# the connected Caribbean : a socio-material network approach to patterns of homogeneity and diversity in the pre-colonial period

Mol, A.A.A.

*Chapter 2*

# A Dynamic Island World: The Northeastern Caribbean

***A dynamic pan-Caribbean web of social relationships and interlocking networks would likely have resulted from the continuous coming and going of individuals and groups of people with a range of motives (environmental, socio-political, economic, ideological) between various parts of the continent and islands.***

Corinne Hofman and Menno Hoogland (2011: 17)

This chapter will start out with a discussion of Caribbean geography, geology and ecology. Subsequently I will highlight some of the logistics of pre-colonial interaction, in other words the routes, means, and other factors involved in moving people and goods around in this island world. After this a broad overview of the social and cultural historical trajectories of pre-colonial networks will be presented. In the historic overview I will focus on the origins of and interactions between culturally diverse peoples and the development of group and political structures, in particular that of the *cacicazgo*. These particular issues will be picked up in later chapters. This chapter will conclude with a small review of current ideas on indigenous ethnic, cultural and linguistic groups followed by a discussion on the prominent characteristics of indigenous ontologies in the region that also affected past interactions. The intent is not to provide the reader with an in-depth regional introduction or a full overview of the state of the field (see e.g. Keegan, *et al.* 2013; Wilson 2007), but to frame the discussion directly within a perspective that focuses on some of the factors that impacted pre-colonial social and material systems.

The reason for this extensive background into the Caribbean setting of this study is that context is all-important for framing and interpreting networks. As we shall see, networks can be abstracted from many kinds of real-world phenomena, but it is through their structural properties that they can be explored and eventually compared. For example, a model resulting from a study of the nodes and ties between stations in a subway network or the nutrition network of *Physarum polycephalum* – a brainless, amoeba-like slime mould – may be indistinguishable from that of a given social network (Tero, *et al.* 2010). Still, in terms of what these networks do, other than connect nodes in a structurally similar manner, they are not identical.

In other words, if I understand how a mould looks for its nutrition, this does not automatically give me the capability to effortlessly navigate the Tokyo subway. What is more, the context of a network is not only of interpretive significance but will also have been a shaping factor in the formation and development of the network in the first place. Consequently, networks of whatever kind are generally not studied as systems that exist and function *sui generis*. This is definitely the case for archaeological networks which cannot be understood without a clear grasp of the setting in which they were embedded.

## Geography

One way to define the Caribbean as a region is by its most prominent geographical and ecological feature: the Caribbean Sea. Together with the Gulf of Mexico, it can technically be considered as a mediterranean sea – a sea that is semi-isolated from an adjacent ocean (Sverdrup, *et al.* 1942) – and is the second largest non-oceanic body of water, comprising an area of *c*.2,754,000 km$^2$. The Caribbean Sea proper is bordered by the Greater Antilles to the north, Lesser Antilles to the east, the South American mainland to the south and Central America to the west. It connects to the Gulf of Mexico at its western extents and the Atlantic Ocean to the north and east. In the south it connects to two other bodies of water: the Lago de Maracaibo in Venezuela and the Gulf of Paria. Through the latter and the Columbus Passage between Trinidad and the mainland, one can gain access to the delta of the Orinoco River (International Hydrographic Organization 1953).

Today the Caribbean consists of thirty island and twelve mainland territories – including sovereign states, dependencies, and overseas departments – the combined territory of which comprises over seven thousand islands. These islands vary hugely in size: from Cuba, the largest island in the Caribbean, to isles that are hardly more than a rock surfacing above sea level. Cuba, Hispaniola (nowadays Haiti and Dominican Republic), Puerto Rico, and Jamaica together form the Greater Antilles. The many islands making up the Bahamas and Turks and Caicos lie to the north thereof. Another archipelago, collectively known as the (U.S. and British) Virgin Islands lie to the east of Puerto Rico. In the East, the Lesser Antilles consist of a collection of island archipelagoes that are often subdivided into the Leeward and Windward islands (with the division at the Dominica channel, south of Guadeloupe and Marie-Galante). The islands of Trinidad and Tobago, officially not part of the Windward Island group, are located close to the South American mainland divided by means of the Gulf of Paria and the Colombus passage from the Venezuelan mainland and Orinoco delta. There are also island archipelagoes off the coast of Venezuela, such as Isla Margarita, Los Roques, Aruba,Curaçao, and Bonaire with similar small archipelagoes positioned off Yucatán and the Central American mainland (see the Map on p.14).

The list above also contains territories that often feature in Caribbean archaeological publications but do not strictly border the Caribbean Sea, such as the Bahamas and the coasts of the Guianas. Actually, most of the major islands in the Caribbean do not only have a Caribbean but also an Atlantic coast. Others,

such as Barbados, are completely surrounded by the Atlantic Ocean. Furthermore, some if not most archaeological studies carried out in Caribbean mainland settings have often left out any form of discussion or perspective on the Caribbean islands and vice versa (Rodríguez Ramos 2010b). In short, defining the Caribbean by means of its main body of water does not seem to work out in practice.

Another alternative would be to define the Caribbean through emic means. On the other hand while it is possible to distinguish the vague cultural or geo-political outlines of the contemporary Caribbean, this is not so easy when referring to pre-colonial times. It is nevertheless a valid question whether there would have been an indigenous concept that is analogous to our concept of the Caribbean. Even if indigenous notions of natural and cultural geographies have not been preserved directly, there is some understanding of them through other sources. Numerous names given to individual islands and their locations by the indigenous inhabitants are known today. They come to us through the contemporary use of originally indigenous names for places. The meaning of these names can sometimes be found by studying linguistic and ethnohistoric records or folk etymologies (Boomert 2001b; Ulloa Hung and Corbea Calzado 2011).

Historic documents shed some light on indigenous perceptions of travel distances, mutual intelligibility and political boundaries. These may serve to establish a first, crude reconstruction of the way in which indigenous (cultural) geographies mapped out (Mol 2011a). Geographies were furthermore projected into indigenous histories of the deep past of the region (Keegan 2007; Oliver 2000). Such (de)ontological narrative maps included actual but also "before-time" places and peoples. In these narratives travel over or through water was one of the central elements shaping local identities and the interactions with others. Even in the case that islands contained large inland regions, the oral history of these places seems to be partly defined in the relation to the sea and other lands.[1]

Even if many indigenous cosmographies include concepts of space and dimension that are unparalleled by most Western cartographies, none of those I am familiar with present a scope of place even remotely akin to the geographic or cultural area we refer to today as the Caribbean. Furthermore, as far as we know, no predominant institutes – central authorities, affiliated polities, organized religions, trade specialists, *etc.* – were by themselves capable of creating pan-Caribbean territories, or of seeking to control larger portions of it. In other words, it is highly unlikely that *the* Caribbean existed as a geographic, cultural or political body before European contact. Instead, Caribbean networks were mostly created and maintained from the bottom-up, by the movements and interactions of individuals and groups interacting with others. The conceptualization of the Caribbean as a

1 This is clear from the role the sea or sea travel plays in Hispaniolan narratives on the origin of various cultural and societal traits (Pané 1999 [1571]). The Lesser Antillean Kalinago also had a similar importance of actual and "before-time" oversea relations. These shaped the identities of local communities as well as their alliances and conflicts with others (Boomert 1986; Breton 1999 [1665]). This is analogous to narratives from contemporary indigenous peoples of the Guianas and Orinoquia, in which the world is essentially water locked (Roe 1982). The Warao of the Orinoco delta, for example, conceive of their actual and primordial world as surrounded by a sea in which actual islands, such as Trinidad, lie at the fringes of cosmographic maps (Boomert 2009; Wilbert 1993).

cultural or geographic place is thus first and foremost a post-contact phenomenon, initially arising with the establishment of the Spanish Main as a political and economic region (Sauer 1966).

On the other hand the interlocked movement of people, goods and ideas could have created social networks that covered the expanse of what is now recognized as the Caribbean. Would this not have created a region in all but name? There is a catch to taking this approach. Because such an inclusive network is an open entity, there is no reason to stop tracing its outlines at the borders of the Caribbean Sea. Even when taking a minimalist view to the idea of diffusion and interaction there is always some evidence to be found for (interregional) ties. Indeed, based on current lines of evidence, the concept that many social networks are "small worlds" – networks that consist of nodal clusters that are only connected by a few ties – can be extrapolated to the pre-colonial Caribbean (see Chapter 3). In other words, local island communities could be connected by means of surprisingly few intermediate ties to communities far beyond Caribbean shores.

For instance, as I shall discuss below, at certain moments in time the Orinoco Delta and Lower Orinoco was as much part of a Caribbean interaction sphere as were the coasts and islands – or part of a Lower Orinoco interaction sphere, depending on one's perspective (Boomert 2000). Communities from these regions were in turn interacting, either directly or through the coast of the Guianas and the Middle and Upper Orinoco, with the Amazon region and beyond (Heckenberger 2005; Hornborg, *et al.* 2005; Hornborg 2005). The same can be said with regard to connections between the Colombian and Venezuelan coast and the Andes region or Central America and Mexico (Hoopes and Fonseca 2003; Rouse and Cruxent 1963). By means of this route or perhaps even Floridian connections, the Caribbean was probably connected to the North American Southwest and Southeast, and so forth.

