td>
<td>396</td>
<td>5.69</td>
</tr>
</tbody>
</table>

The decision to analyse the specific case of the Canary Islands, as well as for reasons of convenience, is justified by their being a European leading destination, with a well-known brand throughout Europe (Gil, 2003), receiving around 15 million annual tourists, with a complex economic ecosystem (Almeida-Santana & Moreno-Gil, 2017). This makes it a perfect subject for analysing the problem of island brand architecture.

The Canary Islands is an archipelago located in the Atlantic Ocean, and is one of the 17 autonomous communities of Spain. Tourism accounts for 31.9% of the Canary Islands’ GDP (€ 13,480,000) and 37.6% of employment (294,896 jobs). (Exceltur, 2015). This European outermost region is located two and a half hours from the capital of Spain (Madrid) and approximately 4 hours’ flight from central Europe, and is geographically situated near the African coast, forming the Macaronesian region along with Madeira, Azores and Cape Verde (Figure 1). The Canary Islands consist of seven main islands: Gran Canaria, Fuerteventura, Lanzarote, Tenerife, La Gomera, La Palma, and El Hierro. The four major islands (Tenerife, Gran Canaria, Lanzarote, and Fuerteventura) receive the largest annual tourist flows, with 98% of the total number of tourists (see Table 2). In addition, the Canary Islands have a prominent role in this Macaronesian region, in terms of tourism.
Figure 1: Geographical location of Canary Islands and Macaronesia.

Table 2: Annual tourist arrivals to Canary Islands and Macaronesia.

<table>
<thead>
<tr>
<th>Islands</th>
<th>Total Tourists</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lanzarote</td>
<td>2,915,727</td>
<td>145,084</td>
</tr>
<tr>
<td>Fuerteventura</td>
<td>2,287,650</td>
<td>107,521</td>
</tr>
<tr>
<td>Gran Canaria</td>
<td>4,223,679</td>
<td>845,195</td>
</tr>
<tr>
<td>Tenerife</td>
<td>5,769,992</td>
<td>891,111</td>
</tr>
<tr>
<td>Canary Islands</td>
<td>14,981,113</td>
<td>2,101,924</td>
</tr>
<tr>
<td>Cape Verde</td>
<td>494,000</td>
<td>434,263</td>
</tr>
<tr>
<td>Madeira</td>
<td>215,511</td>
<td>244,286</td>
</tr>
<tr>
<td>Azores</td>
<td>1,319,489</td>
<td>246,772</td>
</tr>
</tbody>
</table>

Sources: Aena, Istac, World Bank, official website of the Government of Cape Verde, Regional Bureau of Statistics of Madeira, Regional Statistics Service of the Azores. Data from Cape Verde corresponds to the number of international tourist arrivals to Cape Verde in 2014. Data for Madeira corresponds to the total number of guests in hotel establishments in 2015. The Azores data corresponds air passenger landings in 2016 (all islands).
With regard to the main characteristics of tourism promotion and the Canary Islands brand, it is important to note that a joint promotion of all the islands under the well-known umbrella brand ‘Canary Islands’ is being developed and managed by the public company Promotur (Canary Islands Tourism Board). The destination marketing organisations of each of the islands are nevertheless developing their own promotion as an independent destination, coexisting seven individual brands (see Figure 2), forming a complex brand management architecture. In addition, in many promotional actions, the Canary Islands are presented alongside the Spain brand, as an integral part of the country’s wider tourism offering. Finally, some products (cruises, nautical tourism, etc.) are promoted in a network comprised of other islands from the Macaronesian Archipelago, presenting them as a common tourist experience (Carballo et al., 2015), as is the case with ‘Cruises Atlantic Islands’ brand.

Figure 2: Canary Islands brand architecture.

The present study includes in its analysis some of the world’s most popular tourist islands and archipelagos. Tourists were asked about the last three holiday destinations they have visited. The results to this free elicitation question revealed the most popular island destinations for European tourists: Cyprus, Malta, Balearic Islands, Canary Islands, Maldives, Caribbean, Azores, Madeira, Cape Verde, and Greek islands were the most-visited island destinations for tourists in the sample. Although these destinations have been analysed in branding studies (Alonso et al., 2008; Alves et al., 2013; Amira, 2016; Baldacchino et al., 2013; Ekiz et al., 2010; Marcelino & Oca, 2016). However, these islands have been mainly analysed in isolation, and not from a brand architecture perspective.

In order to achieve the goals of this study, we conducted descriptive analysis and estimated 5 logit models with the last version of the SPSS. In this case, we chose the logit model based on the ‘random use’ theory. This model is especially appropriate when working with endogenous binary qualitative variables in the tourism field, despite the availability of other statistical techniques (Alegre & Cladera, 2006; Barros & Assaf, 2012; Perales, 2002). The goodness of fit of a logit model was assessed by −2 log likelihood (LL) ratios and their associated chi-square. This methodology has been recommended for use in analysing brand and image studies related to tourism destinations, and the final decisions made by the tourists (Almeida & Moreno, 2018).
Results

Before answering the main question of this study, in order to understand the brand architecture applied to island tourism it is necessary to highlight the importance of island tourism. We first analysed the importance of island destinations within the total number of holidays taken by European tourists. It was found that 32.1% of European tourists who travelled abroad during the last three years had been on holiday to at least one island during that period. This reinforces the importance of the analysis of the islands' brand architecture in the context of tourism. Specifically, the island destinations with the most visits were the Greek islands, Canary Islands, Balearic Islands, and Caribbean islands. Additionally, island destinations show a high rate in the choice of tourists as a favourite destination among those that had visited during the last three years, with a penetration level of 1.5, compared to 0.75 for the mainland destinations, enhancing the power of attraction the islands provide for tourists. Moreover, when tourists were asked about dreamy, ideal destinations (where they would go on holiday if they could choose anywhere in the world), 17.9% indicated island destinations, compared to 83.7% mainland destinations. That is, almost 20% of European tourists conceive their ideal holidays on an island. Among the destinations named as ideal are the Caribbean islands as an outstanding dreamy brand, the Greek islands and the Canary Islands. These results reveal the importance of islands in the tourist imagination, and in particular the Canary Islands destination among island destinations worldwide, and especially in the European market.

These results are important because building a strong brand architecture in island tourism starts with identifying a destination’s performance, reputation, and imagery, within a product category at any given point in time (Yousaf et al., 2017).

Table 3: The island destinations with the most visits and portrayed as ideal.

<table>
<thead>
<tr>
<th>Island</th>
<th>Visited</th>
<th>%</th>
<th>Ideal</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greek islands</td>
<td>657</td>
<td>9.43</td>
<td>184</td>
<td>2.64</td>
</tr>
<tr>
<td>Canaries</td>
<td>397</td>
<td>5.70</td>
<td>146</td>
<td>2.10</td>
</tr>
<tr>
<td>Balearics</td>
<td>252</td>
<td>3.62</td>
<td>64</td>
<td>0.92</td>
</tr>
<tr>
<td>Caribbean</td>
<td>243</td>
<td>3.49</td>
<td>298</td>
<td>4.28</td>
</tr>
<tr>
<td>Cyprus</td>
<td>92</td>
<td>1.32</td>
<td>26</td>
<td>0.37</td>
</tr>
<tr>
<td>Malta</td>
<td>55</td>
<td>0.79</td>
<td>15</td>
<td>0.22</td>
</tr>
<tr>
<td>Madeira</td>
<td>47</td>
<td>0.67</td>
<td>32</td>
<td>0.46</td>
</tr>
<tr>
<td>Maldives</td>
<td>31</td>
<td>0.45</td>
<td>97</td>
<td>1.39</td>
</tr>
<tr>
<td>Cape Verde</td>
<td>23</td>
<td>0.33</td>
<td>13</td>
<td>0.19</td>
</tr>
<tr>
<td>Azores</td>
<td>16</td>
<td>0.23</td>
<td>5</td>
<td>0.07</td>
</tr>
</tbody>
</table>

Below, and to further analyse the main goal of this study: What are the other island brands with each island should cooperate? And in which mainland markets should they do so? The following analysis focuses on the sample of 2,067 tourists who have visited one of the Canary Islands. An initial descriptive analysis shows there are numerous tourists who have made repeated visits to several of the Canary Islands. The first column of Table 4 shows the distribution of tourists visiting several islands on different holidays and the importance they place on each island. 78.2% of tourists with combined visits to several islands have been to the island of Tenerife (TF), and 75.2% have also visited the island of Gran Canaria (GC). 56.8% have visited the island of Lanzarote (LZ), and 32.5% have visited the island of Fuerteventura (FV). Therefore, it can be said that the four most-visited islands by tourists with combined visits coincides with the islands that receive the most visitors in general, these
being the four largest islands. This result reveals the existence of a relationship between the islands that should be considered in marketing decision-making processes. This is especially relevant for the correct design of the destination’s brand architecture, which requires more analysis.

Trying to further analyse whether there are specific islands whose promotional strategies should be more closely linked, in order to improve the joint visiting of different islands grouped under a common brand, the table shows a first approach with the combinations of islands in pairs and the percentage of visits the tourists make to them. It can be observed, for example, that 58.3% of tourists with combined visits have been on the islands of GC and TF, 42.5% on TF and LZ, 40% on GC and LZ, and 23.5% on LZ and FV.

### Table 4: Percentage of tourists who have visited more than one island of the Canary Islands, by island, and combinations by pairs between the visited islands.

<table>
<thead>
<tr>
<th>Visiting different islands</th>
<th>TF</th>
<th>GC</th>
<th>LZ</th>
<th>FV</th>
<th>LP</th>
<th>LG</th>
<th>EH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tenerife (TF)</td>
<td>78.2%</td>
<td>58.3%</td>
<td>42.5%</td>
<td>21.7%</td>
<td>15.3%</td>
<td>12.1%</td>
<td>2.9%</td>
</tr>
<tr>
<td>Gran Canaria (GC)</td>
<td>75.2%</td>
<td>58.3%</td>
<td>40.0%</td>
<td>22.8%</td>
<td>15.7%</td>
<td>8.9%</td>
<td>2.5%</td>
</tr>
<tr>
<td>Lanzarote (LZ)</td>
<td>56.8%</td>
<td>42.5%</td>
<td>40.0%</td>
<td>23.5%</td>
<td>9.7%</td>
<td>7.5%</td>
<td>2.4%</td>
</tr>
<tr>
<td>Fuerteventura (FV)</td>
<td>32.5%</td>
<td>21.7%</td>
<td>22.8%</td>
<td>23.5%</td>
<td>6.4%</td>
<td>5.0%</td>
<td>1.8%</td>
</tr>
<tr>
<td>La Palma (LP)</td>
<td>20.7%</td>
<td>15.3%</td>
<td>15.7%</td>
<td>9.7%</td>
<td>6.4%</td>
<td>4.2%</td>
<td>2.6%</td>
</tr>
<tr>
<td>La Gomera (LG)</td>
<td>13.3%</td>
<td>12.1%</td>
<td>8.9%</td>
<td>7.5%</td>
<td>5.0%</td>
<td>4.2%</td>
<td>2.5%</td>
</tr>
<tr>
<td>El Hierro (EH)</td>
<td>3.2%</td>
<td>2.9%</td>
<td>2.5%</td>
<td>2.4%</td>
<td>1.8%</td>
<td>2.6%</td>
<td>2.5%</td>
</tr>
</tbody>
</table>

Having verified the existence of interdependence between the islands, it was necessary to analyse the relationship between them, that is, to test the extent to which the visit to one of the Canary Islands’ brands can influence the probability of travelling to another island—inside their own archipelago. In addition, we considered the relationship with other islands that do not belong to the Canary Islands—outside their own archipelago—in order to analyse the relationship with other islands, both geographically close (Azores, Madeira, Cape Verde) and quite distant islands but nevertheless included in the same competitive set (Cyprus, Malta, Baleares, Maldives, Caribbean, Greek islands). In order to tackle this analysis, five logit binomial models were estimated (one for the common brand of the Canary Islands and one for each of the main Canary Islands).

The models explored the existence of a relationship between the brands (brand architecture) though visits to the various island destinations. For example, the first model aimed to identify whether the visit to the umbrella brand ‘Canary Islands’ was influenced by a previous visit to another island destination brand (Cyprus, Malta, Baleares, Maldives, Caribbean, Azores, Madeira, Cape Verde, Greek islands). The various nationalities of the tourists were included in order to analyse how the mainland origin of the tourist influences the relationship. This is a combination of 16 mainland regions and 10 island destinations, one of which (Canary Islands) is composed of seven islands. Finally, the models included the perceived image of the destination and other socio-demographic variables that affect the main explanatory reasons behind a visit to a destination (Moreno-Gil et al., 2012), which are shown in Table 5. These variables are needed to improve the predictive power of the model. The same analysis was carried out on the other models for each of the four main island brands: Gran Canaria, Tenerife, Lanzarote, and Fuerteventura, adding in this case the visit to other islands of the common brand. In this manner, it is possible to observe how the visit to an island brand within the Canary Islands influences a visit to another island brand within the same archipelago.
Table 5: Description of the variables included in the models.

<table>
<thead>
<tr>
<th>Category</th>
<th>Variables</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Socio-demographic and geographic variables</td>
<td>Age</td>
<td>A continuous variable that explains the age of the individuals in years</td>
</tr>
<tr>
<td></td>
<td>Years of study</td>
<td>Number of years of study</td>
</tr>
<tr>
<td></td>
<td>Germany, United Kingdom, Spain, Ireland, France, Austria, Poland, Switzerland, Portugal, Denmark, Norway, Finland, Sweden, Netherlands, Belgium, Italy</td>
<td>Dichotomic variables that take 0 as a value when the individual does not belong to one of the nationalities under study, and 1 when they do</td>
</tr>
<tr>
<td>Coopetition variables within the Canary Islands brand</td>
<td>Visited TF, visited GC, visited LZ, visited FV, visited LP, visited LG and visited EH</td>
<td>Dichotomic variables that take 0 as a value when the individual has not visited the island under study and 1 when he/she has</td>
</tr>
<tr>
<td>Coopetition variables outside the Canary Islands brand</td>
<td>Visited Cyprus, visited Malta, visited Balearics, visited Maldives, visited Caribbean, visited Azores, visited Madeira, visited Cape Verde, visited Greek Islands</td>
<td>Dichotomic variables that take 0 as a value when the individual has not visited the destination under study and 1 when he/she has</td>
</tr>
<tr>
<td>Perceived image</td>
<td>General image perceived of the destination Canary Islands</td>
<td>Scale of 1 to 7 (very negative image – very positive image)</td>
</tr>
<tr>
<td>Endogenous</td>
<td>Visited Canary Islands, visited TF, visited GC, visited LZ, visited FV</td>
<td>Dichotomic variables that take 0 as a value when the individual has not visited the Canary Islands and 1 when he/she has</td>
</tr>
</tbody>
</table>

Table 6 summarises the results of the estimation of the five proposed models. It is observed, as expected, that the better the image of the destination, the greater the probability of visiting it. In addition, level of education influences the probability of visiting the Canary Islands brand. There is also a positive relationship between age of the individual and visits to the islands of Tenerife, Gran Canaria, and Lanzarote as well as the Canary Islands umbrella brand in general. In addition, the relationship between the nationality of the tourists and their visits to the different island brands is analysed. In this case, negative relations were found with several of the markets in which the Canary Islands have a low level of penetration: Poland, Portugal, France, Italy, Belgium, and Switzerland. Thus, tourists from these countries are less likely to visit the Canary Islands and are likely to prefer alternative island destination brands.
Table 6: Logit Binomial models explaining the probability of visiting the brands Canary Islands, Tenerife, Gran Canaria, Lanzarote, and Fuerteventura (* 0.1 % ** 0.05% ***0.01%).

<table>
<thead>
<tr>
<th>Canary Islands</th>
<th>Tenerife</th>
<th>Gran Canaria</th>
<th>Lanzarote</th>
<th>Fuerteventura</th>
</tr>
</thead>
<tbody>
<tr>
<td>β</td>
<td>ε</td>
<td>β</td>
<td>ε</td>
<td>β</td>
</tr>
<tr>
<td>Visit Cyprus</td>
<td>0.443*</td>
<td>0.264</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Visit Malta</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.188</td>
</tr>
<tr>
<td>Visit Balearics</td>
<td>0.554***</td>
<td>0.156</td>
<td>0.431**</td>
<td>0.491**</td>
</tr>
<tr>
<td>Visit Maldives</td>
<td>-</td>
<td>-</td>
<td>0.799***</td>
<td>0.125</td>
</tr>
<tr>
<td>Visit Caribbean</td>
<td>0.861***</td>
<td>0.161</td>
<td>0.431***</td>
<td>0.491**</td>
</tr>
<tr>
<td>Visit Azores</td>
<td>-</td>
<td>-</td>
<td>0.799***</td>
<td>0.125</td>
</tr>
<tr>
<td>Visit Madeira</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.628</td>
</tr>
<tr>
<td>Visit Cape Verde</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.402**</td>
</tr>
<tr>
<td>Visit Greek Islands</td>
<td>0.475***</td>
<td>0.106</td>
<td>-</td>
<td>1.165*</td>
</tr>
</tbody>
</table>

| Age            | 0.188*** | 0.024 | 0.088*** | 0.03 | 0.072**  | 0.039 |
| Education      | 0.017*   | 0.009 | 0.025*   | 0.013| -        | -     |
| Overall Image  | 0.371*** | 0.027 | 0.199*** | 0.036| 0.018*** | 0.044 |

| Visit Tenerife | -        | -     | 1.315***  | 0.104| 1.551*** | 0.125 |
| Visit Gran Canaria | -     | -    | 1.286***  | 0.105| -        | -     |
| Visit Lanzarote | -        | -    | 1.502***  | 0.126| 0.834***  | 0.125 |
| Visit Fuerteventura | -     | -    | 0.799***  | 0.125| -        | -     |
| Visit La Palma  | -        | -    | 0.815***  | 0.157| 1.847***  | 0.158 |
| Visit La Gomera | -        | -    | 0.258***  | 0.208| 0.631***  | 0.215 |
| Visit El Hierro | -        | -    | 0.799***  | 0.292| -        | -     |

| Germany        | -        | -     | -         | -    | -        | -     |
| Austria        | -        | -     | -         | -    | -        | -     |
| Belgium        | -1.925*  | 1.147 | -         | -    | -        | -     |
| Denmark        | -        | -     | -         | -    | -        | -     |
| Spain          | -        | -     | -         | -    | -        | -     |
| Finland        | -        | -     | -         | -    | -        | -     |
| France         | -2.638** | 1.497 | -1.865*   | 1.119| -2.124*  | 1.157 |
| Netherlands    | -1.899*  | 1.497 | -1.865*   | 1.119| -        | -     |
| Ireland        | -        | -     | -         | -    | -        | -     |
| Italy          | -2.76**  | 1.149 | -1.99*    | 1.114| -        | -     |
| Norway         | -        | -     | -         | -    | -        | -     |
| Portugal       | -2.429** | 1.147 | -2.411*   | 1.074| -2.311** | 1.141 |
| Sweden         | -        | -     | -         | -    | -        | -     |
| Switzerland    | -        | -     | -2.154*   | 1.111| -        | -     |
| UK             | -        | -     | -         | -    | -        | -     |

| Constant       | -2.483** | 1.158 | -3.446*** | 1.125| -3.878*** | 1.141 |

-2 Log likelihood | 4934.925 | 3170.003 | 3387.093 | 2173.552 | 1571.625 |
Analysis

This study has posed the central question of: Which island brands should cooperate with one another? In the case of the Canary Islands, it can also be asked: Should individual island brands in the Canary Islands cooperate with island brands outside of or within their own archipelago? The table above shows the values of the coefficients of the variables.

Regarding brand cooperation outside the Canary Islands, the fact that a tourist has visited a number of other island brands (Cyprus, Balearic Islands, Caribbean islands, or Greek islands) increases the probability of this tourist visiting the Canary Islands brand. However, Malta and the Azores do not present such possibilities for cooperation. It is important to note the strong complementarity between the Caribbean and the four main islands of the Canary Islands: Tenerife, Gran Canaria, Lanzarote, and Fuerteventura. There is also a complementary relationship between the island of Lanzarote and the Maldives, Madeira, and the Greek islands; between the island of Gran Canaria and Cape Verde; and between the island of Fuerteventura and the Greek islands. There are thus multiple possibilities for cooperation among islands, through specific brands and through other joint actions.

With respect to brand cooperation between the various islands that belong to the Canary Islands archipelago, we can observe the strong positive relationship between visits to the islands of Gran Canaria and Tenerife. This means that if a tourist visits the island of Tenerife, there is a greater chance of visiting the island of Gran Canaria. In contrast, it is important to note the strong direct relationship between visits to the islands of Lanzarote and Fuerteventura on the one hand and between Tenerife and La Gomera on the other hand. All the main islands have a relationship with each other, which justifies their grouping around a common umbrella brand.

Island studies should, however, be more attentive to nuanced relationships between islands and mainland (Hong, 2017). In order to deepen the previous analyses, while considering the specific relationships between the competitive cooperation of island brands and mainland territories, and in which mainland markets where each brand should cooperate with others, different models were made by country of origin (Figure 5). This was proposed because some island brands can compete on general terms but carry out a strategy of cooperation in some specific geographic markets. By nationality, tourists from Sweden, Norway, the United Kingdom, Spain, the Netherlands, Belgium, Germany, Ireland, Finland, Austria, and Switzerland are the target markets for greater complementarity and cooperation between islands, while France, Italy, Portugal, and Poland have the lowest complementarity between islands and thus greater direct competition.

These results reflect that the cultural background (nationality) of the tourist must be considered when analysing island-mainland relationships. Thus, the design of brand architecture and complementary relationships between island destinations will depend on each specific market. In this case, the main islands of the Canary Islands present, in tourism terms, a greater possibility of cooperation in the majority of markets, whereas this only occurs with a few countries of origin for the smaller islands. When promoting these smaller islands in some specific markets, it may thus make sense to alter the brand architecture, adding differentiated sub-brands, different groupings and connections between the islands, and alternative communication strategies.
Figure 3: Complementarity of the Canary Island brands, by mainland European countries.
Islands face serious geopolitical and economic challenges in an interconnected global business setting. These challenges in the tourism industry involve understanding the starting position of islands in the tourist market, how they manage their coopetition relationships and brand architecture between themselves, and how they promote themselves to their tourists’ various countries of origin and mainland markets. Tourism is facilitated socio-cultural interaction by human interaction between islands and mainlands (Hayward, 2001, p. 34).

This study has focused on designing the general brand architecture related to island tourism. It shows the importance of islands and their brands in the global market as well as a degree of complementarity (visits to some islands influence visits to other islands). Island destinations play an important role in the preferences of the mainland tourists (32.1% of the destinations chosen in the previous three years), being the preferred destination for 16.4% of the tourists. In addition, islands are the idyllic travel destination for 17.9% of European tourists, emphasising their role as dream destinations for mainland tourists. The generic island brand is ‘dreamy’ one. Considering island tourism as a specific category of tourism, island destinations are part of a large network connected through demand. Island managers should pay greater attention to how mainland tourists visit these island destinations and thereby achieve synergies in their marketing strategies and brand architecture. A key aspect for developing island tourism could be emphasising the word ‘island’ in every brand island. Additionally, island destinations around the world could create a formal brand board to manage their brand architecture and foster island tourism, inside and outside their own archipelagos. The word ‘island’ could be presented as an ‘endorsed brand’.

There are evident practical implications since understanding the behaviour of island hoppers across multiple travel periods allows destination management organisations to establish island networks that focus on the brand architecture and the various islands’ promotion activities. In the specific case analysed, the Canary Islands brand uses its country name (Spain) as an endorsed brand, yet this archipelago is likewise complementary and has a mutual relationship with other (and sometimes quite distant) island, archipelago, and country brands. Furthermore, each island within the Canary Islands has complementary relationships with other island brands, both within the archipelago itself (e.g. Lanzarote with Fuerteventura) and with other distant islands (e.g. Gran Canaria with Cape Verde). This allows different brand architecture possibilities and joint promotional actions. In addition, complementary combinations between islands differ by source market, suggesting different possibilities for subgroups and bundling (e.g. Gran Canaria is complementary with La Gomera in the German and Swiss markets, while the relationship is negative and competitive in the Norwegian market, and with the rest of the countries there is no correlation).

As an example of practical implications for efficient brand architecture management while coopetiting, islands with complementary brands (visiting one island encourages visiting another) are part of a network and could have a joint presence at tourist fairs (physical proximity to the tourism fair itself or joint actions during the fair) as a win-win strategy. In addition, complementary brands could manage how they appear in tour operator brochures, tour guides, and travel guides as well as other sources of information consulted by tourists when deciding where to travel. In the same manner, complementary island brands could carry out promotional strategies at the airports of other islands, even with bilateral agreements, seeking to attract island tourists for their future holidays.
Conclusion

Traditionally, island tourism managers have designed their brand strategies without taking into account the other islands with which they are coopetiting, or in any case only those that are close to or that belong to their own archipelago or political region. They have not analysed mainland tourists’ relationships with all islands brands (brand architecture) during different holiday periods. This study shows that when designing an effective island tourism brand architecture and managing coopetition between the islands, islands could improve their competitiveness if they are able to ascertain with which other islands they should coopetite in particular markets.

This paper adds to the island studies literature by presenting a new way of analysing cooperation between islands through island brands. The study therefore helps island managers better manage their collaborations with other islands and with mainland markets in a complex systemic analysis. Even when these islands are not geographically or culturally close, they are sharing tourists, forming part of the same category within tourism. Islands could thus be considered a particular case in tourism in terms of brand architecture. There is a long tradition of mainland destinations working with nearby destinations in designing their brand architecture. In the case of islands, the design of brand architecture should expand its horizons beyond nearby destinations to an even further extent. Island brand architecture could take on different forms and compositions, from branded house, house of brands, master/sub-brands relationships, and endorsed brands. They could have more flexible, temporal, and specific market-oriented architectures, integrating the mainland vision (tourist perspectives and behaviours) and island interests, diversity, and similarities.

Finally, future lines of research could deepen the fundamental understanding of the relationship between island brands and island tourism. Hence, there is a need to consider other variables, such as island size (in geographic and economic terms), geographic and cultural distance between islands, and geographical and cultural distance from continental markets (long-haul or short-haul destinations). Connectivity with home markets is also crucial, taking into account all the different means of transportation, their time, their cost, and their comfort. Industries other than tourism can also be included in the analysis. As a final observation, there is a need to develop a more detailed and global analysis that considers non-European markets and island brands around the globe (Picazo & Moreno, 2013).

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Relationality and island studies in the Anthropocene

Jonathan Pugh
Newcastle University, UK
jonathan.pugh@newcastle.ac.uk

ABSTRACT: The island has become arguably one of the most emblematic figures of the Anthropocene. It is regularly invoked as exemplary of the changing stakes of our planet. This generates a crucially important role for island studies scholars; to explore, question, but now perhaps also trouble, some fundamental debates about islands in the Anthropocene. This paper picks up a particularly recurrent theme for island scholarship in recent decades—relationality and islands—and reorients this within the stakes of the Anthropocene; discussing some implications for island studies, island ontology and resilience ethics.

Keywords: Anthropocene, islands, relationality, archipelagos, temporalities, indigenous, resilience.

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Introduction: the shifting stakes of the Anthropocene

Over the past few decades there have been relational and archipelagic turns in island studies. A range of influential publications have drawn attention to the relational forces, and in particular the archipelagic thinking, which disrupts the static island form (Baldacchino, 2006; Brathwaite, 1999; DeLoughrey, 2007; Glissant, 1997a; Grydehøj et al., 2015; Hayward, 2012a; Pugh, 2013a; Stratford et al., 2011). As explored in many books, papers and conferences today, there are numerous reasons why we now talk about relational and archipelagic turns in island studies (Crane & Fletcher, 2017; Grydehøj, 2017; Hay, 2016; Pugh, 2016; Roberts & Stephens, 2017). But one reason that is rarely explicitly discussed, and which I take as my departure for this paper’s concern with islands and relationality, is the waning of modernity and the associated rise in concern for non-modern frameworks of reasoning. For however we now date this—by the shift from linear to non-linear modelling, by saying that most people on the planet were never ‘modern’ anyway, or, as in this paper, by focusing upon the Anthropocene—it has become increasingly difficult to find security in modernity’s old sanctums, binaries of humans/nature and neatly drawn horizons (Morton, 2013; 2016). Whilst life on planet earth has of course always been interconnected, boundary-disrespecting phenomenon like global warming, nuclear plumes, atmospheric and oceanic pollutants now really do bring home the point that modernity’s neat compartmentalisations are increasingly untenable (Sloterdijk, 2009; Morton, 2013). We can no longer talk in terms of ‘nature’, ‘raw material’, ‘wilderness’, or other sealed off spaces ‘just over there’.

Indeed, today the growing argument from a broad range of scientists is that planet earth has changed to such a degree that we now live in a new historical epoch called the Anthropocene. Distinguished from the Holecene, the term Anthropocene comes from the Ancient Greek word for human, ‘anthropos’. As the website Welcome to the Anthropocene (2017) says, there is now “overwhelming global evidence that atmospheric, geologic, hydrologic, biospheric and other earth system processes” have been transformed by human actions. Saliently, the Anthropocene marks a “fundamental change in the relationship between humans and the Earth” (Lewis & Maslin, 2015, p. 171). This increasingly “disputes
the modernistic view of a strict division between nature and culture and reveals an Earth that is not a neutral background for human activity” (Verlaan, 2016, p. 1). For most leading contemporary philosophers of the Anthropocene, like Timothy Morton (2013, p. 15), the Anthropocene is overwhelmingly characterised as a new “Age of Asymmetry”—all life is now *humbled within* the vast spatiotemporal and multidimensional forces of a rapidly changing planet.

The overall aim of this paper is to think through the now recurrent theme of islands and relationality in island scholarship, and more explicitly reorientate this within the Anthropocene. Structurally, the next section of this paper begins by briefly reviewing some of the key aspects of the relational and archipelagic turns in island studies to date, before turning in detail to this central theme of islands and relationality in the Anthropocene. The last part of the paper considers how the concerns raised play into and through some critical contemporary debates for island resilience ethics.

**The relational and archipelagic turns in island studies**

Up until this point in island studies, the relational and archipelagic turns have tended to focus upon tracing out different relational mobilities, networks, constellations, aquapelagos, assemblages and island movements. Although in different ways, much of this work schematically falls under what is now often called ‘thinking *with* the archipelago’ (Pugh, 2013a, p. 9; Bongie, 1998; DeLoughrey, 2001; Glissant, 1997b). This is illustrated by, among other influential publications, Glissant’s (1997a) *Poetics of Relation*; Bongie’s (1998) *Islands and Exiles*; Brathwaite’s (1999) *tidalectics*; DeLoughrey’s (2007) *Routes and Roots*; Hau'ofa’s (2008) *We are the Ocean*; Sheller’s (2009) work on ‘mobilities’; Stratford et al.’s (2011) ‘archipelagic turn’, and Hayward’s (2012a) ‘aquapelago’. In various ways in this literature, islands are constituted as “relational spaces” (Stratford, 2003, p. 495) that unsettle borders of land/sea, island/mainland, and problematize static tropes of island insularity, isolation, dependency and peripherality (Grydehøj & Hayward, 2014; Pugh, 2005; 2013b; Rankin, 2017); all of which amounts to what I have called a ‘relational turn’ in island studies (Pugh, 2013a; 2016).

The relational and archipelagic turns have in particular emphasized the “power of cross-currents and connections” (Stratford et al., 2011, p. 124) and foregrounded how we live in a world of relationality rather than ‘static’ islands of the world. A concern for relational island geographies is prevalent today in a wide range of geographical locations; for example, in research on the Caribbean (Dash, 2006; Pugh, 2016; Sheller, 2009), China (Hong, 2017), Chile (Hidalgo et al., 2015), Taiwan (Tsai, 2003; Lee et al., 2017), New Caledonia (Korson, 2017), New Zealand (Kearns & Collins, 2016), Sardinia and Corsica (Farinelli, 2017), the Aegean (Karampela et al., 2017), Oceania (Farbotko et al., 2016), and the archipelagic Americas (Roberts & Stephens, 2017), but also in research on archipelagic information systems (Vaitis et al., 2007), island literatures (Crane & Fletcher, 2017; Redd, 2017; Graziadei et al., 2017), island diasporas (Martínez-San Miguel, 2014), and translocal social movements (Davis, 2017). In many different ways there has been a concerted effort to radically de-centre notions of the static island and instead emphasize mobile, multiple and interconnected relational forms (Baldacchino, 2006; Clark & Tsai 2009; Fletcher, 2011; Hau'ofa; 2008; Mountz, 2015; Sheller, 2009; Steinberg, 2001).

Such concerns have been given impetus by prominent statements from the President of the International Small Island Studies Association, Godfrey Baldacchino (2006, p. 10), who has set an important agenda for how islands are “part of complex and cross-cutting systems of regional and global interaction.” As Elizabeth DeLoughrey (2001, p. 23), one of the seminal instigators of this way of thinking, says:

No island is an isolated isle [so instead] a system of archipelagraphy—that is, a historiography that considers chains of islands in fluctuating relationship
to their surrounding seas, islands and continents—provides a more appropriate metaphor for reading island cultures.

Although brought together by these common concerns for the disruption of the static island, as regular readers of Island Studies Journal will know well, the relational and archipelagic turns have been developed in many different ways. One particularly appealing way has been through increasingly engaging and contributing to the contemporary ‘oceanic turn’ in the wider social sciences and humanities today; foregrounding island relationalities through an extending interest in oceanic materialities, currents, volumes, depths, mobilities, tides and swirls, but also watercraft, vessels and ships (Teiawa, 2014; Blum, 2013; Bremner, 2016; DeLoughrey, 2001; Hayward, 2012a; Pugh, 2016; Rankin & Collins, 2017; Steinberg, 2001; Steinberg & Peters, 2015). From Hayward’s (2012) ‘aquapelago’, to DeLoughrey’s (2007) Routes and Roots, such debates now consistently bring to the fore how oceans are not a simple medium of transport between islands, or from A to B, but rather material, social, political and affective spaces themselves that play into island relationalities (DeLoughrey, 2007; Hayward, 2012a; Pugh, 2016; Steinberg & Peters, 2015). These kinds of connections are perhaps most obviously drawn out in contemporary research on shifting ice-sheets (Riquet, 2016; Steinberg & Kristoffersen, 2017), but are also powerfully brought into play in all sorts of other innovative ways in island studies today. For example, in Roberts and Stephens (2017, p. 1) seminal idea of the ‘archipelagic Americas’, the Americas “are clearly not confined to the islands and waters that have been appropriated by the United States” but span through multifaceted colonial, material, affective and political relations into the Caribbean, Indonesia, and many other island and ocean regions of the world that disrupt neat boundaries of island/sea.

Indeed, the reach of these relational and archipelagic turns today, both within, and increasingly beyond, the traditional realms of island studies would now need a book to be comprehensively reviewed. Like many readers of Island Studies Journal, I find it both interesting and rewarding when today I see them playing through academic disciplines that at first sight seem far removed from island studies, and from each other but which—from contemporary political theory, to the creative arts, and architecture—increasingly engage with them.

The central question for this paper is: what do the shifting stakes of the Anthropocene mean for how we think through relationality and islands? Here we can initially begin with an influential paper for the relational and archipelagic turns in island studies: Phil Hayward’s (2012b) ‘The constitution of assemblages and the aquapelagality of Haida Gwaai’. For Hayward (2012b, p. 3), it is the new materialism of Jane Bennett’s (2010) Vibrant Matter which is “particularly pertinent” for his development of the concept of the aquapelago. The philosophical tradition of new materialism is taken as key to understanding the materialities of human and more-than-human assemblages involving islands, oceans, rivers and interweaving liquid relationalities in flux. Developing the aquapelago concept in part as a response to the perceived lack of engagement with oceans, rivers and liquid entanglements in Stratford et al.’s (2011) conceptualisation of the archipelago, for Hayward (2012b, p. 3) “the humans who constitute aquapelagos through their engagements with terrestrial and aquatic spaces are (necessarily) engaged in interaction with what Bennett describes as the ‘vibrant matter’ of the environment, characterised by the ‘vitality’ of various non-human things.” New materialism and the affective relations of more-than-human entanglements are key to unlocking these island and watery relationalities, and here Hayward (2012b, p. 3) is also interested in situating the aquapelago directly within debates about the Anthropocene:

My proposition of the aquapelago as a concept and focus is intended to facilitate comprehension of Anthropocene impacts on interrelated aquatic and land environments and of the impact on and responses of nonhuman actants.
Indeed, such developments now illustrate how island studies scholars are shifting to embed their thinking about islands and relationality more firmly in the stakes of the Anthropocene:

There can be no Island Studies that doesn’t have consideration of Anthropocene impacts as a major element of its field and of its individual instantiations. While islands may have seemed relatively fixed entities when the discipline began aggregating in the 1980s it has become apparent that islands are increasingly in flux. Aquapelagic relations are shifting and reconfiguring at rapid rates. The land areas, elevations and general viability of islands to support particular populations and their relationship to mobile expanses of waters and the nature of subsurface biomasses are in flux and require constant attention. To be an islander is, increasingly, to live in flux. To be an Island Studies scholar is, increasingly, to be scholar of flux. (Hayward, 2018)

But in this paper, as I think through relationality and islands in the Anthropocene, I take a different approach from new materialism; and, indeed, from many other prominent approaches associated with the relational and archipelagic turns today. This is not to say that I completely reject these developments which still have importance, but that I am interested in exploring some new approaches for how we can think through relationality and islands in the Anthropocene: both in terms of general shifts in tone of debate, and specifically in terms of definable island ontology and consequences for ethics.

To start with, we can bring about the more general tonal shift of this paper by simply stating that, in the Anthropocene, islands are much more obviously humbled within the vast multidimensional forces of a rapidly changing planet. Here Clark and Yusoff (2017, p. 16) make clear the contrast to previous approaches:

Whereas the political traction of the more-than-human in new materialist ontologies has tended to be bound up with relations of interconnectedness, reciprocity and mutual affectivity between human and nonhuman actors, by contrast, in the Anthropocene, we can now develop a more explicit sense of a before, a beneath, a beyond to the human presence that draws our attention to other modes of relating.

During the last years of the 20th century much of the focus in philosophy, the social sciences and humanities was concerned with opening up the spatial; and in earlier developments like assemblage theory, (de)territorialisations, rhizomes, actor network theory, new materialism, mobilities and the spatial turn, the concern was for changing our understanding of the human at the ontological level—in particular to disrupt the human/nature divide and better develop concerns for more-than-human entanglements (Chandler, 2018; Pugh et al., 2009; Grove & Pugh; 2015; Pugh & Grove, 2017). We see this played out in the relational and archipelagic turns to date; for example, in Hayward’s aquapelago. As concern about the changing environment has gathered apace, these debates have not only importantly reflected but have also sought to better incorporate and keep track of rapidly changing global conditions. Yet, whereas these developments have tended to forward an ethics of ecophilosophical embeddness, for Morton (2013, p. 181) it is the vast multidimensionalities of Anthropocene which have finally removed “humans from the center of their conceptual world.” Indeed, realising that all islands today already exist within the multidimensional forces of global warming, means that even as we embed ourselves down in the affective materialities of local fluxes and flows, higher dimensions of nonlocality now increasingly force their way into our consciousness. Global warming is thus not only about being in the midst of a disorientating environmental crisis in time and space, but also about this profoundly disorientating corrosion of time and space as well (Danowski & De Castro, 2017, p. 18). Psychological space has become more coextensive with ecological space in the Anthropocene; not only in terms of the collapse of
modernity’s nature/culture binary foregrounded by previous relational thinking, but also in terms of how the multidimensional forces of the Anthropocene accentuate a before, beyond and beneath the human presence and other modes of sensing relation (Clark & Yusoff, 2017; Chakrabarty, 2009; Danowski & De Castro, 2017; Stengers, 2015).