The catch is that a network perspective, being based on connectivity, does not lend itself readily for delineating regional or cultural boundaries and is in fact in complete contrast to it (Malkin 2011). Even when acknowledging that everything is (potentially) connected, one cannot meaningfully discuss pre-colonial systems of interaction that could stretch from Alaska to Cape Horn. The remedy to this problem is to simply cut off the areal of the research at a predefined border. Where to draw the line then depends on the theme, scale of analysis and the period under study, more than on the potential for wider connections. The network case studies here will remain centred on a single geographic zone: the area consisting of the eastern Greater Antilles (Hispaniola and Puerto Rico), the Virgin Islands and the northern Lesser Antilles (Leeward Islands). This region will be referred to as the Northeastern Caribbean (Figure 2.1).

It has long been known that the geographic layout of this region was instrumental in shaping the archaeologically visible patterns of human mobility and interaction. Due to specific geological processes (see below), the Greater and Lesser Antilles geography takes the shape of an arc. Within this arc almost all islands are intervisible

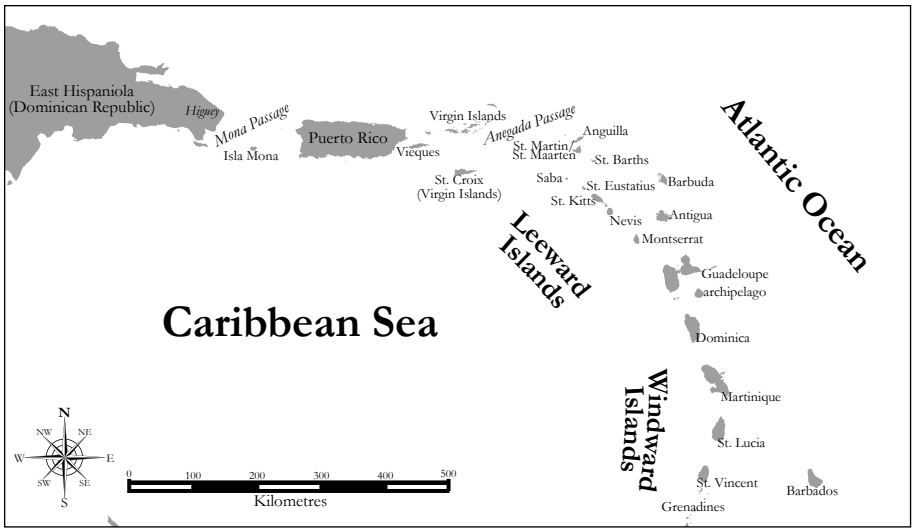


*Figure 2.1: Map of the Northeastern Caribbean.*

and connected by means of relatively narrow sea-passages.[2] The relatively short distances between landmasses presented pre-colonial mariners with excellent navigational landmarks. Other than the stretches of water located between Trinidad and Grenada and the Anegada Passage, there are no other stretches from which someone could not see from one end to the other on a clear day. The intervisibility of islands could have been even further enhanced by being in higher elevations or in the case of certain atmospheric effects, further enabling intervisibility. When certain atmospheric conditions are met, several other mainland to island stretches of water, not traditionally perceived as passages, perhaps did not even represent large navigational obstacles (Torres and Rodríguez Ramos 2008).

Viewed from large cultural scales it is clear that geography is partly responsible for the patterns of mobility and exchange in the region (Siegel 1992; Watters 1982, 1997). Shifts in material cultural repertoires, specifically ceramic styles, line up with the idea of a chained island world to a certain extent. For instance, research carried out by Rouse (1986, 1992) that has been re-confirmed by Bright (2011), indicates that the ceramic assemblages from the extremities of two opposing islands often share more traits than ceramic assemblages between the north and south side of one island (see also Figure 1.2). Distribution of raw materials also primarily takes

2 As may be expected, the average width of channels between the islands depends on which region of the map one looks at. In the southern Windward islands, many isles could have served as stepping stones, here the distance between land masses is often no larger than 10-20 km The same situation can be found in the Virgin Islands and Puerto Rico, where Anegada Island in the East is laced to Puerto Rico by means of a succession of small islands. The Leewards and northern Windwards have somewhat larger stretches of water measuring 20-50 km The Mona Passage between Puerto Rico and Hispaniola is much wider (*c.*130-140 km), but Mona Island is located at its half-way point. The large, unbroken stretches are located between Trinidad and Grenada in the south (130-140 km) as well as between St. Vincent or St. Lucia and Barbados (150-160 km/140-150 km) The Anegada Passage (*c.*130 km) lies between the islands of Anegada and Sombrero (Anguilla).

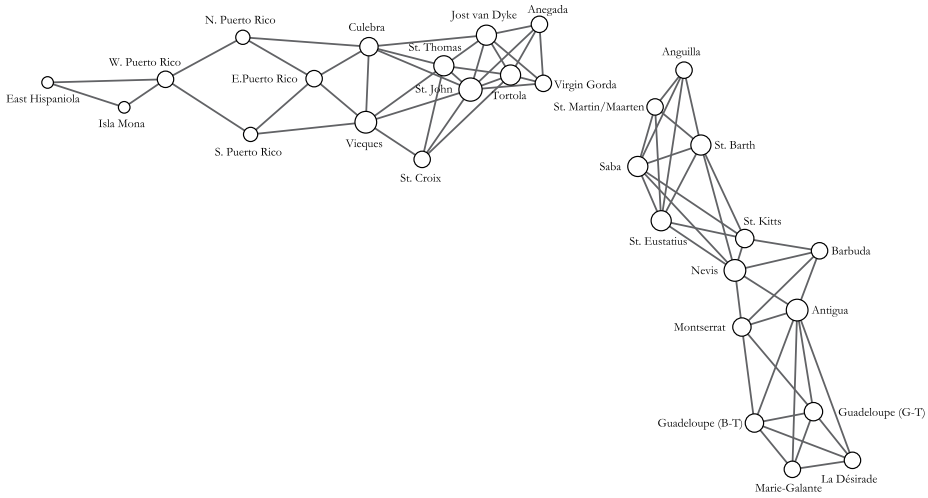


*Figure 2.2: PPA-network of the Northeastern Caribbean islands (neighbourhood number = 4), illustrating the ties between the islands that are each other's nearest neighbour. The geographical layout of the region causes the network to fall apart into two network components (the network has been layouted to mimic the real geography). It also shows that in each component the islands are more or less equally connected. Because of this the network has the appearance of two quarters of a ring-lattice model.*

place within smaller regions. A sharp quantitative fall-off of a certain raw material can often be seen outside its immediate area of procurement (e.g. Isendoorn, *et al.* 2008; Knippenberg 2007).

A Proximal Point Analysis (or PPA) of landmasses is illustrative of the geographic dynamics of North-Eastern Caribbean networks (Broodbank 2000: 180-210; Terrell 1977).[3] PPA is a type of geographical network analysis based on a fixed neighbourhood number for nodes. The underlying idea is that those places that are geographically closest would have had the most interactions. The neighbourhood number can theoretically be set at anything, but is normally 3 or 4. For the model in Figure 2.2 it has been set at 4. In order to create a PPA model ties are drawn from one node to its closest neighbours. Once this has been carried out with the entire set of nodes, unreciprocated ties are removed from the model.

In the case of the Northeastern Caribbean the result hereof is a model that strongly resembles two broken up quarters of a type of network called a "ring-lattice" (Figure 2.2; further discussed in Chapter 3). Certain areas, like the Virgin Islands with their many small islands located close to each other, have higher clustering than other regions (see also Chapter 6). Together with the larger distance between Anguilla and Anegada this causes the network to break down into two components. Nevertheless, even if the real geography of the Caribbean is not a perfect ring-lattice, it comes quite close to the shape of such a network. In other words, the geographic substrate of a North-Eastern Caribbean closest neighbour

3 A node is established by identifying an island (region) measuring between 10 km$^2$ and 1000 km$^2$. Distances between islands are based on straight travel across open sea from the closest headlands.

network would steer regional interaction networks into the direction of a ring-lattice shape, favouring down-the-line interaction.

## A diverse geology and ecology

The Caribbean islands, with the exception of Cuba, lie on the Caribbean plate, the geological history of which is still heavily debated (Jackson 2002; Pindell and Barrett 1990). The northern extremity of this plate is a transform vault, running along the southern coasts of Cuba and the northern coast of Hispaniola and Puerto Rico. These islands were presumably formed during the Upper Cretaceous, undergoing volcanic, marine sedimentation and meta-morphic processes in the course of their formation (Draper, *et al.* 1994). Nowadays the tectonics are relatively tranquil compared to its early history and the fault line does not generate any active volcanism. However, due to the proximity of the Hispaniola and Puerto Rican trenches, the area can be subject to destructive quakes, for example the ones that struck Port Royal, Jamaica (1692) or Haiti (2010). A complex combination of lithospheric processes, including subduction at an early stage with subsequent high pressures but low temperatures and slow lithospheric movement, is the reason why this area of the Caribbean has unique metamorphic formations containing stones such as jadeitite and serpentinite, semi-precious stones which were also exploited by the indigenous peoples (see Chapter 5).

The Lesser Antilles are much younger, presumably dating to the Early or Middle Eocene. These islands were created by the lithospheric movements of the eastern extents of the Caribbean tectonic plate. This active subduction zone runs from Puerto Rico to the South American Plate in the south, creating an area of intense volcanic activity that formed the majority of the Lesser Antillean islands. Shifts in the location of the subduction zone have created a younger inner arc (running from Saba to Grenada) and an older outer arc (from Anguilla to Marie Galante). The inner arc represents the current location of the converging Atlantic and Caribbean Plate fault line, creating an area with much volcanism. The older arc represents an older and more varied geology, in which volcanic but also other formations can be found. In the outer arc a rise of the seabed has created the low-lying limestone (parts of) islands in the region, which have a different geology and altitude and, as a result of this, a much different weather system than the higher volcanic islands. All in all, the geology of the Caribbean is varied with numerous local formations, such as the Blue Mountain belt of Jamaica, and phenomena – seventeen volcanoes and other unique features such as the boiling lake in Dominica – with particular geological contexts (Draper, *et al.* 1994).

Aside from giving the region its arc-shape when looked at on a map, these processes produced a diverse geological landscape. The geology and shape of an island was and is an important factor that influenced the choices and practices of daily human life. High areas were strategically advantageous, while flat surfaces were suited for building larger villages, for example. Settling inland would have brought communities relative seclusion, while rivers and bays presented logistical opportunities (Cooper 2007). Volcanic eruptions were infrequent but calamitous.

Flat, limestone islands on the other hand would provide few areas with wind shade in case of a tropical storm or hurricane. Most importantly, its varied geology also implied that the region was dotted with lithic resources, such as various types of cherts and semi-precious stones (see Chapter 5).

The Caribbean islands and coasts (except for the Bahamas north of Rum Cay) are all located in the tropical belt between the Tropic of Cancer and 8° north, providing the entire region with a tropical marine climate. Nonetheless, across the region and during the year we see a relatively large variation in average low and high temperatures and in the average rainfall per month, ranging between 22° (average low January) and 33° C. (average high July) and 76 mm (March, Aruba) to a torrential 3788 mm. (November, windward Dominica) of rainfall. These fluctuations in temperature and precipitation depend on factors such as season, geographic longitude, elevation, location in relation to the main bodies of water (windward, leeward and central parts of the islands), and (trade) winds. In fact, even the same temperature and rainfall might be experienced differently on a day-to-day basis, depending on cloud patterns, sun intensity, wind speeds and general humidity (see also Cooper 2013).

These weather fluctuations and micro-climates from temperate to hot and dry to extremely wet lead to a considerable variety in ecology. As part of the larger Neotropical ecozone, the Caribbean is one of the most ecologically diverse regions in the world, containing eight out of fourteen major terrestrial habitat zones – comprised of many types of biotopes (Olson, *et al.* 2001). It also sports a large variety of marine habitats with various littoral, pelagic and deep sea-zones dotted with shallows, banks and (coral) reefs. The natural richness of the Caribbean is also one of the aspects most commented upon by chroniclers of the early contact period. They took careful note of how indigenous peoples utilised a diverse range of flora for food, decoration, tool-making, medicine and numerous other purposes (e.g. de Oviedo y Valdés 1851).

Archaeobotanical research has shown that (semi-)management of a diversity of plant species probably goes back to the earliest period of human occupation. The first settlers introduced a variety of fruit bearing trees and smaller seed bearing herbs into the archipelago. They included wild avocado and yellow zapote (eggfruit), that originated from Mesoamerica or Central America, where they are associated with home garden cultivation. Species of timber were also exploited during this period, for construction, fuel, and wooden tools and other objects (Newsom and Wing 2004). Starch grains analysis carried out on tools from Puerto Rico, Vieques and Cuba indicate that maize (*Zea mays*), beans (*Fabaceae, Phaseolus* sp.), sweet potato (*Ipomoea batatas*), manioc (*Manihot esculenta*), and other (wild) tubers were cultivated as early as 3000 B.C. (Pagán Jiménez 2011, 2013; Pagán Jiménez and Ramos 2007).

Paleobotanical evidence from sites dating to the period 400-200 BC indicates a huge growth in the cultivation of fruit trees and crops. New species of fruits were consumed, of which some, such as papaya (*Carica papaya*) and genip (*Melicoccus bijugatus*), were introduced into the Caribbean islands from the mainland. Between 600 and 1492 AD the Greater Antilles is characterized by a huge variety of plants

that were cultivated in home gardens. Staple foods included a mix of various tubers – such as the cultivated manioc (*Manihot esculenta*) and sweet potato (*Ipomoea batatas*) and the wild marunguey or zamia (*Zamia* sp.) – beans (Leguminosae) and corn (*Zea mays*). Gourds (*Cucurbita* sp.) served both as food and containers (Mickleburgh and Pagán-Jiménez 2012; Newsom 1993; Newsom and Wing 2004). Alongside these food crops the indigenous peoples cultivated cotton, various hallucinogenic and medicinal plants, and spices. In addition, (hardwood) trees were utilized for hafting tools and manufacturing statues, ornaments, amulets and in construction (Ostapkowicz 1998). Plant use in the Lesser Antilles during the Ceramic Age is also characterized by home gardening and the cultivation of a variety of fruits and staple crops. From 600 AD onwards, subtle changes with regard to the composition of the floral assemblage indicate increased pressure on the local environment (Blancaneaux 2009; Newsom and Pearsall 2003).

Exploitation of faunal resources was influenced by the differential access to specific terrestrial and maritime zones (DeFrance 2013). In particular, the accessibility to coastal and maritime resources, such as reefs and mangroves was of key importance to the initial colonization of the islands and would continue to play an important role in later periods. Relatively large-scale of off-shore fishing at places such as Saba, Île à Rat on the north coast of Haiti, the Turks and Caicos and the Bahamian islands has been documented (Hoogland and Hofman 1999; Keegan 2009; Keegan, *et al.* 2008; Morsink 2012). Other seafood like shellfish were a large part of many diets. Refuse middens containing crab remains and (sea) shells have been found on every island and have even been at the basis of a cultural taxonomy (Rainey 1952). Shell was also an important raw material with regard to tools and valuables (Carlson 1993; Lammers-Keijsers 2007; Mol 2007; Ortega 2005). Other larger marine animals, such as sea-turtles (Cheloniidae) and manatees (*Trichechus manatus*) also had an important dual role to play as foodstuff and raw material for the manufacture of amulets and shamanic paraphernalia.

After the Pleistocene, larger land animals were rare. However, small game was hunted and consumed until the Early Colonial period. Aside from reptiles these were also rodents, living close to gardens and villages, such as rice rats (Oryzomyini) and hutias (*Isolobodon* spp.). The ethnohistoric sources indicate that larger mammals and reptiles were often reserved for elites. This is also supported by some archaeological lines of evidence (DeFrance 2013; Newsom and Wing 2004). In Tibes, Puerto Rico, for example, larger reptiles such as iguana (*Iguana iguana*) and several species of snake were on the menu, although due to their scarcity they had likely become an elite-only food by the end of the contact period (Curet and Pestle 2010). Other high status food remains, such as Guinea Pigs (*Cavia porcellus*) have also been found here and in other late pre-contact sites (Oliver and Narganes Storde 2003). Birds were part of the diet since the earliest phase of human occupation of the islands (Grouard 2001; Newsom and Wing 2004). Aside from this dogs – perhaps also used for food – and certain birds were kept as pets (Plomp 2013). Another main reason these animals were kept and exchanged was to serve as sources of raw materials for ornaments (Laffoon, *et al.* in press). Although they have not been preserved, ethnohistoric accounts speak of the use

of colourful bird-feathers as ornamentation (Oliver 2000). In addition, perforated and decorated dog teeth have also been used as ornament and are sometimes found together in large caches (Ortega 1978).[4]

What is important to understand is that most terrestrial faunal – and to a lesser extent even floral and maritime faunal – species did not have a uniform distribution over the region. For example, it may be erroneously concluded from the abovementioned presence of guinea pig bones in Tibes that, if the species was present on Puerto Rico, it must have been present on other, nearby, ecologically similar islands as well. However, in this particular case it is more likely that guinea pigs were transported to the island by humans as part of a specific interaction network which may not have extended to (all) other islands in the Northeastern Caribbean (DeFrance, *et al.* 2010: 121). In fact, even with the ecological transformations resulting from the "Columbian Exchange", at present the islands still have their own set of pre-contact animals and plants, some of which can only be found on a single island. The distribution of species is not so much due to the isolation of individual islands and resulting speciation as may be the case in other, more remote island situations. Rather, ecological niches afforded by distinct island environments combined with particular mobility or transportation processes of animals were responsible for the discontinuous floral and faunal distribution map of the pre-colonial period (DeFrance 2013).

## Maritime technology and voyaging

The variation in geological zones, terrestrial and maritime ecologies, and functional and symbolical niches of land and maritime species created a discontinuous but interconnected landscape of resources. In order to fully utilize the natural riches of the Caribbean in all their diversity, people either acquired these through partners or needed to travel across the sea to procure them directly. Even if goods would have been directly procured over longer distances, this would have involved interacting with others, either as a result of random encounters while travelling, because of a need to gain permission to access the territories of other groups, or by relying on the hospitality of others, forming a support network that likely stretched across multiple environmental zones. Aside from such social dynamics, pre-colonial naval technology and maritime logistics would have been important parameters influencing the coherence and connectivity of inter-island networks.