In 1784 James Watt invented the steam engine and from then on “carbon from coal-fired industries began to be deposited worldwide” with resulting global warming (Morton, 2013, p. 4). In 1945 the first nuclear bomb was exploded in New Mexico, and since then there have been at least “2,056 nuclear test explosions” (Arms Control Association, 2017), “with attendant worldwide fallout easily identifiable in the chemostratigraphic record” (Zalasiewicz et al., 2015, p. 197). These global and boundary-disrespecting phenomena, which play out through vast, multiple, spatiotemporal dimensions, require new ways of thinking through relationality and islands. We actually already glimpse this coming shift in the inspirational work of one of the seminal thinkers for island studies to date: Édouard Glissant’s (1997a) *Poetics of Relation*. Towards the end of Glissant’s massively influential book the tone begins to shift from the more explicitly Deleuzian-inspired concerns of the earlier chapters, to the latter parts when Glissant (1997a, p. 203) explicitly says “the circle [of Relation] opens up once more, at the same time that it builds in volume.” Here reflecting upon the fallout of the nuclear plume from Chernobyl, Glissant (1997a, p. 203), explains:

> What was the infinite detour taken by this nuclear catastrophe, whose worldwide repercussions were felt among the destitute as well as among the well-to-do, in savanna villages, probably, just as much as in skyscrapers, and which consequently fed the most passively experienced commonplaces in the planetary consciousness, that led it also to be condensed into what seemed to be an involuntary poem, through which it happened that the world could speak to us?

This paragraph is not easily understood through the tropes of rhizomic relations, (de)territorialisations, mobilities, new materialism, networks and assemblages that have dominated debate to date. It is instead more explicitly about the *afterprint* of the nuclear plume, and therefore better framed and ontologised in terms of *phasing within* vast multidimensional forces beyond our grasp. Humans and non-humans within these zones of relation on a small island would be dealing with the local imprint of the totality of this nuclear plume, playing out through trillions of temporal, as well as spatial, dimensions: some immediate, others lasting thousands of years. Like global warming, they would be dealing with their phasing within what Morton (2013) calls ‘hyperobjects’ of massive proportions. By the end of the *Poetics of Relation*, Glissant’s (1997a, p. 203) approach starts to “open up” into this new tone; and, I contend, hints productively at some new stakes for island and archipelagic studies.

**Islands in the Anthropocene: island ontology and islands phasing within vastly interweaving temporalities**

As noted, to date the relational and archipelagic turns in island studies have done much to complement socio-geographical thinking about how ‘place’ is not merely a backdrop or container, but rather constructed out of dynamically interweaving *spatial* relations (Pugh, 2013a). But although this means that the *spatial* has been interrogated to a great extent, and in particular how space-time is colonialized by imperialist narratives, we have given less attention to *time* itself. When we do think about time, we tend to focus upon how islands have changed over history, or how island histories, “like maps,” “name, order, and confer meanings to space” (Okihiro, 2010, p. 745). We do not tend to situate the island itself within
multiple unfolding temporalities, extending island ontology into these vast multidimensional relations too; a concern which the Anthropocene now brings to the fore.

The Anthropocene forces us to think big because its violence does not unfold all at once, but rather through massively interweaving temporal dimensions—some extremely slow and taking place over hundreds of millennia, others having a much more sudden impact and violence (Morton, 2013). Global warming, for example, humbles islands within different overlapping temporalities—from the extractive capitalism which pumps CO₂ into the atmosphere and is rapidly changing the global climate, to the thousands of years it takes carbon emissions to dissolve in the oceans, to the immediate violence of hurricanes. Global warming puts oceans and islands into new phases that may be smoother temporal transitions for some entities than others. Some will adjust and thrive, others will survive less well over time, or completely die out. Indeed, if we could somehow stand back far enough, outside of space and time itself, we would see global warming as this weird multidimensional object unfolding through trillions of interweaving temporalities (Morton, 2013). Global warming is an enormous hyperobject which is transforming the planet not only because it spreads spatially, but also because it unfolds through these many different temporal dimensions as well (Morton, 2013).

A concern with interweaving temporalities is invoked by island studies scholars, such as Fleury and Raoulx’s (2017, pp. 7-8) recent paper on Mont Saint-Michel Bay, north-western France:

In physical-material terms, the landscape of this area has changed during different periods due to the opposing processes of sedimentation and erosion. At the end of the last Ice Age, the rise of sea levels led to processes of submergence, shaping islands and islets of various sizes from high areas of otherwise inundated land. The present day island of Guernsey was isolated around 7000 B.C (Patton, 1995), followed by the other Channel Islands; Jersey, the largest one, being the last to be detached from the continental mainland, around 4000 B.C. (Cunliffe, 1995). Closer to the continent, islets, rocks and reefs follow each other until they reach the three small rocky islands dominating the bottom corner of the Gulf: Mont Saint-Michel (originally named Mont Tombe), Tombelaine and Mont-Dol […] At the opposite of the time scale, a twice-a-day tidal movement that is amongst the highest in the world brings sedimentary deposits that have gradually filled the bay. As a result, the bay is also known for both the speed of its tidal flows and the quicksands. The erratic course of the three rivers flowing into the bay, the Couesnon, Sée and Sélune, also contribute to shape an ever-changing landscape of water and sand.

This passage usefully illustrates how multiple temporalities unfold to shape island geographies. The Anthropocene encourages this kind of thinking, but it now also pushes, intensifies and reorientates thinking about relationality and islands in new ways too. Being on an island is about experiencing the various phases of the sun, moon, tides, oceans and stars, rising sea levels, sedimentary deposits, and rivers. But today, as I now discuss, the crisis of the Anthropocene much more obviously brings our attention to many other multidimensional forces, and how islands phase within the interweaving temporalities of a transforming planet.

“Rippling with time,” trillions of entities come into zones of relation on an island and “tease other objects into their sphere of influence” (Morton, 2013, p. 63). There is the deep time of the stars and constellations observed from the island hundreds of thousands of light years away as these are mediated by the energies of urban light pollution. There is the non-linear time of global climate change brought about by the earth’s ellipsis around the sun and massive global carbon emissions, as these phase into relation with complex island ecosystems that also blur neat binaries of humans/nature. There is the slow decompositional time of carbon decomposing in the oceans surrounding the island, coming from from extractive capitalist
industries on the island itself and elsewhere. There are the sudden violent times of El Niño events, monsoons or hurricanes, perhaps immediately hitting this island itself, or elsewhere in the globe, but which nevertheless impacts upon the temporal rythms of an island’s economic, social and cultural systems.

Taken into high enough dimensions then, this all suggests that the island in its totality can now be framed as something like a total “phase space,” which “is the set of all the possible states of a system” (Morton, 2013, p. 71). All entities only ever glimpse patches of this total phase space in their brief existence, whilst the vast totality of island relation is withdrawn; simultaneously exerting a downward pressure upon entities as they phase into relation. We hear the island in the trees, oceans, rocks, surfaces, oceans, etc.; but there is also this humbling ontological “rift” between the totality of island relation and us (Morton, 2012, p. 236). Only certain phases of island time will be observed by humans, just as only certain unfolding temporalities will be experienced by turtles, rock, crabs, or internet cables. Ontologically, it is precisely this intimacy of phasing into certain zones of relation, and not others, which makes the island itself—as a total ‘object’—impossible to grasp in its totality. It is our “phenomenological enmeshment in zones, [which] is the very thing that prevents me from grasping the zone as solid and predictable” (Morton, 2013, p. 144). Like the imprinted footsteps on a beach washed away by the tide, what we call the island present is a shifting, ambiguous phasing within a totality beyond our grasp (Morton, 2013).

Reconfiguring relationality and islands in these terms of phasing within relation means that the island is not only deviant from the grasping categories of modernity because it can be understood through more-than-human assemblages, actor-network theory or new materialism (Morton, 2016). Ontologically, the island as a total object is also deviant precisely because phasing and acclimatising to relation “means to approach, then diminish, from a certain fullness,” the totality of which is nevertheless withdrawn (Morton, 2013, p. 74). Today, the changing stakes of the Anthropocene encourage us to frame relationality and islands in these new terms of phasing within relation and in terms of how entities that are massively distributed in time, like global warming, nuclear plumes and hurricanes, exert downward pressure on short-lived entities, causing interference patterns where entities get caught up in intersecting temporalities (Glissant, 1997a; Morton, 2013).

Reconsidering island ontology, edges and boundaries

Here we start to move from the general shifting tone of this paper towards a more precise island ontology. The perennial question of island boundaries and edges in particular will never be far from island studies scholars minds, as we reorientate the stakes of island studies in the Anthropocene. Today in island studies there is much debate concerning whether island edges are ‘fluid’ or ‘fixed’ (Hay, 2006; 2016; Stratford et al., 2011; Hayward, 2012b; Pugh, 2013). ‘Fluid’ can seem more generous, progressive and disruptive of static island geography. Whilst ‘fixed’ can give a heightened sense of phenomenological experience (Hay, 2006; 2016). Thinking about islands in terms of multiple, unfolding temporalities and the richness of relationality in the Anthropocene raises some new questions for island ontology too. In further elaborating these here it is useful to briefly employ examples redolent of fractal theory which are familiar to island studies scholars:

The bay, when examined within a closer frame, is shown to contain many subbays, and each subbay, when examined within a still closer frame, contains many sub-subbays, and the sub-subbays further resolve into a sub-sub-subbays in an infinite regress of recursively smaller analytic frames (Roberts & Stephens, 2017, p. 26).
And again, from Morton (2016, pp. 71-72):

If you look at the coastline of an island from space, you will see something fairly regular—perhaps it’s rather triangular. When you look close up, say from a hang glider, you will see all kinds of curves and folds that you didn’t see from space. And when you crawl around the surface of the coastline as an ant about three millimeters long, you will find something very different again—not just impressionistically different, but extensionally different: the circumference will be a different length. Indeed there may be circumstances—ways of measuring that island—that cause its circumference to be infinite. This is rather like what happens when you examine something like a Koch Curve, the fractal shape in which triangles are populated with smaller versions of themselves to infinity. One ends up with a shape that is bounded yet infinite.

I am interested in these two quotes because they also engage island ontology in a different way from the dominant relational and archipelagic turns in island studies to date, and help us further clarify the stakes of this paper. In a different way from new materialism, mobilities, assemblage and actor–network theory–inspired debates, the above two quotes concerning bays and fractals also tell us that relationality is too rich, too intense, to grasp in the way of modern frameworks of reasoning; but this time precisely because of the ontological withdrawnness of the island itself (Morton, 2013; 2016). Islands are reconfigured as ‘TARDIS’-like (Morton, 2016, p. 71), containing more on the ‘inside’ than the outside. Islands are ‘hyperobjective spaces’ (Roberts & Stephens, 2017, p. 24; Morton, 2016), where the totality of the island as an object is greater than anything which can be experienced phenomenologically. The key take home point in terms of island ontology involves the humbling ontological rift, which cannot be located anywhere in ontically given space-time, and which reflects the gap between the island in its totality, on the one hand, and the intimacies of interweaving zones of relation on the other (Morton, 2016). Indeed, the above examples of fractal geometry tell us this precisely—there are bays within bays, which exist all the way down to infinity, and we cannot grasp this by reference to phenomenological experience alone. We come to realise that there really is a before, beneath and beyond to sensing island relation that remains fundamentally and ontologically withdrawn. We see that the island not only exceeds through the excesses of networked relations, mobilities, and vibrant materialities, but also at this other fundamental level of island ontology too.

Whilst such debates might seem detached from the crisis of the Anthropocene, it is important to stress that they are not mere philosophical musings. Agree with Morton, or not, as Blasdel (2017) says, Morton does capture something of the affective pull of the Anthropocene—that sense of all life now existing within multidimensional relations which are simply beyond our grasp; something which, as just explained, has important implications for island ontology.

Here, very much explicitly tied up into all this sense of relation existing before, beneath and beyond, are the rapidly developing transformative logics concerned with how we sense island relations and hyperobjects like global warming in the Anthropocene. As Morton (2013, p. 140) says, “the fact that we need devices such as computers and Geiger counters to see hyperobjects that will define our future, is humbling in the same way Copernicus and Galileo brought humans down to earth by insisting that the universe was not rotating around us.” We are now living at a time when there is a massive interest in extending beyond and into the richness of relationality in the Anthropocene in new ways, and through different modes of sensing: from the transformative logics of climate change big data, ‘real-time’ computer modelling, and newly emergent algorithms, to hundreds of orbiting satellites circulating around the planet, contemporary social media, and a growing incorporation of indigenous
island communities’ frameworks of reasoning into resilience paradigms, to name but a few prominent examples. From many quarters, there is this increasing realisation that sensing relation in the way of the old moderns is not enough, and precisely because relationality in the Anthropocene is beyond their grasp.

Sensing island relationalities in the Anthropocene: the changing stakes of digital revolutions and data machines

Recent years have seen a more obvious proliferating interest in the transformative logics of all sorts of data processes and sensing techniques that both grapple with and rework the unfolding temporalities of the Anthropocene. They have also, however, increasingly seen books with titles like *The Vast Machine* (Edwards, 2010) and *The Stack* (Bratton, 2016). In *The Stack*, Benjamin Bratton (2016, p. 5) examines how our planet is being slowly transformed by an “accidental megastructure” which has evolved through massive collections of data and governance; from the data collected through island colonialism, the expeditions of Wallace and Darwin, to Google, iPhones, climate science big data, social media, spatial data mining, algorithms, and the material production of the infrastructures necessary to sustain and generate them. “These technologies align, layer by layer, into something like a vast, if also incomplete, pervasive if also irregular, software and hardware Stack” (Bratton, 2016, p. 5). *The Stack* is therefore beyond older tropes of globalisation and more firmly implicated in debates about the Anthropocene. For example, further teasing together spheres of relation and reconfiguring island temporalities in the Anthropocene are the sensing techniques of hundreds of orbiting satellites, GPS systems, and climate change big data, perhaps also drones, algorithms, and Twitter feeds, and so forth. The temporal rhythms of island life are generated as these phase into zones of relation—algorithms associated with climate change time the island in one way; nuclear plumes and big data on degrading carbon and sea level rises time the island in other ways too.

This means that *The Stack* is not only calculative; it is geological, sociological, economic, chemical and geopolitical. As an article in *The Guardian* reads “if you own a mobile, it’s probably held together by tin from the Indonesian island of Bangka” (Hodal, 2017). But even if islands are not directly involved in new data production processes, in the Anthropocene it is increasingly difficult to undertake island studies in complete isolation from them. Not only does the rise of digital technology demand massive energy use and therefore directly contribute to the changing conditions of the Anthropocene within which islands are implicated, but the transformative logics of digital technology today are playing a key role in how islands and relationality, and the unfolding temporalities of the Anthropocene, are reworked, understood and engaged.

In Jakarta, called by some ‘the city of the Anthropocene’, the NGO Peta Jakarta now employs social media and Twitter to develop sophisticated real-time flood mapping for the city (Chandler, 2017, p. 113; Peta Jakarta, 2018). Today, “approximately 60 per cent of Pacific Islanders now have access to a mobile phone and this figure continues to climb” and with “growing social media presence in the region, Facebook and, to some degree, Twitter have become sources of information for journalists during natural disasters” (Papoutsaki et al., 2016). In the Caribbean, particularly post-2017 hurricane devastation, the use of big data analytics is now often seen as key to dealing with increased and intensified hurricanes (Whyte, 2017). Some of these developments will challenge the idea of islanders as “passive recipients of telecommunication technologies and its development” whilst others will raise questions of how data mining takes place, who controls and operates data, and how its transformative logics play out in different island geopolitical, sociological and economic contexts (Hayakawa, 2016, p. 179). “Today synthetic computation expands what is sensed, measured, calculated, communicated, stored and worked on” (Bratton, 2016, p. 88). Digital technologies from
bitcoin in the Cayman Islands, to the selling of internet domains on Tuvalu, implicate islands in new digital processes. But even where they do not, the multiple, interweaving and contesting transformative logics of digital revolutions play an increasingly important role in measuring, sensing and reframing the island in the Anthropocene.

Famously, for Virilio, the world has become a tragic consequence of its appearance in digital images of itself (Depardon & Virilio, 2008). We are all being reduced, shrunken and eaten up by digitised time. But, in practice, island studies scholars now need to do more to unpack the contextual nuances of contemporary digital revolutions and their transformative logics as these pertain to different island contexts. As Springer et al. (2017) say in Reverse Hallucinations in the Archipelago, an innovative text which I believe will become seminal for island studies, we cannot ignore such debates. These authors rightly argue for the “relevance” of the Stack “for a contemporary consideration of the concept of the island as such”:

Bratton’s layer of address within the Stack identifies various means by which data (and their socio-spatial consequences) are measured and classified as a means for their governance. Contrary to popular belief in a free and fluid internet, legibility-cum-addressability is even more consequential as the morphology of sovereignty increasingly exhibits dematerializations, virtualizations, physical assertions, and material instantiations, that is, as politics are simultaneously rendered through a transformative logic of software (Springer et al., 2017, p. 18).

The confines of a journal article do not permit detailed discussion here, but the salient point is that even as islands exist within the Anthropocene in different ways, today islands are measured, captured and sensed by a proliferating range of software and data machines and associated transformative logics—from big data stored by companies often thousands of miles away from the island itself, to Twitter and social media, and the incorporation of indigenous islanders’ frameworks of reasoning into large international development programmes. These cannot be separated from experience of the Anthropocene and associated concerns with the extension and intensification of relationality as such. Building upon legacies of colonialism and island histories, some of the data processes which feed into our understanding of islands today are much older than others, and they often work in tension with each other; but, to a greater or lesser extent, they come into zones of relation which frame island life and the vastly interweaving spatiotemporalities of the Anthropocene.

Relationality and island resilience ethics in the Anthropocene

The proliferation of new sensing techniques is of importance to island studies in the Anthropocene. The more we realise that relationality is complex and interconnected, but also beyond our grasp in the way of the old moderns, the more we seem to open ourselves out to new and innovative ways of sensing relation. The waning confidence in modernity is today both accompanied and stimulated by a proliferation of new approaches: complex big data and algorithms associated with climate change, new techniques for mapping the complexity of ecological systems, but also a particular growing interest in ‘non-modern’ and ‘indigenous’ ways of sensing the environment and relation (see below). As the island ecologist Beatte Ratter (2012, p. 83) saliently notes, today the focus in island ecology is changing “from linear development to non-linear behaviour.” This is necessary, as we come to realise that older modern frameworks of reasoning are no longer up to the task of grasping the sheer complexity of relation in the Anthropocene (Mycoo, 2017). Indeed, this is also precisely what the growth of the ‘risk society’ means: the idea that relationality has become too rich, too intense, to control; so that even as complexity “corrodes our ability to make firm decisions in the
present,” we need to extend and diversify the range of measuring techniques, modes of computation and technologies (Morton, 2013, p. 140).

Such important developments further play out and through the changing nature of ethics in the Anthropocene; and in particular ‘resilience’ as a key trope in island studies today. A leading resilience scholar, Neil Adger (2000, p. 347), defines resilience as “the ability of groups or communities to cope with external stresses and disturbances as a result of social, political and environmental change.” It is due to their specific perceived vulnerabilities, including small size, isolation and limited resources, that over the 1980s and 1990s the acronym SIDS (Small Island Developing States) emerged as emblematic of the need for these resilience debates more generally. Only a year after Time Magazine heralded ‘resilience’ as the new buzzword for our times, the United Nations designated 2014 as the ‘international year’ of SIDS. More recent years have seen the relationship between resilience and islands gathering pace. In 2017, the Presidency of the United Nations Climate Change Conference, where resilience discourses are prominent, was not held by the USA or UK, but by Fiji.

Today, one reflection of the limits of late modernism in the Anthropocene is the increasing emphasis on ‘non-modern’ and ‘indigenous’ knowledge in island resilience debates. A celebration of indigeneity is reflected in international policy in the work of the Intergovernmental Panel on Climate Change (IPCC) where islands figure particularly prominently. Indigenous knowledge was acknowledged in the Fourth Assessment Report as “an invaluable basis for developing adaptation and natural resource management strategies in response to environmental and other forms of change” (Parry et al., 2007, 15.6.1). Recognition was included as a guiding principle for the Cancun Adaptation Framework adopted at the 2010 United Nations Framework Convention on Climate Change Conference (UNFCCC, 2010). The IPCC’s Working Group II contribution to the Fifth Assessment Report also includes local and traditional knowledge as distinct topics within Chapter 12 on human security (Nakashima et al., 2012). As Chandler and Reid (2018, pp. 9–10) summarise the shifting stakes:

The reason why indigenous ways of being are feted is for the specific attributes of coping with natural or environmental problems, which are seen to evade the grasp of modern science and technology. When nature was seen as a passive object open to modernist understanding and appropriate, indigenous ways of being were seen to lack history and agency. Today, the tables are turned … The collapse of the nature/culture divide and the focus on the previously ignored liveliness, power and agency of natural forces, previously thought to be passive, innate and lacking in agency, has transformed the understanding of indigeneity. The indigenous are the anthropocenalogists of non-modern ontology; they can teach the moderns how to see the non-human differently.

Yet, as Elizebeth Povinelli (2016, p. 56) now rightly cautions, this more generally reflects how today’s understanding of indigenous knowledge reduces indigenous analytics to local or cultural knowledge of relations, extending the sphere of being at home in the world, enabling late liberal governmentality to “saturate Being with familiar and reassuring qualities.” Here, the island itself is never given its due, never appreciated in all its rich, vast, multiplicity and potentiality noted above, but is instead flattened and reduced. Keeping this firmly within island studies, I maintain that it is important to never stray too far from Pete Hay’s (2006) seminal Island Studies Journal paper on phenomenology and islands. For all the above discussions that might lead readers to conclude otherwise, I nevertheless feel Hay is always a key point of reference; because he constantly provokes us on the point of distinctive island experiences (see also Baldacchino, 2006; Pugh, 2016; 2017). By contrast, today far too much contemporary resilience literature paints a reductive and romanticised picture of islands and
islanders as somehow ‘naturally attuned’ to the complex and unpredictable forces of the Anthropocene. Nadarajah and Grydehøj (2016, p. 437) have called “for an island studies perspective on decolonization.” Today, similarly, there is a need for a more nuanced island studies’ perspective concerning the figure of the island in the Anthropocene.

When we consider the longer history of island studies, something rather odd, and perhaps unintentional, is happening to the figure of the island in the Anthropocene. As island scholars know only too well, the island has often been something of a placeholder for wider Western projections and anxieties (Gillis, 2004, p. 1). Indeed, as Luo and Grydehøj (2017) say, island romanticisation is not just a ‘Western’ phenomenon, although it may be a phenomenon associated with certain large continental perspectives more generally. Our times of global environmental insecurity are no different. In the Anthropocene, the island and indigenous island community is once again being “naturalized” (Papetti, 2017); but this time by being saturated with vulnerability, adaptation and resilience ethics. Islanders are of course often resilient, but resilience ethics can also become a way of externalising the problem of the Anthropocene onto island communities themselves. Resilience ethics tend to throw the violence of the Anthropocene back onto the island community, telling islanders that they need to draw upon their rich community resources in order to survive.

Debates about the hurricane-ravaged Caribbean in 2017 demonstrated time again how reducing islands to ‘resilience’ can be a rather impoverished political horizon for island life. As a New York Times article by Giusti-Cordero (2017) says, ‘In Puerto Rico, we invented resilience’. Through slavery, oppression and capitalist exploitation, these islands had little choice. But being merely resilient also offers little transformative weight when it comes to the massive political might of the industrially polluting nations of the world in the Anthropocene, and the violence of international capitalist exploitation that prevents islands from recovering effectively from environmental disasters (Kelman, 2014; Papetti, 2017; Pugh, 2005; 2013b; 2017; Reid, 2017). Indeed, there is now one particularly famous quote which appeared on placards scattered around New Orleans after Hurricane Katrina, attributed to Tracie Washington of the Louisiana Justice Institute, which said: “Stop calling me resilient. Because every time you say, ‘Oh, they’re resilient’ that means you can do something else to me” (Nola Defender, 2017).

As Papetti (2017) says about Pacific islands:

In order to go at the root causes of climate change we have to analyze the sociopolitical and economic dynamics generating global warming. The threats to the Pacific Islands populations are the consequences of centuries of competition, striving for surplus value extraction and profit maximization: in one word, centuries of capitalism. In fact, it is not only the resource (fossil fuel) in itself that increases the earth temperature, but the fact that it has been (over)used by capitalist societies as primary source of energy in order to subdue both nature and humans.

Ilan Kelman (2014, p. 120) similarly asks the salient question: “are SIDS an example of climate change’s rhetoric detracting from dealing with wider development problems?” Is focusing upon climate change deflecting attention “away from underlying political conditions of vulnerability towards the nature of the physical hazard itself?” (Kelman, 2014, p. 120; see also Baldacchino, 2017; Powell et al., 2014; Pugh, 2017).

On the one hand, perhaps it is somewhat inevitable that whilst today there are many critiques of resilience, these nevertheless still tend to stick with resilience itself as a key trope to be recovered, rescued and kept in play. As explained above, the conditions of the Anthropocene foreground how islands exist within vast, complex, multidimensional relations: capitalist, environmental, social, political, geopolitical and otherwise. Yet, on the other hand, given all this rich complexity and potentiality, it is also rather strange that the trope of
resilience remains so dominant; and that often islands continue to be objectified, even romanticised, through it.

We are all humbled by the Anthropocene; but ‘resilience’ is not the only logical response or political horizon.

Here then, we island studies scholars have an important role to play; expanding debate creatively beyond what are still too narrow dominant tropes of island life in the Anthropocene. A key concern would be how island studies scholars can work more closely with broader international island networks, extending debate beyond what have become rather reductive tropes of island vulnerability, adaptation and resilience into new political horizons for island networks, which today often span many islands and archipelagos. There is much to be made of these networks. One understands that buzzwords are where the funds and money can be found. But in sticking with confined frameworks of reasoning and impoverished politics, we are also closing down the loop of debate for islands across the globe in the Anthropocene; rather than opening up the range of possibilities of these burgeoning island networks into something more potentially expansive.

Conclusion: the shifting stakes of island studies in the Anthropocene

We are now living at a time that is variously called the Anthropocene, where the character of phenomena like global warming place all life within profoundly asymmetrical and humbling situations. The Anthropocene puts islands and archipelagos much more obviously within vastly interweaving multidimensional relations, even as these manifest in locally contingent ways on and within different islands. Variously focusing upon the multiple temporalities of the Anthropocene, island ontology, the transformative logics of new sensing techniques and data machines, and the figure of the indigenous islander, this paper has engaged the wider theme of islands and relationality in the Anthropocene. The aim has been to build positively upon the relational and archipelagic turns in island studies to date, whilst reorientating relationality and islands in new ways. I have also sought, perhaps more controversially, to critique resilient ethics associated with islands in the Anthropocene, and in particular to trouble how these work to reduce the figure of the island and indigenous subject. The island has become arguably one of the most emblematic figures of the Anthropocene. It is regularly invoked as not only exemplary to the changing stakes of our planet, but of new resilience ethics as well. Island studies scholars are in a good position to engage the theme of relationality and islands in the Anthropocene; to question, trouble and revisit some fundamental debates.

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Gendered consequences of mobility for adaptation in small island developing states: case studies from Maafushi and Kudafari in the Maldives

Phu Doma Lama
Division of Risk Management and Societal Safety, LTH, Lund University, Sweden

ABSTRACT: In recent years island communities have actively adapted in response to a complex combination of changes that has shaped life on the islands, and this has had gendered consequences. The gender ramifications of adaptation on islands are still largely neglected in adaptation policies, although they are increasingly being addressed in the scientific literature. Understanding gendered consequences is indispensable for a critical comprehension of adaptation on islands. It would help avoid the formulation of adaptation policies that tend to focus only on technical problems and solutions. Such solutions potentially run the risk of reducing island problems to only biophysical issues such as sea level rise or problems attributed to the size and isolation of the islands. This paper investigates the consequences of adaptation for the mobility of both women and men on two islands in the Maldives, a small island developing state (SIDS) that has experienced unprecedented changes in recent decades. The focus on mobility stems from the fact that it forms an integral social and cultural part of island life. Although gender and mobility are intrinsically linked, the gendered consequences of adaptation for mobility are understudied. This study used qualitative interviews to collect narratives. The results show that the adaptation interviewees describe from their living memory has only exacerbated gender inequality by influencing the mobility of men and women in different ways.

Keywords: adaptation, gender, mobility, Maldives, small island developing states (SIDS)

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Introduction

Islands have long been objects of fascination aesthetically, in literature, and in academic scholarship (Baldacchino, 2004; King, 1993; McCall, 1994). The rise in global cultural interaction has further increased this fascination and has opportunities in some cases provided islands with (Lockwood, 2004). Contrary to the view that holds that globalization has a homogenizing effect, local-global interactions often create heterogeneity (Appadurai, 1996). This heterogeneity is a product of local-global interactions and local responses to it, albeit on an unequal basis (Pieterse, 1994).

Globalization discourses focusing mostly on the internationalization of the capitalist economy could disguise the role of power and its cultural and ideological influence and create generalizing discourses, including discourses on gender (Chowdhry & Nair, 2004; Mohanty, 1988). For instance, discourses on adaptation on islands that focus on their isolation and geography sometimes end up disguising the historical and cultural experiences of global changes and perniciously shift focus away from pressing issues in the adaptation process (Farbotko, 2005; Kelman, 2014). This is not to disregard the importance of understanding the vulnerabilities and risk stemming from island geography. However, such discourses give
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primacy to islands’ smallness and geographical isolation in understanding the risks and vulnerabilities to which islands must adapt. Understanding adaptation only from a vantage point of geography rather than island lives enmeshed in power relations might depoliticize adaptation and its consequences and disguise gender issues. This could ultimately generalize women in the global south, as often occurs in discussions that showcase women either as ‘virtuous’ in saving the environment or ‘vulnerable’ due to poverty (Arora-Jonsson, 2010). Such generalization can be reinforced by a lack of “critical analysis of the social inequalities and hierarchies within and across islands” (Karides, 2017, p. 30).

The purpose of this paper is to contribute to a critical understanding of adaptation on islands by showing that the consequences of adaptation are gendered in an island context. More specifically, this paper describes the gendered consequences of adaptation for the mobility of men and women within an island context.

Mobility is an important adaptive strategy (Kronlid & Grandin, 2014) that influences identities and the availability to and accessibility of opportunities (Felgentreff, 1999; Kitrinou & Mytilini, 2014). Furthermore, nature of certain island geographies may be such as to heighten the importance of mobility mechanisms and strategies (Alexander, 2015; Farbotko et al., 2016; Grydehøj & Hayward, 2014; Spilanis et al., 2012). This paper adopts a view of adaptation that involves “those processes by which a population attempts to achieve a working relationship with its environment” (Agnew, 1981, p. 106) in the broadest possible sense. Environment here refers not only to nature but also to the lived environment of the people involved. This lived environment is both social and natural, and its social and natural aspects are intertwined to such a degree as to be indivisible (Adger, 2006, p. 37). Human beings act within rather than on their environment (Taylor, 2015). Equally important to note is that the process of adaptation is politicized, so that power operates in the negotiation of interests and needs (Nightingale, 2017). The process of adaptation itself involves some form of change, which could be an adjustment or a transformation. However, what separates an adaptation from a change in general is that it has a motivational core (Thornton & Manasfi, 2010). The motivational core of the adaptation lies in the fact that it happens in response to some changing condition, stress, hazard, risk, or opportunity that people value (Smit & Wandel, 2006).

The Maldives has been adapting to a series of major economic changes with the spread of tourism, commercialization of fisheries, political changes in its quest for democracy, sea level rise, and social and cultural changes with the opening up of the economy. Adapting to these changes has had consequences. Using in-depth interviews conducted on two islands in the Maldives, namely Kudafari and Maafushi, this paper attempts to answer the research question: What consequences has adaptation had for the mobility of men and women in the two case studies? The Maldives makes an appropriate case due to the stated increase in gender inequality over the past ten years, despite a national commitment to mainstream gender in policies (May, 2016; UNDP, 2011).

In an attempt to answer the research question, I start by presenting the context in an effort to relate adaptation to the two islands. This is followed by a conceptual framework comprised of a detailed description of how concepts are used in the paper. Next, the methodology section provides a detailed description of the approach used for the study, including the methods for data collection and analysis. This is followed by a presentation of the key findings of the study, followed by a detailed discussion. I conclude by pointing out the key discussion points that reaffirm the need for a gender-focused approach to understanding adaptation in an island context.

Background to the study

Historically, the Maldives have witnessed a strong foreign influence due to the islands’ strategic position along the Indian Ocean trade route. These foreign influences have shaped
religious beliefs and have influenced the change of the administration of the country from a
sultanate to a constitutional monarchy (Phadnis & Luithui, 1981). In terms of religion, the
Maldives were Buddhist in ancient times, with Islam being introduced in the 12th century
by the Arabs (Phadnis & Luithui, 1981). After its independence from the United Kingdom
in 1965, the Maldives have undergone a major social and economic transformation, especially
since the economy opened to the outside in the 1970s (Fulu, 2004). Up to the 1980s, it was
one of the poorest countries in the world, characterized by a fishing-based economy. The
opening of the economy transformed both the tourism and fishing sectors, and this has had
its own implications. In the tourism sector, the Maldives followed a one-island-one-resort
policy. Tourism was restricted to resort islands where locals did not and still do not reside.
Under the rule of Maumoon Abdul Gayoom, in 1978, quality tourism projects were
introduced to respond to the problem of environmental degradation and mismanaged
tourism. This included a move to avoid “cultural pollution” (see Scheyvens, 2011, p. 152).
Tourism rules regarding ownership changed after 2008 when the new government allowed
tourism on islands inhabited by locals. This gave rise to guesthouse tourism, which allows
locals to construct and own guesthouses on these locally inhabited islands (Kundur, 2012).

When it comes to fishing, mechanized boats, canned wet fish, and fish-aggregating
devices were introduced to enhance the competitive edge of the fishing industry in terms of
export (Adam et al., 2003). Increased international trade and tourism had a multiplier effect,
leading to increased demand for imported goods (Maldives Human Development Report,
2014, pp. 23-24) and infrastructure development, especially transport.

Important to note here is that the transport and construction sectors are dominated by
men. Additionally, both the tourism and fishing sectors are male-dominated, and all means of
production, including fishing vessels, are owned by men (Asian Development Bank, 2014).
Women historically engaged in fish preparation and processing, but fishing itself has always
been a male-dominated activity. With the increased commercialization of fishing, the
activities that women previously carried out have substantially reduced (Fulu & Miedema,
2015, p. 435). Tourism contributed 79.4% of the Maldives GDP in 2016 (World Travel and
Tourism Council, 2017) and accounts for more than a fifth of employment (National Bureau
of Statistics IV, 2014). However, these employment opportunities have not benefited

Historically, the Maldives had a matrilineal tradition (Kulikov, 2003, p. 203). Female
sultans ruled the Maldives from time to time until the 16th century, but since then women
have increasingly assumed domestic roles (Faizal, 2005, p. 92). Democracy has come at a
price, with the country witnessing a rise in non-secular voices (Bonofer, 2014). The rise of
fundamentalism is recognized as hindering public participation, especially by women (UNDP,
2011). Studies have confirmed that religious norms act as a barrier that keeps Maldivian women
from participating in the tourist industry (Shakeela et al., 2010). The cultural norms in Maldives
link men to occupations that require them to go outside and work, while reproductive tasks,
such as childcare and household activities, are considered women’s domain (Asian Development
Bank, 2014, p. 5). The unemployment rate among women is twice that of men (Asian
Development Bank, 2014). The number of Maldivian women who hold jobs that involve
decision-making is extremely low. There was a ban on women holding the office of president
until 2008, with women holding around 5.6% of the total number of seats in the national
parliament, and women make up just 0.5% of atoll councillors and 5.1% of island councillors
(El-Horr & Pande, 2016, p. 27) with the country’s local and regional government system.

The population of the Maldives increased dramatically in the first half of the 20th century
but has been undergoing a decline since the 1970s. The country’s population was around
341,000 as of 2014. This includes a substantial number of immigrants, mainly from
Bangladesh, India, and Sri Lanka. Immigrants make up 16% of the population, and 88% of
immigrants are male labour migrants (May, 2016). The construction sector has been a major
employer of migrant labour (HDR, 2014). The increasing pace of urbanization combined with tourism has led to a population concentration on a few islands, especially in the capital city of Malé. This has led people to redesign spaces to accommodate the increased concentration of people with the result that people’s activities have become limited to the private spaces of homes (Fulu, 2014; Fulu & Miedema, 2015). Artificial islands are also being built to resettle populations under the Safer Island strategy (Maldives Human Development Report, 2014). Efforts to deal with sea level rise, with growing climate change concerns, have increased emphasis on construction efforts for coastal protection (NAPA, 2007).

Furthermore, the rapid pace of political and economic change in the Maldives has been marked by an increase in divisive politics and economic inequities that have had a negative effect on the social cohesion of communities (UNDP, 2014, p. 46, p. 58). For example, there has been an increase in gang and gender-based violence. This is linked to young drug users with high levels of unemployment and a lack of trust in the government (UNDP, 2014).

It is against this backdrop that I examine local consequences of adaptation. This evaluation goes beyond generalizing consequences as only economic and as devoid of gender.

Conceptual Framework

For the analysis reported in this paper, two conceptual discussions are relevant. First, gender is relevant for adaptation studies. Second, mobility is considered an important capability for adaptation and well-being.

Gender and adaptation

Literature on gender, especially on development and environment, has been accused of a tendency to generalize gender vulnerabilities and disregard context (Arora-Jonsson, 2011). With adaptation gaining currency with respect to global changes, especially in the context of islands, recognizing gendered adaptation supports the timely effort to contribute to a critical view of how change is experienced in island contexts (Karides, 2017). Feminist studies focusing on gendered experiences of island tourism (Momsen, 1994; Stonich et al., 2009), studies using the analytical lens of religion combined with tourism to understand women’s access and opportunities (Shakeela et al., 2010), and studies using an intersectional lens to understand gendered experiences of living on and being part of an island (Karides 2017) are all steps in the right direction. Understanding gendered consequences of adaptation to a complex combination of changes in shaping mobilities could further support such efforts.

In contrast to a binary male-female perspective, this paper views gender as a social construct, using the term ‘gender’ as described by Lorber (1991, p. 280) “as a process that creates social differences that define ‘man’ and ‘woman’ […] As part of a stratification system, gender ranks men above women […] As a structure gender divides work at home and economic production.” This paper acknowledges that multiple power intersections exist in society, including island subjectivities (Karides, 2017), and that ‘women’ do not represent a homogenous group (Mohanty, 1988) but that a discussion of each of these intersections requires further research.

Gender and mobility

Using mobility as an indicator of gender practices seems congruent with the current focus on critically understanding gender and adaptation. Mobility is a power-laden concept, as the mobility of some could restrict the mobility of others (Manderscheid, 2009; Urry, 2007). In other words, both the exercise or lack of exercise of mobility (as a capability, discussed below) could be indicators of inequality, and this represents gender in practice and helps in its construction (Uteng & Cresswell, 2008). This paper uses the expanded definition of ‘mobility’ used by Cresswell (2006, p. 3) as a “socially produced motion,” referring to mobility as a movement, going beyond the physical aspect to include the representation or symbolic
meaning of this movement (Cresswell, 2010). Mobility and immobility may not be merely concrete experiences (Silva, 2015). Lack of mobility could result in conditions characterized by insecurity and lack of opportunity to have experiences. Thus, it is important to acknowledge mobility as a concrete reality and to understand the subjective meanings and potentials it represents. Mobility can also be understood as a capability, defined by the opportunity to function and to lead a life that one values (Sen, 2005). In an island context, mobility plays an integral role in accessing livelihoods (Christensen & Gough, 2012) and has been considered as an adaptive strategy, influenced by cultural, religious, economic, and social factors (Stojanov et al., 2016).

Mobility to access livelihoods and deal with risks includes both the ability to be mobile and accessibility to the capacity. When accessibility and ability to be mobile are achieved, the potential for movement is unleashed (Kaufmann et al., 2004). Mobility can thus produce new meanings and representations of “progress, freedom or modernity” (Uteng & Cresswell, 2008, p. 1) and empowerment in the form of accessibility (Hashemi et al., 1996).