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4 Drawing on ethnographic analogies from the South American mainland, it would be likely that dogs and parrots would have been more than just a source of food and raw material. For instance, research carried out among the Waiwai (Vaughn Howard 2001), indicates that dogs and colourful, speaking birds are part of extended social networks in which they are both social persona and valued gifts. It is possible to surmise a similar role for parrots in the Caribbean, which were kept in houses and often presented as highly prized gifts (Mol 2007; Oliver 2000). Pending isotopic analyses suggest that (decorated) dog teeth were also habitually moved between island regions (Laffoon, *et al.* in press). Whether this means that living dogs were also exchanged is not known, yet that dogs were an inherent part of pre-colonial communal networks is evident from various dog burials found in the Greater and Lesser Antilles (Hoogland and Hofman 2013: 454-455).

The documents from the early period of indigenous-European contact are invaluable for our understanding of pre-colonial maritime technologies. All vessels were man-powered canoes, which differed in size from simple one-person boats to canoes made from giant trees that could transport up to fifty people at a time (McKusick 1970). Thus far none of these large canoes have been discovered in the archaeological record. In fact, due to the exceptional circumstances needed for their preservation, only three (partial) vessels have been encountered in underwater sites. In addition a small number of other associated canoe-faring tools and implements like paddles have been found (Billard, *et al.* 2009; Boomert 2000: 297-298; Callaghan 2001; Conrad, *et al.* 2001). None of the recovered canoes resemble the large vessels of the contact period that were reported by Spanish chroniclers (e.g Bérnaldez 1992: 149).[5]

Little was known until recently about the precise hydrographic properties of Amerindian canoes on larger stretches of open water, until the start of the Martinique-based "*Ioumoúlicou*" project. This project started with the commission of an indigenously handcrafted canoe from the Wayana of French Guyana, named *Akayouman*. After its completion a group of archaeologists and volunteers has endeavored trips between the different islands of the Lesser Antilles – over a dozen at the time of writing (Bérard, *et al.* 2011; Billard, *et al.* 2009). With a trained crew of rowers and a dugout-canoe reinforced with plank boards of a type which were presumably known to the pre-colonial indigenous peoples, they have gathered much practical and hydrographic data. Perhaps the most noteworthy finding thus far is the average hourly speed of an indigenous canoe on open water.[6] A trained crew of twenty physically fit rowers attained speeds averaging *c*. 3to 3.5 knots (5.5 to 6.5 km/hour), depending on local wind, swell and current conditions. As a result the crew of the *Akayouman* can easily complete journeys of 12-20 nautical miles per day (22-30 km). Larger stretches of water such as the passage between Martinique and Dominica could be traversed in a single day, although as Bérard reports: "a journey of over 20 nautical miles is a real trek for us, especially if it

5 The Stargate canoe, for example, a rare specimen, found almost intact in an underwater cave in the Bahamas, measured 150x36 cm with a height of only 10 cm. All three canoes recovered thus far have been dug-outs consisting of types described in the historic sources and often found in the region today. With its limited depth the Starlight canoe was probably meant for coastal travel. All of them were sea-worthy vessels, but one type – sometimes referred to as the platform canoe due to its overhanging extensions – was specifically well-adapted to open sea travel. This specific type also has a Circum-Caribbean distribution, probably indicating diffusion of the technology by means of contact (Callaghan and Schwabe 2001).

6 The project has already yielded some highly interesting results, such as the fact that it was easier to row a canoe fully laden rather than empty and that it was difficult to keep the contents of the canoe dry with anything but a mirror flat sea (Bérard, *et al.* 2011; Billard, *et al.* 2009).

includes the dangers associated with the crossing of a channel" (Bérard, *et al.* 2011: 582, my translation).[7]

Although a team of eight or even twenty rowers seems like a small number of people, one should not underestimate the challenges associated with the formation of such a crew. Getting skilled and able-bodied men or women to willingly brave the perils of any extended sea passage – let alone an expedition of several weeks to foreign and possibly hostile lands during which they could not provide for or defend their kin – would have been no mean feat of "interpersonal management". Indeed, it is likely that specific extended kin and other alliance networks would have existed for such expeditions. The existence of precisely such teams of voyagers is recorded for the Early Colonial war expeditions of the Kalinago (Boomert 2000; Bright 2011). Still, as is also well-attested from the historic record, much travel probably took place in smaller boats with smaller groups.

Whatever the size of the vessel and crew, group-owned or personal canoes and their implements must have been focal points of Caribbean social and cultural life. From mainland ethnographies we can establish an impression of what the production and ownership of such canoes entails. The Warao, master canoe builders from the delta of the Orinoco, go through a complex *chaîne operatoire* involving a specifically identified tree, several cycles of adze-carving and burning of the inside of the log, shaping of the hull of the canoe with fire and axe, and an intricate ceremonial process involving many taboos and specific roles filled by various spirits and craftsmen. Even after the canoe has been completed precise ritual and nautical knowledge as well as continued investment by the community are required to operate the canoe (Wilbert 1993). All these ingredients – large, likely cosmologically significant trees, specialized tools, decorations and a degree of ritual and nautical specialization – could have been present in the Caribbean since the first colonization of the islands.

Even with a large supporting community, trained crew, sea-worthy canoes, and good navigational markers, travelling on the open sea would have required a great deal of skill and effort. In the Lesser Antilles the currents in channels and the prevailing winds would have been perpendicular to the direction of travel. Richard Callaghan has therefore suggested that in some cases maritime travel side-skipped a majority of the islands en-route to take a direct, off-shore route to the target destination (Callaghan 2001). His models are based on software that calculates the likelihood of a successful (drift) voyage.[8] With the help of this software

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7 Whether this speed of travel would have been the same for indigenous canoe crews is difficult to surmise, since speed and distances historically reported from the mouths of indigenous Caribbean sailors are in temporal units like "moons" or "days" and not in geographic distances. Bernaldéz (1992: 167), basing himself on various sources, among which Columbus himself, reports that: "a caravel can sail in a single day as far as the canoes are able to in seven." A standard caravel of that era would have travelled at speeds of up to 8 knots with an average of 4 knots, making *c.*78 to 86 nautical miles a day. In fact, this is around seven times the lower limit of a day trip made by the *Akayouman* crew (12 nautical miles).

8 The model applies modern data on winds, currents, gale and hurricane frequencies, and sea-swell conditions from the U.S. Defense Mapping Agency as input (Callaghan 2001).

Callaghan has undertaken several studies on the likelihood of maritime contacts (e.g. Callaghan 1990, 2001, 2013).

An important part of these models is based on the possibility of a failed open sea voyage, but it is difficult to surmise the exact risks of pre-colonial maritime voyaging (Fitzpatrick 2013a). First of all the level of danger would have been dependent on weather, especially during the hurricane season and crew preparation. The problem is also whether the perceptions of risks and benefits by past communities aligns with that of the model. For example, Callaghan (2001) has calculated that a drift voyage from the South American coast of 4 to 5 weeks with a crew of eight would have involved a crew loss of 10% to 12%. On the other hand a northward directed journey from South America to the Greater Antilles lasting 5 days with rowers taking alternate shifts would only have a little less than 1% chance of a fatality, according to Callaghan. If we transpose this to a more common mortality rate system the latter figure translates to a little under 1000 deaths per 100,000 sailors on an outbound voyage. This number seems acceptably low, but this is deceiving. In fact, it is a relatively high mortality rate compared to that of the more dangerous early modern and modern commercial sailing vessels. For example, the mortality rate of outbound Dutch East India Company sailors was 6700 per 100,000 (Bruijn 2009: 75). Although this is higher than the suggested pre-colonial Caribbean mortality rate, one has to keep in mind that this voyage was at least thirty times longer. In fact, the death rate of a Caribbean crossing proposed by Callaghan dwarfs the deaths associated with the most dangerous modern types of sailing: commercial fishing, which "only" has one hundred and twenty-nine deaths per 100,000 sailors per year (Lincoln and Lucas 2010).

One could argue that the model's suggested death rate per crossing is incorrect. If not, it is unlikely that these cross-Caribbean voyages or similar long voyages were undertaken with a light heart. Naturally the perception of maritime voyages would have depended on the actual frequency of trips made and a community's knowledge and memory of (fatal) accidents on sea. Suppose an individual made generally ten trips with a 1% death rate in a lifetime, which would be on the low side. Based on a crew of ten, this means that he or she likely witnessed one death during his or her "career" as a canoe rower. Being on sea for extended periods of time was probably considered to be one of the more unsafe things to do in a region were the only other natural hazards were destructive but infrequent earthquakes, volcanic eruptions and hurricanes. This would have had an effect on sea-going trade expeditions, resource procurement and (individual) mobility.

On the other hand, suppose that travelling across the sea was generally (assumed to be) safe? What would this actually say about the formation and development of inter-island networks? This is difficult to ascertain a priori. When judging and interpreting models of inter-island connectivity we should not fall for the logical fallacy of probabilistic reasoning.[9] In this case, this means that even if intervisibility or favourable sea currents create the contexts for easy travel and easy travel influences the presence of social relations, then it still does not follow that

9 If R then P, P has a large probability of Q, so if R then Q (Oaksford and Chater 2001).

intervisibility or favourable sea currents between two areas equals social interaction. Rather, intervisibility and sea current studies present an environmental spectrum of possibilities (cf. Callaghan 2001: 312). The more probabilistic models are contextualized, the better they will be at approaching historical reality. One should for example take into account that the push and pull of potential or established (social) relations between communities or individuals would have been one of the most important reasons for inter-island travel (cf. Keegan 2004).

The voyages undertaken by the *Akayouman* present a set of meta-data that can serve to contrast such social incentives for Caribbean inter-island travel to current navigational models. It is notable that the canoe always travels between islands rather than bypassing islands in favour of crossings on open stretches of sea. Although the passages often present quite a challenge, as predicted by Callaghan's models, the extra effort is worth it for the crew. This is because, aside from gathering scientific data, the goals of the society are to increase awareness of indigenous heritage and cement the ties between Martinique and the islands that they visit on their trips (Bérard, *et al.* 2011). Indeed, when they arrive at an island this is always accompanied by a public ceremony and media attention. Moreover, this also, interestingly enough, involves the exchange of gifts (see Chapter 4). In the case of the *Akayouman*, bypassing (inhabited) islands defeats the greater purpose of the voyage.[10]

To synthesize my argument, it is clear that navigational models have yielded valuable insights into the spectrum of possibilities for Caribbean maritime voyaging. Yet this probabilities need to be further defined into plausible (local) histories. This needs to be based on agentive simulations for modelling costs, but should also incorporate modelling of voyaging benefits within a wider set of factors. Ideally both sets of parameters would be (partly) data-driven: a model that does not only computes navigational paths but also measures these in terms of cost and benefit and contrasts this with evidence of interaction from the archaeological record. Such a model does not exist yet with reference to the Caribbean.[11] As such, once developed it is sure to benefit from the incorporation of network theoretical models and measures (e.g. Knappett, *et al.* 2008).

## Culture history

Traditionally the history of the pre-colonial Caribbean has been divided into three large periods, the beginning and end times of which are subject to debate and vary per region (Petersen, *et al.* 2004): (1) the Archaic Age (6000/4000 BC-500/400

10 There is one comparable experiment with canoe travel on open seas in the Caribbean. During the late 1980s a group of Dominican archaeologists and volunteers paddled from the Amazon, up the Orinoco and the Lesser and Greater Antillean island chain, to Cuba. This epic expedition was completed in the indigenously-made canoe called *Hatuey*. This canoe is still on display outside the Museo del Hombre in Santo Domingo. It was named after the famous indigenous leader who took his people from Hispaniola to Cuba in order to escape Spanish oppression. Remarkably, the journey had the same objective as that of the *Ioumoúlicou* project: honouring indigenous maritime heritage and the strengthening of inter-island relations (Harold Olsen, personal communication 2009).

11 Such a new maritime, cost-benefit model will be one of the intended outcomes of an upcoming NWO-funded project by the Leiden Caribbean Research Group.

BC), (2) the Early Ceramic Age (500/400 BC-AD 600/800), and (3) the Late Ceramic Age (AD 600/800-1492). Sometimes these longer periods are further subdivided into an Early and Late phases or transitional periods, such as the Early Archaic Age or the *fase transicional* of the Dominican Republic. Aside from this, every island (archipelago) has its own cultural periodization (Rouse 1992; Figure 1.1). As discussed in the introductory Chapter, these larger and smaller periods are demarcated by means of several criteria, notably material culture type and style, subsistence practices and socio-political system as evidenced by site layout and inter-site patterning. The end of the Archaic and beginning of the Early Ceramic Age has, for example, been set around 500/400 BC in the Northeastern Caribbean when communities using so-called Saladoid ceramics started to appear (see below). However, recent breaks from these standard models are more aligned with the idea of a continuous and connected process of gradual ebb and flow of local, regional and interregional systems of interaction and diffusion, rather than a series of cultural phases. This makes any strict periodization difficult to defend. Nevertheless, for the sake of clarity, I have subdivided the following diachronic discussion into paragraphs reflecting open-ended periods that align with date marks for important developments and processes. Although there are some overlaps with recently proposed period names (e.g. Petersen *et al.* 2004; Rodríguez Ramos 2010b), the paragraph titles are not suggestions for a new periodization, but reflect the most important processes in terms of interaction and mobility during this period.

### *Foundation: 6000/4000 BC - 2000 BC*

The earliest dates of human occupation in the Caribbean originate from the site of Banwari Trace in Trinidad, ranging *c.*6000 BC – although Boomert (2000: 49) discusses a single spearhead from the much earlier Joboid complex. Here, as part of the budding riverine and coastal interaction sphere on the Venezuelan coast and Orinoco, the first settlers exploited the rich resources of the island, while probably remaining in contact with their mother communities across the Gulf of Paria (Boomert 2000). Banwari Trace and the nearby site of St. John both show evidence indicating a way of life that would be typical of much of later Caribbean (pre-)history. Tools for the production of canoes and the faunal remains suggest a rapid shift from a terrestrial subsistence strategy to one that focused on freshwater and marine foods – notably shellfish and crab (Wilson 2007: 39-43). At the western extents of the Caribbean islands another group of settlers, presumably originating from Yucatan, reached Cuba and Hispaniola in *c.*5000 BC (Rodríguez Ramos, *et al.* 2013). In contrast to their counterparts in the southern Caribbean, early Cuban sites, do not display a similar reliance on (shell)fish, still focusing largely on foraging as well as the hunting of larger animals (Kozlowski 1974; Newsom and Wing 2004).

Both these groups originated from a small group of settlers that had colonized Mesoamerica a long time before the Caribbean islands seems to have been. However around the time the Caribbean islands were first inhabited mainland material cultures – for this period defined by various stone knapping techniques and form as well as composition of lithic toolsets – were rather diverse (Kozlowski

1974). As a result, the Caribbean islands were colonized by peoples with two quite different knapping techniques and associated assemblages. The southern lithic material culture group, traditionally called Ortoroid, is characterized by a versatile and opportunistic toolkit and knapping technique, working from small cores to produce flakes applied in a variety of purposes. The western group of lithic materials, known as the (Casimiran) Casimiroid, is distinguished by the presence of larger cores to produce flakes and long thin blades, although over time the percentage of blades in relation to flakes slowly dropped (Rodríguez Ramos, *et al.* 2013; Wilson 2007).

There is another marked difference between the two colonisation waves, as indicated by means of the speed in which they spread and their connections to their original homelands. The Casimiroid-lithic using peoples seem to have steadily extended their range eastwards, with the first evidence for human presence in Puerto Rico by *c.*4000 BC (Rodríguez Ramos 2010: 50). In contrast, the southern migration was concentrated mostly around Trinidad and Tobago, with very little evidence for early sites in the other more northerly Lesser Antilles (Callaghan 2010). It is presumed that the peoples who settled Trinidad were still in contact with their mainland neighbours or could even be alternatively living on the island and mainland. They would have trekked around the Orinoco and Gulf of Paria not in a mainland-island colonisation setting, but in that of a riverine, coastal interaction sphere. In any case, the maritime technology and knowledge required in order to cross the Gulf of Paria would have been limited. Even up to a few decades ago small dugout canoes carrying only one or a few individuals, regularly made the journey from the mainland to Trinidad (Boomert 2000).

In the West, the logistics of navigating the Yucatan channel – the narrowest gap between the Yucatan peninsula and Cuba – or any other waterway between the North American and Mesoamerican mainland and the islands would have been far more taxing, with strong currents prohibiting easy canoe crossings (Callaghan 1993). As a result interactions between the early colonizers of Cuba and their mother community may not have been as intensive as those between communities on Trinidad and the South American mainland. It could be that the proximity of the mainland and strong ties between Trinidad and mainland communities created an "anchor" for the first southern settlement of the islands. The effect hereof was that the southern colonization of the Caribbean advanced very slowly, whereas early communities in Cuba were not "inhibited" by similar social ties.

The preservation of sites for the earliest periods is heavily biased by obscuring or destructive natural factors such as erosion, volcanism, and fluctuating coastlines (Cooper and Boothroyd 2011; Delpuech 2004), making it difficult to say something definitive on human interaction and mobility during this period. To our best knowledge it seems that, if there is evidence for human settlement, total population numbers on islands were very low. Based on site layouts and the evidence for site activities, it is generally accepted that the first settlers of the

Caribbean lived in small social units consisting of not more than ten individuals.[12] Furthermore, the relative low density of early sites suggests that these groups were moving around in large areas. Sites often do concentrate around areas that gave easy access to marine foods, such as fishing grounds located close to shore, salinas and mangroves.

Ethnographic analogies with comparable settings and cultures suggest that most, if not all, individuals in the group were connected to each other through close blood relations. With a small pool of potential marriage partners, even individuals from other groups were closely (genetically) related. For an early inhabitant of the islands, one's social network consisted generally speaking of a small number of related individuals with which one consistently interacted in the course of his or her lifetime. This would have had a corresponding effect on how such small groups were structured, which social strategies were used when interacting with others and how material culture formed a part of these interactions.