The present paper endorses this view and discusses three types of mobility and what they represent. The three types of mobility are 1) physical mobility (on the island, between islands, and on the open sea), 2) occupational mobility, and 3) existential mobility. Physical mobility represents not just physical movement but also the potential this creates for occupational and existential mobility. Occupational mobility (intergenerational or intragenerational) commonly refers to change in the work people do (Treiman, 2007), but also represents potential to be socially mobile (Lipset & Bendix, 1992, pp. 1-8). The third type of mobility is existential mobility, which is described by Kronlid (2008) as “intrinsic capability” to “imagine and dread potential identities and future lives.” Existential mobility represents well-being as accessing and actualizing “a full range of experiential and behavioural possibilities” (Todres & Galvin, 2010, p. 3).

Methodology

A case study approach was deemed appropriate for this study as it provides the researcher with an opportunity to gain an in-depth understanding of a phenomenon (Noor, 2008; Yin, 1994) in its natural setting, which also makes it context aware (Walsham, 1995). A major challenge in a qualitative case study approach is identifying the boundary of the cases (Cresswell, 2007). This could easily lead to subjectivity on the side of the researcher (Patton, 1987). However, creativity requires subjectivity, and by exercising explicitness with regard to the criteria and rationale behind the selection of the cases, one can avoid being accused of unscrupulous subjectivity (Diefenbach, 2009, p. 891).

Two islands, Maafushi and Kudafari, were chosen for this study. The island of Kudafari lies in the Noonu atoll (Southern Milandhunmadulu), an atoll with a registered population of 453 people, 99 of whom are non-Maldivian (National Bureau of Statistics I, 2014, p. 33). The island of Maafushi lies in the Kaafu atoll (corresponding to the Malé atoll), with a registered population of 3025 people, of whom 419 are non-Maldivians (National Bureau of Statistics I, 2014, p. 43). Tourism has resulted in both internal and international in-migration. Interviews and personal observations revealed in-migration for work by Maldivians from other islands (mainly the Addu atoll, the southernmost islands of the Maldives) as well as foreigners. Most of these migrants are employed in the tourism industry as hotel managers, water sports instructors, or waiters at restaurants and hotels.

Maafushi was selected as it was the first island to allow guesthouse tourism. The encouragement of local tourism on the islands allowed for the operation of guesthouses by locals on the islands. The second case, Kudafari, was chosen due to its limited tourist influence. The choice of the two islands was influenced by situational constraints of time and resources, along with the availability of gatekeepers. The fieldwork was carried out in January and February 2016.
Understanding the lived realities of community members is important for understanding change (Rigg, 2007; Wicks et al., 2008). Consequently, the empirical data was collected using two kinds of interviews, namely unstructured in-depth interviews and semi-structured key informant interviews. The interviews were conducted with the help of research assistants who live on the island and have better knowledge of the local contexts. They acted as interpreters during interviews conducted in the Divehi language. They also acted as gatekeepers to provide entry into the community as they live on the island themselves. They played a key role in the selection of some of the respondents, which was influenced by the availability and willingness of respondents. In this way, the research assistants played a major role in the co-production of knowledge about the islands. Trust was built by having discussions before the interviews to clearly state the objectives of the research, and following up the interviews with another discussion. This process helped reduce selection bias.

The combination of two ways of interviewing helped to confirm and elaborate upon issues that emerged during interviews. In-depth interviews allowed the researcher to get a glimpse of the lived reality and to collect detailed information about the issues that the interviewee narrated (Legard et al., 2003). The key informant interviews helped the respondents narrate their experience of the changes taking place on the island. They also proved useful for bringing to light conflicting views on common subjects (John, 2001, p. 106) that could potentially be linked to gender. During unstructured in-depth interviews, questions were more general and emerged out of the interview itself. This helped cover a broad range of topics and at the same time get in-depth information on relevant ones. Key informant interviews were semi-structured in the sense that questions were framed more specifically to confirm and elicit new information on key issues that emerged from in-depth interviews with other respondents.

In-depth interviews were carried out with respondents of a mature age, most being over 50 years old. An older age group was selected as a sampling frame to gain insight into how islands and lives have changed over time. The key informants from the community, representatives of an NGO, and local government officials were subjected to semi-structured interviews.
Before the interviews, permission was requested after the purpose of the interview had been explained to the respondents. Only one of the interviewees requested anonymity. A special attempt was made to interview an equal number of male and female participants. This was done to help unearth what people value (Alkon, 2004) and to see gender differences (Beutel & Marini, 1995). Due to the qualitative nature of the study, a smaller sample size was deemed suitable (Anderson, 2010, p. 4). Furthermore, this decision was validated when the information that emerged from the interviews became repetitive after a certain number of interviews.

<table>
<thead>
<tr>
<th>Interview type</th>
<th>Maafushi</th>
<th>Kudafari</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>F</td>
<td>M</td>
<td>F</td>
</tr>
<tr>
<td>Unstructured in-depth</td>
<td>6</td>
<td>11</td>
<td>8</td>
</tr>
<tr>
<td>Semi-structured key informant</td>
<td>1</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>7</td>
<td>13</td>
<td>8</td>
</tr>
</tbody>
</table>

On Maafushi, a group discussion ensued, which was not intended in advance. It involved four men engaged in water sports work. Semi-structured key informants on Maafushi included the head of the women’s association and the island council head. On Kudafari, the key informants included a local NGO representative and the island council head. A group discussion also ensued on Kudafari while we were interviewing a female respondent as other women gathered in her house. In Malé, an Environmental Protection Agency representative and two members of Transparency International (NGO) were the key informants. The language barrier was a major limitation. Interpreting, translation of the interviews and the analysis of the data proved challenging. However, before and after every interview, a short discussion was conducted with the gatekeeper to better understand the context and content of the interview. The respondents provided a narrative of the past that included references to their childhood and youth without mentioning the exact timeline. Considering the age of the respondents, many events referred to could date back more than ten years. On several occasions, it was difficult to conduct single-person interviews as the older people are usually found in groups.

The interviews were conducted in Divehi (Maldivian language) and translated to English with the help of the research assistants. The transcribed interviews were then analysed using a coding technique. Initially, open codes were identified from the interview data. Next, categories were developed and named using these in vivo codes. Initially, there were 42 codes relevant to the study; some of these were subdivided as coding progressed. Comparative coding, annotations, and literature were used to inform the three types of mobility categories. NVIVO software was used for coding and categorization.

Findings

The following section describes the ways in which people on these islands have adjusted and responded to the changes they have experienced according to their living memory. The consequences that these adaptations have had for people’s mobility is concurrently discussed.

Physical mobility

Changes are observed in three types of physical mobility: mobility on the island, between islands, and on the open seas. In the past, women on Kudafari were more mobile on the island. Some of the changes to their physical mobility on the island can be linked to changes in the religious views on the islands. One of the female respondents mentioned that there used to be a special mosque that had been erected by women for their own use. At this mosque, women led the prayers. Women and men both mentioned the ease of visiting their
neighbours in the past. On Maafushi, both male and female respondents, expressed that there used to be no hesitation to physically move around the island.

There is a stark difference in the present-day mobility of men and women. The mosque dedicated to women is closed now, and there is a new mosque that is mostly visited by men. Only a few women visit during Eid celebrations. A change in the kind of Islam practiced was briefly mentioned as the reason for the closure of the mosque for women. It was not completely clear from the interviews why women stopped worshipping, but one of the respondents pointed to the strict form of Islam, which is different from the Islam practiced before, as the reason for restrictions on women in terms of visiting mosques and the way they women dress. Also related to religion, parts of Maafushi have been labelled as no-go areas for local, particularly the bikini beach area. The beach was constructed for tourists by the guesthouse owners. Women on the island protested but lost the legal battle in the court. As a compromise, a straw fence was built to demarcate the area as a no-go zone and to veil the activities of the foreign tourists. It is possible that women wish to avoid the beach area due to pressure from their husbands, but the interviews tended more towards the women having their own religious reservations about tourist culture.

On Kudafari, one of the respondents also pointed out the growing influence of religious conservativeness: “There’s a new kind of religion. They’re told they’ll burn in hell for not covering their heads […] The tsunami was considered a curse for their actions” (Male, 35, Kudafari). On one occasion, female research assistants refused to enter the premises of the tourist guesthouse where an interview was due to take place due to the aforementioned religious reservations. Men who live on Maafushi have always been mobile, but even they do not venture into the bikini beach area. However, Maldivian men from other islands who work with water sport activities operate very close to this area.

Looking into mobility between islands, the motivation for being mobile has always been related to livelihoods. In the past, women travelled between islands to collect materials to sell. Today, however, women from Kudafari and Maafushi no longer make these trips, and very few collect materials from different islands. Household duties such as taking care of children, particularly with the commencement of formal education, were given as reasons for this decrease in movement. At the same time, the decline in the primacy of material collection activities as their source of income, provision of pension, and indirect benefits from the tourism industry in the form of remittances could also be potential reasons why women are less physically mobile. This can be inferred from the quotes below:

“Women used to collect shells, coir ropes (rope made of coconut husk), clean around the island for money. Now we don’t do much. The local council has people to clean and are paid to do it” (Female, 56, Kudafari).

“Women have to go look after their kids and be on time. They look after the children. This was because of formalization of schools. Men don’t do it. Women have to do it” (Female, 71, Kudafari).

In the case of men, fishing and selling processed products has always been a main reason to move between islands. There has been a rise in demand for commercial fishing with the rise in tourism and exports. Mechanized travel and changes in fishing methods with the use of bigger boats and fish-aggregating devices were some of the changes made to meet the demand. Illegal fishing and unsustainable fishing methods were noted as the primary reasons for the decline in fish stocks. Climate change was discussed as influencing nakait (the traditional weather calendar), rendering men unable to make weather predictions during fishing periods. This reduction in fish stock in the house reef (reef around the main island) and the reefs of nearby islands has compelled men to travel farther to distant islands and also
to move farther into the open seas. Longer distances mean more use of diesel and greater need to store catch, both of which are noted as proving difficult. Although the introduction of mechanized travel has helped ease travel, fishermen rely on resorts for their fuel supply.

“We didn’t have engines, we had sailing dhonis, so it took 2–3 months to travel, and it took a long time to bring in food items […]. Now we fish for yellowfin tuna in mechanized vessels in the night time, and we use lights to catch bait fish, 80–90 miles outside the atoll” (Male, 50, Maafushi).

“We used to get toddy from the coconut palm and get the drink which was sold on the island. I was in the timber business, so it was carpentry and then later fishing” (Male, 80, Kudafari).

Fishing today is terribly unsustainable […] fish-aggregating device is a big blunder […] International boats come and fish in Maldivian waters” (Male, 56, Kudafari).

Women do not engage in the activity of going to the open sea to fish. The decline in fish stock has not impacted their physical mobility directly, but rather indirectly, as it partly affects their occupational mobility as their participation in preparing fish has been affected.

Occupational mobility

In terms of occupation, interviews from both the islands reveal that women were engaged in diverse occupations in the past. Men, on the other hand, were mostly involved in fishing activities, carpentry and, sap collection (the sap of the coconut palm is used for making the local toddy, known in the Maldives as Ruku-raa). As mentioned earlier, women used to collect materials that they used for making products like cowry shells, coir ropes, thatch for roofing purposes, and coconuts for their husks and oil. In the past, these products, especially cowry shells, were in great demand (Maloney, 1980). On the island, women collected breadfruit, coconut, and firewood and were engaged in maintenance work.

“We used to get toddy from the coconut palm and get the drink which was sold on the island. I was in the timber business, so it was carpentry and then later fishing” (Male, 80, Kudafari)

Women used to clean the island until this became a remunerated occupation. Women on Kudafari were also key to the post-cholera clean-up of the island. On Maafushi, women cleaned streets and repaired dhonis (local boats used for fishing and carrying passengers and goods). In the past, agricultural activities like growing chillies, onions, and aubergine was also done by women. The quotes below reflect the gendered division of labour in the past and in the present:

“We grew chillies and sold coir ropes […] After having children; I stopped working” (Female, 65, Maafushi).

“We used to go fishing in the dhoni. They used wake up early in the morning and wake and collect food from there, rice, curry, and sugar. Everybody used to take their own food” (Male, 73, Maafushi).
Women on Kudafari are no longer engaged in multiple occupations. Tourism created more income-earning opportunities, but mostly off the island, which means that only men can access it. A few women still prepare snacks and make thatch with palm leaves, but on a small scale. This does not suggest that the employment situation on the island has become either better or worse for the men, but it suggests a shift in the types and number of employment opportunities available and accessible to women. In other words, women’s options for being occupationally mobile have become more limited.

In contrast to Kudafari, women on Maafushi now cook food for guest workers and do laundry, services started to cater to tourism needs. One of the female respondents has even converted a room in her house into a souvenir shop where she now sells hand-painted t-shirts and coconut shells, apart from working as a tutor teaching religious studies. The quotes below reveal the gendered division of labour in the tourism industry on Maafushi:

“Tourism has helped in development […] it is beneficial for the income. I have a shop that sells t-shirts and shells. I get more tourists now” (Female, 47, Maafushi).

“We do laundry, make snacks, and so now job opportunities are more” (Female, 63, Maafushi).

“Even if I have got a masters in management it’s difficult still to get a decent job […] Since I knew about the tourism, I got into this stuff, and so we got in couple of cousins” (Male, 26, Maafushi).

Maafushi also has a women’s association that offers courses in baking, sewing, and other topics, along with religious studies. This offers opportunities for starting home-based activities. The association mainly has two sources of income: the local pre-school operated by the association and rent from the land it leases. The association has a female president, who is also part of the local island council. Religious studies are the most popular courses provided by the association.

Men on the island of Maafushi cater to tourism directly by working at resort islands or in guesthouses. Observations at the local school and local island council office as well as interaction with the locals revealed that both men and women are employed, but the precise proportions could not be confirmed due to a lack of data.

**Existential mobility**

On both Maafushi and Kudafari, male and female respondents said that community bonds were stronger in the past than they are at present. Women described these communal bonds by referring to their group work when collecting materials. Women used to organize themselves in groups to divide the work of food preparation and material collection. When talking about their past activities, women described themselves as working and being involved in different sorts of manual labour, including the maintenance of the island.

Their narratives about their present situation reflected a different state of affairs. Women described the loss of this group work culture and expressed caution about working together, fearing conflict, as reflected in the quote below:

“Yes, before we could go from one house to another, we will share everything, our food, from one house to another. We had such a stronger and friendlier community spirit. Now all the women stay in the house, few talk to each other” (Female, 65, Maafushi).

While describing changes on the island, one of the respondents said: “So different now, we almost have no trees, it used to be wild forest before […] The island is empty now” (Female, 50, Maafushi). On Maafushi, women described tourism as creating opportunities,
but also as something that brings restrictions and a sense of loss. They expressed discomfort about moving freely on the island as they did before. This is reflected in the following quote: “Disadvantage is that they are wearing bikini [...] For local people, there is no place for picnic, we cannot go with families there” (Female, 28, Maafushi).

Male respondents who have had experiences of working at resorts described the restrictions that the work culture at the resorts imposes on their own work culture. They feel restricted to one part of the resort. The resort was compared to a jail-like environment, with limited holidays to visit their families. As a result, former staff members of the resorts on Maafushi had taken jobs in guesthouses. During a group discussion on the changing nature of work, one of the respondents was quick to point out that: “The pay is much better in resort. But compared to the work and freedom that we get here, we will choose here. Even if the pay is low, a happy staff will be happier” (Male, 33, Maafushi).

Despite the low pay, being employed at a guesthouse is favoured over the resorts due to a more favourable work culture. On Kudafari, two of the respondents had left their resort jobs to operate an environmental NGO, even though funds are intermittent. The guesthouse owners had a different take on tourism and described it as benefiting the economy of the island. One of the guesthouse owners even described the owners as “powerful” in providing jobs. Another guesthouse owner described the community as dependent on the guesthouses for income. The present state of power relations on Maafushi can be ascertained from the quotes below:

“Actually, in Maldives, rules and regulation do not allow this because people live on the island. Those who can invest in the local tourism, they can pressure the government. This is not good for the local island” (Male, 39, island council head, Maafushi).

“We bring the guest and money in, and they respect us and like us. Even the locals cannot say anything to us we are more powerful than them” (Male, 34, guest house manager, Maafushi).

Discussion

The findings and background information clearly indicate different mobility changes on the islands for men and women. The examples of mobility differences show that people have adapted to changes in circumstances that in many cases have been outside their control. This proves that a power interplay exists in the adaptation process that could influence gender practices in new ways (Kaufmann & Montulet, 2008; Sheller, 2008). The two case studies show inequality in the respondents’ capacity to access mobility. This inequality in capability is the result of a reduction in women’s physical mobility. This can be attributed to the creation of gendered physical spaces; reduced occupational mobility, with reduced diversity of job opportunities; and finally reduced existential mobility, with restriction in access to opportunities.

Gendered physical spaces were created with the development of stigmatized physical spaces, e.g. the area where the bikini beach is located or the women’s mosque where women went for prayers in the past. The development of stigma and resultant restrictions in women’s movement could be seen as a consequence of the creation of a kind of localism or glocalism (a synthesis between localism and globalism) (Robertson, 1995). However, this glocality does not imply empowerment of the local (Anthias, 2002). For example, the promotion of tourism caused Maafushi to be converted into a hub for guesthouse tourism, which involved the creation of physical spaces that do not benefit the locals, such as the bikini beach. Protests by locals did not stop the creation of the bikini beach; instead, the demarcation of the area was decided upon by representatives of the tourism industry and the island council. As noted from the findings, both these entities wield power when it comes to deciding access to areas on the island. Local women on Maafushi were sidelined even though they played an important role
in protests. There is a relationship between women’s ability to adapt economic change and the development of gendered spaces that affect mobility. These spaces result from the tension between maintaining the power of Maldivian community on the one hand and the promotion of tourism for income generation on the other. The effect this has on mobility represents domination and a form of violence (e.g. Bourgois, 2001).

In comparison with women, men, with a few exceptions, are more physically mobile. Men face no obvious restrictions to physical movement, except on the resort islands. Women, however, are discouraged from even going to or working at resorts, indicating the stigma attached to women working in tourism. Even the proportion of men migrating overseas is higher compared to women (UNICEF, 2013).

Men and women experience different kinds of occupational problems. The new constraints limit men’s occupational choices and mobility in a different and less severe when than they do women. However, although men are less restricted than the women, they too experience more occupational constraints than before. For instance, men who engage in fishing cited fuel and storage constraints as well as the depletion of baitfish resources as common problems. At the national level, the high unemployment rate among young men is attributed to a lack of suitable education and training (National Bureau of Statistics IV, 2014). In addition, the case studies reveal that political affiliation could influence access to employment opportunities. These problems are more related to existing resource constraints than to a lack of choice. Women, however, face constraints in both choices and resources. The tourism sector has failed to provide employees with childcare facilities, and social norms further restrict women from engaging in tourist-related activities, especially staying on resort islands (Shakeela et al., 2010, p. 67).

It can be argued that adaptation to opportunities created by tourism resulted in more job opportunities for men, providing them with more occupational choices, but that these same dynamics reduced occupational choices for women by indirectly forcing them to stay home and care for the household. This is confirmed by the decline in women’s labour force participation (May, 2016, p. 12), with twice as many women unemployed than men (May, 2016). Taking an example from Kudafari, women have stopped performing multiple livelihood activities and are instead engaged in making snacks, a less financially viable option, due to lack of market opportunities. This activity is only supplementary to the household income. Adaptation to change has not only created unfavourable gender roles but has also engrained the unequal gender division of labour (Huws, 2012).

Women are engaged in home-based work and constitute 90% of the informal sector. Government employment is 38% for women compared to 68% for men (UNDP, 2011). This is reflected on Maafushi, where women, including expatriates (mainly from Bangladesh), are engaged in the ‘low-ranking’ work of washing clothes as well as making and serving food, tasks considered unworthy of being performed by Maldivian men. This indicates limited job opportunities and constrained access to resources due to changes on the island, forcing women to undertake less profitable livelihood activities. It also reflects a loss of social network, as the group previously allowed them to build trust and community bonds. This culminates in involuntary mobility (Carling, 2002), with a restriction on freedom to physically move perpetuating social immobility (Kauffmann & Montulet, 2008:38; Kronlid, 2008), all of which reflects gendered inequalities of power (Silvey, 2000).

The limit imposed by social norms, such as restrictions on accessing tourism-based jobs, affect men less than women. In fact, despite constraints, ease of travel due to mechanization has allowed the men to be more mobile. This means men can travel to other islands for work (especially tourism) or farther out to sea to catch fish. This allows men to be both physically and occupationally more mobile than in the past. This faster transport service has its advantages but is privatized and costly, which poses a challenge in the event of medical emergencies. It potentially increases health risks for all, but especially women who need to travel during emergency situations, e.g. women facing complicated pregnancies (UNDP, 2011).
On an individual level, the outcome of this physical and occupational immobility for women could be interpreted as what Lems and Moderbacher (2016, p. 123) describe as a “feeling of being at a complete standstill” in the present. This condition, when compared to men, would translate into highly unequal mobility. Although men experience a feeling of being stuck in a jail-like an environment on the resort islands, their physical and occupational mobility allows them to have different experiences, which does not qualify them as existentially immobile. They are more mobile and also assert this mobility, in some cases causing immobility for others. The case of guesthouse owners asserting their power is exemplary of how the mobility of one person restricts the mobility of another.

Adaptation to a nexus of complex social, political, environmental, and economic changes results in the construction of place and identity over time (Olwig, 1999). The existential crisis for women can be seen in the changes in their identity from working to not working, from practising their religion to being good and obedient religious women, and a sense of loss related to belonging to the island. This is representative of a stagnant situation, in which women can no longer utilize their potential as they once did. Adaptation to new changes, particularly tourism, might have brought economic advancement for both men and women, but this does not necessarily imply gender equality. Economic advancement could prove regressive in strengthening gender inequalities (Kronlid, 2014, pp. 157-180). Adaptation to the changes brought about by tourism metamorphosed and enhanced the existing gendered division of labour.

Tourism creates opportunities and home-based services that are accepted as a celebratory sign of female empowerment. However, what is veiled by this false sense of empowerment is the reinforcement of gender roles. It marginalizes women into underpaid jobs and reinforces the idea that women’s place is at home, creating existentially immobile gender roles. Home symbolizes a safe sanctuary, away from the western influences of tourism, such as drinking, which is considered socially and religiously inappropriate. The very labelling of home-based work as a female’s domain and outside work as a male domain shows that work itself is gendered. This unequal and discriminatory division of labour further supports other unequal gendered identities. As pointed out by Ghafournia (2017, p. 148), although religion can act as a source of empowerment, it can also intersect with political, economic, and cultural factors to act as an agent of oppression.

On Maafushi, women, in a bid to maintain a balance in their household roles, take advantage of job opportunities and at the same time try to maintain their identities as good religious women, but they often end up stuck in informal activities or not working at all. There are religious norms that prescribe that a Maldivian woman should be dressed in a particular socially acceptable manner and should not venture into the bikini beach area. The veil in particular has come to symbolize discord with western culture (Listerborn, 2013) and could be argued in this case to represent a form of “strategic garb” (Aksoy & Gambetta, 2016) for resisting western influences. These identities and roles create immobile choices that have the potential to impinge upon other capacities that are important for individual well-being (Arora-Jonsson, 2011; Lamphere et al., 1997). Since mobility is seen as a capacity for well-being (Kronlid, 2008; Nordbakke & Schwanen, 2014), restrictions on mobility can have repercussions for women’s well-being.

Conclusion

This paper treats mobility as an important adaptive strategy on the part of the islanders and contributes to an understanding of adaptation by using a gendered lens. A gendered understanding of adaptation is important for cautioning against the reduction of island problems to geography and isolation alone, to the generalization of the experiences of change by men and women in island settings, and to the generalization of the problems of ‘third-
world women’ (Mohanty, 1988). This paper attempted to confirm the divergent adaptive consequences for the mobility of men and women in two cases in the Maldives. What is peculiar is that the consequences are not just different but also unequal and discriminating, establishing that adaptation is a gendered process. The two case studies show how adaptation to multiple changes has increased mobility restrictions for women while, barring a few exceptions, increasing the overall mobility of men.

There is a mobility complex in which interdependent economies influence interdependent activities, thereby causing mobility stratification in the daily lives of a population (Urry, 2009). Mobility becomes even more pertinent in an island setting as it is an adaptive strategy (Rasmussen et al., 2009). Changes in each type of mobility, as well as the interplay between them, reinforce old and create new gendered practices. Changes in physical movement result in gender-stigmatized spaces in terms of both geographical and social space. This gendered social space has implications for women’s occupational mobility in the form of a reduced range of occupations from which to choose. Finally, an existential restriction is created as women are physically and occupationally immobile, preventing them from grasping emergent opportunities. These types of restrictions on mobility represent physical and material restrictions, but they also represent a lack of freedom for women to make choices and make judgements.

This paper strongly advocates that research on adaptation include gender questions, recognizing that the consequences of adaptation may be different and unequal. Doing so will help guide the understanding of adaptation in a direction that is nuanced and that emphasizes the identification of sources of unequal power in order to at least partially resolve gender blindness in adaptation policies.

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Science and culture in the Kerguelen Islands: a relational approach to the spatial formation of a subantarctic archipelago

Solène Prince
European Tourism Research Institute (ETOUR)
Department of Tourism Studies and Geography, Mid-Sweden University, Sweden
solene.prince@miun.se

ABSTRACT: The Kerguelen Islands are devoid of a permanent population, but are nonetheless interlinked to past and current human activities that have shaped their subantarctic landscape. In the past decades, the archipelago has become a French outpost for scientific research where scientists, support staff, research assistants, and travelers assemble during temporary missions. In this article, I present the spatial formation of islands as relational in order to explore how the material and the cultural converge to make the Kerguelen Islands a place of both mundane practice and global interconnection. These spatialities intertwine the features of the landscape with pre-departure preparations, animal encounters, scientific rigour, daily routines, and past human activities. I advance these narratives by analyzing 18 blogs of French sojourners who have spent extensive time on the Kerguelen Islands. I ultimately give islands without a permanent population a character unlike that of isolation and contemplation as is usually attributed to cold-water islands of the (sub) polar seas.

Keywords: dwelling, materiality, narrative analysis, practice, relational geography, subantarctic islands, scientific research

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Introduction

The subantarctic islands are some of the most remote places on the globe. Their access is complicated not only by distance, but also by the unfavourable weather conditions typical of their latitude. These islands did not harbour native inhabitants at the time of their discovery by European explorers, and few of them have been permanently settled since then. However, the non-native and transient character of the current populations of most subantarctic islands does not ultimately devoid them of a culture. Of interest for this article is the long history of activity on the Kerguelen archipelago, but most particularly its development into a French outpost for scientific research. Hince (2008) contends that there exist contemporary works, especially in ecology and history, positioning the Kerguelen Islands as a site of continuous human activity (see for instance: Arnaud & Beurois, 1996; Bajard, 1964; Delépine, 2002, 1976; Druett, 2007, 1983). In this article, I turn to relational geography to uncover the multiple actors and meanings that give the Kerguelen Islands their special character. I do more than look through historical or scientific texts to conceptualize the spatial formation of this subantarctic archipelago without a permanent or native population. I explore the Kerguelen archipelago instead through the diary writings of those who have sojourned on it. I do this through the analysis of 18 blogs of French sojourners who have spent from 4 to 13 months on the Kerguelen Islands.

These sojourners are mostly researchers and civic volunteers affiliated with scientific projects from L’institut polaire français Paul-Émile Victor (IPEV), but there are also tourists and
writers amongst them. On their blogs, these individuals describe the landscape they encounter, as well as detail the practices behind their pre-departure preparations, scientific work, encounters with animals, daily routines at the base, and observations of past human activities around the islands. In their accounts, the material and the cultural converge to make the Kerguelen Islands a place of mundane practice and global interconnections. These spatialities are significantly influenced by the interrelation of scientists, volunteers, animals, vegetation, buildings, historical remnants, and various equipment. These blogs are a window into the everydayness of being in the Kerguelen Islands, and into the latter’s connection to the world.

Figure 1: Topographical and locational map of the Kerguelen Islands. © Rémi Kaupp, https://commons.wikimedia.org/wiki/File:Kerguelen_topographic_map-fr.png

I begin this article by giving a brief historical overview of the Kerguelen Islands as a place of discovery and industry, literary imaginary and scientific research. Secondly, I present different geographical concepts related to hybridity, material culture, and mundane practice that inform a relational approach to island studies. The special character of cold-water islands with transient populations, like the Kerguelen Islands, is arguably under-researched in island studies. The study of these islands can offer island studies particular insight into the materiality
behind travel preparations, human and non-human interrelations, and the continuation of culture. By presenting my narrative analysis of the blogs through three analytical categories (materiality from the mainland, the contact zone with animals, and culture and continuation), I outline some of the particular ways through which such remote islands without a permanent population are culturally formed. This analysis infuses these islands with a different character than the one they acquired from their description through narratives of isolation and contemplation. It also displays more of their substance as an inhabited realm than what can be found in historical, literary, or scientific accounts. I lastly encourage more research into the lived experiences, interrelations, and practices that form islands, especially those without a permanent or native population, like those found in the subantarctic seas.

The Kerguelen Islands

The Kerguelen Islands were discovered in 1772 by French explorer Yves Joseph de Kerguelen de Trémarec. This subantarctic archipelago in the southern Indian Ocean is now administered as one of France’s five subantarctic and Antarctic districts, together called Terres australes et antarctiques françaises (TAAF) (www.taaf.fr/). The archipelago is composed of a main island of 6,675 km², La Grande Terre, and of 300 smaller islands and islets totaling 7,215 km² (see Figure 1). As all other subantarctic islands, the Kerguelen Islands were uninhabited at the time of their discovery. After a history of sealing and failed attempts at making the islands inhabitable through farming practices, the Kerguelen Islands became in 1949 a permanent scientific outpost for French polar research (Delépine, 1995; Fleury & Raoulx, 2016; Hince, 2008). These islands are some of the most remote on the planet and can only be reached by boat. The vessel Marion Dufresne supplies food and equipment to the French scientific base through four yearly rotations, departing from La Réunion, another French territory. Around 100 researchers, civic volunteers, and support staff sojourn at the Kerguelen Islands’ base, Portaux-Français, at once (see Figure 2). They do this for often up to a year, and then rotate in their duties and study of the local geology, ecology, and meteorology. All research operations on the TAAF are managed by France’s polar research institute, L’institut polaire français Paul-Émil Victor (IPEV) (www.institut-polaire.fr/). A restricted number of tourists can embark on the Marion Dufresne during its rotations to visit the Kerguelen and the other French subantarctic islands it supplies (around 8 or 12, depending on the amount of space left). The tourists are mixed with crew, staff, and scientists, and will get the chance to stop over at Portaux-Français in the Kerguelen Islands, Alfred-Faure in the Crozet Islands, and Martin-de-Viviès in the Amsterdam Islands.

Islands are never simply physical objects of discovery; they are also made through careful and exclusive design from the mainland (Baldacchino, 2012; Baldacchino & Clark, 2013). Islands are made into the images that are associated with them, such as paradise on Earth, pristine natural reserves, or locales of isolation (Baldacchino, 2012; Dening, 2004; Gillis, 2004; Kneale, 2017). The island is always connected to the mainland through not only physical contact, but also through symbolic frames of references, often formed and legitimized in the writings of those who know the island through their travels or the travels of others. After his brief visit in 1776, Captain James Cook was compelled to name the Kerguelen Islands Desolation Islands. Similarly, explorers, travel writers, and novelists have depicted the Kerguelen Islands and their subantarctic counterparts as desolated, and their landscapes as rugged and majestic in various works. Notably, Jean-Paul Kauffman (1993) wrote L’Arche des Kerguelen: Voyage aux îles de la Désolation. The book is an account of Kauffman’s voyage to the Kerguelen Islands during the summer of 1992 where he seeks to discover the impressive Arch of Kerguelen. Dutton (2009) calls this literary work an elevation of the natural beauty of the islands through the French imperialist imaginary. Hince (2008) points out that Kauffman (1993) sees no continuation in the history of the Kerguelen Islands, perceiving
human activity there as only transient. In fiction, the islands are featured in Jules Verne’s (1897) *Le Sphinx des Glaces* and in Edgar Allen Poe’s (1838) *The Narrative of Arthur Gordon Pym of Nantucket*. These two adventure novels illustrate stories of death and survival in icy desolated landscapes. More recently, but still on the themes of solitude and isolation, Patrick O’Brian (1978) wrote the historical novel *Desolation Island*.

![A view over Port-aux-Français, administrative base of the Kerguelen Islands, located in the southeast part of the main island on the Péninsule Courbet.](https://commons.wikimedia.org/wiki/File:Route_66,_Port-aux-Fran%C3%A7ais,_French_Southern_and_Antarctic_Lands.jpg)

**Figure 2:** A view over Port-aux-Français, administrative base of the Kerguelen Islands, located in the southeast part of the main island on the Péninsule Courbet.

Islands in the polar and subpolar seas diffuse their very own imaginaries. Riquet (2016) argues that travel writers to islands covered in ice and snow more often philosophize the meaning of islandness by writing of them in poetic and contemplative ways, rather than through narratives of economic survival, which is more likely to be used on warm-water islands where resources are more obviously abundant and conditions more favourable to humans. Through her analysis of Antarctic travel writing, Dutton (2009) holds that images of discovery and conquest of a land unknown and far away infuse the minds of sojourners to remote cold-water islands like the Kerguelen Islands. Similarly, in tourism discourses, the cold-water island, especially the one of the (sub) polar seas, exudes notions of adventure and discovery, compared to the warm-water islands where a slower pace of activity is expected in the sea, sun, and sand (Baldacchino, 2006a, 2005; Kaae, 2006). In his comparison of cold- and warm-water islands, Baldacchino (2005, p. 186) writes about the former: “Pleasure is derived from being overwhelmed by, succumbing to and respecting the environment. Wide open vistas are everywhere.” Islands such as the Kerguelen Islands are thus known to emanate mixed feelings of desolation, mystery, and adventure in amazing landscapes worth contemplation.

Hince (2008) reminds readers that the subantarctic islands are nonetheless places of great human activity, though their lack of a native and permanent population could be seen as voiding them of a cultural heritage and of a sense of place. Human geographers define sense of place as the meaning that a place evokes to those living in close relation to its social and material constituents (Cresswell, 2013). Place are not mere physical entities, but rather realms of direct human involvement to which people assign meaning (Buttimer, 1993; Buttimer &
As pointed out earlier in this section, the Kerguelen Islands have had their fair share of inhabitation, and this is visible in their landscape. For instance, the archipelago is the site of contamination by invasive species (feral cats and rabbits notably), and there are many physical remnants of past attempts at introducing grazing cattle and developing an animal oil industry (Delépine 1995; Fleury & Raoulx, 2016; Hince, 2008). More recently, the Kerguelen Islands have emerged as a very tangible laboratory for French polar research, leaving traces of scientific exploration in the archipelago’s landscape. The actual isolation of remote islands has been questioned by scholars of island studies, importantly with Deloughrey (2007) establishing this trope as an instrument of colonization. These geographies of the imagination are important to deconstruct for post-colonial analytical purposes, but they often overlook the tangible spatial practices through which island cultures and senses are shaped over time (Riquet, 2017).

**The spatial formation of islands: substance, practice and relations**

Island scholarship is increasingly adopting a relational turn in its spatial conception of islands (see, for instance, Anderson, 2012; Pugh, 2016; Steinberg & Peters, 2015). This is a recognition that the conceptualization of islands cannot be solely reduced to their isolation and specificity, though physically they might be remotely located from the mainland (Hay, 2006). Relational geographers have defined the world as a realm of spatial interconnections where rootedness and essences should be replaced by hybrids and networks (Cresswell, 2013; Murdoch, 2006). It is impossible to retain any particular sense of place in the wake of increased mobility and intermixing (Amin 2002; 1997; Escobar, 2001; Massey, 2005, 1991). As Massey contends (2005, 1991), it is better to think of a place as having many senses, where the multiple identities of people translate into multiple spatial identities. Hay (2006) therefore argues that it is important to study islands as they are experienced by social beings in order to capture these many senses formed through local and extra-local relations.

Baldacchino (2012, 2006b) and McCall (1996, 1994) express this concern in island studies by encouraging the definition of islands on their own terms. As Riquet (2017, p. 294) adds, there is an inclination “to move away from a discussion of islands as tropes for a set of preconceived meanings in favor of a precise examination of the textual practices through which islands are spatially conceived and reconceived.” With such an analysis, the island is to be understood as holding many identities, juxtaposed on top of each other. The island can be defined as having an interior and an exterior, meaning that it is connected to an exterior world, yet lives its interior in isolation; it is fictional on the exterior, yet very real on the inside (Baldacchino, 2012; Riquet, 2017). As Baldacchino (2005, p. 248) writes: “An island is a world; yet an island engages the world.” Hince (2008) sees this dynamic in the subantarctic islands as she collects stories and observations of wreckage, industry and species invasion to simultaneously describe these islands’ connection to the world and their distinct cultural history in light of this interactivity. It is ultimately localized responses to extra-local processes that form the unique character of a place (Amin 2002, 1997; Escobar, 2001; Massey, 2005, 1991).

An attempt to study the relational character of the island should thus bring attention to the composition of cultural and material practices (Pugh, 2016). In a relational conception of the world, it is important to consider the interrelations people have with their material surroundings (Anderson, 2012; Thrift, 2008; Whatmore, 2006, 2002). Entities exist in relation to each other, and these relations are never stable (Latour, 2005), not only because of global interconnectivity, but because of the character of human and non-human life. Anderson (2012, p. 575) uses the surfed wave to describe the formation of space through “the meeting of movements and the pausing of practices.” Surfing would not exist as it does without the particular components and movements of the sea, which are both rhythmic and unpredictable (Anderson, 2012). Considering materiality gives objects a form of agency that
entangles them in the realm of the social (Latour, 2005; Whatmore, 2006, 2002). Whatmore (2006, 2002) explains that materials have their own agency, which affords humans capabilities. Objects, technologies, plants, and animals mediate the actions that connect bodies with their surroundings (Crouch, 2003; Michael, 2000; Power, 2009). The interweaving of these entities highlights that places are what scholars within island studies have often come to refer to as assemblages (Anderson, 2012; Pugh, 2016).

Relational approaches help scrutinize the way people inhabit their world by encouraging the consideration of mundane practices, material substances, and social interrelations in the study of spatial formation (Ingold, 2011; Olwig, 1996). Interesting theoretical development has come from landscape scholarship. For instance, Olwig (1996), contesting notions of landscape as mere scenery and aesthetic background, advocates the conceptualization of the latter’s emergence through a temporal process, which requires an analysis of the changes that mark the dynamism of culture. There grew an interest within relational geography to study the mundane practices of everyday life as the formation of space increasingly became conceptualized through embodied practices and experiences (Crouch, 2003; Ingold, 2011; Lorimer, 2005; Simonsen, 2012; Thrift, 2008). For instance, Crouch (2003) contends that gardens are not just floral arrangements, but the product of a set of mundane practices such as kneeling, weeding, and planting, done by a gardener in close connection to the landscape. Also in terms of landscapes, Ingold (2011) proposed that these arise from the skillful activities and practical engagement of those dwelling therein. Those who dwell form a landscape through movements of incorporation as the processes that give rise to their human activity weave themselves in their environment.

The relations humans entertain with the various complex elements and processes of their world are important to consider in a conception of dwelling that does not fall back on essentialist and romanticized spatial discourses (Cloke & Jones, 2001; Wylie, 2013, 2003). Any conceptualization of dwelling needs to make sense of the routes, relations, contexts, networks, practices, and assemblages shaping spaces, rather than simply adopt meta-narratives of being (Cloke & Jones, 2001; Thrift, 2008; Whatmore, 2006, 2002; Wylie, 2013, 2003). In other words, an interest in the experience of inhabiting space must take into account the transient, confusing, spontaneous, and complex character of human life. These moments leave traces of themselves in a landscape, attesting to the temporality of material and cultural practices within a dynamic world. For example, Cloke and Jones (2001), speaking of an orchard, acknowledge that the art of pruning shapes the character of fruit trees in orchards, but that fruit trees themselves shape the nature of pruning. The practice of pruning is furthermore influenced by an array of extra-local phenomena such as marketing strategies, technological development, and global market prices, making the orchard an assemblage of local and extra-local phenomena (Cloke & Jones, 2001).