### *Development: 2000-800 BC*

Archaeological investigation has thus far only presented a general picture of the Early Caribbean. What does become clear from site excavations and research is that we should not view the period from 6000/4000 BC - 2000 BC as consisting only of two major waves of migration, followed by centuries in which nothing happened. A steadily rising population, the opening up of new territories, and increasing specialization and adaptation to the island environments, ensured that Early Caribbean society and culture was anything but static.

Another major tipping point occurred in *c.*2000 BC in the North-Eastern Caribbean. This was, according to current consensus, the time and place that peoples from the Southern Caribbean came into contact with peoples from the West. It is not known at what point exactly the networks of these different groups first started to coalesce. Incidental contacts must have been taking place centuries before archaeologists can first see clear proof of their interactions (Ulloa Hung and Valcárcel Rojas 2013). The result is clear, however: a uniquely Antillean combination of two different mainland-to-island traditions (Hofman, Boomert, *et al.* 2011; Rodríguez Ramos, *et al.* 2013). This Ortoroid-Casimiroid interface marked the first moment in which the Greater and Lesser Antilles were connected by means of geographically far ranging, but still small social networks.

The number of sites in the Northern Lesser Antilles skyrocketed during the period 2000-800 BC in comparison to the period before. Subsistence economies were focused on acquisition of locally available foods and tools. The one exception to this is the Caribbean lithic tradition, including but not limited to the knapping, use, and distribution of siliceous artefacts. In addition, spheroliths – stone balls

12 Sites are often small scatters of materials, sometimes concentrated in a local region and probably the result of temporary camps from which hunting and gathering activities were undertaken. Several larger sites such as rock and cave shelters may well have served as base camps. Furthermore, their larger size and generally deeper stratigraphy suggests that they were the result of many centuries of cyclical occupation (Bonnissent 2008; Crock, *et al.* 1995; Davis 2000; Hofman and Hoogland 2003; Hofman, *et al.* 2006).

ranging in size from a pellet to ones measuring more than 1 m. across, the purpose of which is unclear – can be found in Cuba, the Dominican Republic, and Puerto Rico. The typical shapes of celts and the distinct pattern of wear of edge-ground cobbles are also indicative of wide-shared lithic tool practices (Rodríguez Ramos 2010). These examples provide a tantalizing insight into the circulation of knowledge and practices in incipient, regional networks.

Furthermore, many practices that were seen as key traits of culture and society after 200 BC – crafting techniques of lithics and ceramics, foodstuffs, ritual practices such as use of hallucinogenics and carving of petroglyphs, and (semi-)permanent settlements – were also pioneered in the course of this era (Hofman and Hoogland 2003; Keegan 2010; Pagán Jiménez 2013; Rodríguez Ramos 2010a; Rodríguez Ramos, *et al.* 2008; Ulloa Hung and Valcárcel Rojas 2013). During the period 2000-800 BC the movements and interactions of the first settlers in many ways laid the foundations for the diverse yet connected societies and cultures of later periods.

### *Continuity: 800-200 BC*

Caribbean archaeology has always had a special interest in the period between 500 BC and AD 400. It was previously firmly believed that this era saw the arrival of a wave of new migrants that utilised a distinctively new type of ceramics referred to by archaeologists as the (Cedrosan) Saladoid, named after the type site of Saladero in the Lower Orinoco (Boomert 2000; Rouse and Cruxent 1963). Following a theoretical framework based on population movements (Rouse 1986), the idea was that Saladoid colonizers migrated into the Caribbean from the Orinico delta. These "Saladoid peoples" were thought to be the founders of Ceramic Age culture in the Caribbean, which did not only include the use of ceramics, but also traits such as sedentarism, horticulture, a pronounced animistic ideology, tribal organization and long-distance acquisition of exotic raw materials and finished objects. The "Saladoid phenomenon" has also been linked to the spread of the Arawakan language into the Caribbean islands (Granberry and Vescelius 2004; Heckenberger 2013; Rouse 1948a).

It was believed that this influx of Neolithic migrants from the mainland pushed out or otherwise quickly assimilated with the original "Archaic Age" inhabitants. The sudden break-off of the distribution of Early Saladoid ceramics at the western extent of Puerto Rico signalled that indigenous resistance in the western Greater Antilles was more successful, leading to a Saladoid-"Archaic Age" frontier between Puerto Rico and Hispaniola. However, slow acculturation finally dissolved this frontier, which then shifted further westwards. Historical documents of the early contact period still reported pockets of a-ceramic, cave dwelling peoples in the extreme West of Cuba, so the neolithization of the Caribbean was thought never to have been completed (Rouse 1992).

Nevertheless, several facts do not align with some basic aspects of this version of Caribbean history. The newest data suggests that this crucial period was less about the mass migration of culturally dominant colonists than it was about growing

and increasingly interconnected island and mainland worlds (Hofman, Boomert, *et al.* 2011; Rodríguez Ramos 2010a; Rodríguez Ramos and Pagán Jiménez 2006). What is more, this process did not start with the appearance of new ceramic series, but much earlier.

In a recent contribution and following up on earlier studies (Ulloa Hung and Valcárcel Rojas 2002; Veloz Maggiolo 2001), Rodríguez Ramos and his colleagues have shown that the first use of ceramics could potentially be traced to the early 2nd millennium BC. The evidence is clearest for the period between 800-200 BC. These sites that were previously considered to be a-ceramic yielded evidence for a crude but widely distributed ceramic series, called the Caimitoid in Cuba and Hispaniola (Rodríguez Ramos, *et al.* 2008). The fact that this ceramic series is not connected to the Saladoid phenomenon is especially clear in the case of the Dominican Republic and Cuba where "true Saladoid" has never been found (Hofman, Ulloa Hung, *et al.* 2007).

There is also solid evidence of certain typical lithic tools and techniques later associated with another series called the Huecoid (see below). Iconic "Neolithic" tools such as edge-ground cobbles, flints, pestles and celts, were part of toolkits that predated the arrival of Saladoid ceramics in the Caribbean (Rodríguez Ramos 2005). Furthermore, proof from starch grains on tools and in the calculus of teeth, has indicated that foodstuffs considered part of a horticultural or even more intensive agricultural diet (such as maize and beans) were also produced and consumed at pre-Saladoid sites (Mickleburgh and Pagán-Jiménez 2012; Pagán Jiménez 2013). Chapter 5 will discuss how the same raw material resources continue to be applied and distributed from the earliest settlement of the islands until the end of the pre-colonial period. All things considered, it is safe to say that there is no clean break between an Archaic and Ceramic Age. Instead we should speak of a 800-200 BC interface period during which two traditions started to mesh together (Hofman, Boomert, *et al.* 2011).

What does this continuity entail in terms of the deep-time dynamics of Caribbean social networks? Firstly, ceramic and lithic production techniques are not just single dots on the map, but occur at several sites over an extended region and period. Unless independent invention occurred in every single case, diffusion involving social interactions must have been taking place in the Archaic Age. As a result, the foundational groups of settlers would have become evermore tightly knit and interlocked over time. This caused or came together with structural changes in several key areas of human mobility, food economy, and socio-political systems. The exact scale of and interaction mechanisms behind these processes are not yet fully understood, but it is likely that they were partly the result of a structural growth of local movement of goods, people, and ideas and not only the result of outside migration.

So, prior to 500 BC, networks must also have been meshed together with those on the mainland (Hofman, Boomert, *et al.* 2011; Rodríguez Ramos, *et al.* 2013). Whether these network paths led through many interlocked archipelagic subgraphs or consisted of a small number of cross-Caribbean long-distance or "weak" ties is impossible to say (see Chapter 3). Unfortunately, the evidence is also unclear as to

the extent of which this involved the circulation of information or also of goods and raw materials. It is also important to note that continuity of foundational culture and society does not necessarily contradict earlier opinions on the actual movement of new peoples into the Caribbean (Bérard 2013). It rather suggests that this movement was part of a connected set of developments.

### *Transition: 200 BC-AD 400*

Notwithstanding recent ideas on continuity, the period between 200 BC and AD 400 witnessed many structural revolutions to Caribbean culture and society (Bérard 2013). This came together with an influx of new peoples, attested by the sudden appearance of Saladoid-style ceramics. The most plausible lines of evidence point to East Venezuela as the homelands of these migrants, most likely in the Lower Orinoco (Bérard 2013; Boomert 2000). Their migration into the Caribbean did not follow a stepping-stone fission pattern up the chain of islands as would be the case in a slower, undirected migration. If this had indeed been the case then the most southerly island from the mainland would have the earliest evidence of this migration process. After some time a group would then have fissioned off from the earliest colony to colonize the island further to the north, and so forth. Currently available evidence does not support this. Rather, as was first noted by Keegan (1995) and later substantiated by Fitzpatrick (2006), it seems that the earliest dates of sites with Saladoid ceramics on the islands stem from the northern Lesser Antilles. This would imply that a rather rapid advance to the northern Lesser Antilles and Eastern Greater Antilles had taken place, and not a slow, up the line exploration. This has recently led to a discussion on the ancestral homeland of these migrants (Fitzpatrick 2013b). Still, in terms of historical processes and network dynamics the region of origin is ultimately not that important. What is more interesting is that a direct migration indicates that these movements were *directed* towards a certain objective (cf. Keegan 2004's "pull factors").

If all that the new colonizers were looking for was a new place to live it seems unlikely that they would travel that far north. On their journey they would have passed through mainland and island regions suitable for habitation – which according to the evidence thus far were not or only scarcely populated. Moreover, based on the patterning of Early Saladoid sites, it seems that they were indeed located close to areas with good access to resources that were useful but in no sense critical for survival. Thus, if one rules out a voyage of random drifting, these migrants would have travelled to places of which they already had acquired some prior knowledge passed to them by means of down-the-line information exchange or direct contacts. From this point of view, the rapid advance north is an argument in favour of the existence of an interaction network connecting the first inhabitants of the islands with the immigrants from the mainland prior to 500/400 BC and possible intermingling afterwards.

The fact that they were not cut-off from their previous social contacts is also clear from the increase in evidence for long-distance interactions (Boomert 1987, 2001b; Hofman, Bright, *et al.* 2007). Exotic objects in site assemblages are easily

transportable ornaments. In the site of La Hueca and Sorcé, for example, they consist of a range of materials, such as decorated bones from mainland animal and various sorts of worked semi-precious stones. Many feature animal elements and iconography that can only be connected to species found on the mainland, such as jaguar and peccary teeth as well as amulets depicting large birds of prey. Birds of prey amulets made from Puerto Rican serpentinite and found as far south as Trinidad, provide evidence for interactions between the islands and the mainland (Chanlatte Baik and Narganes Storde 1990, 2005; Narganes Storde 1995).[13]

A new ceramic series, the Huecoid, taking its name from the above mentioned site, has been linked to these (geographically) long-distance ties (Chanlatte Baik 2013). Rouse (1992) had originally proposed that Huecoid ceramics simply represented a sub-series of the Saladoid series. Yet, based on their fieldwork on Vieques and in East Puerto Rico, this has been contradicted by Chanlatte-Baik, Narganes Stordes and other Puerto Rican archaeologists (Chanlatte Baik and Narganes Storde 1990). Although advances have been made on the study of its ceramics and associated assemblages (Chanlatte Baik 2013; Hofman and Hoogland 1999; Rodríguez Ramos 2010a), the role of sites with Huecoid-style material culture in the melting pot of the first centuries BC and AD, is still not quite clear.[14]

What dynamics can possibly account for the complex interrelations in the site assemblages of the "Archaic"-Saladoid-Huecoid interface period? Due to its ties to older local and Saladoid assemblages it is unlikely that the appearance of the Huecoid represents a completely unconnected phenomenon – e.g. a separate migration of people making and using only Huecoid ceramics. This also implies that it is not likely that the Huecoid assemblage evolved from either a purely Caimitoid or Saladoid strain. Instead the divergences and similarities in material culture practices and the parallel timing of several structural changes within Caribbean society and culture in a span of a few centuries or even decades is of crucial importance. It seems to me that the only way forward is to understand the developments of this period as the result of what is known in network science as a "phase transition".

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13 The origins of exotic zoological materials found at Vieques on which isotopic provenance studies have been carried out do not only extend to the Eastern Venezuela, but also to other mainland regions located more to the West (Laffoon, personal communication 2012).

14 It is difficult to ascertain if the Huecoid represents a completely separate set of social and material relations to the Saladoid. Following a system of chrono-metric hygiene, Saladoid is dated earlier than Huecoid with the earliest occurrences at the site of Trants on Montserrat and La Hueca/Sorcé (see Chapter 6). It is furthermore noteworthy that there are very few sites in which only Huecoid ceramics have been found. At present, the only dated and published site that contains only Huecoid ceramics is Punta Candelero in East Puerto Rico. Other Huecoid-style ceramics always co-occur with Saladoid and sometimes earlier components are discovered on the same site. However, few securely excavated and dated sites have an Early Saladoid component only. Indeed, the majority of early sites present mixed Huecoid/Saladoid components. A study on the raw materials and production techniques of both Huecoid and Saladoid ceramics at Trants also shows these were indistinguishable (Reed and Petersen 2001).

Although phase transitions can often not be explained as the result of one place, one process, or one moment in time they can be seen as an event. If a network undergoes a phase transition then a system will "suddenly" evolve that can have completely new dynamics when compared to previous stages (Padgett and Powell 2012). In the case of the Archaic-Saladoid-Huecoid interface, the lead-up to this transition was slow but steady: in the millennia before island and mainland communities had become ever more connected over an ever wider region. Ceramic production, horticulture, and other innovations had already been circulating in the pan-Caribbean region through down-the-line diffusion or intermittent, long-distance ties. Then a "sudden" change occurred. Island and mainland networks across the Caribbean seaboard became and stayed fully connected. There are several parallel revolutions in regional culture and society, consisting of: (a) the sudden presence and spread of both Huecoid and Saladoid ceramics, (b) the increase in (habitation) site size and quantity, (c) new forms of material culture, and (d) changing foodways. This co-temporality is congruent with the idea of a network undergoing a phase transition, suddenly changing shape, becoming more coherent and having greater connectivity.

When a network becomes more connected, the new structure needs to be sufficiently robust or else the system will return into a less connected state. It is thus possible that in the Caribbean greater coherence and connectivity had already occurred at multiple moments in time and at various places (Rodríguez Ramos 2010). Yet, in contrast to earlier occasions, for some reason this time interregional networks were robust enough to not fall back into their previous, less connected state. One way in which this threshold could have been overcome was the movement of migrants into the North-Eastern Caribbean.[15] Migrant groups did not have to be large (cf. Laffoon 2012). Even small numbers could have been responsible for the new forces at work. This idea is not new, but this incarnation of an old hypothesis does need to be strengthened by means of a continued discussion with reference to the timing and causal factors of this transition (Boomert 2000; Keegan 2004). The question remains which specific processes, places, material culture and moments in time caused this transition to occur and succeed? Chapter 5 will present further ideas on and a discussion on these issues.

### *Waxing and waning of inter-regional interaction: AD 400-600/800*

After the first few centuries AD, interaction systems continued to grow both geographically and in terms of the total amount of individuals and social groups taking part in them. Between AD 200 and 500 we see the largest number of sites on the larger as well as the smaller islands in the Northeastern and Southeastern Antilles (Boomert 2000; Bright 2011; Curet 2005; Haviser 1991; Torres 2012).

15 Migration does not have to be the (only) factor in creating these robust networks. Any other increase of fitness of more expansive Caribbean networks, such as a breakthrough in (maritime) technology, could have been at its basis (see also Keegan 2004).

This is also the period during which the archaeological record yields the best evidence for regional and interregional interactions (Fitzpatrick, *et al.* 2008; Hofman, Bright, *et al.* 2007; Knippenberg 2007).[16]

It seems that greater network connectivity and coherence does not hold true for all aspects of the archaeological record. At the same time that the record shows an intensification of interaction in the region, we also see that technical and iconographical systems lose their similarities. This resulted in a typical island style of ceramics in the Lesser Antilles, sometimes called the "Late" or "Modified Saladoid" (Boomert 2000; Bérard 2013). A similar process takes place in the Greater Antilles with the emergence of local styles such as Ostiones, Cuevas and Monserrate, which are normally treated as part of a larger (sub)series called the (Ostionan) Ostionoid (Rouse 1992). The same can be said for changes in foodways with archaeobotanical and archaeozoological evidence revealing an increased reliance on marine and horticultural resources, rather than the hunting of small game animals (Newsom and Wing 2004).

It is likely that this was related to a change in the socio-political landscape in the region. Changes in burial practices, an increase of sites denoting an increase in population, and development of more pronounced local and regional cultures indicate a slow change in the political structure of the Caribbean from around AD 200 on (Hofman and Hoogland 2004; Siegel 1992).[17] This argument is strengthened by the increased quantity of personal valuables found in excavations and surveys in the Northeastern and Southern Caribbean islands (Curet 1996). They are mainly small objects designed to be worn or easily carried and were probably crafted in household settings by non-specialists. It has to be noted that these ornaments are fairly standardized with relatively little variation within the same category of objects. Perhaps this is related to the fact that, aside from being personal ornaments, they were also circulated in wide-ranging exchange systems (Hofman. Bright, *et al.* 2007).

The majority of these objects depict animals or fantastic creatures. The identities of others, such as the small three-pointed stone, bone coral and shell artefacts, are less easily interpreted. As will be discussed below to the indigenous people of the Caribbean these were not only objects but inspirited things and other than human beings (Breukel 2013; Petitjean-Roget 1997; Waldron 2010). At any rate, it is clear that by AD 500 a complex system of cosmological relations between humans and non-humans had developed (Hofman and Hoogland 2004; Oliver 1998). The

16 For example, new studies indicate that the majority of the jadeitite objects, for instance those from the Royall's site in Antigua reported by Harlowe and Murphy (Harlow, *et al.* 2006; see Chapter 1), date from after AD 400 (Knippenberg, personal communication 2013). However, it now seems likely that at least a part hereof originates from either Hispaniola or Cuba and not from the Sierra de las Minas in Guatemala (Garcia-Caso, *et al.* 2013). It nonetheless represents a movement of materials over a range of several hundreds to over 1000 km Another example of continued long-distance exchange is found at the site of Maisabel in Puerto Rico. Here a few fragments of guanín were recovered, i.e. an alloy of gold, copper and silver for which the knowledge of smelting techniques was only present in the Isthmo-Colombian region (Oliver 2000; Siegel 1992).