Vannini and Taggart (2012) assert that relational approaches interested in dwelling and practice have been lacking in island studies. This is even the case with calls within the discipline to study islands on their own terms, which would imply an interest in the experiences behind the material and cultural assemblages of island spaces. Applying Ingold’s (2011) and Olwig’s (1996) work to island studies, Vannini and Taggart (2012, p. 235) speak of doing islandness, describing this as “a set of tasks unfolding in front of its inhabitants,” to give islands their practical sense. This is a way to apprehend islands differently than through the symbolic lens of the exotic, isolated, or mythical, but rather through the mundane experience of inhabiting the island. The authors explain that the island is formed through a set of tasks such as catching the ferry, driving from one end to the other, or kayaking along the shore (Vannini & Taggart, 2012). The material realm becomes meaningful as practice implies an engagement with physical elements such as tools and equipment (Crouch, 2003; Haldrup & Larsen, 2006; Ingold, 2011; Walsh & Tucker, 2009). The water surrounding the island is no longer a symbolic barrier, but rather a physical space that affords the islanders
practices like fishing and recreation (Vannini & Taggart, 2012). Through this type of analysis, the island and its landscape are presented as a very real practical realm composed of material substances, such as water and outdoor equipment, and cultural experiences, such as leisure and work activities.

The Kerguelen Islands in the blogs of French sojourners

The subantarctic islands are a special case in point to study the formation of island landscapes and cultures since they have never hosted a permanent population. It remains that the Kerguelen Islands are inhabited by French scientists, research assistants, support staff, and tourists who exist in relation to the archipelago’s physical and symbolic space. A number of these sojourners have documented their sojourn on the Kerguelen Islands through personal blogs which they made freely available on the Internet. I have studied 18 of these blogs in order to build a narrative related to the everydayness of temporarily inhabiting the Kerguelen Islands, as I sought to describe their spatial formation. Eight of these blogs were written by civil volunteers affiliated with scientific missions to the Kerguelen Islands. These volunteers take part in missions that generally last 13 months and provide technical support during the manipulation of the animal and bird specimens under study during field research. This implies mostly tasks of attaching and fetching geolocation devices on animals such as elephant seals and marine birds, surveying their population, and noting biological and ecosystem changes. Five blogs were written by support staff to scientific missions: one assistant doctor, two electronic engineers, and the two others identified themselves as support staff only. These five individuals sojourned 12 or 13 months on the Kerguelen Islands. Two blogs were written by researchers on scientific missions, one accompanied an international meteorological campaign, and the other worked for the IPEV in thermo-biology. These individuals stayed for shorter terms on the Kerguelen Islands, respectively seven and four months. Three blogs were written by travelers who visited the Kerguelen Islands for personal enjoyment. Their journeys lasted around two months, the time it takes for the Marion Dufresne to provision its French subantarctic territories and leave back for la Réunion after its own sojourn.

As the scientific outpost is administered by the IPEV, it is French scientists, support staff, and civic volunteers that embark on these sojourns. The blogs were thus all written in French, which did not pose a problem for this study as my first language is French. These blogs were written between 2010 and 2017. I studied extensively their content, including their welcome pages, diary entries, pictures, and the other details the writers provided about, for instance, the geography of the islands and the description of their scientific projects. The blogs were analyzed using narrative analysis. In the social sciences, narrative analysis is aimed at understanding how individuals perceive themselves within their social world (Creswell, 2013). This study interests itself in the spatial experiences of humans involved in the material and cultural formation of a group of islands. Narrative research illuminates the particular features of the lives of the individuals it seeks to understand, and thus provides insight on social reality (Freeman, 2004). Czarniawska (2004, p. 17) explains: “narrative is understood as a spoken or written text giving an account of an event/action or series of events/actions, chronologically connected.” Freeman (2004, p. 79) contends that narrative research is a “project of articulating and explicating meaning.” Narrative research suggests social possibilities, rather than finds a definitive truth.

I divided the narratives I encountered into three categories which highlight the relational character of the Kerguelen Islands as a subantarctic outpost for scientific research: 1) materiality from the mainland, 2) the contact zone with animals, and 3) continuation and culture. These categories are the result of the coding of the text read in the blogs. Coding implies the researcher aggregates text into specific categories of information while going meticulously through the dataset, assigning these codes their own labels (Creswell, 2013).
Solène Prince

After reading and re-reading carefully the many entries, I was able to extract meaningful themes from the stories, thoughts, epiphanies, and descriptions of the sojourners, and then label them with the keywords that would outline their experience of inhabiting the Kerguelen Islands.

Materiality from the mainland
For the sojourner-to-be embarking on pre-departure preparations, the physical substance of the Kerguelen Archipelago is significantly known in terms of its uninviting conditions for human life. Many of the bloggers started their online journals with entries on their pre-departure preparations, where they described the objects they were to bring with them on their journey to a remote area with harsh and unpredictable weather. Researchers interested in travel and tourism acknowledge that objects are a significant element behind the practice of travelling, may it be shoes, cameras, guidebooks, or sporting equipment (Haldrup & Larsen, 2006; Walsh & Tucker, 2009). Such objects attest to the tangible character of travelling. The bloggers’ accounts reveal that these individuals’ relation to the Kerguelen Islands is mediated through the equipment that will engage them with a physical landscape. The objects at stake are warm and impermeable clothes to fight back the harsh weather conditions, but also the technologies that will keep them connected to the mainland in this desolated area, as well as those objects that will keep them entertained, like books. In this quote from Le blog de Didier, the reader gets a sense that the material preparations for a sojourn to the Kerguelen Islands is a serious matter:

The physical preparation of this stay is above all a matter of judicious choice of equipment to bring along. The matter is made easier by the Guide for Wintering document provided by the TAAF in which we find a whole lot of diverse and varied recommendations. But above all, we must rely on information gleaned here and there from colleagues who have already been there. Internet is also, of course, a good source. (http://kerguelen.over-blog.com/article-18848456.html)

This quote highlights that the sojourners’ choices of equipment are made by engaging with various guidelines and perspectives, but also with the thought of inhabiting a real physical space. Many of the bloggers made allusions to the Guide for Wintering, which implies that there is much to learn before inhabiting an environment like the one of the Kerguelen Islands. The TAAF’s Guide for Wintering informs the sojourners of the mundane and practical aspect of living on a subantarctic archipelago. This physical space is presented, for good reason, as harsh and desolated, meaning that, to these individuals, Subantarctic is known in this instance through a material engagement with narratives of survival.

Also as part of the pre-departure preparations, some bloggers describe the scientific workshops they need to attend before embarking on their mission to the Kerguelen Islands. For the civil volunteers, there is a pre-departure program in France which they need to attend. The attendance of this session is to prepare the scientific teams for the routines of their scientific work. The writings of Maxime Passerault on his blog Maxime Passerault, Ornitho pour la 62ième mission aux Kerguelen attest to the organizational and mundane aspect of the preparation that volunteer technicians have to go through:

On the menu for this preparation [in France during the program days]: bibliography on the ecology of species, familiarization with scientific protocols, ordering of the wintering schedule, preparation of trunks… (http://maximeker62.canalblog.com/)

Such descriptions of the activities planned for pre-departure programs illustrate the labour behind carrying out a scientific project and travelling to its location. Science is something that takes organization; it imposes rules and guidelines on those who want to do it. These organizational tasks are a significant part of the journey to the Kerguelen Islands for the
member of a scientific team. These pre-departure arrangements framed within the context of scientific work and survival skills already reveal that the Kerguelen Islands are a space filled with material entities to engage with in a particular guided and routinized manner. Even before they are physically reached, islands are experienced in specific ways through practical and tangible matters. It is not solely through an imagination fostered by literary work that the Kerguelen Islands are known, but also through guidelines of survival, the lens of the scientific method, and the imposition of order.

Interestingly, this kind of analysis gives agency to the physical and natural entities of the Kerguelen Islands of the kind Latour (2005), Whatmore (2006, 2002) and Anderson (2012) advocate, where the archipelago’s substance has a way of guiding human movement. The Kerguelen Islands have a very real substance that requires humans to approach it seriously and which makes it an interesting setting for scientific research. The agency of the substance of the Kerguelen Islands becomes even more apparent as the sojourners engage with its non-human elements in real time.

The contact zone with animals

The sojourners involved in scientific missions are generally dutiful and elaborate in their description of their scientific work in their blogs. Many of the descriptions found on the blogs give clues about the way the Kerguelen Islands are formed as a relational realm of cultural and material practices, carried out closely in tune with the local natural environment. Interesting examples of the role of science in mediating human encounters with animals can be derived from the work of the blogging ecologists. Scientific observations in the field are a rigorous practice that necessitate patience and precision. The bloggers on ecological scientific missions (mostly in ornithology and thermal biology) on the Kerguelen Islands seem very aware of this as they write about their tasks as researchers and technical support staff. As Jones (2012, p. 578) would explain, there is “total concentration and mental immersion in the task at hand” as the components of the world require immediate involvement. These tasks include, for instance, surveying populations and attaching tags and transponders to birds and animals. These two quotes from the blogs Tranche de vie aux îles Kerguelen and Récit d’un hivernant ornitho-écologue de la 60e mission aux îles Kerguelen illustrate how two sojourners affiliated with ecological scientific projects speak of their tasks of handling and observing various birds and animals out in the field:

Penguin chicks should be taken at the beginning of molting to be weighed, measured and transpondered. Next comes another manipulation: exchanges of eggs. (http://thibaultblf.blogspot.se/2012/)

Around the boat, Barau’s petrels, wedge-tailed shearwaters, brown noddis, white-tailed tropicbirds and sooty terns accompany us. A day of calm sea also allows us to observe a group of sperm whales and a small whale! Not a minute of respite aboard, my ornithology colleagues and I track birds and marine mammals (counting them for 10 minutes every hour of the day). (http://alexauxkerguelen.blogspot.se/2009/12/le-marion-dufresne-laventure-commence.html)

Dutto (2009) proposes that the contact zone in the desolated subantarctic archipelago is not with an indigenous population as Marie-Louise Pratt (2008) proposed in her treatise on colonialism, but between the human and the non-human population of the island. Currently, in the Kerguelen Islands, the asymmetry of power of this zone of contact can be found in the discourse of science imposed on the fauna and flora by the transient inhabitants. The development of the scientific method, based in empiricism and objectivity, has encouraged
the separation of the cultural realm from the natural realm (Foucault, 1970; Latour, 1993). The animals of the Kerguelen Islands are inventoried and scrutinized as they are framed as elements of the methodical and objective scientific world. This is a different form of imperialism, which nonetheless subjugates a native population to a foreign power, and which affects the culture, landscape, and sense of the island.

It would be simplistic, however, to content ourselves solely with this discursive analysis. When the matter is approached in relational terms, it is apparent again that the entities of the Kerguelen Islands project their agency on its temporary inhabitants. The subantarctic animals in their habitation of the seas, air, and ground ultimately guide the movements of the scientific groups through the islands, as the latter seek contact with these populations. It is the kind of agency that Whatmore (2002) gives to animals in her more-than-human geography. In this case, science finds its form in the substance of the non-humans it seeks to make sense of, as it is used to make sense of these non-humans. The human and animal interrelation in the formation of the Kerguelen Islands is well illustrated in this sentence from Maxime Passerault who is involved in ornithological fieldwork. As he describes at length on his blog the stages and exercises of the project he will be involved with on the archipelago, he comes to this conclusion: “My travels and activities on the island will be determined by the protocols of these programs and therefore timed to the phenology of the birds” (http://maximeker62.canalblog.com/).

Through this quote, the reader can appreciate how the research technician and his scientific measures are formed through the living elements of the landscape with which he engages. The ecology of the Kerguelen Islands guides the mundane actions that moves the scientific sojourner through the landscape. This works to form a space where materials and cultural practices are highly intertwined. What is apparent by looking at human and non-human relations during this scientific work is the way that these interrelations influence the way humans inhabit the island space. Human movements become rhythmic, as if in tune with the flows and movements of the substances of their world (Ingold, 2011; Thrift, 2008). As Vannini and Taggart (2012) argue, the characteristics of the island afford to humans a certain set of very real practices, which in their turn impregnate the island landscape as a realm of practice. In this case, it is not only water and land that afford particular practices to islanders as Vannini and Taggart (2012) have already explored, but also the special animals with whom humans co-exist.

Culture and continuation
In the blogs of the sojourners, the breathtaking subantarctic landscape is often juxtaposed with routines of mundane societal practices at basecamp and observations of scattered signs of past human activity around the islands. The majority of the bloggers dedicated entries to discuss everyday life in the Kerguelen Islands, informing their readers about the organization and uneventful character of being on the archipelago. The sojourners describe, for example, the tasks that need to be done do keep the micro-community afloat, like cleaning, and their leisurely activities, like playing football. An example of these descriptions of everyday life is seen when sojourners tell about the organization of meals and the food they are served. These two quotes from different blogs, Un hivernage aux îles Kerguelen and Sur la base subantarctique de Port-aux-Français, exemplify this type of description surrounding meal times that presents life on the Kerguelen Islands as mundane and structured:

In the cabin [at a field station], we have practically all that can be preserved that could be found in supermarkets. Preserves, cooked dishes, juices, milk... (http://elie-ornithoker-64.blogspot.se/2013/12/premiere-manip-mayes-lile-des-ornithos.html)

On the base, meals are taken at fixed times, except breakfast which works on a time slot. Meal places are not reserved. Each person sits on either side of a large table. (http://www.christianegeoffroy.com/blogs/blog/archipel-de-kerguelen/page/4/)
Reading these blogs, one learns that there are no staff hired to work at the base in positions such as cleaning, bartending, fire patrolling, or collecting garbage. These positions are filled voluntarily by sojourners and coordinated with relative structure. One sojourner (who does not identify himself by name) explains on his blog *Kerguelen: On dirait le sud...*: “From time to time it is necessary to refuel the huts, to do some reparations, to bring back the garbage etc., etc., etc...” (http://ker64.canalblog.com/). By detailing life on a remote scientific outpost, these narratives reveal its routinized and uneventful character. Unsurprisingly, the Kerguelen Islands acquire a different identity than the one of dreams of adventure and contemplation that their status as remote cold-water islands proffers them as they become spaces of communal habitation.

Mundane activities are important to consider in the analysis of relational space because they are behind the substance of the landscape (Crouch, 2003; Olwig, 1996). In the case of the Kerguelen Islands, though their inhabitants are transient, culture is formed through continued daily involvement based, not only in scientific work, but in building a space of everyday life that includes mealtime routines, socializing, leisure time, maintenance, cleaning activities, etc. The continuation of human activity on the archipelago is also seen in the relay of information from one scientific mission to another. Some bloggers detailed their preparations before their departure back to France to ensure that the participants in the next mission would have the information they needed to continue the scientific project. The continuation of French scientific involvement in the Kerguelen Islands is also apparent in the observations of the bloggers. For instance, Elie Gaget, a civil volunteer with the blog *Un hivernage aux îles Kerguelen*, informs the reader that the IPEV has been monitoring almost 400 rabbit burrows on the archipelago since 1986. As the employees of the IPEV rotate in their duty, they preserve the culture of science of the islands.

The participants of this micro-community might not inhabit the archipelago permanently, but the former is organized at its own rhythm, preserving itself through time in these otherwise humanly desolated islands. Ingold (2011) argues that there is a temporality to a landscape, where human activities weave themselves in the fabric of the latter through time. The activities at the base of the Kerguelen Islands attest to the presence of an interchanging human population that inscribes its presence in a momentum of continuation on the territory. Interchanges and transitions are central elements to this particular condition of dwelling (Wylie, 2013, 2003). Regardless of their non-permanence, through their various activities, the individuals who nowadays pass through the Kerguelen Islands participate in the latter’s consolidation as an outpost for scientific research.

Many sojourners mention and illustrate through photography their encounters with traces of past human activities during their own explorations and while on missions out in the field, such as seeing rundown infrastructure like old fences and landing docks, boat wrecks, old cabins and research stations, and the pictures that decorate them. There are many bloggers who explain the stories behind the remnants that they see of failed attempts at industry, such as the destitute infrastructure for sheep farming and oil production from the 19th and 20th centuries (see Figure 3), and for salmon farming from the 1980s. Past activities visible in the landscape are reminders of not only scientific and economic efforts of other times, connecting the archipelago to the mainland, but also of the continued geopolitical significance of these islands. On her blog *Sur la base subantarctique de Port-aux-Français*, writer and traveler Christiane Geoffroy tells of her encounter, just outside of basecamp, with the stations and towers currently used to monitor wave lengths and communications of all sorts, from magnetic fields to illegal nuclear testing. However, her observations inform the reader that this strategic assemblage has older roots. On her excursion, she observes a defunct Soviet rocket launch platform:

A disused launch pad is also visible on this site, from the time this miniature Silicon Valley had Russian flavors. It was used in the 1970s for the launch of Soviet rockets,
creating aurora borealis, which operated symmetrically in both hemispheres at Kerguelen and Sogra in Russia. This Franco-Russian collaboration collapsed with the Soviet Union. (http://www.christianegeoffroy.com/blogs/blog/archipel-de-kerguen/page/4/)

![Image](https://de.wikipedia.org/wiki/Kerguelen#/media/File:ElephantSealOilVats_Kerguelen.jpg)

**Figure 3:** These remnants in Port-Couvereux of vats and boilers used for making elephant seal oil in the 20th century attest to the short-lived history of industry on the Kerguelen Islands. © B.navez, [https://de.wikipedia.org/wiki/Kerguelen#/media/File:ElephantSealOilVats_Kerguelen.jpg](https://de.wikipedia.org/wiki/Kerguelen#/media/File:ElephantSealOilVats_Kerguelen.jpg)

These observations of remnants of past mundane activities simultaneously attest to the Kerguelen Islands’ long-lasting global interconnectedness, and the very real ways in which these relations have affected its physical landscape. This cultural entanglement occurs, as Hince (2008) advances, even without the presence of a permanent population. Each attempt at exploiting and inhabiting the islands has left physical traces. With years of human involvement centred on relaying information, building transnational networks and physical structures, and noting down observations for future research, the novelty of the Kerguelen Islands as desolated and remote is juxtaposed with the archipelago’s temporal social and physical formation as a scientific and strategic outpost since 1949. Through this interactivity, the Kerguelen Islands become, as Cloke and Jones (2001) would argue, a hybrid assemblage of local and extra-local practices.

This juxtaposition of the remote with the global is decipherable in the bloggers’ descriptions of the landscapes they encounter where they express their interest for its peculiar beauty. Particularly revealing is this quote from the electronic engineer Thibault Béziers la Fosse from *Tranche de vie aux Kerguelen*, where he links his view of the massive scientific equipment he works with daily to the immensity and deserted character of the archipelago’s landscape: “It is precisely at this point that one can see all the radomes containing large antennas aimed at tracking the satellites. The landscape is quite particular, immense and lunar” (http://thibaultblf.blogspot.se/2013/).

The materials of scientific discovery, often of geopolitical character, like antennas and radomes, and the physical remains of past endeavours, become a part of the Kerguelen Islands’ landscape. The landscape does not necessarily lose its fantastic appeal as desolated, but rather becomes something quite particular, to put it in the words of the engineer. The Kerguelen
Islands are connected to spaces beyond their territorial limits through French scientific and strategic endeavours and failed attempts at industry, and as Massey (2005, 1991) argues in terms of relational geography, it is these interrelations that give this space its own particular and hybrid identity. As Baldacchino (2005) contends, the island is a world apart, but this uniqueness does not occur in isolation to the rest of the world as the island engages with the latter.

**Conclusion**

Through the diary writings of those who have sojourned on the archipelago, it becomes evident that humans have left and still leave traces of themselves in the Kerguelen Islands, even if their inhabitation has always been temporary. Cold-water islands of the (sub)polar seas exude images of desolation, wild landscapes, and dreams of exploration to the end of the world. By studying the relational character of travel preparations, scientific expeditions, the fulfillment of daily tasks, and rhythmic encounters with non-humans, the Kerguelen Islands become a hybrid realm in constant interplay with the people and spaces of this world. An analysis of the Kerguelen Islands through mundane practices and spatial interconnections infuses the archipelago with a different sense than the one it acquired from its description through island tropes of isolation and contemplation in travel literature and fiction. This analysis also gives more substance to a landscape that is traditionally written about from the perspective of an observer interested in historical and scientific writings. Focusing on the accounts of those who dwell therein helps to see a place of connection, continuity, and organization, formed through the daily engagement of humans with a tangible landscape, who give it its own unique cultural character and meaning (Ingold, 2011; Olwig, 1996; Vannini & Taggart, 2012). As Baldacchino (2005) would argue, the Kerguelen Islands are a physical realm that engages and is engaged with human activity.

Island scholarship can broaden its conception of island geographies by looking into the way the cold-water islands at the end of the world are formed through socio-cultural practices and global interrelations. Riquet (2016) proposes that the study of islands erased by snow and ice provides insight into a distinct set of philosophical questions over islandness. As literary tales of economic survival in resource-abundant contexts and contact with exotic people are replaced by constructions of wonderment and contemplation, we are left with a distinct perspective from which to understand this particular context of human involvement. This article has outlined three themes to contrast this type of conceptualization of cold-water islands. Firstly, the context of the subantarctic islands is one that requires elaborate preparations, attesting to the importance of objects in the experience of islands. This conceptualization brings to light more general questions about material culture in island studies. Besides woolen socks and rain jackets, what other objects mediate the way islands are known to those who visit them? Economic survival and mundane order are visible in the objects and practices that mediate human encounters with the vast landscape of the subantarctic region and its non-human entities.

Secondly, the analysis of the interrelation between humans and non-humans on islands designated as (sub)polar sanctuaries for ecological research can be taken further to re-conceptualize the contact zone between worldly populations and gain further insight into the impact of their encounters on spatial formation. Importantly, science and industry on islands without a native population, like is so often the case in the subantarctic region, can be approached as imposing imperialist discourses upon a landscape. More generally, the impacts of humans on the fauna and flora of islands raises important questions over island ecosystem resilience. More questions revolving around human and non-human interplay could address this matter in island studies. The presence of invasive species on the Kerguelen Islands was addressed briefly in this article, more as background information, but further research could look into these species’ interplay with the landscape. What roles do the introduced reindeers
and the feral cats play in the ongoing formation of the Kerguelen Islands’ landscape? What are the ecological consequences?

Lastly, the Kerguelen Islands have been formed through many industrial, geopolitical, and scientific projects that have connected them, and still connect them, to the rest of the world. The many identities of the archipelago are all visible in the landscape, creating a very particular space that is highly global because of strategic interests, and yet desolated to the point where survival guides need to be written. The blogs of its sojourners are an interesting window into the way the material and the practical converge to make the Kerguelen a distinct cultural realm. However, my analysis did not enable me to probe adequately at the dreams, imagination, and fascination that make up the human experience of finding oneself in the Kerguelen Islands. Further research could use more in-depth qualitative methods, such as interviews and participant-observations, to juxtapose the physical agency of these islands with the human imagination. This could help to develop further a relational island geography interested in studying islands on their own terms.

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Feeding island dreams: exploring the relationship between food security and agritourism in the Caribbean

Adelle Thomas
adelle.thomas@ub.edu.bs
Visiting Researcher, University of The Bahamas
Senior Caribbean Research Associate, Climate Analytics

Amelia Moore
ameliamoore@uri.edu
Assistant Professor, University of Rhode Island

Michael Edwards
michael.edwards@ub.edu.bs
Assistant Professor, University of The Bahamas

ABSTRACT: Caribbean islands have increasingly turned to tourism as a pathway for economic advancement, often to the detriment of other industries, particularly agriculture. The influx of millions of tourists to these island destinations increases food demand, escalates food importation, and oftentimes results in food insecurity. Agritourism, an alternative tourism form, has been proposed as a way to stimulate domestic food production and increase food security. This article provides a selective examination of the possibilities of relationships between agritourism and food security in the context of a specific Caribbean island: New Providence, Bahamas. Drawing from semi-structured interviews and site visits with over sixty farmers, we focus on the experiences of three farms that have attempted to engage in agritourism, with different approaches, levels of success, and potential impacts on food security. We find that the potential for agritourism to transform food security for Caribbean islands is constrained by demand and the consumption standards of both residents and tourists. The type of agritourism that has thus far proven to be most appealing to tourists is unachievable for the majority of farmers, has inconsequential contributions to island food security, and privileges wealthy farmers. Unfortunately, in its current form, agritourism is not yet a viable solution for the food security issues of New Providence, let alone other Caribbean islands.

Keywords: agriculture, agritourism, Bahamas, Caribbean, food security, islands, sustainable tourism

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Island dreams

Small islands across the Caribbean have undergone significant economic shifts following the wave of independence post-World War II. While industries such as agriculture and manufacturing were dominant in the region during the era of colonization, the expansion of tourism was touted as a way to modernize economies, stimulate foreign exchange, and decrease inequality and poverty (Mullings, 2004). Many of these newly sovereign countries
thus turned to tourism as a pathway for economic advancement, gambling on the dream that their sandy beaches, turquoise seas, and inviting climates would lure Euro-American tourists and ensure financial stability (Pattullo, 2005). Tourism rapidly grew as a major industry within the region, becoming one of the main contributors to revenue generation and job creation (Thacker & Perrelli, 2012). However, the growth of tourism came at the expense of other sectors, in particular agriculture (Modeste, 1995). The focus on tourism and other tertiary sectors, along with the loss of preferential access to markets, destruction of crops due to extreme events and diseases, and structural adjustment policies led by international agencies such as the World Bank, contributed to the constriction of agricultural sectors across the region (Friedmann & McMichael, 1989; Timms, 2006). Countries such as Jamaica, which once had a thriving agricultural industry, saw a steady decline of the sector resulting in the need to import significant amounts of food (Rhiney, 2011). Indeed, the decline of agriculture within the region has resulted in domestic food production being dwarfed by the influx of imported foods. Almost all Caribbean countries import more than 60% of the food that they consume, with half of them importing more than 80% of total food consumption (FAO, 2015).

Declining agricultural industries, along with the need for greater amounts of food to meet the requirements of residents and the millions of tourists who oftentimes exceed national populations, have led to a state of food insecurity for many countries within the region (CARICOM 2011). Food insecurity has been defined as “the limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways” (Anderson, 1990, p. 1559). Dependence on food importation exposes countries to volatile food prices while high levels of income inequality and unemployment often lead to inability of those beneath the poverty line to afford high-quality and nutritious food, resulting in the prevalence of diabetes and obesity (ECLAC, 2008; FAO, 2014). Further, the vulnerability of the region to natural hazards can inhibit the ability of countries to import food, from both logistical and financial standpoints, while global economic shocks reduce levels of remittances and result in quality food being priced beyond the reach of the poor (FAO, 2015).

As food insecurity has been increasingly identified as a significant challenge for the region, the question of whether tourism can be utilized as a tool to increase food security, rather than contributing to insecurity, has been raised (CARICOM, 2011). An alternative form of tourism, agritourism, has been proposed as a way to capitalize on existing tourism industries within the Caribbean to stimulate domestic food production and lead to greater levels of food security (Collins, 2000; Harvey, 2011; Hepburn, 2013). Agritourism, also referred to as agro-tourism, farm tourism or farm-based tourism, has a host of definitions but can be understood as a form of tourism in which there is some interaction between tourists and agricultural activities (Philip et al., 2010). Although there have long been calls for increasing linkages between agriculture and tourism within the region, these sectors have largely been viewed as discrete industries and there has been little study on agritourism in particular as a viable means of increasing food security (e.g., Timms, 2006; Wiley, 1998).

This article provides a selective examination of the possibilities of relationships between agritourism and food security in the context of a specific Caribbean island: New Providence, located in The Bahamas. Similar to other countries within the region, The Bahamas has long struggled to ground its tourism industry and its domestic economy within the archipelago and within Bahamian sovereign control (Cleare, 2007). Yet dependence on foreign capital, foreign goods, foreign expertise, and foreign markets remains the norm in the postcolonial present. National self-sufficiency is a perpetual goal, perpetually deferred. Within this Bahamian context, we explore existing and potential agritourism in New Providence and connections with food security. Drawing from semi-structured interviews and site visits with
over 60 farms conducted in early 2016, we also explore how agritourism may result in uneven privileging of particular types of farms. We focus on the experiences of three farms that have attempted to engage in agritourism, with different approaches, levels of success, and potential impacts on food security. These ethnographic studies are supplemented with the views of local agricultural and tourism actors to obtain deeper insight on the potential for linking agritourism and food security in the island nation.

Agritourism and food security: a global review

As tourism has increasingly been used as a means for economic advancement in developing countries, the argument has been made that there is immense potential to maximize benefits by linking the sector with other industries, particularly agriculture (Ashley et al., 2006; Belisle, 1983; Rogerson, 2012). Forging greater relationships between tourism and agriculture in the Caribbean is also viewed as imperative to reduce high levels of economic leakages, diversify economies, conserve cultural heritage, increase food security, and reduce poverty (IICA, 2013). The concept of agritourism encompasses the broad variety of linkages that can be found between agriculture and tourism and can take many forms. Drawing on experiences from within the Caribbean, Harvey (2011) defines six categories of agritourism, including the provision of food for tourist consumption by farmers, tourist visitation to working farms or prior agricultural sites, and the inclusion of tourists in food festivals, fairs, or markets. Other typologies categorize agritourism depending on whether the interaction between visitors and agriculture is passive or direct, whether activity takes place on a working farm or not, and whether the tourist has an authentic or staged agricultural experience (Flanigan et al., 2014; Philip et al., 2010). In our reading, agritourism can be viewed as consisting of two broad categories: (i) indirect agritourism, which focuses on the supply of food by local agriculturists for tourist consumption, and (ii) direct agritourism, which emphasizes active interaction between tourists and the agricultural industry in agricultural space. These two categories have also been described as (i) backward linkages, centring on connections among agricultural entities, hotels, and restaurants, and (ii) forward linkages, which focus on direct interaction between agricultural entities and tourists (Cai et al., 2006). In this article, while we explore both forms of agritourism, we focus on direct agritourism as these forward linkages are a burgeoning industry in the region and have also been understudied, particularly in island settings (Karampela et al., 2016).

Indirect forms of agritourism focus on the provision of produce, livestock, value-added goods (such as sauces and jams), and other agricultural products to restaurants, stores, hotels, and other enterprises that are patronized by tourists. These backward linkages between tourism and local agriculture are intended to promote lower carbon economies through reduced shipping of produce to destinations, help prevent economic leakages by keeping profits within the country, and increase tourism-related employment beyond hotels and onto the farms that support tourism enterprises (Pillay & Rogerson, 2013). This more passive form of agritourism envisions tourism as an impetus to increase food security through the rejuvenation of local agricultural sectors (Telfer & Wall, 2000). There are also potential linkages between agriculture and pro-poor tourism whereby poor farmers may utilize existing skills to provide food for tourism establishments, providing an authentic food experience for tourists and spreading the economic benefits of tourism locally (Rogerson, 2012; Torres & Momsen, 2004). However, there are a number of challenges associated with indirect agritourism, including the need to manage tourist expectations, limited communication and trust between agriculture and tourism sectors (which are often composed of socially distinct groups), and lack of governmental policy support (Pillay & Rogerson, 2013).
The majority of literature on tourism and agriculture in the Caribbean is focused on exploring these types of backward linkages, and many studies don’t explicitly refer to these activities as agritourism. A number of studies critique the variety of linkages between hotels and farmers, finding that not all relationships prove to be beneficial for farmers due to high tourism industry standards, limited farmer access to capital and technology, and unreliability of supply to meet tourism demands (Belisle, 1983; Timms, 2006; Rhiney, 2011; Torres & Momson, 2004). While indirect agritourism has the potential to result in thriving domestic agriculture sectors, there must be deliberate efforts to prevent a solitary focus on providing food for tourist consumption while ignoring the needs of local residents, thereby failing to improve food security. There is also acknowledgement that domestic agricultural sectors must be revamped in order to meet the demands of both tourists and local residents (Timms, 2006; Torres & Momson, 2004). Building the capacity of local farmers to boost production, developing farmers’ associations, and making connections with tourism representatives are also identified as key needs (Rhiney, 2011).

Direct agritourism focuses on creating spaces where tourists and agriculturists can interact. These forward linkages may take the form of sharing agricultural heritage through visiting historical agricultural sites, having tourists participate in farm tours, including tourists in farmers’ markets or food festivals, and having tourist accommodations built directly on farms (Flanigan et al., 2014). Direct agritourism is promoted as having a plethora of benefits at the farm level, including increasing revenue, providing avenues for further employment opportunities on farms, and mitigating against risk during times of poor harvest or reduced market values (Tew & Barbieri, 2012). While there have been a number of studies on the benefits of agritourism for farms and communities, there has been limited engagement in how direct agritourism might promote food security (Amsden & McEntee, 2011).

Studies centred on the Caribbean that address the potential for direct agritourism mostly focus on investigating opportunities and challenges facing existing agritourism establishments. These studies have found that while there is potential for greater expansion of agritourism in the region, challenges such as lack of financing, limited fiscal incentives, and the absence of clear and effective policies and programs to encourage agritourism development have inhibited growth of these types of establishments (Collins, 2000; Harvey, 2011; IICA, 2013; Rhiney et al., 2015). There are also challenges with balancing agritourism development with environmental preservation and finding innovative ways of attracting different types of tourists to an agritourism experience (Collins, 2000; Rhiney et al., 2015). For islands that rely on mass tourism, visitors may be more interested in the sun, sand, and sea experience and less open to engaging and interacting in cultural activities, such as forms of direct agritourism. While some studies do include limited discussion on the potential for agritourism to affect food security, mostly through stimulation of agriculture, the focus is largely on the benefits of agritourism in diversifying tourism products, creating employment, and contributing to greater economic resilience on national scales. Notably, Hepburn (2013) has explicitly explored the connection between direct agritourism and food security in the Bahamas through linking the interest of tourists in participating in agritourism activities to potential implications for food security. Through a survey of tourists, the study finds that many are interested in farmers’ markets and product tasting: interests that can be met through the development of agritourism enterprises that could, in theory, increase local agricultural production and improve island food security.

While there is limited literature on direct agritourism within the Caribbean, other regions provide case studies of ways that these forward linkages have been implemented, with some
examples from other island settings. In the US, agritourism has taken a variety of forms and is linked with increasing the potential for more profitable on-farm sales of value-added products and services, a benefit particularly attractive to smaller farms that may be facing financial hardship (McGehee, 2007). Scholars have noted that there are common characteristics of American farmers who participate in agritourism, including farmers who are younger, are college educated, have access to the Internet, or pay for advice. Farms that have a large percentage of land unsuitable for crops, are located near central cities, or are organized as corporations are also more likely to engage in agritourism (Bagi & Reeder, 2012). Direct agritourism appears to be touted as a means to stabilize farms that are suffering from economic strains due to declining prices, decreased sales, or expanding production costs, but this may only work for farms near urban centres that can generate demand for farm excursions. In the archipelago of Hawai’i, island tourism has been found to positively influence some sectors of the agricultural export industry. As American tourists returned home with new appreciation for Hawai’ian-grown produce, a market on the mainland cultivated the development of exportation of Hawai’ian-grown products (Cox et al., 1994). Hawai’i would seem to be an important case for the Caribbean, but it seems that for much of the 20th century tourism primarily enabled the creation of an export market for products branded as “typically Hawai’ian.” There has been no sustained discussion of the relationship between tourism and food security or between tourism and forms of small-scale agriculture that benefits local populations or is even sold to them.

In Europe, agritourism takes the form of an alternative strategy to standard farm production. In tourist centres farmers find engaging directly with tourists to be far more lucrative than indirect linkages. In England, agritourism is assumed to be a panacea for rural areas with few development options (Busby & Rendale, 2000). Farmers most interested in agritourism are those who are most in debt and in need of cash and those whose children wish to remain in the business in a declining agricultural sector. While agritourism does not seem to increase profits, it can stabilize local farms so they can stay open through all seasons and at small scales. Many farmers consider agritourism to be a separate business from farming and do not wish to give up their farming identity, even as they engage in agritourism (Sharpley & Vass, 2006). In Italy, larger farmers are seen to be more capable of making the shift to agritourism because they have more capital and can absorb the risk of investing in tourist infrastructure. Age also is a structural factor and older farmers are less likely to venture into agritourism because their goals are more short-term (Sonnino, 2004).

In the Gulf Cooperation Council (GCC) region of the Middle East, Pirani and Arafat (2016) explain that growth in tourism means growth in food demand, consumption, and also food waste. The region is a large food-waste generator, with 30% of all purchased food in hotels and malls being wasted, and so food demand must be managed in terms of behaviour change to minimize food waste. In Israel it was found that tourists in rural areas did not care much about the farm factor as a major component of rural tourism but that farms in tourism cluster areas produce more product and have higher-valued accommodations (Fleischer & Tchetchik, 2002). In the Middle East there is acknowledgement of the need for food security concerns to be addressed in discussions of the food demand linkages between tourism and agriculture, but direct forms of agritourism do not appear to be widely prevalent. Israel may be an exception to that assessment, but even in that case rural farms seem to be the beneficiary of tourist dollars that stabilize their income in tourist regions, and if these agritourist farms do produce more product, it is not clear where that product goes or who it feeds.

In Southeast Asia forward linkages may be deemed unnecessary in many places if local agriculture can be supported by the tourism industry through backward linkages. In the island
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of Lombok, Indonesia, Telfer and Wall (1996) explore the challenges facing agritourism, including lack of communication and understanding between sectors, tourists’ preferences for the familiar, and competition for land, labour, water, and domestic capital. In very poor subsistence areas that are nonetheless growing rural tourism locales, such as in parts of rural Thailand, local household gardens with vegetables and other produce are encouraged for local food production and tourist consumption. The goal is cheap, locally produced, healthy food that supports community resilience but that also has a unique local identity to attract tourists (Sikiram, 2014). Some direct small-scale, community-based agritourism, such as home stays or guest houses, can improve highly localized forms of food security by encouraging households to grow local nutritious foods to serve tourists and ultimately themselves. In the island of Taiwan, resource use, pollution, and landscape change are impacts of tourism, but promoting agro-ecotourism can supposedly have benefits like organic production and improved environmental quality (Kuo & Chiu, 2006). These authors see agro-ecotourism, which addresses environmental concerns, as superior to conventional agritourism and claim it should be the optimal rural policy for Taiwan.

In the Indian Ocean, residents of Mauritius view agritourism as a positive factor in improving community well-being (Naidoo & Sharpley, 2016). Agritourism is perceived as offering greater potential to enhance the security and welfare of community members as compared to resort-based enclave tourism. Similarly, island communities in China view agritourism as increasing revenue and reinforcing island identity (Su et al., 2017). In this context, agritourism takes the form of sharing fishing culture and practices rather than land-based agriculture—capitalizing on the fisheries-based livelihoods of these island communities.

While our global review is not limited to islands alone, it is by no means exhaustive. However, these representative examples of the existing literature show that a great deal of direct agritourism around the world does not yet explicitly address food security, and in many cases the relationship between agritourism and food security must be inferred. Direct forms of agritourism, where they exist, are frequently utilized as a rural development strategy to provide income. In many cases agritourism is not necessarily tied to local, national, or regional food security via food production at all, except at the very small scale in developing economies where agriculturists might not be producing much at all for themselves if it weren’t for the presence of tourists, thereby improving their own diets as they cater to guests.

Agriculture and tourism in New Providence

The Bahamas is a small island archipelago in the western Atlantic Ocean on the northern edge of the Caribbean region. Consisting of over 700 islands, astronauts have remarked that this island nation is one of the most beautiful places on Earth when seen from space; these islands are the stuff of dreams. The tourism industry of The Bahamas has expended significant time and energy selling the islands of The Bahamas as some of the most beautiful places on Earth when visited as a Euro-American vacation destination (Cleare, 2007; Moore, 2015). New Providence island is the seat of the Bahamian capital, Nassau, the home to the majority of the nation’s citizens, and the site of the majority of the nation’s tourist arrivals.

The USA, less than 200 miles from New Providence, provides over 80% of tourists to the island (Thomas, 2012). The tourism product in New Providence is targeted towards relatively affluent mass tourists who are attracted to large resorts that offer the sun, sand, and sea experience along with casinos (Cleare, 2007; Pattullo, 2005). Large resorts, concentrated on the northern shores of the island near Nassau, offer immersive experiences where tourists do not need to leave the premises. A variety of restaurants, entertainment options, and
shopping experiences are offered at these resorts, diminishing the need for tourists to venture to other parts of the island. While there are a number of smaller, locally owned or operated hotels, these establishments cater to the minority of international guests and are often used for business travel or for accommodation by tourists who are visiting friends and family (Thomas, 2012). In addition to stopover tourists, the majority of visitors to New Providence arrive via cruise ship. As one of the major Caribbean cruise destinations, New Providence welcomes 2.6 million cruise-ship tourists per year, dwarfing the resident population of approximately 250,000 (Department of Statistics, 2015; Ministry of Tourism, 2017). These visitors tend to remain close to downtown Nassau, where the cruise-ship port is located.

Despite its overabundance of tourism, New Providence has one of the largest agricultural landholdings in the nation and has also been an integral part of a number of historic plans for the expansion of the nation's agricultural sector. Perhaps the most significant development was the Millar's Road Agricultural Development Project in the 1970s where 500 acres of Crown Land, land in the property of the state, was made available for both established and aspiring farmers (Eneas, 1998). A large area in southwest New Providence, centred around Cowpen Road, was set aside for farm leases for small-scale local farming and was designated as an agricultural centre, adjacent to the urban density of Nassau. It was envisioned that this agricultural corner could feed the island, provide wholesome local produce to the majority of residents regardless of income level, and stabilize the local agricultural economy. Islanders took up these leases and the area became known as a place for farming on an island that otherwise looked to the expanding Caribbean tourism industry as the national standard for modern development and consumptive lifestyles.

Figure 1: Agritourism case studies.
Methodology

In order to investigate the current state of agriculture and agritourism in New Providence, the authors, along with a team of students and colleagues, administered semi-structured interviews and site visits with approximately 60 current and former farmers on the island between February and March of 2016. In the absence of a formal farmer registry, a list of farmers was compiled using input from the Bahamian Ministry of Agriculture, Inter-American Institute for Cooperation on Agriculture (IICA), and local researchers. The vast majority of contacted farmers agreed to participate in the study that focused on farmers’ perspectives on local food production. Interviewees were asked about their background and training in agricultural practices, crop yields, sales, profitability, and details on how and to whom they sold their products. Information about the size and ownership of the farms along with existing or potential relationships with tourism stakeholders and other farmers was also obtained. Site visits were made to active farms (producing crops) and lasted between one and three hours. Detailed ethnographic observations were made on the type of farming methods utilized, crops and livestock present, and existence and state of farm infrastructure. Interviews were transcribed and qualitative content analysis was utilized to determine themes related to existing agricultural activity, potential and challenges for agritourism development, and the linkages between agritourism and food security.

To round out our study of agriculture and the potential for agritourism in New Providence, we also conducted semi-structured interviews with governmental representatives, buyers from local grocery store chains, and one prominent island chef who is known for sourcing produce locally.

Results

Our results are divided into two categories: interviews and case studies. The interviews yielded an important snapshot of the current state of agriculture on New Providence as well as narratives explaining how the present shape of agriculture came to be from the perspective of both current and former farmers and members of the farming industry. In addition to interviews, site visits and observations on farms helped us identify those farms that most closely fit the bill of direct agritourist destinations. At present only three farms identified themselves and were readily identified by others as engaging in agritourism on an island that receives millions of annual tourist arrivals.

New Providence agriculture interviews

Summarizing from our extensive interview data with farmers, we found that in the decades since the land was designated for farming, several different kinds of farms have struggled to emerge. Most farms consist of small- to medium-sized plots ranging between two and five acres. Farms are generally classified as either crop, livestock, or ornamental production, with most being used for a combination of crop and livestock. Similarly, farmers are not known to focus on any one crop but produce a wide array of crops depending on the season—the peak being the winter and spring months when temperatures are cooler. Farming methods vary from ‘traditional’ pot hole farms where seeds are placed in naturally formed holes in the limestone rock, to ‘high tech’ aquaponic closed systems that utilize live fish to fertilize a smaller array of hydroponically grown crops. However, the majority of farmers grow a few staple crops in irrigated beds utilizing well water. A few farms are intentionally organic, while some farms are considered organic by default because small-scale farmers cannot pay for expensive chemicals or fertilizers. Others utilize fertilizers and products subsidized by the government or imported from abroad.
Very little has changed since the 1970s in terms of land acquisition for farm development. Most farmers do not purchase Crown Land outright from the government but, instead, are given long-term lease contracts and initial land-clearing support for periods of 20-25 years, once they demonstrate continuous production on their plots. Leases are discontinued due to arrested agricultural production or if farmers pass away. Over the years it has become customary for small farmers to construct housing structures either on or in close proximity to their plots for themselves or for seasonal hired laborers, precipitating an interesting mix of farmland and housing subdivisions in southwest New Providence.

Farmers are generally older and male, although there are a few farms run by younger families under the age of 50. Many farms are still run by the original lease holders or their family members, although we soon learned that the longevity of farms did not necessarily mean these family farms were ‘successful’. Many farmers on New Providence, especially in this agricultural area, no longer make a real living with farming, if they ever did. A great deal of the produce we saw is given to friends and family. For many, holding on to their minimally productive farms is important as a means to maintain lease of the land. Employees are typically of Haitian origin because they are said to work for less than Bahamian farm employees. The low percentage of Bahamian workers is also related to increases in employment in other industries, namely tourism and financial services, which attract a large percentage of the New Providence population. Most older farmers have adult children who have not followed them into the farming tradition; instead, they are pursuing other forms of employment.

The 1970s vision of having substantial commercial operations on this corner of the island never came to fruition. Instead, what has resulted are modest subsistence landholdings of various sizes scattered across the southwestern region of the island. This is indeed a far cry from the great agricultural vision of New Providence as being the nucleus of an agricultural system of far-flung food producers. Today, this area of New Providence is experienced as an anachronistic return to a former era of domestic food production, with scattered farms ‘hiding out’ from the urban sprawl that attacks the land from all sides. Most tourists never see this part of New Providence, and many residents may never venture there in their daily routines.

Why did these farm dreams ‘fail’ to lead to food security for New Providence? The main reasons explained by the farmers themselves seem to be that the cost of farm labour is high, Bahamian farm labour is scarce, and farm inputs like fertilizer are costly. Local produce is often rejected by local buyers, especially buyers from the tourism industry, because it does not meet standards for price, appearance, and consistency demanded by the international market. Bahamian residents, increasingly connected to other markets in a globalized world, have decreased consumption of native produce and have become accustomed to imported food items which local farms find difficult, or impossible, to compete with.

Our interviews with industry officials and buyers revealed mixed perceptions on possibilities and barriers to agritourism and potential linkages to food security in New Providence. Existing agritourism was perceived as mostly focusing on backward linkages between agriculturists and tourism–related establishments. The most financially successful of these were identified as a few large farms on the more rural islands of the Bahamian archipelago which sell directly to restaurants and hotels. Also identified were a few smaller-scale agriculturists who provide produce, meat, seafood, and eggs to small restaurants and caterers. The high quality of food was recognized as a major benefit of local produce as interviewees intimated that items such as locally produced eggs and tomatoes often surpass the quality of imported items, which may look good but can be flavourless or unripe.

In terms of the island’s potential for agritourism, industry interviewees recommended the development of farms and farm produce niche markets, which would allow agriculturists to fulfill desires that ‘consumers don’t yet know they want’. This would allow farmers to attract both domestic and international tourists. Capitalizing on linkages between diet and
health would allow agriculturists to gain a wider market for fresh, local food. The development of value-added products such as jams, preserves, and pickles was seen as a way for agriculturists to utilize surplus produce and to garner higher profits. Farmers’ markets where consumers can directly purchase goods were also identified as an area in need of development. While interviewees identified some strides in localized, market-based agritourism, such as a few small existing farmers’ markets and an all-women producers’ cooperative that has encouraged the participation of women in agriculture and in the production of spices and crafts, they all felt that there was much more room for growth.

Industry interviewees also identified a number of barriers that have inhibited agritourism development. One of the most common barriers identified was lack of access to land and financing. Given that direct forms of agritourism require development of infrastructure, such as restrooms and other facilities, financial investment is a necessity. In the opinion of a representative from the Ministry of Agriculture, the current system of leasing land is not conducive to the development of infrastructure for agritourism purposes because there is little incentive for the farmer to invest in infrastructure. Another challenge that was identified was the lack of consistency in the production of local food. When produce such as tomatoes, onions, and cucumbers are out of season in the Bahamas, the demand for them does not decrease, thus creating the need for imported items. Imported items were also identified as having more uniform quality, grade, and packaging sizes than their Bahamian counterparts. These factors, in addition to the lack of a reliable and rapid transport system from out islands to New Providence, has increased reliance on imported food by hotels and restaurants. The chef whom we interviewed described the challenges of relying on only local produce, stating that relying solely on locally produced food would necessitate changing the restaurant menu daily, depending on the availability of items. While a small restaurant or caterer may be able to accommodate an ever-changing menu, this model would not be ideal for larger establishments.

These barriers to agritourism were also linked to challenges in improving food security for the nation. The lack of a national plan on stimulating food production along with the prolonged focus on tourism to the detriment of other industries led a number of interviewees to doubt the potential of agritourism to increase food security. The absence of a new generation of farmers was also seen as a hindrance to achieving food security. Younger people were characterized as more interested in pursuing less labour-intensive careers, leading to a lack of farmers and the decline of the agricultural industry. As one agriculture industry official stated, “I feel sad for those who have given their life to it [agriculture]. Feeding sheep and putting potatoes in the ground, and when they close their eyes the bush will grow up over it and no one will remember them.” However, other interviewees had more optimistic views. A representative from Bahamas Agriculture and Marine Science Institute (BAMSI) was confident that at least 30 crops could be produced within the nation, if people can be found to produce them, eliminating the need for importation and increasing food security. Other stakeholders also agreed that increasing food production is indeed possible and that changing island diets to rely on local, seasonal foods would go a long way towards greater self-sufficiency.
Table 1: Benefits and barriers to agritourism in New Providence.

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<thead>
<tr>
<th>Benefits</th>
<th>Barriers</th>
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<tr>
<td>The development of niche value-added agritourism products and experiences can attract more domestic and international tourists and diversify the existing tourism product;</td>
<td>There is generally a decline in available land, funding and interest by younger people for farming operations;</td>
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<tr>
<td>Farmers can adopt a smart zero food waste approach to their operations that will allow for increased profit margins through the creation of a variety of value-added items and experiences;</td>
<td>Agritourism requires investment in facilities which small farmers find difficult to provide given limited funding sources;</td>
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<tr>
<td>The market for local food production has grown due to the increasing appetite by both tourists and residents to consume more local, seasonal foods.</td>
<td>The current land lease system for farming is not conducive to enabling farmers to making sizeable investments in their properties to facilitate agritourism;</td>
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<td>There are direct correlations between high quality local food and greater diet and health performance.</td>
<td>There is often a lack of consistency in the volume and quality of locally grown food which increases the need for imported food items;</td>
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<td></td>
<td>There is no comprehensive agriculture/food policy to create an environment conducive to significantly grow the local industry;</td>
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<td>Governmental focus has centered on traditional mass tourism development which lowers possibilities for agritourism and food security.</td>
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New Providence agritourism case studies

Farm #1 is atypical for New Providence. It is 12 years old and all 50 acres of land are fully owned by a wealthy Bahamian who made his fortune in finance and whose family has a long history of farming and agricultural landholdings. His farm, located near an affluent residential enclave in the west of the island, is not associated with the leased farmsteads of Cowpen Road. The farm is organic and engages in both direct and indirect forms of agritourism. Microgreens along with other produce are supplied to the high-end restaurant sector and boutique hotels and a number of farm-based activities are offered that are frequented by both tourists and affluent residents. Visitors can tour the farm grounds and have lunch served al fresco on the grounds from the farm restaurant. The food is decidedly up-market and ‘farm fresh’ with salads, soups, and grains featuring heavily on the menu. The food tastes more like Napa California, and is indeed priced in that strata, than the usual Bahamian cuisine which is often more fried, breaded, and stewed. The self-guided farm tour features greenhouses with large scale aquaponics systems for the growth of ‘niche crops’ including cherry tomatoes, strawberries, and varietals of mint and basil, a system that the owner feels is the most sustainable way to farm. The owner opined that the Bahamian government has ruined farming by eradicating protective policies, leaving the country dependent on imports and drowning in crime as a result of poverty and government corruption. The owner stated that if crime levels did not decrease he would close his farm and move his restaurant to the nearby gated residential enclave, where only wealthy residents would have access to his products. Indeed, following our interview, the owner did move the restaurant to the enclave and the farm is no longer open to the public.
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Farm #1 appears to be the most successful in direct agritourism and is often heralded as an example for other farms. Low acreage is required to produce its high-end crops and everything it produces is sold, donated, or turned into value-added products. The farm does indeed attract many visitors who will pay a premium to enjoy this style of upscale agritourism, with over 45,000 lunches being sold annually. But this farm is not exactly a model for island food security. The restaurant itself relies on goods sourced from Florida, which are flown in on the farmer's private plane. Microgreens, mint, and basil will not meet the food demands of the island. Only a wealthy person with direct access to capital could start a farm like this in New Providence, only affluent people can consume the farm's products, and few Bahamians benefit from the farm's existence. Instead of being a model for the development of island food security, Farm #1 features a form of agritourism that is actually a brand of ‘sustainable tourism’ (Moore, 2015). The organic fields of greens, the aquaponics system, and the farm-to-table feel of the restaurant align with the prevailing aesthetics of ‘green local business’ that is a popular high-end product for an international, cosmopolitan clientele. This farm is most certainly a model for a viable business, but the actual sustainability of that business beyond catering to the elite is highly questionable. If anything, Farm #1 helps to stabilize a luxury tourist market in The Bahamas, rather than stabilizing any real capacity for island food security.

Farm #2 is closer to the typical farm in New Providence. This farm is 13 years old with the nine acres of land in the Cowpen Road area on lease from the government by a former entrepreneur in the heavy tool equipment industry. The clientele is primarily comprised of Bahamian residents, not Euro-American expatriates or vacationers who frequent Farm #1. This farm combines food production with tours, parties, and retail shopping. The owner, a self-taught farmer, sells eggs, a wide variety of standard Bahamian produce, and an assortment of jams and sauces to local residents and a few restaurants. The farm doubles as an event space which is rented for retreats or camp experiences. Large pizza ovens are utilized for the quick production of casual lunches, and pitchers of freshly made juices are served to guests as part of the meal experience. Most of the tours are given to school groups to learn about farming and to discover the farming history of the island. This agritourism farm is an eclectic space. There are vestiges of the owner's earlier tool business everywhere, including heavy equipment parked at the entrance, and walls covered with metal hardware. Most of the infrastructure was built by the farmer himself, resulting in an unplanned aesthetic that stems from the cost-saving habit of building piece by piece over time without the injection of large sums of capital up front.

Farm #2 is more representative of the type of direct agritourism that Bahamians without access to significant capital may be able to achieve. This farm is a site for domestic recreation, and, as such, its products are much more likely to be purchased by a small middle-class market for fresh produce outside of the imported grocery system. Although the farm advertises online, has a restaurant, petting zoo, and other amenities, few international tourists venture to Cowpen Road to visit. Farm #2 is also far more concerned with educating a new generation of Bahamian youth in the ways of farming, hoping to inspire interest in agriculture as a viable career path. However, even this more egalitarian agritourism model is not likely to stem the flow of imported agricultural products. Instead of stabilizing domestic food production, direct agritourism stabilizes the existence of this one farm, as it is unlikely that the farm could afford to exist without the capacity to rent out its space for social events. But with the additional income gleaned from turning the farm into a recreational site, the farmer retains use of the land, makes a decent living with the part-time help of family, and offers produce at reasonable rates as a supplement to the goods available in the island’s grocery chains.

Farm #3 is unique in New Providence in that the farmers have an extensive, technical background in horticultural and plant science, but it is an incipient agritourism destination.
The couple that started the farm travel constantly to conferences and workshops to maintain continuing education in the field of organic farming. The farm is an example of organic micro-farming in which large amounts of crops are creatively grown on small amounts of space, although without the aid of greenhouses or aquaponics. Located on two acres of land that is rented from a larger commercial farm in the west of the island, this farm grows some varieties of plants that are atypical for The Bahamas, such as experimental bitter Chinese greens, multicoloured radishes, Japanese eggplants, heirloom tomatoes, and kale, which are consistent with the expanding tastes of the Bahamian high-end market. In terms of agritourism, the farm is home to a weekly farmers’ market that attracts local consumers, produce is sold to local high-end restaurants and individual buyers, and the farmers are active proponents of buying local, welcoming everyone to their farm and market as a form of experiential education. And yet this farm struggles with profitability, and the owners are currently unable to afford land for a more permanent farmstead. Along the lines of increasing profitability, they hope to create more value-added products and eventually expand the possibilities for direct agritourism at their farm beyond occasional tourists off the beaten path. The owners are clear that education will drive visitors to their farm, stating that they can make money from ‘selling the experience’ and that guests will come to learn about organic and micro-farm practices and experience local, sustainable produce.

Farm #3 is similar to Farm #2 in that its goods are mostly purchased by a small middle-class market as a supplement to imported items. While this farm produces more high-end and exotic crops, the current scale and seasonality of the operation is not sufficient to make significant impacts on food security. Direct agritourism is viewed by the owners as a way of increasing revenue to improve profitability of the farm and to expose both tourists and residents to an organic farm experience. However, while this farm already operates a farmers’ market, it is mostly frequented by island residents. While the owners plan to expand their direct agritourism product though production of value-added goods, it is unclear that this will result in significant financial gains. With limited capital to invest, the options for expanding direct agritourism are constrained and, as seen by Farm #2, even adding more amenities does not guarantee that tourists will come.

Discussion and conclusion

So what promise, if any, might small island agritourism hold for The Bahamas and its dreams of food security? While the existing agritourism farms currently have insignificant impacts on food security due to the type, volume, and seasonality of crops, it is arguable that they are strengthening domestic food production on New Providence. The three farms engaging in direct agritourism were the most active producers in terms of year-round consistency of the many farms that we visited because they had to have a constant supply of produce and goods for guests at their on-site restaurants and markets in addition to their wholesale clients. While the majority of the other farms produced very limited volumes of crops or livestock and left most of their land either vacant or utilized for housing, agritourism farms actively cultivated and expanded local markets for their goods. By engaging with customers, either indirectly through supplying goods for hotels and restaurants, or directly through creating a welcoming space for visitors, these farms all had some measure of success and profit. Similar to case studies from our global review, agritourism in New Providence has been used as a strategy to increase farm revenue rather than food production. However, the limited contributions of individual agritourism farms to food security could perhaps be bolstered by encouraging other farms to follow in their footsteps.
While these farms will likely never produce enough food to render the country's dependence on imports obsolete, when taken as a collective, small agritourism farms can make significant contributions towards increasing the nutritional value and quality of domestic agriculture. If more farmers are able to engage in domestic agritourism this could ideally contribute to decreasing food insecurity by increasing the availability of high-quality, locally grown, organic and/or nutritionally rich fresh produce on the island, making such produce more desirable for more islanders. Locally accessible farms like #2 and #3 may be capable of changing the tastes of the Bahamian middle-class vegetable palate, injecting a desire for fresh, bitter greens and pickles into a diet steeped in Wesson Oil. In addition, agritourism has the ability to empower small farmers to retain control of their lands, resources, and futures as farms gain value in being both a site of production and a tourism destination (Sonnino, 2004). These benefits are also valuable to those who lease land, like many of the New Providence farmers.

However, these three farms also show that not all farms will be equally able to participate and reap the benefits from direct agritourism, particularly with wealthy international tourists. Farm #1 has by far been most successful by appealing to upscale residents and foreign visitors. This success can be attributed to a number of factors including location, high-end ‘green’ aesthetics, and amenities—all of which are related to the farmer's investment of personal financial capital. In contrast, the unplanned and rustic aesthetic of Farm #2, along with its location in the Cowpen Road area, have failed to attract foreign tourists. Similarly, the ‘off the beaten path’ charm of Farm #3’s farmers’ market has been mostly patronized by island residents. New Providence is one of the most expensive destinations in the Caribbean and is marketed as an upscale beach and casino destination. As has been identified in other studies (e.g., Collins, 2000; Rhiney et al., 2015), tourists that come to the island for this type of vacation may not be interested in a more rural agritourism experience. Indeed, agritourism has largely been associated with rural tourism (Busby & Rendle, 2000; Sikiram, 2014) and not with the ‘exotic island’ beach tourism of New Providence. Without significant capital, it would be difficult to transform existing farmsteads in the Cowpen Road area into upscale agritourism destinations that may be more appealing to a sufficient number of foreign tourists that frequent the island.

Further, if direct agritourism in Caribbean islands is viewed as having a certain elite aesthetic, then farms may become even more polarized. Only farmers with capital to secure prime locations and develop direct agritourism that is more reflective of high-end consumer luxury expectations will benefit, while the vast majority of farmers will continue to languish. As noted by Timms (2006), without specific measures including regulations and participatory planning, agritourism may only benefit a small minority of farmers. Agritourism is therefore not an automatically sustainable strategy. Further, agriculture is more often linked to tourism in the literature in order to promote the growth of interesting niche markets for tourism diversification, not for the development of domestic agriculture or food security (Torres & Momsen, 2011; Turkalj et al., 2013). As many destinations increasingly desire a high-end tourist (Lundy, 2014; Ministry of Tourism, 2003) and therefore seek to promote the kind of experience a wealthier traveler would enjoy or expect, we could expect destinations to cut out poor farmers and focus on those who are able to provide ‘high-quality’ products that tourists are said to desire.

In a survey of foreign tourist preferences for direct agritourism in The Bahamas, Hepburn (2013) finds that farmers’ markets, product tasting, and farm tours were most commonly identified as activities that visitors would be potentially interested in. While this does provide a basis for increasing direct agritourism on the island, there is a pressing need to
explore more radical possibilities that may have a greater impact on food security and other 
social concerns. The practice of “critically reflexive leisure” is tourism that is self-consciously 
aware of the social context of leisure and the relations among leisure, power, and subsistence 
(Amsden & McEntee, 2011). Viewing agritourism as a mechanism to address food justice, 
health, and the sustainability of communities and livelihoods, while also increasing 
connections to place, means that agritourism must be developed in a way that considers more 
than potential appeal to wealthy tourists. Encouraging the development of multiple 
agritourism farms like Farm #1 that would only benefit the affluent does not improve food 
security or address the social and economic inequalities of the island. Agritourism created 
without a sense of politics or without devolution of power and economic control to the local 
level is potentially an accumulation strategy by which forms of subsistence wealth is actually 
extracted from the poor. Historically based socioeconomic inequities matter when it comes 
to success with agritourism, and agritourism can easily participate in exacerbating uneven 
hierarchies by sustaining wealthier farms (Sonnino, 2004).

Development of direct agritourism in pursuit of food security in an island as heavily 
dependent on tourism as New Providence must also take into account both local and visitor 
consumption patterns. Residents and tourists expect to have access to a wide variety of food 
regardless of the season, leading to an almost complete dependence on importing food. These 
demands for diverse food of a particular aesthetic quality limit what local markets can provide 
to the detriment of the agriculturalists, food culture, and food security. This is a form of food 
imperialism or food colonization and domestic agriculture will be unable to meet these 
expectations, due to seasonality and the inability to produce certain crops or livestock that do 
not grow well in the region. If food security is to be improved for the island, there would 
need to be significant changes to consumer demand and taste, a daunting task as this would 
require modifications to the expectations of both tourists and locals. Local farms would also 
have to take up the charge of producing crops that can lead to greater food security, rather 
than focusing primarily on herbs, microgreens, or other specialty crops. There must also be 
purposeful efforts to produce food to meet both tourist and local resident demands.

In the face of annual food imports dwarfing local agricultural production, island food 
security has become a recurring dream that has so far failed to manifest in waking life. Despite 
failures and setbacks, attempts to stabilize food security through the redesign of Bahamian 
agricultural production continue. The market for direct agritourism is just now emerging as 
an alternative that may hold promise to reverse the trend of agricultural decline in tourism- 
dependent nations like The Bahamas. However, the potential for agritourism to transform 
food security for small Caribbean islands is constrained by demand and the consumption 
standards of both residents and tourists. The outlook for change does not look positive unless 
these larger cultural issues are faced head on in the wider society. Direct agritourism that 
positively impacts food security cannot follow existing models that privilege the select few 
and result in greater inequalities. The type of agritourism that has thus far proven to be most 
appealing to tourists in New Providence may just be a boutique industry for the high-end 
foreign visitor, not achievable for the majority of farmers, and have inconsequential 
contributions to island food security. Rather than promoting these unsustainable 
estABLishments, direct agritourism should be inclusive of different types of farms and farmers, 
take into account national food supply requirements, and actively address the need to shift 
consumer demands to locally viable, nutritionally rich sources of food. Unfortunately, in its 
current form, direct agritourism is not yet a viable solution for the food security issues of New 
Providence, let alone other Caribbean islands.
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Tourism economies and islands’ resilience to the global financial crisis

Katarzyna Podhorodecka
Faculty of Geography and Regional Studies, University of Warsaw, Poland
kpodhorodecka@uw.edu.pl

ABSTRACT: The article is a comparative study of islands’ reactions to the global financial crisis. The main aim is to identify conditions which influence how the effects of the crisis in the tourism sector differed between selected island territories. Seventeen island territories which rely on tourism were selected for analysis. Each reacted differently to the global financial crisis, especially with regard to changes in tourist movement, employment in tourism, and expenditure by foreign tourists. The factors analysed are: length of time as an independent state or dependent territory, degree of dependence on tourism, the diversity of the mix of foreign markets from which tourists arrive, level of dominance of the main foreign market, level of dependence on European and North- and South American markets, duration of flights from the main market, level of economic development, quality of life of the island area’s residents, tourist expenditure, and changes in government expenditure on tourism. The statistical analysis was conducted using both the Spearman and the Kendall rank correlation coefficients.

Keywords: global financial crisis, island economics, island territories, resilience, SIDS, tourism Economy

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Introduction

Tourism is the driving force of economic growth in many island economies that lack other competitive sectors. There are over 180,000 islands of different sizes and natural conditions worldwide (Tiago et al., 2016, pp. 601-618; Tiago et al., 2015). Many islands have good environmental conditions for expanding into the tourism market. However, the global financial crisis revealed the great vulnerability of island territories to external factors (Lewis et al., 2009, p. 2). Examples of severe problems associated with the global financial crisis include: decreases in the number of arrivals to Antigua and Barbuda; a decrease in the export of goods essential to the economy, such as bauxite and aluminium in Jamaica; and decreased remittances to islands (Lewis et al., 2009, p. 2). The analysis of the situation in island countries and dependent territories during the global financial crisis (2008–2010) showed that the economic situation of islands was varied. Despite the global recession in the tourism market, for some of the islands tourism movement (i.e. tourist numbers), tourist expenditure, and employment in tourism actually improved. Seventeen island areas worldwide whose tourism industry expenditure generates more than 10% of GDP were selected for analysis.

Literature discussion

Tourism, sometimes called the ‘blue economy’, is the main economic sector for many SIDS (Small Island Developing States). Many island territories are strictly reliant on tourism and, for
many, tourism is the main source of exports (e.g. Maldives, Seychelles, Saint Lucia) (Reddyis, 2013). Tourism has a very large impact on economic activity and is usually seen as profitable. Many authors have tried to estimate profits from tourism and identify the conditions influencing increases in tourism expenditure (Crompton et al., 2001; Dwyer & Forsyth, 1993; Fletcher, 1994). Tourism provides funds for local communities and has a significant economic multiplier effect. The role of innovation in developing tourism has been discussed by d’Hauteserre and Funck (2016, pp. 227-244). Many authors have analysed the factors influencing economic revenues from tourism. There are links between tourism development and economic indicators (Lim, 1999). Tourism expenditure and currency exchange rate have also been analysed to identify the impact of tourism on the economy (Coshall, 2000). Researchers have tried to apply the econometric model to explain the number of tourist arrivals (Vanegas & Croes, 2000, pp. 946-963). Development pathways of small tropical islands have been analysed by Jędrusik (2014). Distance as a development factor on islands was analysed by Wites (2009). The impact of tourist arrivals on economic growth has also been confirmed by case studies done on islands (Podhorodecka, 2014, pp. 16-25). Tourism is an important factor in accelerating the GDP of islands, as confirmed by strategic documents relating to SIDS. Positive development paths for tourism on small island were presented by Scheyvens and Momsen (2008, pp. 491-510). However, the negative impact of tourism on the local economy is rarely analysed (Dwyer et al., 2004, p. 308). The development of agrotourism on islands has been discussed by Karampela et al. (2016, pp. 161-176). Grydehøj (2011) looked for economies of very small jurisdictions which, due to their small populations and small economies, react differently than large islands. Development on islands was described by Law et al. (2016) in the case of the Bali islands. Bianchi (2004) showed tourism initiatives on the Canary Islands. Capó et al. (2007) proved the reaction of a local economy to a rapid change in the export of natural resources on the Canary Islands. The relationship between tourism development and community for islands’ economies was checked by Nunkoo et al. (2010) as well as by Kokkranikal et al. (2003), who studied the tourism development of the Lakshadweep Islands.

The global financial crisis has ended, but many sectors are still in recession. The tourism industry, however, is not experiencing a long-term recession (Reddyis, 2013). There has, in fact, been a decades-long increase in the tourism economy, with an average annual growth rate of 3-4%. However, there have been exceptional crisis events, such as the Asian financial crisis of 1997, the Asian tsunami of 2004, and the terrorist attacks of September 2001 (Reddyis, 2013). This means that the rate of tourism growth has been weakened by economic crises, terrorist attacks, natural disasters (e.g. tsunami and earthquakes) and politics (e.g. restrictive visa regulations). Many authors have studied the impact of crisis events on tourism (Rucińska & Lechowicz, 2014; Ryan, 1993). For example, Prideaux and Witt (2000) showed the impact of the Asian financial crisis on Australian tourism. There have also been studies on the impact of terrorist attacks (Blake & Sinclair, 2003, p. 823; Goodrich, 2001; Pizam & Fleischer, 2002), the impact of natural disasters (Kim et al., 2006, p. 931), and the impact of earthquakes (Wang, 2009, p. 76; Huang & Min, 2002) on tourism. Crisis events on islands have been analysed by Shareef and McAleer (2005, pp. 313-314).

These crisis events result in a decrease in the tourist market, which is associated with a decrease in employment figures in the tourism economy and greater unemployment for the region, as well as a decrease in tourism business revenues. There are cuts to investment plans as costs rise. Moreover, crisis events make working and living conditions very stressful for local people. However, crisis events can sometimes provide positive outcomes, such as new ideas, new products, new markets, or new management programmes (Okumus & Karamustafa, 2005, pp. 943-944). Enterprises have an increased opportunity to develop new strategies and bring in innovative products and processes, which results in lower prices (Zdon-Korzeniowska & Rachwal, 2011). Tourists love peaceful conditions and not crisis events, so destinations need safe conditions for their visitors (Winiarski & Zdebski, 2008). It is possible to differentiate ecological,
regional, and global crises, but, although their origins are different, they are all connected in some way. For example, ecological crises, terrorist attacks, and wars may result in political crises that influence the tourism industry of a particular country. For instance, the war in the former Yugoslavia (in the beginning of the 1990s), conflicts in the Middle East, the war in Iraq (2003), the conflict in the Persian Gulf (1991), or political problems in Tibet (Okumus & Karamustafa, 2005, pp. 943-944).

It is to be expected that the tourism sector, as a part of the global economy, is at risk from crises, and it needs to learn how to react to such events (Kotler & Caslione, 2009; ZdonKorzeniowska & Rachwal, 2011). There are different definitions of ‘crisis’, especially in political science, economics, and other social sciences (Dziedzic, 2012, p. 11). Broadly, however, a crisis is an unplanned and unexpected event that comes from inside or outside the environment or organisation. Crisis events are also characterised by their causing physical or mental fear and by being impossible to cope with by means of normal management procedures. For the purposes of this paper, the definition of financial crisis is a situation in which there is a shift in tendency from expansion to depression (Bremond et al., 2005, p. 87).

The effects of the global financial crisis on tourism were visible in the statistical data. In 2009, according to United Nations World Tourism Organization (UNWTO) data, the tourism industry recorded an 8% decrease compared to 2008. The regions most affected were Europe and the Middle East (Geise, 2009, pp. 42-45). In 2009 there was a decrease in foreign tourist arrivals of 4.3% (from 920 to 880 million) (Dziedzic et al., 2010, pp. 13-14; World Tourism Organization, 2010, p. 5). Airlines reacted quickly to the global financial crisis (Geise, 2009, pp. 42-45).

The problem for all destinations was the European tourist market, which was responsible for almost 70% of the worldwide decrease (World Tourism Organization, 2010, p. 5). The large impact of the European economic slump on other countries was due to European citizens being very active in tourism movement. In 2009, global earnings from tourism were 8% lower than in 2008 (Dziedzic et al., 2010, pp. 13-14; World Tourism Organization, 2010, p. 5). Aviation sector earnings were also weaker due to falling passenger numbers (Dziedzic et al., 2010, pp. 13-14; Air Passenger Market Analysis, 2017).

An analysis of island reactions to the global financial crisis

Comparing the data from 2011 and 2008, it is possible to identify territories with different results for three indicators, namely: tourism movement, employment in tourism, and level of tourist expenditure. Some territories coped much better with the impact that the global financial crisis had on tourism. Tourism movement was best for the Seychelles, Bahamas, Maldives, and Saint Kitts and Nevis. The poorest results regarding tourist arrivals were for Antigua and Barbuda, Anguilla, Dominica, the British Virgin Islands, and Saint Vincent and the Grenadines. With regard to the tourism employment market, Anguilla, Dominica, and Malta coped best. In terms of changes in tourism expenditure, Dominica, the Maldives, and Malta dealt with the crisis best.

The economy of the Caribbean region is highly dependent on tourism; especially in particular island territories such as the Bahamas, Anguilla, Barbados, Jamaica, and Saint Lucia (Lewis et al., 2009, p. 10). The main markets from which tourists arrive to this area are the United States, the United Kingdom, and Canada. The global financial crisis reduced demand in these markets and, even in the peak season, use of accommodation was less than in the same period in the year preceding the crisis. In the first quarter of 2009, countries such as the Bahamas, Antigua and Barbuda, Anguilla, and Saint Vincent and the Grenadines registered a double-digit decrease in the number of tourists visiting the selected islands compared to the same period in 2008 (Lewis et al., 2009, p. 10).
Selecting conditions that potentially impact reaction to the global financial crisis

The research took into account independent island countries and dependent island territories in which tourist expenditure generates more than 10% of GDP and for which there were appropriate data available from the World Travel & Tourism Council (WTTC) and the United Nations World Tourism Organization (UNWTO) database. The 10% of GDP criteria was applied because the author’s previous research (Podhorodecka, 2008) on a larger group of islands showed that this specific situation and response was recorded in the group of countries which ‘rely on tourism’.

The island territories which were excluded due to tourist expenses constituting less than 10% of GDP were Bahrain (7.6% in 2008 and 8.3% in 2009), Comoros (7.5% in 2008 and 5.9% in 2009), Haiti (4.4% in 2008 and 4.9% in 2009), Madagascar (7.2% in 2008, 6.1% in 2009), Reunion (2.1% in 2008, 2.1% in 2009), Taiwan (1.9% in 2008, 1.8% in 2009), East Timor (0.3% in 2008 and 0.5% in 2009), Tonga (6.3% in 2008 and 4.9% in 2009), and Trinidad and Tobago (2.0% in 2008 and 2.9% in 2009). The same situation (less than 10% of GDP) pertained for the Solomon Islands.

Hong Kong and Macau were excluded despite their share of tourist expenses being higher than 10%: Hong Kong (9.2% in 2008, 9.5% in 2009 and 11.9% in 2010) and Macau (83% in 2008 and 86.6% in 2009). Hong Kong and Macau are special Administrative Regions of the People’s Republic of China and have a specific political and economical situation which is very different from the analysed island territories. In addition, despite having constituent islands, Hong Kong and Macau are connected with the mainland.

The analysis did not cover islands which strictly rely on tourism but which are part of a larger country (for example, the Canary Islands, which are a part of Spain; the Bali Islands, which are a part of Indonesia; and the Phuket islands, which are a part of Thailand). There was a problem with getting exact data on the tourism employment and tourism expenditures on such islands, which are an administrative part of a larger country.

In the case of Guam, which has a large tourism movement, there were no data on tourism employment or tourism expenditures. There were no data on tourism expenditures from the UNWTO database in the cases of American Samoa, French Polynesia, Nauru, Saint Eustatius, Saint Marten, Samoa, Sao Tome and Principe, Tuvalu, US Virgin Islands, Cabo Verde, Cayman Islands, Curacao, Dominican Republic, Guadeloupe, Marshall Islands, Vanuatu, and Bonaire. No relevant data were also available for Åland Islands and Saint Helena (no statistical data in the UNWTO database). Belize, Guiana, Guinea-Bissau, and Suriname are not strictly islands, so they were not taken into account. Papua New Guinea was too big (462,840 km²) to take into account. Moreover, there was no information about inbound tourism expenditure over GDP in the UNWTO database.

Island areas were divided into particular types according to the reaction of their tourism sector to the global financial crisis. The division into four types was made based on the scale of changes in incoming tourism during the global financial crisis, as follows (see also Table 1):

A - no (or very low) decrease in tourism movement during the global financial crisis (4 territories),
B - a small, short-term decrease, but a better situation in 2011 than before the crisis (4 territories),
C - a similar situation in 2011 to before the crisis (4 territories) - only reaching pre-crisis levels after four years’ recovery, and
D - a long-term recession and a worse situation in 2011 than in 2008 (5 territories).
Table 1: Ranking island economic resilience to the global financial crisis, based on changes in tourist movement (2011 and 2008).

<table>
<thead>
<tr>
<th>Island territory</th>
<th>Changes in tourist movement (2011/2008)</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Maldives</td>
<td>136%</td>
<td>A</td>
</tr>
<tr>
<td>2 Saint Kitts and Nevis</td>
<td>134%</td>
<td>A</td>
</tr>
<tr>
<td>3 The Bahamas</td>
<td>127%</td>
<td>A</td>
</tr>
<tr>
<td>4 Seychelles</td>
<td>121%</td>
<td>A</td>
</tr>
<tr>
<td>5 Jamaica</td>
<td>108%</td>
<td>B</td>
</tr>
<tr>
<td>6 Malta</td>
<td>107%</td>
<td>B</td>
</tr>
<tr>
<td>7 Aruba</td>
<td>106%</td>
<td>B</td>
</tr>
<tr>
<td>8 Saint Lucia</td>
<td>103%</td>
<td>B</td>
</tr>
<tr>
<td>9 Barbados</td>
<td>102%</td>
<td>C</td>
</tr>
<tr>
<td>10 Mauritius</td>
<td>101%</td>
<td>C</td>
</tr>
<tr>
<td>11 Grenada</td>
<td>100%</td>
<td>C</td>
</tr>
<tr>
<td>12 Cyprus</td>
<td>100%</td>
<td>C</td>
</tr>
<tr>
<td>13 Antigua and Barbuda</td>
<td>98%</td>
<td>D</td>
</tr>
<tr>
<td>14 Anguilla</td>
<td>97%</td>
<td>D</td>
</tr>
<tr>
<td>15 Dominica</td>
<td>89%</td>
<td>D</td>
</tr>
<tr>
<td>16 British Virgin Islands Dziewicze</td>
<td>89%</td>
<td>D</td>
</tr>
<tr>
<td>17 St Vincent and the Grenadines</td>
<td>83%</td>
<td>D</td>
</tr>
</tbody>
</table>

Source: own elaboration.

According to Kaczmarska (2014, pp. 201–203) the factors impacting tourism are diverse but can be divided into five main groups: social, economic, political, technical, and environmental. Economic factors are considered the most important. They include an increase in income, uniformity of income distribution, and a stable financial situation with beneficial economic conditions. Among the political factors, the author lists foreign policy, while among the technical factors, she lists transport infrastructure, i.e. availability of transport.

The present article analyses the factors behind various levels of resilience to the global financial crisis in island tourism economies. Specifically, the following factors were assessed for their statistical correlation to the aforementioned levels (A–D) of resilience:

1. length of time as an independent state or dependent territory,
2. degree of dependence on the tourism sector (the relationship between income from tourism and GDP),
3. diversification of markets for incoming tourism (the degree of diversification in the mix of markets from which incoming tourists originate),
4. dominance of the main incoming market,
5. level of dependence on European markets,
6. level of dependence on North American and South American markets,
7. duration of flights to and from the main market,
8. level of economic development,
9. quality of life of residents (measured by HDI index),
10. tourism expenditure per tourist, and
11. changes in governmental expenditure on tourism.

All factors were chosen due to data accessibility and relevance of factors. The most important factors are considered to be economic and political, so were accompanied by a bigger number of indicators. Regarding length of time as an independent state, in the beginning such a country may have advantages in tourist origin markets and foreign investments but, after several decades, an earlier dependence brings disadvantages, such as ‘tourism leakage’, i.e. profits from tourism in less developed countries being exported to the developed countries of the facility owners. The above factors can be classified as: political (1, 3, 4, and 11), economic (2, 10, 5, 6, 8, and 10), technical (7), and social (9).

The following hypotheses were proposed:
1. The longer the state had been independent, the better the reaction to the global financial crisis. Independent policy provides the possibility to better control foreign investment and taxation in the tourism sector.
2. The degree to which an island area was dependent on tourism influenced the island area’s reaction to the global financial crisis (i.e. the relationship between income from tourism and GDP). This is because countries which depend heavily on tourism should react very quickly, because they have a lot of income to lose. They should provide money for tourism promotion campaigns and on showing a competitive tourism product.
3. The level of dependence of an island area on a few main markets for incoming tourism, (i.e. the more diverse the mix of incoming markets, the better the tourism sector’s situation during the global financial crisis). If the crisis hits the main market of an island, it is better to have the possibility to provide tourists from other important markets.
4. The level of dependence on the main market influenced reaction to the global financial crisis; the lower, the better for the island area. A high level of dependence on one main market may bring disadvantages, especially when this first main market is hit by the global economic crisis.  
5. The level of dependence on European markets influenced reaction to the global financial crisis of a given island area; the lower, the better. The global economic crisis also hit European countries, so islands which did not heavily rely on European markets could cope with the crisis in tourism better. Moreover, there was unusually large European-sourced tourism during the crisis. 
6. The level of dependence of island areas on the markets of North America and South America influenced reaction to the global financial crisis; the higher, the worse for the island area (because the crisis affected the American market first). The global economic crisis first hit American countries, so islands which were not heavily reliant on American markets could also cope with the crisis in tourism better. 
7. The duration of flights to and from the main market (expressed in hours) influenced reaction to the global economic market; the shorter, the better—because of the cost to tourists and ease of travel. 
8. The tourist expenditure per tourist visiting a given island area influenced reaction to the global financial crisis; the higher, the better. This can be explained by exclusive and expensive destinations being able to reduce prices and attract more tourists—‘best value for the best price’. 
9. The economic development of a given island area influenced reaction to the global financial crisis. A more developed country or dependent territory has funds and tools to cope with crisis events in the economy and in the tourism sector.
10. The quality of life on a given island area influenced reaction to the global financial crisis (HDI index). A wealthier and well-developed country or dependent territory has funds to cope with crisis events in the tourism sector.

11. Changes in governmental expenditure on tourism influenced reaction to the global financial crisis; the greater the expenditure, the better. Increasing governmental expenditure on tourism could provide better results during a crisis in the tourism sector.

**Statistical analysis of the conditions relating to reaction to the global financial crisis**

Verification of the purposes and hypotheses presented above was conducted in the sequence presented. Data from secondary sources came from UNWTO and the World Travel & Tourism Council (WTTC).

1. **Length of time as an independent state (or whether it is still a dependent area)**

Analysing status, and the year of the selected island territory’s independence, shows that most dependent areas belong to type D (the worst reaction to the global financial crisis). Conversely, all type A island areas are independent countries, as are nearly all type B territories. Below is a list of the countries, of which 1 to 14 have gained independence (date of independence in brackets) and 15 to 17 are dependent territories. Their classification into type of economic reaction of the tourism sector to the global financial crisis is also indicated.

<table>
<thead>
<tr>
<th>Rank</th>
<th>Country</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cyprus (1960)</td>
<td>C</td>
</tr>
<tr>
<td>2</td>
<td>Jamaica (1962)</td>
<td>B</td>
</tr>
<tr>
<td>3</td>
<td>Malta (1964)</td>
<td>B</td>
</tr>
<tr>
<td>4</td>
<td>Maldives (1965)</td>
<td>A</td>
</tr>
<tr>
<td>5</td>
<td>Barbados (1966)</td>
<td>C</td>
</tr>
<tr>
<td>6</td>
<td>Mauritius (1968)</td>
<td>C</td>
</tr>
<tr>
<td>7</td>
<td>The Bahamas (1973)</td>
<td>A</td>
</tr>
<tr>
<td>8</td>
<td>Grenada (1974)</td>
<td>C</td>
</tr>
<tr>
<td>9</td>
<td>Seychelles (1976)</td>
<td>A</td>
</tr>
<tr>
<td>10</td>
<td>Dominica (1978)</td>
<td>D</td>
</tr>
<tr>
<td>11</td>
<td>Saint Lucia (1979)</td>
<td>B</td>
</tr>
<tr>
<td>12</td>
<td>Saint Vincent and the Grenadines (1979)</td>
<td>D</td>
</tr>
<tr>
<td>13</td>
<td>Antigua and Barbuda (1981)</td>
<td>D</td>
</tr>
<tr>
<td>14</td>
<td>Saint Kitts and Nevis (1983)</td>
<td>A</td>
</tr>
<tr>
<td>15</td>
<td>Anguilla – dependent territory of UK</td>
<td>D</td>
</tr>
<tr>
<td>16</td>
<td>Aruba – dependent territory of Netherlands</td>
<td>B</td>
</tr>
<tr>
<td>17</td>
<td>British Virgin Islands – British Overseas Territory</td>
<td>D</td>
</tr>
</tbody>
</table>

Table 1 ranks the resilience of tourism economies to the global financial crisis, based on the change in tourism movement between 2008 and 2011. The higher ranks the better reaction of island territory in terms of changes in tourist movement due to the global economic crisis.

In the study the Spearman correlation ratio was used, as it is the appropriate method for the calculation of correlations of small samples (a sample of at least 15). Pearson correlation ratio needs a sample of at least 30 islands. Moreover, the Spearman correlation method is appropriate even if data are limited. This is why it is the method used with low quality data, especially. Moreover, the Pearson correlation method needs a normal distribution of data. There is no such limitation on the Spearman correlation ratio. The Spearman rank correlation coefficient between length of time as an independent state and resilience of tourism to the global financial crisis for the 17 island territories (n=17) was 0.378. There is therefore a low correlation between the length of time as an independent state and a better reaction by the tourism sector to the global financial crisis. For further analysis, the Kendall rank correlation coefficient was used. Both the
Spearman rank correlation coefficient and the Kendall rank correlation coefficient are measures of monotonic dependencies between random variables, but the two coefficients are interpreted in different ways. The Kendall rank correlation coefficient should be interpreted as a probability. The formula for the Spearman correlation ratio:

\[ r = 1 - \frac{6 \sum (V_x - V_y)^2}{N^3 - N} \]

Where: \( N \)—number of analysed sample, \( r \)—Spearman correlation ratio, \( V_x \)—value of variable \( X \), \( V_y \)—value of variable \( Y \).

The formula for the Kendall rank correlation coefficient for a sample (Abdi, 2007, pp. 5-7):

\[ r = \frac{P - Q}{P + Q + T} \]

Where \( r \) is the value of the Kendall rank correlation coefficient for a sample, \( P \) is the number of compatible pairs (i.e. changing in the same direction), and \( Q \) is the number of non-compatible pairs (i.e. changing in a different direction).

The Kendall rank correlation coefficient was calculated between reaction to the global financial crisis regarding tourism and the length of time as an independent state. This dependence for the 17 island areas (i.e. \( n=17 \)) was 0.279. Therefore, again, there is a low correlation between length of time as an independent state and the tourism sector reacting better to the global financial crisis.

2. Degree of dependence of an island area on tourism (the relationship between income from tourism and GDP) It would be fair to assume that the tourism sector of island areas that were heavily dependent on tourism coped poorly with the global financial crisis, while areas less dependent on tourism should have coped better; economic diversification should be a factor in better performance during the global financial crisis. Table 2 shows tourism income as a percentage of GDP and the resilience of island areas to the global financial crisis. It was analysed whether the degree of reaction to the global financial crisis in terms of tourist numbers for particular island areas depends on the share of tourism as a percentage of GDP.
Table 2: The relation of tourism income to GDP (in %) and reaction of the tourism sector to the global financial crisis.

<table>
<thead>
<tr>
<th>Island territory</th>
<th>Share of income from tourism as part of GDP (%)*</th>
<th>Rank of island reaction to crisis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Anguilla</td>
<td>40.3</td>
<td>14</td>
</tr>
<tr>
<td>2 Antigua and Barbuda</td>
<td>27.7</td>
<td>13</td>
</tr>
<tr>
<td>3 Aruba</td>
<td>52.6</td>
<td>7</td>
</tr>
<tr>
<td>4 Barbados</td>
<td>25.3</td>
<td>9</td>
</tr>
<tr>
<td>5 British Virgin Islands</td>
<td>n.d.</td>
<td>16</td>
</tr>
<tr>
<td>6 Cyprus</td>
<td>11.6</td>
<td>12</td>
</tr>
<tr>
<td>7 Dominica</td>
<td>22.9</td>
<td>15</td>
</tr>
<tr>
<td>8 Grenada</td>
<td>13.9</td>
<td>11</td>
</tr>
<tr>
<td>9 Jamaica</td>
<td>14.4</td>
<td>5</td>
</tr>
<tr>
<td>10 Maldives</td>
<td>97.9</td>
<td>1</td>
</tr>
<tr>
<td>11 Malta</td>
<td>16.4</td>
<td>6</td>
</tr>
<tr>
<td>12 Mauritius</td>
<td>15.8</td>
<td>10</td>
</tr>
<tr>
<td>13 Saint Kitts and Nevis</td>
<td>12.6</td>
<td>2</td>
</tr>
<tr>
<td>14 Saint Lucia</td>
<td>28.2</td>
<td>8</td>
</tr>
<tr>
<td>15 St. Vincent and the Grenadines</td>
<td>13.1</td>
<td>17</td>
</tr>
<tr>
<td>16 Seychelles</td>
<td>39.5</td>
<td>4</td>
</tr>
<tr>
<td>17 The Bahamas</td>
<td>29.3</td>
<td>3</td>
</tr>
</tbody>
</table>


Spearman’s rank correlation coefficient between the share of tourism in GDP and resilience to the crisis for n=16 (no data for the British Virgin Islands) was 0.405. This indicates a moderate positive correlation. The Kendall rank correlation coefficient for the dependence calculated for 16 island areas (n=16) was 0.233, which can be interpreted as a low correlation between the share of tourism in GDP and tourism sector resilience to the global financial crisis. This means, unexpectedly, that countries with a higher share of tourism in GDP, and therefore greater dependence on tourism, coped better with the global financial crisis.

It is possible that these island areas did not underestimate the situation and, knowing that they would have a lot to lose, were prepared to react quickly and appropriately to the global financial crisis; therefore, the higher the share of tourism in GDP, the better the ranking of resilience to the crisis. This hypothesis is supported by examples such as that of the Maldives, which had a very high share of tourism in GDP (i.e. 97.7%) and the best reaction to the global financial crisis (first position in the ranking). Another example confirming this dependence is the Seychelles, whose share of tourism as part of GDP was 39.5% and was fourth in the ranking. The Seychelles provided money for a special tourism campaign—the “Affordable Seychelles
Marketing Campaign” and “Market Source Over Satisfaction Supported by Air Access” during the global economic crisis. The Ministry of Tourism of Seychelles also provided more funds for tourism promotion during the global economic crisis (in 2009—30 mln rupees, in 2010—35 mln rupees, in 2011—38 mln rupees).

3. Level of diversification of markets for incoming tourism
The diversification of markets for incoming tourism was assessed using a modified diversification coefficient of Amemiya’s economic base. This ratio is usually used in economic geography to measure degree of diversification in employment. It is used to analyse particular branches of the economy and to analyse employment in terms of major employers in a given municipality or region. It is therefore possible to calculate the diversification coefficient for the number of people working in particular branches or sectors. Diversification can be analysed at the micro scale, i.e. at the scale of individual enterprises. Thanks to this coefficient it is possible to indicate areas that are excessively dependent on one sector or one market, or in relation to one employer (Gwosdz et al., 2010; Jerczyński, 1973).

The coefficient is so universal that it has been used in this article to analyse the diversification of foreign markets. This approach is innovative, as this coefficient has never been used before to analyse tourist movement. The analysis was performed using the number of foreign tourists arriving from each of the main markets at the beginning of the global financial crisis. The number of markets taken into account was dictated by data availability. For many countries, the analysis was performed for the 20 main incoming tourism markets (usually these markets constituted 90-95% of tourism entering a given territory).

The diversification coefficient ranges from 0 to 1 (i.e. <0.1>). A value of 0 means a completely diversified structure, while 1 means the complete dominance of one branch or entity, or dependence on one market (Gwosdz et al., 2010, p. 137). For better readability of the coefficient, it was multiplied by 100. For the initial interpretation of the coefficient, the division suggested by Kubejko-Polańska was used and, therefore, the coefficient values (after multiplying by 100) were grouped as follows: below 15 means high diversification; from 15 to 30, average diversification; from 30 to 60, low diversification; and 60 and above, very low. Below is the formula that was used in the further analysis (Jerczyński, 1973, pp. 74-83). The formula was modified appropriately for the analysis of the coefficient of incoming tourism diversification. Formula for the coefficient of diversification for incoming tourism:

\[
\text{Coefficient of diversification} = \sum_{i=1}^{n} \frac{n}{n-1} \left( \frac{W_{ri}}{Wr} - 1 \right) ^2
\]

Where \( n \) is the number of identified markets, \( W_{ri} \) is the size of a given market, and \( Wr \) is the size of the entire market.

It should be remembered that a large share of tourism from one market for a given island area causes excessive dependence on the social, economic, and political situation of that country. If a given market of incoming tourism experiences recession or another type of crisis, and it is the most important market, it may cause the tourism economy of a given destination (in the case of this article, an island area) to collapse.
Table 3: Changes in tourism movement, differentiation ratio, main market, level of dependence on European and American markets (% value).

<table>
<thead>
<tr>
<th>Island territory</th>
<th>Changes in tourist movement (2011 /2008)</th>
<th>Differentiation ratio of markets (1%)</th>
<th>Main market (%)</th>
<th>Main market</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maldives</td>
<td>136%</td>
<td>5.5</td>
<td>16.2</td>
<td>UK</td>
</tr>
<tr>
<td>Saint Kitts and Nevis*</td>
<td>134%</td>
<td>n.d.</td>
<td>58.4</td>
<td>USA</td>
</tr>
<tr>
<td>The Bahamas</td>
<td>127%</td>
<td>69.0</td>
<td>80.1</td>
<td>USA</td>
</tr>
<tr>
<td>Seychelles</td>
<td>121%</td>
<td>7.1</td>
<td>19.9</td>
<td>France</td>
</tr>
<tr>
<td>Jamaica</td>
<td>108%</td>
<td>46.6</td>
<td>64</td>
<td>USA</td>
</tr>
<tr>
<td>Malta</td>
<td>107%</td>
<td>11.8</td>
<td>31</td>
<td>UK</td>
</tr>
<tr>
<td>Aruba</td>
<td>106%</td>
<td>42.7</td>
<td>64.9</td>
<td>USA</td>
</tr>
<tr>
<td>Saint Lucia</td>
<td>103%</td>
<td>21.3</td>
<td>42.2</td>
<td>USA</td>
</tr>
<tr>
<td>Barbados</td>
<td>102%</td>
<td>49.1</td>
<td>33.8</td>
<td>UK</td>
</tr>
<tr>
<td>Mauritius</td>
<td>101%</td>
<td>13</td>
<td>32.3</td>
<td>France</td>
</tr>
<tr>
<td>Grenada</td>
<td>100%</td>
<td>25</td>
<td>22.5</td>
<td>USA</td>
</tr>
<tr>
<td>Cyprus</td>
<td>100%</td>
<td>22</td>
<td>50.0</td>
<td>UK</td>
</tr>
<tr>
<td>Antigua and Barbuda</td>
<td>98%</td>
<td>25.4</td>
<td>35.0</td>
<td>USA</td>
</tr>
<tr>
<td>Anguilla</td>
<td>97%</td>
<td>38.9</td>
<td>62.7</td>
<td>USA</td>
</tr>
<tr>
<td>Dominica</td>
<td>89%</td>
<td>8.8</td>
<td>25.1</td>
<td>USA</td>
</tr>
<tr>
<td>Brit. V. Islands</td>
<td>89%</td>
<td>51.3</td>
<td>47.3</td>
<td>USA</td>
</tr>
<tr>
<td>St Vincent and the Gren.</td>
<td>83%</td>
<td>10.3</td>
<td>26.7</td>
<td>USA</td>
</tr>
</tbody>
</table>

n. d.—no data.
*In the case of Saint Kitts and Nevis the differentiation ratio was not calculated because of UNWTO official statistics existing for only 3 markets. Source: own elaboration.

Spearman’s rank correlation coefficient was calculated for the diversification coefficient and ranking of resilience to the crisis for the selected island territories. The correlation for 16 island areas (n=16) (no data for Saint Kitts and Nevis) was 0.056, while the Kendall rank correlation coefficient for the same group was 0.067. This indicates a lack of correlation between the analysed features, and the hypothesis must therefore be considered unconfirmed. No dependence was indicated between level of diversification of foreign incoming tourism markets and the resilience of island areas’ tourism sectors to the global financial crisis.

4. Extent of dominance of the main market of foreign tourism
An analysis of the data presented in Table 3 was performed. For 11 island territories, the dominant market for incoming tourism was the United States, for three territories it was the
United Kingdom, and for two it was France. The Spearman rank correlation coefficient between the size of a given island territory’s dominant market and its reaction to the global financial crisis was 0.096 for the 16 island areas (n=16); while the Kendall rank correlation coefficient for the same set of data was 0.059. Therefore, no dependence was observed between size of dominant market and reaction to the global financial crisis. Accordingly, the hypothesis posed at the beginning was not confirmed.

5. Island area’s level of dependence on European markets
In this study, it was assumed that the global financial crisis reached Europe later than it did the United States. Moreover, Europe was not affected by the global financial crisis to the same degree as was the United States. According to World Bank statistics, the GDP growth rate in 2008 in United States was -0.3%, and -2.8% in 2009. European Union growth rate in 2008 was +0.5%, and -4.4% in 2009. Numerous countries in Europe did not register any decrease in GDP and turned out to be what have been referred to as ‘green islands’ (e.g. Poland’s GDP growth rate in 2008 was +4.2%, and +2.8% in 2009). Later in this article, calculations of the Spearman rank correlation coefficient are made between the share of European markets and better reaction to the global financial crisis. This dependence was measured by the Spearman rank correlation coefficient for n=17 and was 0.137, while the Kendall rank correlation coefficient for the same set of data was 0.103. This indicates a lack of relationship between the dependence of the tourism economy on European markets and a better reaction of the tourism economy to the global financial crisis. The level of dependence of particular island territories on European tourism is presented in Table 4.

Table 4: Dependence on European and American markets of island territories (% value).

<table>
<thead>
<tr>
<th>Island territory</th>
<th>Dependence on European markets</th>
<th>Dependence on American markets*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Anguilla</td>
<td>13%</td>
<td>83%</td>
</tr>
<tr>
<td>2 Antigua and Barbuda</td>
<td>41%</td>
<td>57%</td>
</tr>
<tr>
<td>3 Aruba</td>
<td>9%</td>
<td>90%</td>
</tr>
<tr>
<td>4 Barbados</td>
<td>44%</td>
<td>54%</td>
</tr>
<tr>
<td>5 British Virgin Islands</td>
<td>86%</td>
<td>12%</td>
</tr>
<tr>
<td>6 Cyprus</td>
<td>96%</td>
<td>1%</td>
</tr>
<tr>
<td>7 Dominica</td>
<td>17%</td>
<td>82%</td>
</tr>
<tr>
<td>8 Grenada</td>
<td>34%</td>
<td>50%</td>
</tr>
<tr>
<td>9 Jamaica</td>
<td>16%</td>
<td>83%</td>
</tr>
<tr>
<td>10 Maldives</td>
<td>72%</td>
<td>2%</td>
</tr>
<tr>
<td>11 Malta</td>
<td>93%</td>
<td>1%</td>
</tr>
<tr>
<td>12 Mauritius</td>
<td>2%</td>
<td>65%</td>
</tr>
<tr>
<td>13 Saint Kitts and Nevis</td>
<td>8%</td>
<td>88%</td>
</tr>
<tr>
<td>14 Saint Lucia</td>
<td>31%</td>
<td>67%</td>
</tr>
<tr>
<td>15 Saint Vincent and the Grenadines</td>
<td>26%</td>
<td>73%</td>
</tr>
<tr>
<td>16 Seychelles</td>
<td>79%</td>
<td>3%</td>
</tr>
<tr>
<td>17 The Bahamas</td>
<td>6%</td>
<td>91%</td>
</tr>
</tbody>
</table>

* North and South America. Source: own elaboration.

6. Island area’s level of dependence on American markets
Spearman’s rank correlation coefficient between the share of the markets of North America and South America and a better reaction to the crisis was calculated. The largest shares of North American and South American markets were for Aruba (90%), Saint Kitts and Nevis (88%), and Anguilla (83%). The smallest were for Malta (1%), the Maldives (2%), and the Seychelles (3%). This dependence, measured using the Spearman rank correlation coefficient for 17 island areas (n=17), was -0.077. The Kendall rank correlation coefficient for the same set of data was 0.074. This means that no dependence was observed between a high share of North American and South American markets for incoming tourism and reaction of the tourism economy to the global financial crisis.
7. Duration of flights from/to the main markets, in hours

It was hypothesised in this study that transport communication availability should positively affect the reaction of the tourism sector to the global financial crisis. The tourism industry on tropical islands is dependent on flights. The taxation of tourist services should take into account islands’ dependence on air transport. A large number of flights means competitive prices, and therefore impacts the attractiveness of the entire tourism offer for a given island. Table 5 shows flight duration from main market (in hours) and the reaction of the selected island territories’ tourism sectors to the global financial crisis. The Spearman rank correlation coefficient was calculated for flight duration from an island territory’s main market and reaction to the global financial crisis. The Kendall rank correlation coefficient was 0.140, while the dependence measured by the Spearman rank correlation coefficient for the 17 island areas (n=17) was 0.017. This means that there is no observable dependence between flight duration in hours from the main market from which tourists arrive and the tourism economy’s reaction to the global financial crisis for the selected island territories.

Table 5: Length of aircraft connections in hours and reaction of tourist islands to global financial crisis.

<table>
<thead>
<tr>
<th>Island territory</th>
<th>Main</th>
<th>Length of aircraft connections (in hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Maldives</td>
<td>UK</td>
<td>12 hours, 35 min (1 change) London - Male</td>
</tr>
<tr>
<td>2 Saint Kitts and Nevis</td>
<td>USA</td>
<td>7 hours, 40 min (1 change) New York - SKB</td>
</tr>
<tr>
<td>3 The Bahamas</td>
<td>USA</td>
<td>3 hours, 15 min (direct) New York - Nassau</td>
</tr>
<tr>
<td>4 Seychelles</td>
<td>France</td>
<td>13 hours, 10 min (1 change) Paris - Victoria</td>
</tr>
<tr>
<td>5 Jamaica</td>
<td>USA</td>
<td>6 hours, 21 min (1 change) New York - Kingston</td>
</tr>
<tr>
<td>6 Malta</td>
<td>UK</td>
<td>3 hours, 10 min (direct) London - Luqa</td>
</tr>
<tr>
<td>7 Aruba</td>
<td>USA</td>
<td>4 hours, 45 min (direct) New York - Oranjestad</td>
</tr>
<tr>
<td>8 Saint Lucia</td>
<td>USA</td>
<td>7 hours, 20 min (1 change) New York - Castries</td>
</tr>
<tr>
<td>9 Barbados</td>
<td>UK</td>
<td>8 hours, 10 min (direct) London - Bridgetown</td>
</tr>
<tr>
<td>10 Mauritius</td>
<td>France</td>
<td>11 hours, 40 min (direct) Paris - Port Louis</td>
</tr>
<tr>
<td>11 Grenada</td>
<td>USA</td>
<td>8 hours, 16 min (1 change) New York - Saint George’s</td>
</tr>
<tr>
<td>12 Cyprus</td>
<td>UK</td>
<td>4 hours, 30 min (direct) London - Larnaka</td>
</tr>
<tr>
<td>13 Antigua and Barbuda</td>
<td>USA</td>
<td>8 hours, 15 min (1 change) New York - Saint John’s</td>
</tr>
<tr>
<td>14 Anguilla</td>
<td>USA</td>
<td>9 hours, 23 min (2 changes) New York - The Valley</td>
</tr>
<tr>
<td>15 Dominica</td>
<td>USA</td>
<td>7 hours, 45 min (1 change) New York - Margiot</td>
</tr>
<tr>
<td>16 British Virgin Islands</td>
<td>USA</td>
<td>8 hours, 13 min (1 change) New York - Road Town</td>
</tr>
<tr>
<td>17 Saint Vincent and the Gren.</td>
<td>USA</td>
<td>8 hours, 40 min (1 change) New York - Kingstown</td>
</tr>
</tbody>
</table>

Source: Own elaboration based on information from www.esky.pl.

8. Tourism expenditure per foreign tourist

It was hypothesised in this study that areas of highest tourism expenditure coped better with the global financial crisis. It might also be assumed that areas that earned the most from tourism had to be more committed to preventing the consequences of the global financial crisis from affecting the tourism sector. The table below presents islands ranked by resilience to the crisis based on the change in the number of tourist for 2011 and 2008, and average tourism expenditure per tourist.
Table 6: Ranking of island tourism economy resilience to the crisis and average expenditures per tourist, GPD per citizen according to PPP, human development index, changes in employment in tourism, and changes in tourist expenditure (2011 and 2008).

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Maldives</td>
<td>2,245</td>
<td>6,665.8</td>
<td>0.698</td>
<td>-4.00%</td>
<td>19.8%</td>
</tr>
<tr>
<td>Saint Kitts and Nevis</td>
<td>151</td>
<td>14,132.8</td>
<td>0.750</td>
<td>-6.30%</td>
<td>-6.7%</td>
</tr>
<tr>
<td>The Bahamas</td>
<td>436</td>
<td>22,312.1</td>
<td>0.789</td>
<td>-2.00%</td>
<td>0.1%</td>
</tr>
<tr>
<td>Seychelles</td>
<td>1,961</td>
<td>16,185.9</td>
<td>0.756</td>
<td>-2.20%</td>
<td>-4.2%</td>
</tr>
<tr>
<td>Jamaica</td>
<td>752</td>
<td>5,290.5</td>
<td>0.715</td>
<td>-10.00%</td>
<td>-9.4%</td>
</tr>
<tr>
<td>Malta</td>
<td>695</td>
<td>22,775.0</td>
<td>0.829</td>
<td>8.90%</td>
<td>10.0%</td>
</tr>
<tr>
<td>Aruba</td>
<td>862</td>
<td>25,354.8</td>
<td>0.975</td>
<td>8.30%</td>
<td>0.5%</td>
</tr>
<tr>
<td>Saint Lucia</td>
<td>301</td>
<td>7,328.4</td>
<td>0.714</td>
<td>0.00%</td>
<td>3.2%</td>
</tr>
<tr>
<td>Barbados</td>
<td>972</td>
<td>14,917.1</td>
<td>0.776</td>
<td>-22.50%</td>
<td>-17.4%</td>
</tr>
<tr>
<td>Mauritius</td>
<td>1,258</td>
<td>9,477.8</td>
<td>0.771</td>
<td>-5.70%</td>
<td>-0.8%</td>
</tr>
<tr>
<td>Grenada</td>
<td>243</td>
<td>13,900.0</td>
<td>0.770</td>
<td>3.70%</td>
<td>-11.8%</td>
</tr>
<tr>
<td>Cyprus</td>
<td>1,043</td>
<td>25,249.0</td>
<td>0.845</td>
<td>-10.40%</td>
<td>-19.7%</td>
</tr>
<tr>
<td>Antigua and Barbuda</td>
<td>323</td>
<td>13,342.1</td>
<td>0.760</td>
<td>0.90%</td>
<td>-6.6%</td>
</tr>
<tr>
<td>Anguilla</td>
<td>143</td>
<td>12,200.0</td>
<td>0.865</td>
<td>40.00%</td>
<td>2.8%</td>
</tr>
<tr>
<td>Dominica</td>
<td>127</td>
<td>7,175.6</td>
<td>0.717</td>
<td>26.90%</td>
<td>39.5%</td>
</tr>
<tr>
<td>British Virgin Islands</td>
<td>436</td>
<td>42,300.0</td>
<td>0.945</td>
<td>-15.70%</td>
<td>-13.0%</td>
</tr>
<tr>
<td>St Vincent and the Grenadines</td>
<td>325</td>
<td>6,485.7</td>
<td>0.719</td>
<td>-5.60%</td>
<td>-6.4%</td>
</tr>
</tbody>
</table>


The dependence between the ranking of resilience to the crisis and average tourism expenditure per tourist was studied. The Kendall rank correlation coefficient for the two studied features was 0.273. This can be interpreted as a low positive dependence between the average expenditure per tourist and reaction of island territories to the global crisis, while the Spearman rank correlation coefficient was 0.418, indicating a moderate, negative dependence. One example of this dependence is that of the Maldives, whose tourism industry had a very good outcome despite the global financial crisis. The Maldives were first in the ranking of reactions to the global financial crisis in terms of changes in tourism, and tourism expenditure per tourist was US $2,245. The Seychelles, where expenditure per tourist was US $1,961, was fourth in the ranking. Therefore, the hypothesis posed at the beginning of the chapter regarding the dependence between tourism expenditure and resilience of island areas to the crisis can be considered confirmed. Moreover, we can also presume that exclusive destinations, characterised by very high prices, and therefore high tourism expenditure, were not affected by the global financial crisis to the same extent. In the literature, it has been argued that, during the crisis, the groups with the lowest salaries lost the most, and that the crisis did not affect the wealthiest in the same way (Walsh, 2015).

9. Island areas’ level of economic development
It was also analysed whether the level of economic development affected the reaction of the tourism sector to the global financial crisis. The index of GDP value according to purchasing power parity per resident was used. Table 6 shows reaction of the tourism sector using changes in tourism after the global financial crisis, and the GDP value according to PPP per resident. It turns out that the Kendall rank correlation coefficient between GDP value by PPP per resident and changes in tourism during the global financial crisis was -0.044, and the Spearman rank correlation coefficient for the same was -0.049. Accordingly, in both cases, no dependence was recorded between level of economic development and reaction to the crisis of selected island areas.
10. **Quality of life on an island area**

It was also analysed whether the quality of life for residents of a given island territory measured by HDI index influenced the various reactions of the tourism sector to the global financial crisis. The results were as follows: the Kendall rank correlation coefficient was -0.191, which can be interpreted as no correlation; the Spearman rank correlation coefficient was -0.267. This indicates a weak negative correlation. Summarising the results of the analysis, a weak negative dependence was observed between quality of life (by HDI index) on selected island territories and reaction of the tourism sector to the global financial crisis.

11. **Changes in governmental expenditure on tourism**

Analysis was made of the dependence between the island economies’ resilience to the global financial crisis (in terms of changes in tourism) and changes in governmental expenditure on tourism. The Kendall rank correlation coefficient was -0.015. The Spearman rank correlation coefficient between the analysed features was -0.053. This indicates a lack of correlation between the analysed features.


<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Anguilla (XCD mln)</td>
<td>16.7</td>
<td>16.7</td>
<td>14.8</td>
<td>14.6</td>
<td>14.6</td>
<td>14.6</td>
<td>14.9</td>
<td>15.4</td>
</tr>
<tr>
<td>Antigua and Barbuda (XCD mln)</td>
<td>170.5</td>
<td>144.3</td>
<td>138.2</td>
<td>142.8</td>
<td>149.8</td>
<td>158.8</td>
<td>164.3</td>
<td>18.9%</td>
</tr>
<tr>
<td>Aruba (AWG mln)</td>
<td>170.8</td>
<td>177.7</td>
<td>171.4</td>
<td>184.6</td>
<td>195.2</td>
<td>199.3</td>
<td>204.7</td>
<td>3.4%</td>
</tr>
<tr>
<td>Barbados (BBD mln)</td>
<td>261.6</td>
<td>253.8</td>
<td>250.4</td>
<td>242.5</td>
<td>228.0</td>
<td>218.8</td>
<td>214.0</td>
<td>0.3%</td>
</tr>
<tr>
<td>British Virgin Islands (USD)</td>
<td>563.8</td>
<td>645.3</td>
<td>628.6</td>
<td>642.1</td>
<td>643.7</td>
<td>653.1</td>
<td>663.3</td>
<td>11.5%</td>
</tr>
<tr>
<td>Cyprus (EUR mln)</td>
<td>282.7</td>
<td>285.4</td>
<td>288.1</td>
<td>272.6</td>
<td>256.1</td>
<td>247.0</td>
<td>248.5</td>
<td>1.9%</td>
</tr>
<tr>
<td>Dominica (DOP bn)</td>
<td>31.4</td>
<td>33.3</td>
<td>33.6</td>
<td>38.6</td>
<td>38.1</td>
<td>40.0</td>
<td>42.1</td>
<td>7.0%</td>
</tr>
<tr>
<td>Grenada (USD mln)</td>
<td>36.0</td>
<td>37.1</td>
<td>36.8</td>
<td>37.3</td>
<td>40.2</td>
<td>39.4</td>
<td>40.0</td>
<td>2.2%</td>
</tr>
<tr>
<td>Jamaica (JMD bn)</td>
<td>38.1</td>
<td>36.7</td>
<td>36.7</td>
<td>37.9</td>
<td>36.6</td>
<td>31.7</td>
<td>37.2</td>
<td>-3.7%</td>
</tr>
<tr>
<td>Maldives (MVR mln)</td>
<td>1,155.4</td>
<td>1,069.7</td>
<td>1,004.5</td>
<td>1,054.5</td>
<td>1,128.3</td>
<td>1,182.9</td>
<td>1,242.5</td>
<td>-13.1%</td>
</tr>
<tr>
<td>Malta (EUR mln)</td>
<td>132.0</td>
<td>134.9</td>
<td>138.1</td>
<td>145.7</td>
<td>149.3</td>
<td>158.9</td>
<td>163.0</td>
<td>4.6%</td>
</tr>
<tr>
<td>Mauritius (MUR mln)</td>
<td>44.4</td>
<td>48.8</td>
<td>51.3</td>
<td>53.4</td>
<td>48.9</td>
<td>53.3</td>
<td>57.7</td>
<td>15.5%</td>
</tr>
<tr>
<td>Saint Kitts and Nevis (XCD mln)</td>
<td>43.5</td>
<td>42.1</td>
<td>42.4</td>
<td>47.9</td>
<td>50.4</td>
<td>52.5</td>
<td>55.1</td>
<td>-2.5%</td>
</tr>
<tr>
<td>Saint Lucia (XCD mln)</td>
<td>29.6</td>
<td>30.1</td>
<td>30.0</td>
<td>31.0</td>
<td>31.5</td>
<td>31.4</td>
<td>32.0</td>
<td>1.4%</td>
</tr>
<tr>
<td>Saint Vincent and the Grenadines (XCD mln)</td>
<td>33.0</td>
<td>29.9</td>
<td>33.1</td>
<td>35.6</td>
<td>37.5</td>
<td>38.4</td>
<td>39.6</td>
<td>-0.3%</td>
</tr>
<tr>
<td>Seychelles (SCR mln)</td>
<td>742.3</td>
<td>740.4</td>
<td>790.5</td>
<td>859.0</td>
<td>860.9</td>
<td>865.9</td>
<td>880.9</td>
<td>6.5%</td>
</tr>
<tr>
<td>The Bahamas (BSD mln)</td>
<td>98.6</td>
<td>98.9</td>
<td>108.8</td>
<td>110.6</td>
<td>117.6</td>
<td>121.5</td>
<td>127.2</td>
<td>10.3%</td>
</tr>
</tbody>
</table>

Analysis was also performed for changes in tourism employment and changes in tourism expenditures. The data used for the analysis below is presented in Appendix 1. To analyse employment in tourism, WTTC data were used, and to analyse expenditure, UNWTO data were used. Moreover, when analysing the Spearman correlation ratio and the stronger outcomes of correlation, linear regression analysis was done only for high or average outcomes of correlations (more than 0.4):
Katarzyna Podhorodecka

1 - degree to which an island area is dependent on tourism and changes in tourist movement
\[ y = 0.332x + 97.3 \]
y—changes in tourist movement x—degree of island area dependency on tourism
Linear regression analysis statistically significant at level: 0.000 for A and 0.59 for B.

![Graph 1: Linear regression for island area dependency on tourism and changes in tourist movement](image1)

2 - degree of island area dependency on tourism and changes in tourist expenditures
\[ y = 0.271x - 8.248 \]
y—changes in tourist expenditures x—degree of island area dependency on tourism
Linear regression analysis statistically significant at level: 0.115 for A and 0.174 for B.

![Graph 2: Linear regression for degree of island area dependency on tourism and changes in tourist expenditures](image2)
3 - degree of diversification of incoming tourism markets and changes in expenditures

\[ y = -0.325x + 8.258 \]

\( y \) — changes in expenditures
\( x \) — degree of diversification of incoming tourism markets

Linear regression analysis statistically significant at level: 0.101 for A and 0.206 for B.

![Graph of degree of diversification of incoming tourism markets and changes in expenditures](image)

Source: own elaboration.

4 - tourism expenses per tourist and changes in tourist movement

\[ y = 0.012x + 97.422 \]

\( y \) — changes in tourist movement
\( x \) — tourism expenses per tourist

Linear regression analysis statistically significant at level: 0.000 for A and 0.050 for B.

![Graph of tourism expenses per tourist and changes in tourist movement](image)

Source: own elaboration.

5 - tourism expenses per tourist and changes in employment in tourism industry

\[ y = -0.008x + 6.161 \]

\( y \) — changes in employment in tourism industry
\( x \) — expenses per tourist

Linear regression analysis statistically significant at level: 0.185 for A and 0.280 for B.
Outcomes of the statistical analysis

As a result of the statistical analysis and based on the results of the Spearman rank correlation and the Kendall correlation, the following hypotheses regarding tourism were verified:

1. The length of time a state has been independent influenced reaction to the global financial crisis. The hypothesis has been confirmed for changes in tourism and employment in tourism. The longer a given state has been independent, the better the reaction of the tourism sector to the global financial crisis.

2. The degree to which an island area was dependent on tourism influenced reaction to the global financial crisis (the relation of income from tourism and GDP). The hypothesis has been confirmed for three variables (changes in tourism, employment in tourism, and tourism expenditure). The larger the income from tourism, the better the situation of an island territory regarding the crisis.

3. The level of dependence on main markets for incoming tourism influenced reaction to the global financial crisis (the more dependent a given island area was on, for example, one main market, the worse the situation during the crisis, and the more diverse the markets for incoming tourism, the better). The hypothesis was confirmed.

4. The level of dependence on the main market influenced reaction to the global financial crisis; the lower, the better for a given island area. The hypothesis has been partially confirmed. There is no dependence for changes in tourism, but there is a relationship for changes in employment in tourism and tourism expenditure.

5. The level of dependence of a given island area on European markets influenced reaction to the global financial crisis; the more dependent, the better for a given island area. The hypothesis was not confirmed. Actually, this dependence, both for the Kendall and Spearman rank correlations, is nearly zero for changes in tourism and employment in tourism, but for changes in tourism expenditure the dependence is low.

6. The level of dependence of a given island area on North American and South American markets influenced reaction to the global financial crisis; the larger it was, the worse it was for the island areas (the crisis affected the American market greatly). The hypothesis was not confirmed. There is no dependence between reaction to the crisis in tourism and tourism expenditure on the one hand and the level of dependence of island territories on North American and South American markets as calculated by the Spearman and Kendall rank correlation coefficients on the other.
7. The duration of flights to and from the main market (expressed in hours) influenced reaction to the global financial crisis; the shorter they were, the better the reaction of a given island territory to the crisis: The hypothesis was not confirmed. There is no correlation between the three analysed variables.

8. Tourism expenditure per tourist influenced reaction to the global financial crisis; the higher it was, the better the reaction of an island territory to the crisis: The hypothesis has been partially confirmed. A dependence is registered for tourism arrivals, but not for changes in tourism employment or tourism expenditure.

9. An island area’s level of economic development influenced reaction to the global financial crisis: The hypothesis has been partially confirmed. No such dependence for tourism or employment in tourism was observed; only in the case of tourism expenditure was a weak dependence observed.

10. The quality of life on an island area measured by HDI index influenced reaction to the global financial crisis: The hypothesis has been only partially confirmed. The dependence measured by the Kendall rank correlation coefficient and the Spearman coefficient was negative and weak for tourism and tourism expenditure. There was no dependence for employment in tourism.

11. Increased governmental expenditure on tourism influenced reaction to the global financial crisis: The hypothesis was not confirmed for three variables (perhaps private investment in the tourism sector should be analysed instead of centralised public expenditure).

Moreover, it was possible to create linear regression analysis for: degree of island area dependency on tourism and changes in tourist movement; degree of island area dependency on tourism and changes in tourist expenditures; degree of diversification of incoming tourism markets and changes in tourist expenditures; tourism expenses per tourist and changes in tourist movement; tourism expenses per tourist and changes in employment in tourism industry. The biggest significance of the model was recorded for tourism expenses per tourist and changes in tourist movement.

The small sample (only 17 island territories) makes it difficult to generalise the results.

Findings

The biggest influences on the reaction of the 17 tourism islands to the global financial crisis, according to changes in tourism movement, were from:

1. degree of dependence on tourism (ratio of tourism income to GDP),
2. tourism expenditure per tourist, and
3. length of time for which a state has been independent.

The biggest influences on tourism employment were:

1. degree of the dependence on tourism,
2. length of time as an independent state, and
3. degree of diversification of markets for incoming tourism.

The biggest influences on tourist expenditure were:

1. degree of dependence on tourism,
2. degree of diversification of incoming tourism markets,
3. dominance of the main incoming tourism market,
4. dependence on European markets,
5. level of economic development, and
6. quality of life of residents (measured by HDI index).

This indicates that diversification of markets is an effective way to minimise economic crises and that independent countries reacted better to the financial crisis. Moreover, the countries which rely more on tourism had a better reaction to the global financial crisis. It is
speculated that this is because they appreciated how much they needed to invest in marketing campaigns and to support enterprises which rely on the tourism market (that is the evidence of Maldives and Seychelles).

The degree of dependence on tourism was the main condition which had the strongest influence on three measures: changes in tourism movement, tourism employment, and tourist expenditures.

The second condition was degree of diversification of markets for incoming tourism. This ratio explained the resilience of island territories to the global economic crisis, in terms of tourism employment and tourist expenditure. Moreover, the use of the coefficient of diversification for incoming tourism for tourism purposes was a good way to explain the diversification of tourism sector incoming markets.

The third condition was the degree of dependence on tourism, as the factor which influenced two factors: tourism employment and tourist expenditure.

The following conditions influenced only on one measure (changes in tourism movement or changes in tourist expenditure): tourism expenditure per tourist, dominance of the main incoming tourism market, dependence on European markets, level of economic development, and quality of life of residents.

Moreover, degree of island area dependence on tourism was observed to have a mild influence on reaction to economic crisis in terms of tourist expenditures, while the degree of diversification of incoming tourism markets mildly influenced the reaction to economic crisis in terms of tourist expenditures. Those relations were the significant at the 0.05 level and, with care, can be generalised for bigger number of tourist islands.

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An exercise in decision support modelling for islands: a case study for a ‘typical’ Mediterranean island

Anna Tsoukala
University of the Aegean, Mytilini, Greece
mard16004@marine.aegean.gr

Ioannis Spilanis
University of the Aegean, Mytilini, Greece
ispil@aegean.gr

Isabel Banos-González
University of Murcia, Murcia, Spain
isabanos@gmail.com

Julia Martínez-Fernández
University of Murcia, Murcia, Spain
juliamf@um.es

Miguel Angel Esteve-Selma
University of Murcia, Murcia, Spain
maesteve@um.es

and

George Tsirtsis (corresponding author)
University of the Aegean, Mytilini, Greece
gtsir@aegean.gr

ABSTRACT: Decision support for island management must be based on quantitative tools able to integrate the natural, economic, and social environment, including the effects of recent climate change. In this context, a decision support framework is proposed, characterized by generality and flexibility, to be adapted to the specific characteristics of each island. The framework includes: (a) compilation of existing information and organization in a DPSIR framework; (b) selection of the main economic activities; (c) calculation of environmental, economic, and social indicators through models; (d) development of scenarios for future evolution; and (e) ranking for their preferability using a multicriteria methodology. Scenario development and weighting of indicators and criteria can be based on stakeholders’ and public views collected through questionnaires. The proposed framework is applied to a ‘typical’ fictitious Mediterranean island where tourism, services, and low-rate agriculture are the main economic activities. Mid- and long-term (including climate change) scenario analyses are performed as an exercise with three scenarios expressing different policies in terms of economic and environmental priorities. Advantages and limitations of the proposed framework for real-world applications are discussed.

Keywords: climate change, models, multicriteria analysis, public participation, scenarios, sustainability

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Introduction

Islands are complex dynamic systems with clear physical boundaries (Petridis, 2012; Stratford, 2008) and strongly interacting natural, social, and economic components. They are characterized by fragility and vulnerability (Hay, 2013; Stratford, 2008), considering all aspects of their environment. Sustainable growth and integrated management of coastal zones and islands received the attention of many researchers worldwide. Initially research was focused on conservation and management of natural resources aiming to protect local or national economies (e.g., Farhan & Lim, 2010; Krelling et al., 2008; Nadin et al., 2008; Stepanova, 2015). The intensive growth of tourism and recreational activities during the recent decades (Christofakis et al., 2009; Ghermandi, 2015) also imposed the need to preserve tourist destinations, and protect cultural heritage and quality of life. For European islands in particular, integrated management has been attempted, for example, in the Canary Islands (Banos-Gonzalez et al., 2015, 2016a, 2016b) and some Greek islands (Spilanis et al., 2009; Petridis, 2012). Various models were used to identify and calculate interactions between sustainability indicators and causal factors. The goals were to ensure a sustainable future with public participation and to achieve different levels of implementation based on local or national approaches, along with system understanding and support of decision-making. Although all these approaches use a common strategy, the tools are different and not generally applicable. Most of them are case-specific, focused on individual characteristics of islands, therefore not flexible and adaptive enough to be generally implemented (de Kok et al., 2015).

Integrated management is considered as an adaptive process with separated phases, such as problem identification, formulation, implementation, and evaluation (Farhan & Lim, 2010; Perez-Cayiro & Chica-Ruiz, 2015). Selection of the appropriate indicators advances the effectiveness of implementation at each phase and supports the quantification and simplification of information that is not always apparent (Bowen & Riley, 2003). Indicators must have certain characteristics, among which they must (a) supply understandable information to decision-makers; (b) measure the progress in terms of a target; (c) indicate trends in space and time; and (d) be generally applicable and conform with available thresholds and regulations (Pickaver et al., 2004). Integration of such indicators into dynamic models allows the visualization of their change over time and the assessment of how any variation in one indicator may lead to a series of responses on other indicators, showing in this sense the ongoing changes in the processes they represent (Moldan et al., 2012). Moreover, the models facilitate the recognition of interactions among interconnected subsystems driving the behaviour of dynamic systems, by means of causal relationships, feedback loops, delays, and other processes (Banos-González et al., 2015). Dynamic models also represent useful learning tools that enhance system understanding and facilitate involvement of non-technical stakeholders in the decision-making process, a key issue in integrated management (Deboudt, 2012; Le Gentil & Mongruel, 2015; Perez-Cayiro & Chica-Ruiz, 2015; Soriani et al., 2015; Stojanovic et al., 2004).

Decision Support Systems (DSS) are tools able to assist, facilitate, and support decision-making (Farhan & Lim, 2010), coping with multiple aims and incorporating quality and development indicators. They must also take into account local carrying capacities, meet the flexibility and complexity of dynamic systems, conduct multicriteria analysis, and integrate multidisciplinary approaches (Farhan & Lim, 2010). In this sense, they may form the appropriate tools for supporting policies in evolving environments (Marotta et al., 2011) such as islands or coastal zones. Although the implementation of those policies strongly depends on the administrative status of islands since final decisions are not always taken locally, DSS form the most appropriate consultation tools to impose guidelines for a sustainable future and support mid- and long-term decision’s depiction (Van Kouwen et al., 2008; Varghese et al., 2008). Long-term planning is especially important when mid-term decisions have long-term
consequences, making it possible to visualize key issues that may otherwise be missed. The use of dynamic models inside DSS allows decision-makers to anticipate the long-term consequences of their decisions and actions, as well as the unintended consequences and uncertainty of policies and strategies (Kelly et al., 2013). For this purpose, scenario development, including policy options, is one of the major tools used to visualize and compare the potential outcomes of a variety of policies to meet sustainability objectives, as well as to anticipate the long-term consequences of scenarios, policy decisions, and actions (Banos-González et al., 2016a).

Islands as fragile socioeconomic systems are expected to be more vulnerable to recent climate changes, mostly associated with changes in air temperature and precipitation. In Integrated Coastal Zone Management (ICZM), climate change has been already identified as one of the main priorities (Farhan & Lim, 2010), considering that it will affect population growth, is likely to reduce per capita water resources (Kostopoulou et al., 2014), change energy consumption and human comfort (Kostopoulou & Jones, 2005), and, finally, increase loss of human lives (Kostopoulou & Jones, 2005). In the Mediterranean region, in particular, air temperature shows a significant increase, whereas precipitation decreases, showing seasonal differentiation (Brunetti et al., 2004; de Luis et al., 2010; Giannakopoulos et al., 2011; Kostopoulou & Jones, 2005; Spyropoulos et al., 2013). As a result, there is an increased probability of extremely warm days and significant trends in the maximum number of consecutive dry days (Kostopoulou & Jones, 2005; Kostopoulou et al., 2014) with direct impacts on the economy. For instance, extremely high temperatures will affect tourism and agriculture, the two main economic activities for coastal zones and islands in the Mediterranean Basin (Giannakopoulos et al., 2011; Kostopoulou & Jones, 2005), finally leading to economic losses and immigration (de Luis et al., 2010).

In the present paper a framework for decision support in islands' management is introduced, approaching islands as complex dynamic systems. The framework includes: (a) compilation of the existing information for the physical, social, and economic environment of an island, including climate trend analysis; (b) identification of the main system drivers using the DPSIR framework; (c) selection of an appropriate set of sustainability indicators; (d) development of models quantifying relations, interactions, and feedback mechanisms; (e) development of scenarios and policy options for mid- and long-term forecasting; (f) application of multicriteria analysis where stakeholders’ views and political and social priorities may be accounted for. This framework is general for wide applicability, however flexible enough to include distinct characteristics of the physical, socioeconomic, or cultural environment of an island. The proposed framework is applied as an exercise on a ‘typical’ Mediterranean island and (a) the current state of the island is depicted; (b) a mid-term (10 years) scenario analysis is performed; (c) effects of climate change are considered by comparing the current state and a typical year in the future (long-term scenario analysis); and (d) a multicriteria analysis is applied aiming to highlight points where political priorities, stakeholders’, and social views may be incorporated.

Methodology

Outline of the proposed framework

The proposed framework for decision support in management of islands is based on a similar approach developed for Mediterranean coastal lagoons (Zaldivar et al., 2006). Following the perspectives emerging from the science of sustainability, in the current approach there are two interconnected but clearly distinctive components (Figure 1).
The first component refers to the description of the system, using all necessary data and models. The second component (the DSS) refers to the selection of objectives, criteria, and valuation procedures to assess different scenarios and prioritize among policy options. This second component should be based on the knowledge provided by the first component (model results assessed in terms of indicators and thresholds) and on a wide involvement of stakeholders, policy-makers, and citizens, by means of a participatory process. In this sense the current state of the island under consideration is firstly depicted (Figure 1a). A database is compiled including information for the natural, economic, and social environment of the island. Based on this information, the main economic sectors are identified using the DPSIR (Drivers-Pressures-State-Impact-Response) framework and each sector is expressed through a characteristic variable $V_i$ measuring the production capacity or the real production of the main activity. Models (simple linear relations or more complex models) based on those variables and appropriate coefficients are then used to estimate a number of indicators expressing the performance of each activity: economic, socio-demographic, and environmental. Then the total performance (the current State) of the whole system is assessed. There are two potential sources of uncertainty in the above calculations: (a) uncertainties in characteristic variables due to data collection methods from national statistical authorities; and (b) uncertainties in coefficients since they represent averages including variation due to differences in behaviour or practices within each activity (e.g., Erb et al., 2013). For the mid-term evolution of an island (e.g., for a decade), scenarios are developed by changing characteristic variables and coefficients (Figure 1b). Those changes may reflect local views of the public, stakeholders, or politicians, as well as external trends at the national or international level affecting the socioeconomic system of the island. Long-term analysis can also be performed by comparing the current state with a typical year in the future in which climate changes are incorporated.

**Figure 1**: Flow diagram of the proposed integrated framework for the management of islands: (a) assessment of current state and (b) development and ranking of scenarios for mid- and long-term analysis.
through a number of external variables $D_i$. Those external variables can be changes in precipitation height and frequency, or rise in air temperature. A viability test is performed prior to the multicriteria evaluation aiming to reject scenarios that are not acceptable in terms of environmental protection or socioeconomic growth. Ranking of viable scenarios from the most to the least preferable is then carried out to support decision-making, using a multicriteria choice methodology. Agents, institutional or local, are involved in the multicriteria analysis through the assignment of weights. A prototype of the proposed framework for integrated management of islands has been developed in R code (R Core Team, 2013).

**Implementation in a ‘typical’ Mediterranean island**

The above described framework is implemented in a ‘typical’ fictitious Mediterranean island with a population of about 30,000 inhabitants and an area of 500 km$^2$. The economy of most of those islands is based on tourism (Banos-Gonzalez et al., 2015, 2016a; Petridis, 2012; Spilanis et al., 2009), but also on low rate agricultural, stock-breeding, fisheries and industrial activities (Spilanis et al., 2009; Petridis, 2012). Since services including administration, education, health care, energy and water supply, and solid waste treatment have to be provided to each island on its own due to transport limitations (Spilanis et al., 2013), the services’ sector engrosses a large number of employees and largely contributes to the local economy.

Trying to resolve interactions, conflicts, and feedback mechanisms in the environment of the island (natural, economic, and social), the DPSIR (Drivers-Pressures-State-Impact-Response) framework is applied. The economic activities on the island are considered as the main Drivers (D). Pressures (P) originate from those drivers, affecting natural resources (e.g., water, energy) and producing pollution and contamination, which in turn alter the State (S) of natural resources. Accordingly, changes in state have positive or negative consequences which are defined, evaluated, and described as Impacts (I). Those impacts lead to Responses (R), undertaking of actions and policies coping with the effects on the natural and socioeconomic environment. For the typical island, the Drivers are the main economic sectors: (i) agriculture, (ii) stock-breeding, (iii) fisheries, (iv) industry, (v) tourism, (vi) construction, and (vii) services, each one expressed through a characteristic variable $V_i$ (Table 1). Each sector can be further divided into subsectors aiming to increase the resolution of the model. For example, fisheries, aquaculture, and shellfish harvesting can be the subsectors for fisheries and olive refineries, milk dairies and wineries, the subsectors for industry in a Mediterranean island.

**Table 1:** Main economic sectors (Drivers) and their corresponding characteristic variable for the ‘typical’ Mediterranean island.

<table>
<thead>
<tr>
<th>Economic Sectors</th>
<th>Characteristic variables (Vi)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>Cultivated area</td>
</tr>
<tr>
<td>Stock-breeding</td>
<td>Number of animals</td>
</tr>
<tr>
<td>Fisheries</td>
<td>Catch</td>
</tr>
<tr>
<td>Industry</td>
<td>Raw material</td>
</tr>
<tr>
<td>Tourism</td>
<td>Nights spent</td>
</tr>
<tr>
<td>Construction</td>
<td>Number of employees</td>
</tr>
<tr>
<td>Services</td>
<td>Number of employees</td>
</tr>
</tbody>
</table>

Economic activities consume water and energy, produce solid wastes and pollution (e.g., N and P loading, CO$_2$), and cause biodiversity loss in the island. The state of the island is affected, population can be increased or decreased, per capita income and employment changed; land use also changes and there are alterations in the quality of agricultural, fishing,
and industrial products. Those effects are expressed through a number of environmental and socioeconomic indicators. In the current implementation, ten indicators were used (Table 2).

Table 2: Environmental, economic, and social indicators used in the current implementation of the integrated framework for the ‘typical’ island. HDI is a synthetic index based on unemployment rate, life expectancy, and poverty rate (or income per capita).

<table>
<thead>
<tr>
<th>Category</th>
<th>Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental</td>
<td>Water consumption/water availability</td>
</tr>
<tr>
<td></td>
<td>Energy consumption</td>
</tr>
<tr>
<td></td>
<td>N loading</td>
</tr>
<tr>
<td></td>
<td>P loading</td>
</tr>
<tr>
<td></td>
<td>CO₂ emissions</td>
</tr>
<tr>
<td></td>
<td>Solid wastes</td>
</tr>
<tr>
<td></td>
<td>Land use change/Biodiversity loss</td>
</tr>
<tr>
<td>Economic</td>
<td>Employment</td>
</tr>
<tr>
<td>Social</td>
<td>Human Development Index (HDI)</td>
</tr>
</tbody>
</table>

Indicators are calculated for each sector or subsector based on its characteristic variable and appropriate coefficients, using models, either simple linear relations or more sophisticated dynamic models. As an example of simple linear relationships, water consumption can be calculated by multiplying cultivated area by the amount of water used for irrigation per unit area. Income from tourism can be estimated by multiplying nights spent by tourist expenditure. A more complex watershed model is used for the calculation of nitrogen and phosphorus loading from point and non-point sources, already described in detail in a previous paper (Spyropoulou et al., 2013). These loadings can be further used to estimate marine pollution or the risk to overcome related thresholds. The island is firstly divided into watersheds. The model estimates the amount of run-off and nutrients (dissolved inorganic nitrogen and phosphorus) leached from each watershed, after a rainfall event on a daily basis according to land uses and the local topography. Loads from point sources (industry, stock-breeding, urban wastes) are also taken into account and the total amount of nitrogen and phosphorus or the amount flowing into the receiving water bodies is used as environmental indicator. Moreover, renewal time estimated from hydrodynamic models, or amount of erosion can be used as indicators in the proposed framework. The same holds for other socioeconomic indicators estimated by simple or more complex relationships. A detailed description of the model equations used in the current implementation is given in Appendix 1. The full set of indicators is finally used to depict the current state of the island under consideration.

Scenarios are then developed for the future evolution of the island, either for mid- or long-term analysis. For mid-term analysis (e.g., one decade), three prospective scenarios of environmental and socioeconomic changes were deployed in the current implementation, their basic context already described in a previous paper (Kontogianni et al., 2007). The baseline or reference scenario (Business as Usual, BAU) is where prevailing trends are continued without special interventions. This trend is expressed for the ‘typical’ island through a slow rate of annual increase in economic activities, paying less attention to environmental protection. In the second scenario (Policy Targeted, PT), policies for a rather fast economic growth are encouraged, whereas environmental protection is also taken into account more actively. Finally, the Deep Green (DG) scenario is mostly focused on environmental protection and environmentally friendly economic growth. These scenarios are quantified in the models by changing, on an annual basis, either the characteristic variables.
of each sector, or the coefficients, or both. For example in a PT scenario, cultivated area may increase aiming to economic growth (e.g., 0.5% per year); however, the amount of water used for irrigation can decrease (e.g., 0.2% annually) for environmental protection. This decrease may be more pronounced in a DG scenario.

Direct and indirect mechanisms of dependence and feedback are also taken into account in the evolution of the island. For instance, industrial raw material originates from agricultural (e.g., olive oil and wine) or stock-breeding (e.g., milk) activities. Employment in the services sectors depends on the previous two-year trend in income, whereas population changes are connected with the trends of economic growth and social welfare (the latter expressed with HDI). More details about the dependencies and feedback mechanisms used in the current implementation are given in Appendix 2. Scenarios are then simulated for the mid-term analysis on an annual basis and the evolution of various indicators in time (e.g., for a decade) is estimated. Indicators can be integrated into three criteria—environmental, economic, and social—each one being a weighted sum of the corresponding indicators. For example, in the current implementation, the environmental criterion is a weighted sum with equal weights of all environmental indicators, and the same holds for the economic and social criteria. Thereafter, the evolution of each criterion in time is used for a qualitative comparison of scenarios.

For the long-term analysis including climate change, scenarios are simulated for one typical year in the future. Climate changes can be easily incorporated in the models by, for example, reducing the height and frequency of rainfall or increasing air temperature. Single values are estimated for each indicator and scenario, and those values are compared with the corresponding indicators of the current state of the island. A similar comparison can also be made for criteria, as described in the previous paragraph.

A viability test can be applied for both mid- and long-term analysis prior to the multicriteria evaluation. This test aims to identify scenarios that are not acceptable in terms of environmental protection or socio-economic growth. To perform the test, thresholds are set for each indicator expressing carrying capacities, legal standards, or reference values originating from the historical evolution of the island. Indicators that violate the limits are identified and the corresponding scenarios are considered as non-viable and rejected from further analysis.

Finally, ranking of acceptable scenarios is performed by applying a multicriteria choice methodology. In the current implementation, Analytic Hierarchy Process (AHP) was used. AHP, originally developed by Saaty (1980), evaluates different alternatives (scenarios) based on pairwise comparisons of criteria, according to their importance. In this sense, a final score is attributed to each scenario, and scenarios are ranked from the most to the least preferable. This ranking is on an annual basis in the mid-term analysis, whereas for the long-term analysis ranking is based on the single values calculated for each scenario.

It is essential to involve different agents, institutional or local, in the decision-making process. Stakeholders’ views and political and social priorities can be collected through a variety of methodologies, including workshops and meetings with stakeholders, and questionnaires. A thorough analysis of questionnaires can be used (a) to identify the appropriate set of indicators; (b) to define the number of scenarios; (c) to assign changes in characteristic variables and coefficients in scenarios’ development; (d) to assign weights to indicators inside criteria; and (e) to define the relative importance of criteria.

**Results: a case study for a ‘typical’ fictitious Mediterranean island**

The proposed integrated framework for decision support in islands’ management was applied on a typical or prototype Mediterranean island, integrating most of the common characteristics of Mediterranean islands, including limited natural resources, small size, isolation, and local economy mostly based on tourism and services, but also on small-scale agriculture, stock-breeding, fisheries, and industry (Spilanis et al., 2009). More than half of
the residents are financially inactive, whereas the majority of employment is in services, commercial as retail and non-commercial as public services. The current state of the island can be described by running the model and estimating the environmental and socioeconomic indicators. An important environmental indicator for Mediterranean islands is water consumption per sector, shown in Figure 2, where agriculture and households are the main consumers. Similar graphs can also be plotted for the subsectors of a sector if a more thorough analysis of the indicator under consideration is needed.

![Figure 2: Water consumption (tn/year) per sector in the typical Mediterranean island estimated by the model. Agr: Agriculture, Sbr: Stock-breeding, Fsh: Fisheries, Ind: Industry, Tou: Tourism, Con: Constructions, Srv: Other Services, and Hhs: Households.](image)

Considering local economy, income per sector can be estimated by the model (Figure 3). Tourism and services are the main sources of income for the typical island, the same holding for most of the Mediterranean islands.

![Figure 3: Income (MEUR/year) per sector in the typical Mediterranean island estimated by the model. Agr: Agriculture, Sbr: Stock-breeding, Fsh: Fisheries, Ind: Industry, Tou: Tourism, Con: Constructions, Srv: Other Services, and Hhs: Households.](image)
Taking a step forward, a mid-term (for a decade) scenario analysis was performed. Three scenarios were developed and tested for the typical island, expressing the current trends (Business As Usual, BAU), emphasis on economic growth (Policy Targeted, PT), and emphasis on environmental protection (Deep Green, DG). The evolution of indicators during the decade is the result of the simulation. Synthetic indicators can also be calculated, used as criteria in the multicriteria analysis, such as the economic criterion, being a weighted sum of the economic indicators, income and employment, with equal weights in the current case study. The evolution of employment (number of employees) and the economic criterion are shown in Figure 4. Employment is decreasing for almost three years in all scenarios due to the depression of the local economy which was incorporated in the scenarios for two years. This depression follows the corresponding trend at the national level since the island is an open system not isolated from the rest of the world. The decreasing trend is then reversed for all scenarios and economic growth is presumed, being more pronounced for the PT and DG scenarios (Figure 4a). A similar trend is observed for the economic criterion, being an average of the income and employment (Figure 4b).

Figure 4: Mid-term scenario analysis: Evolution of (a) employment (number of employees) and (b) economic criterion (weighted sum of income and employment with equal weights) during a decade for BAU (in blue), PT (in red), and DG (in green) scenarios.
Finally, the Analytic Hierarchy Process (AHP) was applied to rank scenarios according to their preference based on environmental, economic, and social criteria. Final ranking with equally weighing criteria is shown in Figure 5. It is important to note that according to the methodology, the sum of the three scores is always equal to one, so only pairwise comparisons are possible, not taking into account absolute values and differences. BAU scenario has the lowest score throughout the decade. DG is slightly more preferable than the PT during the first two years of the analysis; however, the latter is more preferable in the long term.

![Figure 5: Mid-term scenario analysis: Evolution of Final score (with equal weights on environmental, economic, and social criteria) during a decade for BAU (in blue), PT (in red), and DG (in green) scenarios.](image)

For the long-term analysis aiming to incorporate climate changes, the three scenarios were simulated for a future year and results were compared with the current state. According to recent climatological studies for the Mediterranean basin (Giannakopoulos et al., 2011; Kostopoulou et al., 2014), a decrease in annual rainfall of 10% and an increase in air temperature of 10% are plausible. These changes affect the water budget due to the decrease of precipitation and the increase of evaporation. Increase of air temperature, especially in summer, also affects economy (tourism and agriculture) and social well-being. Simulation results for the future year include single values of all indicators and criteria for each scenario, which can be compared with the corresponding values for the current state of the island. As an example, population growth and final ranking of scenarios are shown in Figure 6. Equal weights were assigned to the three criteria—environmental, economic, and social—in the multicriteria analysis.
Figure 6: Long-term scenario analysis: Comparison of (a) population and (b) final score for the current state (in grey) and the future year as estimated by the three scenarios (BAU in blue, PT in red, and DG in green).

Population shows an increase in the future which is more pronounced for the Deep Green scenario. Population change is related both to the trends of economic growth and social welfare. It seems therefore that environmental protection in the DG scenario increases social welfare that in turn out-competes possible higher economic growth in favour of the PT scenario. However, taking into account all criteria with equal weights, PT scenario is more preferable than DG, whereas BAU expressing current trends without significant interventions is the least preferable in long term.

Discussion

Integrated management of islands, taking into account climate change and using information technology tools, must be a first priority in decision-making for politicians, local and institutional stakeholders, and researchers, based on the long experience from coastal zone management (Van Kouwen et al., 2008). The proposed framework is characterized by generality to be applied to any island, but also by flexibility to be adapted to the specific environmental, economic, social, or cultural characteristics of each island. The framework
approaches islands as dynamic systems, highlights their main components (physical environment, economy, society, cultural identity, and transport) and develops quantitative relationships to study interactions, dependencies, and feedbacks, as well as input and output flows. Those flows might be in terms of currency, people, goods, or energy, since islands are open systems that continuously interact with the external environment at the national and international levels. The framework is divided into separate phases, some of which should include public and stakeholders’ participation, as the definition of indicators and sustainability goals, prioritization of economic sectors, and ranking of scenarios. Limits set by carrying capacities in terms of environmental, economic, social, and cultural aspects, or by the existing legislation, in the form of thresholds for indicators, can also be taken into account and, accordingly, reject scenarios overcoming those limits. The proposed framework can be used for consultation and for the assessment of possible outcomes of policy options, although final decisions and implementation always depend on the administrative authorities of each island, either local, regional, or national.

Spatial resolution and capability to develop spatially explicit scenarios is desirable in the coastal zone (Van Kouwen et al., 2008), and moreover in islands’ management. Multi-agent-based models can be used to study problems integrating social and spatial aspects (Bousquet & Le Page, 2004), including human behaviour, an important steering factor for management (Boulanger & Brechet, 2005; Otter, 2000). Theoretically there is no limitation in spatial resolution for the proposed management framework, provided that information is available, for variables, coefficients, mechanisms, and priorities, even at a small-scale level. However, there is always lack of information at low spatial scales, especially for the socioeconomic data and therefore spatial aggregation is almost always necessary (Van Kouwen et al., 2008; Le Gentil & Mongruel, 2015). National statistical authorities usually collect data for administrative units, as municipalities, prefectures, or regions; therefore a compromise has always to be made between spatial resolution and available information. In the case study of the ‘typical’ island, the lower spatial unit was the watershed for which the water budget was studied; whereas the rest indicators were calculated at the whole island level, considering the island as the administrative unit. This hybrid approach is proposed for future use as a compromise between processes that have to be studied in low resolution and availability of data. Coastal hydrodynamics or biodiversity losses are often studied with spatially explicit low-resolution models which are time-consuming to set and run. Such models can be run off-line and their results be aggregated in single indicators able to be incorporated in the management framework and taken into account in current state evaluation and scenario testing.

A fundamental difficulty in managing long-term and sustainability decisions is uncertainty. Since the future is uncertain, Uusitalo et al. (2015) stated that it is impossible to predict with certainty the result of each management decision. Moreover, complex models with many interactions among individual sources of uncertainty can increase the overall model uncertainty (Perz et al., 2013). Therefore, there is a need to identify potential sources of uncertainty and to quantify their impact on model outputs and on the evaluation of policy options. Among the tools to understand and take into account uncertainty, an extensive sensitivity analysis can be performed, for example, by means of Monte Carlo simulations. The sensitivity analysis allows a detailed assessment of model robustness and, therefore, the reliability of the model outputs, as well as the explicit quantification of the specific uncertainty associated to each model outcome under the considered scenarios and policies. The consideration of uncertainty is important since it modifies the conclusions regarding whether some objectives are achieved or whether certain sustainability thresholds might be exceeded. For example, some indicators might not exceed their thresholds when mean values (of Monte Carlo simulations) are considered, but such thresholds might be overcome when the whole uncertainty range of the concerned indicator is taken into account. The proposed modelling tool can be easily adapted to be used for backcasting the evolution of a real island, for example, one decade. In this sense,
Monte Carlo simulations can be used to assess the sensitivity of indicators resulting from uncertainties, either in characteristic variables due to the methods of collection or in coefficients representing averages resulting from different behaviours and practices.

In terms of interpretation of the indicators and in order to represent a useful tool for public communication and assessment of scenarios and policy options, a quantitative notion of what is acceptable for sustainability (a threshold) is needed (Banos-González et al., 2016b). A threshold may be a background value or a meaningful reference value for something like the irreversibility of the socio-ecological system. Depending on the nature of the indicator, either environmental or socioeconomic, threshold values can be provided by mandatory legal standards, guidelines from different institutions, benchmarking (best practices and experiences from other islands or socio-ecological systems), and the own background of the island (historical values as reference). The establishment of thresholds for every indicator is a clear step forward in sustainability since they represent a reference for decisions allowing the definition of acceptable ranges of change (Rodríguez-Rodríguez & Martínez-Vega, 2012). Establishment of thresholds for socioeconomic indicators would also prevent actions of conspicuous sustainability leading to an ‘eco-island trap’ (Grydehøj & Kelman, 2017), often resulting from the overweighing of environmental criteria in multicriteria approaches. In the proposed framework, prior to the application of multicriteria analysis, a viability test can be performed: scenarios exceeding existing limits or thresholds, including social or political acceptability, are considered as not viable and rejected from further analysis. Setting sustainability goals and identifying appropriate indicators with their thresholds to monitor progress towards these objectives over time, with the involvement of stakeholders in the whole process, may increase their influence on the adoption and assessment of sustainable policies and practices.

In order to support policies, management tools are used for both backcasting and forecasting (Holmberg, 1998; Robinson, 2003; Van Kouwen et al., 2008). Forecasting through public participation, an inherent characteristic of the proposed framework, is also important to evaluate the effectiveness of the proposed strategies, define alternatives, and optimize policies (Le Gentil & Mongrue, 2015). Public participation in certain phases of the management framework restricts the drawbacks of participatory activities which are often time- and resource-consuming (Le Gentil & Mongrue, 2015; Soriani et al., 2015). The selection of stakeholders’, politicians’, and public views is also crucial (Le Gentil & Mongrue, 2015), based on appropriately designed questionnaires. Analysis of the information from questionnaires can be used to assign weights to indicators, define the number and content of scenarios by prioritizing economic sectors, and, finally, apply multicriteria analysis. The possibility to include climate changes and forecast possible effects on economy and social well-being is an additional important feature, since those changes greatly affect regions with many islands, such as in the Mediterranean (Giannakopoulos et al., 2011; Kostopoulou et al., 2014; Spyropoulou et al., 2013).

Acknowledgements

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References


## Appendix 1: Simple model equations for the calculation of environmental and socioeconomic indicators.

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Equation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Agriculture</strong></td>
<td></td>
</tr>
<tr>
<td>Water consumption</td>
<td>Cultivated area x % irrigated x water consumption/unit area</td>
</tr>
<tr>
<td>Energy consumption</td>
<td>Cultivated area x % irrigated x energy consumption/unit area</td>
</tr>
<tr>
<td>N, P pollution</td>
<td>From point and non-point sources through a watershed model</td>
</tr>
<tr>
<td>CO$_2$ emissions</td>
<td>Energy consumption x CO$_2$ emissions/kWh consumed energy</td>
</tr>
<tr>
<td>Production</td>
<td>Cultivated area x production/unit area</td>
</tr>
<tr>
<td>Income</td>
<td>Production x value/unit of production</td>
</tr>
<tr>
<td><strong>Stock-breeding</strong></td>
<td></td>
</tr>
<tr>
<td>Water consumption</td>
<td>Number of animals x water consumption/animal</td>
</tr>
<tr>
<td>Energy consumption</td>
<td>Number of animals x energy consumption/animal</td>
</tr>
<tr>
<td>N, P pollution</td>
<td>Number of animals x N, P/animal</td>
</tr>
<tr>
<td>CO$_2$ emissions</td>
<td>Energy consumption x CO$_2$ emissions/kWh consumed energy</td>
</tr>
<tr>
<td>Meat production</td>
<td>Number of animals x meat production/animal</td>
</tr>
<tr>
<td>Milk production</td>
<td>Number of dairy animals x milk production/dairy animal</td>
</tr>
<tr>
<td>Income</td>
<td>Meat production x value/unit of production + Milk production x value/unit of production</td>
</tr>
<tr>
<td><strong>Fisheries</strong></td>
<td></td>
</tr>
<tr>
<td>Energy consumption</td>
<td>Catch x energy consumption/unit of catch</td>
</tr>
<tr>
<td>N, P pollution</td>
<td>Catch x N,P/unit of catch</td>
</tr>
<tr>
<td>CO$_2$ emissions</td>
<td>Energy consumption x CO$_2$ emissions/kWh consumed energy</td>
</tr>
<tr>
<td>Income</td>
<td>Catch x value/unit of catch</td>
</tr>
<tr>
<td><strong>Industry</strong></td>
<td></td>
</tr>
<tr>
<td>Water consumption</td>
<td>Raw material x water consumption/unit of raw material</td>
</tr>
<tr>
<td>Energy consumption</td>
<td>Raw material x energy consumption/unit of raw material</td>
</tr>
<tr>
<td>N, P pollution</td>
<td>Production x N, P/unit of production</td>
</tr>
<tr>
<td>CO$_2$ emissions</td>
<td>Energy consumption x CO$_2$ emissions/kWh consumed energy</td>
</tr>
<tr>
<td>Income</td>
<td>Raw material x cost of processing/unit of raw material</td>
</tr>
<tr>
<td><strong>Tourism</strong></td>
<td></td>
</tr>
<tr>
<td>Nights spent</td>
<td>Number of beds x nights spent/bed</td>
</tr>
<tr>
<td>Water consumption</td>
<td>Nights spent x water consumption/day</td>
</tr>
<tr>
<td>Energy consumption</td>
<td>Nights spent x energy consumption/day</td>
</tr>
<tr>
<td>N, P pollution</td>
<td>Nights spent x N, P/day</td>
</tr>
<tr>
<td>CO$_2$ emissions</td>
<td>Energy consumption x CO$_2$ emissions/kWh consumed energy</td>
</tr>
<tr>
<td>Solid wastes</td>
<td>Nights spent x solid wastes/capita.day</td>
</tr>
<tr>
<td>Income</td>
<td>Nights spent x average tourist expenditure/day</td>
</tr>
</tbody>
</table>
### Constructions
- **Water consumption**: Number of employees x water consumption/capita.day
- **Energy consumption**: Number of employees x energy consumption/capita.day
- **CO₂ emissions**: Number of employees x CO₂ emissions/capita.day
- **Solid wastes**: Number of employees x solid wastes/capita.day
- **Income**: Number of employees x average annual income in constructions

### Services
- **Water consumption**: Number of employees x water consumption/capita.day
- **Energy consumption**: Number of employees x energy consumption/capita.day
- **CO₂ emissions**: Number of employees x CO₂ emissions/capita.day
- **Solid wastes**: Number of employees x solid wastes/capita.day
- **Income**: Number of employees x average annual income in services

### Households
- **Water consumption**: Residents x water consumption/capita.day
- **Energy consumption**: Residents x energy consumption/capita.day
- **N, P pollution**: Residents x N, P /capita.day
- **CO₂ emissions**: Number of residents x CO₂ emissions/capita.day
- **Solid wastes**: Number of residents x solid wastes/capita.day

### Other socioeconomic indicators
- **Total income**: Income from all sectors + income from pensions
- **Employment rate**: Employed/financially active
- **Poverty index**: \[
\frac{\text{Unemployed} + \text{employees in agriculture} + \text{employees in stock-breeding} \times 0.2 + \text{employees in fisheries} \times 0.3}{\text{financially active}}\]
- **Access to education index**: \[
(1 - \text{employed/financially active}) \times 0.5
\]
- **Life expectancy index**: \[
0.3 \times \text{employment rate} + [0.7 \times (\text{employees in fisheries} - \text{employees in industry}) \times 0.3] / \text{employed}
\]
- **HDI**: \[
0.3 \times \text{life expectancy index} + 0.3 \times (1 - \text{access to education index}) + 0.4 \times (1 - \text{poverty index})
\]

### Appendix 2: Dependencies and feedback mechanisms in scenario testing.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Equation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial raw material</td>
<td>Related agricultural product (e.g., olives for olive oil, must for wine)</td>
</tr>
<tr>
<td>Trend in constructions</td>
<td>Last two-years’ trend in income and population</td>
</tr>
<tr>
<td>Trend in services</td>
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Book reviews


In *Postcolonial Nations, Islands, and Tourism: Reading Real and Imagined Spaces*, Helen Kapstein offers previously published and new research to illustrate how the tourist gaze organizes the postcolonial island/nation, from within and without. The book is an enjoyable, richly developed monograph which uses critical theory “to return a critical gaze on the normative and ideal island space.” She analyses how island spaces and “tourist tales” have been used in literary texts and the popular imagination “to shore up the fiction of the nation” as it “struggles to maintain its intactness.” Kapstein effectively exposes the “dirty work of colonialism” in challenging the fictions and violence that undergird both tourism and nation-building in a global economy.

Kapstein’s academic background is in Anglophone postcolonial comparative literary and cultural studies. Her book is organized geographically into three sections of two chapters each; focused on England, Sri Lanka, and South Africa respectively. Across chapters, Kapstein examines the island as a paradox that is “supplemented and reiterated by other spaces, real and imagined, internal and external” while she deconstructs the “false dichotomies of islandness versus connectedness and coherence versus contamination.” She establishes in Chapter One the failure of the island to provide a central organizing concept for the nation. She shows the island, the nation, and the Robinsonade genre as similarly elusive and vulnerable. Chapter Two, like the book itself, is full of examples which compete for the lead. Many deserve their own volumes.

The book’s second section reviews emerging trends in tourism through Sri Lankan author Romesh Gunesekera’s oeuvre. Herein, Kapstein illustrates how nation-building around tourism is a “global proposition—a mode of translation (albeit a fraught one)” that works at many scales. Her choice of fictions displays tourism in its “frustrated, messy, and failed forms.” She describes adventure and dark tourism as manifestations of the postmodern tourist’s desire for authenticity or “a reality effect, that is, for wanting to be an insider” where increasingly, “work and war become the object of the tourist gaze” in “a new kind of safari” (Gunesekera’s term). Her applied focus in this section on the tactics and strategies of tourism provides clear connections between theory and material (economic) effects; for instance, she observes that both the nation and the island share the priorities of “accumulation, storage, and investment in a particular space.” Here, as well, Kapstein demonstrates her ecocritical sensibility when analyzing both the agency and neoliberal production of nature as an integral part of nation-building. She impressively describes in a single frame the “vexed spaces” and “shared violence” of the nature preserve, the game park, and the war zone, wherein the impossibility of achieving authenticity increasingly “ratchets up the tourist experience,” suggesting more disturbing trends to come.

Kapstein’s final section on Robben Island is her strongest. As the product of mixed methods, these chapters upstage her earlier text-based analyses. Her complementary combination of close reading, field study, discourse analysis, and primary source archival research best exemplifies an interdisciplinary approach that “lends equal authority to different kinds of knowledge.” Here, she provides insightful readings of “cultural artifacts” such as visitor questionnaires, memoirs, correspondence, advertising, and official documents. Kapstein also vividly describes her experiences as a young researcher in place (including being a castaway “stranded” overnight on Robben Island). The methodological shift between chapters provides markedly different reading experiences yet advances her goal of moving beyond island “as trope” to examine “actual power relations, specific geographies, and material economies.” This section also does the most radical work. Throughout the book, after Homi Bhabha, Kapstein catalogues ways in which the center-periphery dichotomy is “disrupted.” Noting that
returning the colonial gaze “is a key component of postcolonial empowerment,” she is purposefully “making space for resistant [re]imaginings” which might “destabilize those same spaces.” For example, these final chapters raise social justice questions of uneven access to and control over the world heritage site for average South African residents and “domestic tourists.” Additionally, her analysis of the “Brand South Africa” campaign reveals contested visions of the new nation after apartheid. The book could be strengthened by theoretical engagement with uneven development, decolonization, (neo)coloniality/modernity, etc., as well as by the inclusion of more diverse, local voices. A different book—perhaps better focused on “the real lives of most people on the (post)colonial margins”—might find Kapstein deeper in the field, collecting her own visitor surveys and interviews. Missing is a reflexive statement of positionality and/or solidarity with her subjects; as Kapstein wrote in these pages recently, “we must ask who our work is in the service of.”

Kapstein explains why the island and the center will not hold. Though she analyzes these as unstable categories (reproduced and reinvented in new spatial configurations and forms of colonial violence), she stops short of imagining them differently. Needed is a conclusion section to consider implications and alternatives. For instance, the book’s many interisland, intertidal examples—including Jonathan Raban’s Coasting and Gunasekera’s Reef and Noontide Toll—could benefit from an archipelagic analysis, largely avoided here. Archipelagic readings of being (adrift) in-between or just beyond states seem pertinent to Kapstein’s argument against insularity. Describing the irony of Brexit, she asserts this wider (more archipelagic) perspective: “retreating to island status does not reject global interconnectedness; it reaffirms it.” To rethink the island begs the question of what replaces it, locating island and archipelagic studies squarely in the unique, interdisciplinary position to confront some of the most pressing challenges of our time. The stakes are high with the compounded problems of climate change, limits to growth, geopolitical tensions over immigration and refugees, the rise in nationalism, etc. Abandoning such island myths and mentalities is imperative; Kapstein proves why it is necessary and proper to so argue forcefully.

Jenny R. Isaacs
Rutgers University, USA
jenny.isaacs@rutgers.edu

This anthology draws inspiration from island studies and its work on defining ‘islandness’ to explore the identity of islands and islanders. It applies this line of enquiry to the Arctic and its peoples, both challenging and developing the concept of ‘Arcticness’. The collection examines Arcticness through the lenses of ‘power’ and ‘voice’, as the title indicates. In terms of power, it explores Arcticness as an identity that can be instrumentalised, both politically (in terms of resource rights) and financially (as a commodity which sells). It also seeks to convey Arcticness as a human construct, shaped and defined by multiple voices. Structure echoes content, for the text is comprised of a series of chapters by authors from different disciplinary backgrounds—from art to resource management, engineering to anthropology—each contributing to a working definition of Arcticness.

The diversity of Arcticness: Power and Voice from the North is highly impressive. Ilan Kelman, a reader in Risk, Resilience and Global Health at UCL, has put together 13 chapters written by 28 contributors, including PhD students, experienced academics and artists. Indigenous and non-indigenous perspectives from the Arctic appear alongside those of people living outside the Arctic Circle. The contributions are hugely varied, ranging from a graphic essay to personal accounts of Arctic living, which sit alongside academic essays covering
everything from resource frontiers to radar measurements of ice. It is rare to find a collection that incorporates such a wide range of perspectives, and it makes for a fascinating and compelling read. This multiplicity also conveys the idea that Arcticness is a relational construct, composed of manifold subjectivities; a discursive skein of perspectives emanating from the arts and sciences. From an island studies standpoint, this imbues Arcticness with archipelagraphic qualities, which is appropriate considering the numerous islands and archipelagos located within the Arctic Circle.

One criticism that might be levelled at *Arcticness: Power and Voice* is that because it incorporates so many different disciplines, a reader might struggle to critically engage with each chapter. However, all authors have clearly made efforts to explain their arguments in concise and jargon-free language, with Arcticness providing a point of connection within a kaleidoscope of different ideas and perspectives. In some chapters, defining and interrogating Arcticness constitutes the main thrust of the argument, whilst in others it is just one facet of an Arctic-based research question. Marius Warg Næss’s ‘Reindeer Herding in a Changing World’ is an example of the latter. In this chapter, a comparative analysis of reindeer herders in the Arctic and the Qinghai–Tibetan Plateau, Arcticness is not explicitly mentioned until the conclusion. Initially the mention is jarring, but Næss does succeed in contextualising it with his own research question. He suggests that Arcticness is in danger of being defined as a quality linked to a specific place or reality, which could lead to exoticisation or reification. However, comparative studies such as his own make links between the Arctic and other places and peoples, and in forming these connections the Arctic is no longer a place apart, fundamentally different or radically Other.

Larissa Diakiw’s graphic essay, ‘Conversations in the Dark’ does not explicitly mention Arcticness, but it clearly engages with the term as a form of marginalisation and oppression. Through text and illustration it discusses ‘The Truth and Reconciliation Commission’, an enquiry into the legacy of residential schools for Canada’s indigenous and First Nations population. It explores the atrocities committed at these schools through the lens of hunger, quoting from pupils’ reflections on their deprivations, showing how food—or lack of—can be instrumentalised as a weapon, not only through imposing scarcity but by alienating people from their culture and modes of survival. Although the graphic essay is a fascinating addition to the anthology, there is a danger that some researchers might not find it sufficiently ‘scholarly’, as it doesn’t synthesise or substantiate information in the same way an academic essay does. However, what it does successfully show is that Arcticness should not solely be perceived as a theoretical construct or intangible quality. Instead it forms part of the fabric of daily life, and can be situated in a specific time and place.

The chapter that constitutes the most sustained engagement with Arcticness is Patrizia Isabelle Duda’s ‘Arcticness: In the Making of the Beholder’. Duda argues that ‘outsider’ perspectives have influenced Arctic politics and shaped ‘insider’ narratives of Arcticness. Outsider perspectives constitute a form of ‘Arctic orientalism’, one which she shows is undeniably gendered, as it evokes the Arctic as a pristine space to be conquered and managed by the rugged scientist-explorer-hero. Duda shows how these colonial themes have pervaded the neoliberal commercialization of the Arctic and permeated Arctic policy. She suggests that Arcticness is a concept built upon backwards-looking historical legacies, but driven forward by technological, political and economic opportunities. She concludes that Arcticness is a mobile construct, one which has the potential to contribute to northern countries’ empowerment. Duda’s argument is compelling, and her chapter is one of the few in the collection to approach Arcticness from a gendered perspective.

Ultimately, this book makes a clear and original contribution to the field of Arctic studies, with each chapter adding an extra dimension to the discussion of Arcticness. The anthology should be credited with opening up a conversation about Arcticness, which can be built upon and developed by subsequent theorists working in multiple disciplines. The
establishment of Arcticness as a relational construct will undoubtedly make it a work of interest to island studies researchers, as will the discussions of how Arctic peoples might avoid being essentialised, and reclaim their diverse identities.

Dani Redd
Independent Researcher, UK
dani.redd@gmail.com


In 1941, the United States Navy (USN) appropriated two-thirds of the Caribbean island of Vieques for the purposes of live ammunition training, specifically sea-to-land and air-to-land bombardments and amphibious landings. The civilian population was confined to a corridor along the centre third of the island. In 1999, a grassroots movement to oust the military from the island gained transnational momentum and the USN left the island in 2003.

The end of military exercises in Vieques raised concerns about the challenges of developing the island and improving the islanders' quality of life. Close to two-thirds of the island was polluted by heavy metals and radioactive materials, the island population had reported a disproportionate number of cancer cases, and two generations had lived under intense bombing, which had left islanders with psychological and nervous system disorders. However, there were reasons for staying optimistic about Vieques' post-USN development. After all, the islanders had mobilised the international community to persuade the most powerful military in the world to abandon its interests in the northeastern Caribbean during a time when US militarism was on a rise. Would these same actors be able to coordinate a sustainable development plan on their own terms? Luis Valldejuli’s conclusion, after ten years of conducting interviews and participant observation on the island of Vieques, is that the voice of the viequense has been ignored in the post-USN scenario.

*Tourism and Language in Vieques: An Ethnography of the Post-Navy Period* argues that the post-Navy period in Vieques has been dominated by the tourism industry, which has been led by immigrants from the continental United States. The book’s analysis centres on the language and discourses that viequenses use to describe their relationship to the tourism industry and to continental immigrants. Valldejuli finds that the local understandings of the situation in Vieques have not been heard by decision makers associated with the state and capital, leaving local islanders without the means to participate in designing the future development of their island. Valldejuli reads the “silencing” of the viequense voice as an illustration of the post-colonial subaltern who is not listened to even when their utterance is formatted along hegemonic frames of reference.

The book explores this process in seven chapters that address local understandings of the tourist economy, tourism imaginaries, access to land, values associated to work, race relations, and the future of Vieques. Valldejuli reads the power relationships of Vieques’ tourist economy through a binary opposition between ‘hosts’ and ‘guests’ where the hosts are represented by the viequenses/Puerto Ricans and the guests are represented by white North American immigrants. While the permanence of the binary opposition between hosts and guests may strike some readers as dated, I found the analysis consistent. If tourism is to be read as a set of power relations, then the story necessarily requires actors to align themselves along clearly delineated camps.

However, I would have appreciated a more thorough explication of the characterisations Valldejuli assigns to the groups. For example, the book’s conflation of viequense and Puerto Ricans needs more explanation. While Vieques is within the jurisdiction of Puerto Rico and
Viequenses may correspond to the ethnic and linguistic characteristics of the Puerto Rican nationalist project, I would not be surprised if Viequenses strike a distinction between themselves and Puerto Ricans. Viequenses have developed a cultural relationship with the English Caribbean (which is not an acknowledged part of the Puerto Rican national space), have had a long history of French presence on the island, and Viequenses oftentimes view Puerto Ricans, or people from the ‘Big Island’, as the putative ‘other’ in addition to North American tourists. Further, the author identifies a local distinction between ‘good’ Americans and ‘bad’ Americans, suggesting that the terms of the binary opposition are not as consistent as the argument requires. Also, there is evidence in the book that suggests that the American community in Vieques occupies a transnational space and is constantly on the move. The complexities that emerge from this transnational condition are not accounted for in this analysis.

One fascinating theme that is described in the book relates to local responses to land access. Valldejuli identifies three squatting groups on the island and examines their different strategies. The material shows how the Viequenses are divided on the appropriate strategies for squatting, resulting in serious disagreements between the groups. While showing the internal complexities of local politics is the hallmark of good ethnography, the idea that the Viequenses are fragmented amongst themselves puts pressure on the binary opposition that lies at the heart of the book’s argument.

My critiques are not meant as challenges, but are questions inspired by the book’s central argument, which is a consistent and welcome contribution to current research on Vieques and the northeastern Caribbean. The book tackles the difficult question of power relationships in a tourist economy and describes the ways in which Viequense language and discourse is silenced within discussions on the island’s political economy. This case is illustrative of the continuing contradictions at the heart of the US-Puerto Rico colonial relationship. Valldejuli offers provocative parallelisms between Vieques’ current predicament and the Caribbean’s historical struggle with imperialism, which result in a situation where the Viequenses are left with limited resources to develop their agency. For all the pessimism that animates the interviewees, Valldejuli makes a positive case for the ‘heteroglossic’, chaotic, and open-ended aspect of Viequense language and discourse. I would only hope that the ‘heteroglossic’ language and discourse that Valldejuli describes may produce a character that would be able to negotiate creatively the different fields of power that lie at the heart of contemporary Vieques and prove Valldejuli’s final predictions, of an expropriated population, wrong.

Carlo A. Cubero
Tallinn University, Estonia
carlo.cubero@gmail.com


Island studies are still in quite short supply in a Nordic cultural context, in the sense that the field has contributed infrequently to the self-knowledge of the Nordic countries. This is perhaps because they already conceive of themselves as island nations to such a degree, that the need for and relevance of studies of islands have not seemed clear or urgent.

In this context then, it is remarkable that a systematic introduction to island studies has been published in a Nordic language. Owe Ronström’s Öar och öighet (Islands and Islandness) begins from a local island context, and is enriched by extensive references to Swedish as well as Nordic cultural areas. The result communicates a thorough
connectedness between island perspectives and their general Nordic context, which offers a beautiful and highly detailed depiction of local island relations and global island perspectives.

Owe Ronström, Professor of Ethnology at the University of Uppsala, lives and works in Visby on the major island of Gotland, where he was born and raised. In the introduction he uses this biographical aspect to unfold some basic phenomena of island existence as an inspiration to the general reader before proceeding to his specific topic of research.

The introduction also conveys a thought-provoking feature of the Swedish way of writing. To my knowledge hardly any other alphabet shows such a direct and symbolic relation between typography and meaning. The Swedish word for island—the letter ö—represents in its simple form the hallmark of the island world. The circular ö, including its two dots—communicates all the positive and all the negative aspects of “islandness,” and the related duality and ambivalence of islands. The positive: small scale, proximity, comfort, and community, representing the utopian and the paradisiacal view of islands. But the opposite is here as well: inbreeding, backwardness, tristesse, like prisons, horror, terrible…

The book, instructively and richly illustrated, consists of 15 chapters, each of which explores a specific theme. Each chapter offers an examination of its ideas and content relevant to its theme and uses a mixture of expected and unexpected approaches. This book demonstrates Ronström’s willingness to reflect thoroughly and deeply on every specific theme, taking nothing for granted. The reader is conducted in a simultaneously personal and highly professional manner through each chapter and, importantly, Ronström’s writing style reaches far beyond the strictly academic. The benefit of this approach is the book’s potential to appeal to many more “island readers” than most academic monographs.

In this manner the book deals vividly with basic questions of island research, engaging perceptively with numerous fields of study, and offering an instructive example of McCall’s call for island studies to be cross-disciplinary. Ronström takes the reader from the now classic island studies question, ‘What is an island?’ through ‘An archipelago of words’, unrolling an abundant semantics of island words. Island designations in several languages are examined, depicting an exciting multitude of island meanings across a variety of cultures and their histories.

The following chapters discuss shifts in the perspectives of island research away from a traditional ‘continental’ mindset, their unstable history of culture, island designs in the humanistic sciences, and islands in modern language. The chapter, ‘In or on islands’, analyzes the significance of the two propositions for the meaning of islands and islandness. Other chapters analyze basic concepts such as ‘definedness’, ‘remoteness’ and the two classical concepts, ‘archaism’ and ‘endemism’.

In the final chapter, ‘Presence and absence’, Ronström examines the titular themes in the light of a late modern mindset (Giddens et al.), theories of globalization and their consequences for island societies and their understanding of themselves. Ronström explains these consequences as a confrontation with deeply rooted traditions and conceptions. Islands, he argues, are not isolated (anymore), but serious players in the dynamic relations between ‘isolation’ and ‘connectedness’. These days many island societies choose to perceive and define themselves as uniquely local. Ronström mentions Mauritius, which has developed a powerful consciousness of local cultural character and potential isolation at the same time as taking part in strategies of globalization to avoid negative social and cultural insularity. Isolation has become increasingly relative in the ‘eternal’ now of global
presence, and the question arises for islanders about how to maintain a form of local culture amid all the similarities.

A main point of interest in the final chapter becomes the ‘natural’ islandness of islands: the limits between island and the outside world are culturally being created consciously and unceasingly, and at the same time they are being blurred by traditional conceptions of certain forms of specific natural borders. The conception of islands exemplifies all the well-known binaries (center vs. periphery etc.), but the definable and the insular in itself has a special status within the Western history of ideas. The definable represents a protection against all the surrounding space, being perceived as empty and meaningless. Islands provide a lexicon for a double discourse about marginalized phenomena, offering a wealth of symbols and metaphors, a rich treasure of pictures and conceptions that have been of great importance for Western societies.

Ronström’s work is important also because it focuses on the relevance of Nordic islands to various significant international contexts. For example, it contributes to debates about whether the Scandinavian/Nordic countries represent a specific area of study by pointing out the high density of islands on one most ‘populated’ belts on earth, on the northern hemisphere, especially between the 58th and the 66th northern latitude. While it may not be Ronström’s intention, his approach could generate new reflections about the character and values of Nordic island culture. Nevertheless, this book inspired my thinking about future research on Nordic island culture as a valuable player in global island connections. For example, the area around the Åland Archipelago is so densely populated, why have the remote islands of the Pacific Ocean dominated literature (Robinsonades), more than this world of islands?

Ronström’s introduction to island studies is careful and comprehensive. It conveys much new and substantial knowledge about Nordic islands as well as raising open, inspiring questions about islands in general. This book offers the crucial insight that islands and islandness are much more than simple facts and unambiguous phenomena. They are instead highly complex entities, and an island studies approach such as Ronström’s enables a richness of reflections, which indisputably points far beyond the understanding of islands as such.

Jørgen Rasmussen
Independent Researcher, Island of Omø, Denmark
jr3857@gmail.com

I spent months looking for a printed map of the island of Hispaniola while I lived in the Dominican Republic (DR) in 2017. I could not find one. Not even the fridge magnets of the island that street sellers offer tourists had the full shape of the island. The Haitian side was always missing, even though in reality the western side of the island includes about a third of its landmass. The impossibility of finding a complete map of Hispaniola is a symptom of the fragmentation of the island, and concomitantly, searching for it became a utopic quest.

Maria Cristina Fumagalli’s On the Edge: Writing the Border between Haiti and the Dominican Republic is a solid contribution to the quest to foster an imagination of Hispaniola that conceives the island in its totality. Fumagalli describes the book as an “intercultural archive” about the whole of the island, which is variously named Hispaniola, Ayiti, Bohio, and
Quisqueya. Fumagalli uses ‘Hispaniola’ despite its colonial imprint, because it is the one name historically used to refer to the island’s totality and not to one of the nation-states that were established there.

Fumagalli engages with an extensive body of literary works, films, paintings, sculptures, and other art forms that have Hispaniola at its core. The volume is based on a rich dialogue among works produced between 1796 and 2012 by artists, writers and travelers who shared an interest in understanding and shaping Haiti’s and DR’s understanding of each other. The latter was, and continues to be, central to the ways these nations understood themselves.

Through the lens of literary geography, Fumagalli successfully explains the role of colonial and occupying powers in shaping Haiti and the DR. Spain, France, and the United States were keen on erecting and reifying what Fumagalli describes as a vertical border between the two nations. These powers idealized the possibility of obstructing communication and trade between the two countries, often constructing them as mutually unintelligible. Fumagalli explores the logics of belonging and sovereignty that shape the island from a bottom-up perspective that engages with the ways the island is conceived and experienced.

On the Edge examines the management of the island’s territory by powerful leaders and institutions, which saw the idea of interaction and integration among island peoples as either a promise or a peril. For example, Fumagalli’s Chapter 3 focuses on indigenous Anacaona and her leadership over Jaragua, an indigenous Taino region located in the west and center of the island, which would be fragmented by the border if it were existing today. Jaragua was notorious for welcoming several Spaniards who were in defiance to the Spanish Crown, and for facilitating interethnic and interracial alliances.

The author sets these integrative perspectives in contrast with others that reify the border. Fumagalli highlights the regularization and criminalization of transnational interactions based on the 1952 treaty signed by dictators François Duvalier and Rafael Trujillo to regulate the importation of Haitian labourers into the DR. These efforts materialized, among others, into the use of Haitian paramilitary men to infiltrate Dominican plantations in order to eliminate any interaction between Haitian migrant workers and Dominican union leaders (Chapter 8).

Fumagalli identifies a fundamental tension in the island’s history. On the one hand, a line of thought has exalted the impossibility of coexistence between two nations and has reified the necessity of the border. Take, for example, the works of Médéric de Saint-Méry’s Description Topographique et Politique de la partie espagnole de l’Isle Saint-Domingue from 1796, or Juan Carlos Mises’s El día de todos from 2008. On the other, an opposing line of thought notable from José Martí’s War Diaries (1895) to Rita Indiana’s Da pa lo do (2010) emphasizes the emancipatory potential of a transnational perspective of the island, one that understands the borderland as a horizontal fertile ground of interaction and interculturality.

Fumagalli’s volume addresses Haiti’s and DR’s supposed mutual unintelligibility and animosity (also referred to as the ‘fatal conflict model’, a term coined by Samuel Martínez) by contextualizing them historically and politically. Her analysis sheds light on the tensions between France and Spain, and traces the island’s history as a stage where European tensions played out. Also colonial were the ways racial differences were highlighted in the nation-building processes of the island, especially in terms of the need to control African presence, African origins, and blackness.

The ‘fatal conflict model’ represents a partial and transcendent part of Hispaniola’s history such as the massacre of 1937 in which the Dominican dictator, Rafael Trujillo, commanded the death of thousands of Haitians and Dominicans of Haitian descent. Between 10,000 and 40,000 men, women, and children were killed north of the border. Fumagalli devotes two of the twelve chapters of On the Edge to the 1937 massacre and its repercussions both in the north and the south of the borderlands. While addressing this period in all its
severity, the author privileges a perspective of possibility that comes after a tragedy, or what Fumagalli calls ‘concrete utopias’.

Fumagalli’s agenda is to contribute to a utopian interpretation of the island and its peoples. Her work explores the horizontality of the borderlands and the way interculturality takes place in the island despite past and current efforts to deepen the differences and conflicts between the two countries that inhabit it.

*On the Edge* illuminates the cultural richness of the borderlands, by describing the vibrant communities that inhabited them during the late nineteenth and early twentieth centuries as a possibility of what can be, nurtured with the certainty of the cultural richness that was already there in the past. The book’s main contribution is to come to terms with the irrepressibility of interculturality between Haiti and the DR, which has transcended the frontier and lies at the heart of the two nations. To Fumagalli, coexistence is not only unavoidable but also emancipatory.

Despite her choice to embrace the idea of a future of possibility in which both nations grow together, Fumagalli does not ignore the hardships confronted across the island today. For example, *On the Edge* discusses the deep environmental degradation of the island and the Dominican Constitutional Court’s 2013 decision to open the possibility of denationalizing all Dominicans of Haitian descent born since 1929.

All in all, Fumagalli makes a significant contribution to our understanding of Hispaniola. She gives prominence to voices that build and imagine the island from the ground up. By doing so she nurtures a transnational lens so important in the current times of increasingly sealed borders and forced human mobility.

Masaya Llavaneras Blanco
Balsillie School of International Affairs, Wilfrid Laurier University, Canada
mlavaneras-blanco@balsillieschool.ca


Édouard Glissant has been a seminal thinker for postcolonial and islands scholarship for many decades. For readers of *Island Studies Journal*, Glissant is a well-known figure, among others including Kamau Brathwaite, Antonio Benítez-Rojo, Epeli Hau’ofa, Elizabeth DeLoughrey, Lisa Fletcher, Teresia Teaiwa, Adam Grydehøj, Philip Hayward and Elaine Stratford, to have been incorporated in the longer relational and archipelagic turns, which I have also been a part of myself. Glissant’s work not only disrupts the figure of the insular and isolated island, foregrounding island relationalities and movements, but also approaches islands as paradoxical spaces, simultaneously bounded and dynamically relational.

Given the readership of *Island Studies Journal*, it is useful to first say what kinds of audience Wiedorn’s book engages most. On the one hand, if you are very immersed in debates about Glissant you will probably want to buy this well-written and structured book. It is particularly good on the specificities of Glissant’s work, especially his later writing. On the other hand, if you are looking for something that is situated within the broader debates of wider disciplines, these are less prominent. I do not think this is a problem. Glissant is an important figure, and I found Wiedorn’s book an attentive and useful read, reflecting how Glissant’s contribution continues to be interpreted in new and interesting ways.

As a useful departure, the opening pages of the book briefly revisit older critiques and controversial debates that surrounded Glissant nearly twenty years ago. Back then, a range of scholars, most notably Peter Hallward, argued that Glissant’s Deleuzian-inspired approach was based on an impoverished understanding of the political. For Hallward, Glissant had adopted
a totalising and globalising ethics, whose singular approach could be contrasted to the specific nature of political struggle. Such debates were more broadly situated against the backdrop of a much wider set of arguments at the time over what constitutes the political (including Badiou’s similar critique of Deleuze); debates which of course continue to take place today in new ways.

Wiedorn’s new book calls us to look at Glissant’s whole body of work again. Wiedorn says that in Glissant’s earlier works he was more of “a hot-blooded partisan of Martinican independence, or the fierce critic of neocolonialism and imperialism.” But by the 1990s until Glissant’s passing in 2011, Glissant had reoriented his approach more around experimental, creative, and aesthetic ways of being political. This central argument for Wiedorn hinges upon “the increasing prominence of paradox in Glissant’s work … [and how this] proves to play a key role in Glissant’s political and aesthetic ambitions.” I do not think this central argument of the book will necessarily convince those who have already settled upon different ways of thinking about the political, particularly those who understand the political in a more product-oriented way, such as those just noted above. Nevertheless, Wiedorn’s important and well-argued book, through his introduction of the running theme of paradox, does bolster the claims of those who are focused upon experimental, creative, and experiential ways of thinking about the political.

Chapter 1 explores how Glissant famously celebrated the Caribbean, creolization, and Relation as movement, developing a profoundly different ontological position from modern and Cartesian frameworks of reasoning associated with subject/object, human/nature, and mind/body divides. Thus, Wiedorn argues, central to Glissant’s ontology and the associated “cognitive upheaval” is a creative paradox foregrounding a movement that cannot be grasped. Given this, Chapter 2 then unsurprisingly turns to situate Glissant as a proponent of Deleuzian “minor literature.” Wiedorn analyzes Glissant’s reading of Faulkner and the inability of Faulkner to breathe life into the black characters of his novels. This also foregrounds a range of paradoxes which Wiedorn is interested in exploring, including: saying without saying, and the opaqueness of Relation associated with the horrors of colonialism and slavery. As Wiedorn summarises Glissant’s approach: “Living with(in) the opacity of the other … reaching out to a people that both exists and does not exist: all of these paradoxical yet necessary actions represent Glissant’s efforts to set forth an ethics of alterity.”

But Glissant of course was not only focused upon the local contingencies of Relation; he also developed a global ethics of going-on-and-with Relation too. Here Chapter 3 reads *Le quatrième siècle* and *Tout-monde*, Chapter 4 *Philosophie de la Relation*, and the conclusion to the book explores archipelagic thinking more generally in Glissant’s work. As Wiedorn points out, the Caribbean is not only inspirational for Glissant’s ontology, it is also “a sort of exemplar for what the world as a whole is becoming, but it is more importantly a model for what the world ought to be becoming.” Glissant conflates the ontological and the ontic into a global ethics. This has been one of the most controversial aspects of Glissant’s work, and one which island studies scholars have rarely wholeheartedly embraced. Whilst for many Glissant takes a step too far, Wiedorn’s reorienting move and reading of Glissant is to instead focus upon the experimental, creative, and experiential aspects of the associated paradox of never actually being able to grasp the totality of Relation, only ever imagine it. Wiedorn quotes Glissant: “The imaginary of the world would be entirely different. The imaginary foresees, divines, finds, it predicts nothing in terms of relationships, it accompanies neither possession nor knowledge. It in no way concludes. It supposes an archipelago (en archipel).”

Wiedorn thus argues that “we readers of Glissant might do well to focus not on the products of our engagement with his texts, that is, on what we might grasp in them or get out of them, but rather on the process of reading them, of experiencing them and experimenting with them.” The process is transformative and contemplative, but not product-orientated. In contrast to many other readers of Glissant, Wiedorn makes the argument that Glissant’s later
work “did maintain its politics as well as its principles, albeit through shifting them onto a different plane.” Here, like Wiedorn, I do not think it is fair to say that Glissant is simply Deleuze imported into the Caribbean. These general approaches were already more widely prevalent in the world at this time. It is often said that we are all Deleuzian now, but this does discredit to Glissant as philosopher in his own right. Wiedorn’s book does an important job in reasserting the creative paradoxes associated with Glissant’s particularly experimental, if still controversial, approach.

Jonathan Pugh
Newcastle University, UK
jonathan.pugh@newcastle.ac.uk


This book focuses on the political, economic, social and cultural effects of migration on the making of the Andaman Islands. The Andamans emerges as a melting pot of cultures, ‘a Mini-India’. Here the main actors in this transformation trace their genealogies from criminalised low castes, Dalits, tribals, including refugees, and convicts and indigenous inhabitants, i.e. Jarawas, and others. The focus of this study is not the indigenous inhabitants of the islands, but rather the historic refugees and convicts, including the current migrants who continue to occupy a liminal postcolonial space in the region. The book provides an empathetic understanding of the islanders as disenfranchised and occupying marginal spaces and positions in relation to the hegemonic identity of the few. This hegemonic identity was formed due to the patron-client relationship established during the corrupt colonial period and now continues to exist in a postcolonial state. Philipp Zehmisch unpacks the idea of subalternity and its relevance to the island community. The book thus presents compelling ideas of subaltern marginalisation and agency and their links to migration, relations of production, and politics. Subaltern resilience is a theme introduced in this journey to the islands. The entangled histories and practices of the settlers in the Andamans is fascinating for uncovering subaltern agency, resistance and complicity.

The book is divided into eight chapters, with Chapter One establishing the theoretical contours of the anthropology of subalternity. Of particular interest are the “exclusionary practices” which, in Zehmisch’s analysis, are engaged by both the dominant and marginal members of the island community. Chapter Two contextualises and justifies the Andamans as a site for fieldwork. It presents an overview of the islands’ history, from the peopling of the Andamans as a penitentiary space to its modern manifestation as a Union Territory of India. This chapter attempts to delineate the processes of interaction among diverse ethnic groups and at the same time highlight the particularities of political negotiations across and among the communities. Chapter Three highlights the significance of subalternity in the creation of ‘Andamanian’ identity. Chapter Four contextualises the term ‘Mini-India’ by framing it in relation to the hegemonic perspectives of plural identity and countering the established “subaltern consciousness.” This consciousness is what prevails as “island mentality.” Zehmisch further attributes the uniqueness of the Andaman Islands to the cultural creolisation typical of settler colonies. ‘Mini-India’ represents solidarity and competition among ethnicised groups seeking privileges, despite the competition to survive.

Chapter Five analyses the debate around legacies of the island. Of particular interest is the debate over the politics of recognition among the silenced subalterns with a ‘past’ and criminalised into the future. A detailed and rich description of the ‘Ranchis’ as a dynamic subaltern community highlights their systematic marginalisation and embedded
vulnerabilities. The Ranchis operate outside the hegemonic structural posturing by creating their unique life worlds. Chapter Six delves deeper into the emergence of the Ranchis as an “aboriginal labour force from Chotanagpur,” in mainland India. Their racial typecasting as ‘aboriginal forest dwellers’ since 1918 reinforces their disenfranchisement. This section contains very interesting life histories of the subaltern migrants and the effects of their marginalisation. Chapter Seven provides a reconstruction of the history and culture of the Ranchis and their disassociated links to the place of origin. Zehmisch’s account of place-making along with community-in-the-making presents a nuanced, empathetic reading of the Ranchis’ plight and opportunities. The chapter highlights how an ecological frame conditions the existence of the islanders in the periphery.

Chapter Eight delves deeper into questions of exclusion and the complicity of both the Church and the state in reinforcing the status quo and the marginality of the Ranchis in the Andamans. The passing of such iconic leaders as Birsa Munda has continued to silence the Ranchis’ voices and at the same time provided them with a buffer from the binary discourses of their benefactors. The Ranchis’ choice was between extortionist-hegemonic colonial imperatives and the supposedly “hegemonic national consciousness” after 1947.

All nationalist movements from Europe to Asia and beyond are, by definition, ‘hegemonic’, which, in my view, is the only way these countries have attained freedom from the colonial yoke. We need to make a distinction between ‘freedom fighters’ and ‘ordinary convicts’, rather than conflating the same with labels of ‘bourgeois’ and ‘subaltern’. This simplistic characterisation too can become a ‘hegemonic’ discourse. Thus, the Bengali “babu or the Moplas,” along with others, played a critical role during their incarcereation in the Andamans as prisoners of conscience during the colonial rule.

The book’s definition of Ranchis as a fluid category would have benefited much by adherence to key data which distinguishes between migrants based on “place of birth” versus those based on “last residence.” Zehmisch’s assertion that “enumeration” of Ranchis into the islands is incomplete pays too little attention to South Asian migration dynamics. The statement, “Catholics and Hindus compete for the souls of the believers,” is similarly unpersuasive when considered against the history of proselytization and of the key principles of Hinduism in the subcontinent over the centuries. The non-hegemonic state of postcolonial India has enabled Ranchis to be governed by the Church, like a parallel state. Zehmisch’s arguments relating to “exploitation and cultural domination” and his extrapolation of “divide and rule” policies in modern India strike me as loose. It is unfair to blame more than 150 years of social engineering in the Andaman Islands on the postcolonial state of India. Zehmish does well to highlight the inclusive discussions between settlers and the local inhabitants in the blurring of the boundaries between the island and the mainland. Question however remains whether Mini-India as a social form emerged out of colonialist, statist or nationalist narratives, or out of the Andaman Islands’ own developmental history?

M. Satish Kumar
Queen’s University Belfast, UK
s.kumar@qub.ac.uk

This edited volume by Klaus J. Meyer-Arendt and Alan A. Lew was motivated by the lack of a curated collection exploring the expansion and diversity of tourism as a development strategy to “remotest corners of the world.” Seven of the nine chapters were initially published in Tourism Geographies 13.1 (February 2013); the remaining two appeared in the
same journal in later issues. Financially savvy readers will likely read the essays in the journal and avoid the steep investment for the hard copy from Routledge. Notwithstanding this unusual publication history, the overall quality of the contributions makes each chapter individually worth reading.

The chapters explore a diversity of frameworks and theories around a broad theme of tourism as a development strategy for tropical coastal and island geographies. This diversity—a valuable feature according to the editors—reflects the complexity of coastal and island tourism research, and the contextual understanding demanded by diverse places, geographies, and ecologies. The diversity of theories and frameworks, however, is not supported by an overarching narrative. The editors do serve their goal of bringing together fragments of the “abundance of scattered literature” existing on coastal and island tourism. But, their mere one-and-a-half-page introduction does little justice to the chapters and fails to highlight all of the contributions. Readers looking for a higher-level assessment, connecting themes and narratives, and offering ways forward in tourism research will be disappointed. Furthermore, the introduction does little to help readers understand the editors’ perspective, rationale for selection of the work, or selection of themes and contributions. While the editors claim to offer new perspectives on tourism development, in the cases of Brida et al. and Ribeiro et al., the authors use existing models to replicate survey studies from the literature. This is certainly not problematic in and of itself—-islands and coastal regions are indeed worthy of context-specific research—but the editors’ emphasis on new conceptual and theoretical contributions is misleading.

Broadly, development including tourism expresses insider-outsider, top-down, and bottom-up dynamics that influence development strategies and prioritize certain perspectives. In Chapter Two, Sarrasin takes a macro-view of ecotourism in Madagascar’s Ranomafana National Park, analyzing through a heterodox approach in international political economy. While rural populations are considered to be instrumental in poverty-conservation-economic growth development frameworks, Sarrasin finds that the impacts of ecotourism on conservation and local employment have been grossly exaggerated. Yet, ecotourism is privileged as the development strategy of choice, reinforced through power structures of the government, NGOs and international financial institutions. In contrast, collaboration may be a way forward to develop tourism that is meaningful for primary stakeholders. In Chapter Three, Graci employs Gray’s collaboration theory and Selin and Chavez’s tourism partnership model to outline the potential of partnerships in tourism development on Gili Trawangan, Indonesia. The author considers implementation of cross-stakeholder collaborations to be essential for developing sustainable tourism. The case study reinforces the benefits of collaboration: a holistic approach to problem and vision setting through local involvement, finding common ground for the greater good, and moving from transactional to relational value exchange through developing long-term relationships.

Both Nost and Amoamo (Chapter Six and Seven, respectively) illustrate the importance of insider-outsider dynamics in the construction of place. Through ethnographic field work, Nost questions representations of the Caribe Sur in Costa Rica as a place. Tourists’ desire for ‘authenticity’ and underdevelopment stands in tension with a need for further development and its forms of representation. Amoamo finds that literature tropes and outsider ideas have power in constructing a persistent place-myth of Pitcairn Island as a utopia/paradise. A utopia stands in juxtaposition to how internal experiences and representations of the islands are formed by residents. Both authors illustrate fluidity, contestation, and negotiation in navigating what place means and for whom.

Other authors examine attitudes and opinions of internal and external stakeholders in tourism, namely residences and visitors. Through surveys and cluster analysis, Brida et al. (Chapter Five) segment cruise line tourists into six marketing groups, offering policy suggestions for targeting high-value tourists destined for Cartagena, Colombia. In Chapter
Eight, Ribeiro et al. demonstrate that residents are generally optimistic about tourism in Cape Verde, aligning with previous research on island/coastal areas in initial stages of development. Results from survey data and statistical analysis demonstrate that attitudes toward tourism are segmented demographically.

Hamzah and Hampton (Chapter Four), and Timms and Conway (Chapter Nine) offer new approaches to thinking about the sustainability of tourism. Hamzah and Hampton revisit longitudinal data through the lens of resilience theory. The authors find that the tourism area life cycle’s linear orientation is inadequate to explain the non-linear change exhibited by Perhentian Kecil in Malaysia. The authors demonstrate the growing complexity of non-linear tourism development—exogenous pressures and tipping points—and the resilience of local people to respond and adapt to changing physical and social tourist spaces. Timms and Conway offer “slow tourism” as a model for redeveloping marginal/stagnant tourist regions in the Caribbean. Daly’s slow growth may serve as a blueprint to counter some of the negative environmental and social aspects of Caribbean tourism and aligns with other bottom-up tourism approaches.

Overall, the book offers some new perspectives from theoretical and conceptual standpoints. The value, however, as most readers will realize is in the contextualized cases, rich data, and diversity of perspectives.

Allison Elgie
University of Waterloo, Canada
allison.elgie@uwaterloo.ca