17 Although Keegan recently suggested that socio-political hierarchy was present in some form before this period (Keegan 2010), there are few archaeological proxies that may serve to argue for institutionalized social inequality before AD 600 or even intercommunal polities before AD 200.

material counterparts of this system served to create, maintain and contest social relations in new ways (see Chapters 7 and 8).

Regional surveys across the Caribbean suggest that the population still increased rapidly during the period AD 400-700 (Curet 2005; Hofman 2013). Around AD 700 however, we see a relatively abrupt end to the growth of sites both in size and number, particularly in the northern Lesser Antilles. Interaction across the Northeastern Caribbean region also dropped sharply (Bérard 2013; Hofman 2013; Hofman, Bright, *et al.* 2007). The quality of the ceramics, sometimes referred to as "Terminal Saladoid", was cruder than before and their designs became more rudimentary (Bright 2011; Hofman 2013). In addition, this period is marked by what seems to be the intentional destruction of ceremonial valuables in the northern Lesser Antilles, like the aforementioned three-pointed stones (Petitjean Roget 1993). It has been suggested that these developments were correlated with a change in climate to more arid conditions than before (Blancaneaux 2009; Bonnissent 2013) This does not imply that in the 8th century AD interactions between communities had come to a halt. In the Guadeloupe archipelago, for example, we see a tightly knit system of sites, which are related through specific ceramic decorative and technical practices (de Waal 2006; Hofman, *et al.* 2004; Petersen, *et al.* 2004). For example, the site of Anse a la Gourde on Grande-Terre has evidence for the movement of exotic (lithic) materials and individuals in and beyond the archipelago (de Waal 2006; Hofman and Hoogland 2004; Knippenberg 2007; Laffoon and Vos 2011).

## *Increasing density and complexity: AD 600/800-1492*

While the Lesser Antilles seems to have hit a phase of stagnation or even decline, the Greater Antilles, in particular Puerto Rico and Hispaniola, saw the emergence of evermore complex systems of people, things and ideas. With reference to these topics, the development of chiefdoms or *cacicazgos* has been discussed at great length (Curet 2003). Much of our interpretations of the type and dynamics of indigenous political structures during the period AD 600/800-1492 is a projection from late 15th and early 16th century post-contact European documents (Machlachlan and Keegan 1990). These documents describe a system that has come be known as the *cacicazgo*, a regional polity headed by a *cacique*. Traditionally the *cacicazgo* has been seen as a political system that occurred in many of the regions along the shores of the Caribbean Sea and beyond. For example, it has been suggested to be present in some form or other in the Lesser Antilles, the South American coasts and llanos, Amazonia, the Isthmo-Colombian region and parts of Mesoamerica (Blanton, *et al.* 1996; Crock 2000; Heckenberger 2005; Keegan, *et al.* 1998; Redmond 1998; Spencer and Redmond 1992). Yet in how far these systems were similar in their general or specific mechanisms remains very much unclear. The *cacicazgo* should thus be seen more as of a diffuse set of related practices and political roles than as any unified form of cultural or political organization (Curet 2003).

It is safe to say that in the islands the majority of such research was carried out in Puerto Rico and, to a lesser extent, the south and east Dominican Republic. This region, divided by the Mona Passage, has become known as the heartland of *cacical* culture in the Antilles.[18] Here, one of the lines of evidence for regional integration of autonomous communities is the evolution of the earlier village plaza into clearly demarcated, ceremonial plaza complexes that served the wider region.[19] Siegel has argued that the empty space in the centre of habitation sites from the first centuries AD was the starting point for the later evolution of ceremonial plazas and so-called ball courts (Siegel 1999, 2010).

During this period in the Greater Antilles population numbers continued to rise. Sites themselves did not necessarily grow in size, but their density in the late pre-colonial landscape increased. Regional overviews indicate the presence of large sites with many smaller pockets of habitation across the Greater and Lesser Antilles (e.g. Curet 2005; Hofman, *et al.* 2004; Ulloa Hung 2013; Veloz Maggiolo 1972). As was referred to in the previous discussion on Caribbean flora and fauna use, this population growth was sustained by means of evermore sophisticated subsistence techniques.[20] However, it has been suggested that population pressure was partly the reason for the rise of the *cacicazgo* system, although it has been shown that the population in West Puerto Rico was not anywhere near its maximum threshold when the first regional polities appeared (Curet 2005). Nevertheless, larger population numbers also implied a potential larger pool of social partners or competitors now existed (Siegel 2004).

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18 Ethnohistoric records indicate the presence of similar regional polities in Cuba and Jamaica, but the material culture of these islands indicates that they differed slightly from the Dominican Republic and Puerto Rico. The best evidence for chiefdoms outside of the Mona Passage heartland can be found in the Cuban Banes region. It has a few larger habitation sites surrounded by smaller habitation sites, of which the site assemblages contain many personal decorations and amulets (Valcárcel Rojas 1999; Valcárcel Rojas 2002). For a discussion of possible Lesser Antillean chiefdoms, see Chapter 6.

19 In Puerto Rico the earliest demarcated plazas occur around 650 BC (Curet and Stringer 2010; Oliver 1998; Siegel 1999, 2010; Torres 2012). With the addition of new plazas at the same site, single plazas grew into plaza complexes. From this period, demarcated plaza sites are also known from the Virgin Islands. Here stone alignments do normally not feature petroglyphs. The same applies to Hispaniola, where some of the largest plazas can be found (Alegría 1983). It has been suggested that central plaza sites can also be found in other islands outside of this heartland. Yet, because they are not clearly demarcated, they are not easily recognized (Keegan 2007).

20 Dental anthropological studies suggest that carbohydrate intake increased. A change in food preparation techniques also meant that food from staple crops became more refined after AD 600-800 in both the Greater and Lesser Antilles (Mickleburgh 2013). In addition, islands like Cuba and Hispaniola have evidence for agricultural works, such as terraces and *montones* – small hills functioning as mini raised fields (Ulloa Hung 2013). There was also an increase in the scale and effectiveness of marine food procurement, including new techniques for processing, preservation and distribution (Morsink 2012). Historical sources indicate elite-specific foodways in the Greater Antilles, for which some archaeological evidence also exists in Puerto Rico (Curet and Pestle 2010). Valuable non-food plants such as cotton were more intensively cultivated (Morsink 2012; Newsom and Wing 2004).

For the period AD 1000-1492 Rouse (1992) identified only five larger cultural series (see Figure 1.1), but this is not representative of the actual variability in material cultural repertoires.[21] New research of site and regional ceramic assemblages has indicated that local divergence in decorative and technical styles had continued after AD 1000. This is not to say that there are no similarities at all between local ceramic and other material culture expressions. These larger series should rather be seen as broad "interregional styles". While local technical and decorative choices represented a different way of doing things locally, broadly shared iconographic repertoires meant that ceramics and other forms of material culture were still part of wider socio-cultural systems (e.g. Bright 2011; Hofman, Isendoorn, *et al.* 2008; Hofman, Ulloa Hung, *et al.* 2007; Hoogland and Hofman 1993; Petersen, *et al.* 2004; Ulloa Hung 2013).

Among the artefacts recovered from this period a distinct repertoire of beautifully crafted objects stands out (e.g. Bercht, *et al.* 1997). From a systemic perspective these valuables probably co-evolved with earlier elite networks that culminated into the *cacicazgos* of the proto-historic period (Curet 1996; McGinnis 1997; Oliver 2009; Walker 1993).[22] Although such objects are often identified as chiefly regalia, it would be more accurate to describe them as being part of the system of *cemí* objects (Oliver 2009; Figure 8.1). The material cultural repertoire of the last phase of contact was thus a specific Antillean extension of an Amerindian ontology in which things could be (as central as) people in the context of late pre-colonial social relations (see Chapters 7 and 8).

More than before, production and exchange took place in and with places that were geographically close. This increasingly local focus is particularly clear in the Lesser Antilles, which has been the subject of several studies dealing with stylistic interaction and provenance of raw materials and finished goods (Bright 2011; de Waal 2006; Hofman 1993, 1993b; Isendoorn, *et al.* 2008; Knippenberg 2007). Evidence for interregional ties is still present, but in contrast to the earlier interactions from around the turn of the first millennium AD, coherence of material culture assemblages across the entire region had greatly decreased (Bright 2011; Hofman 2013).

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21 Meillacoid assemblages are found across sites in the Dominican Republic, Jamaica, the Bahamas and Cuba (Rouse 1992; Ulloa Hung 2013). The Chicoid series is present in the Dominican Republic, Puerto Rico and, after AD 1200, also in the northern Lesser Antilles (Hofman 1995; Rouse 1992). Puerto Rico, the Virgin Islands and the northern Lesser Antilles still had some later forms of the Elenan Ostionoid (Rouse 1992). Suazan Troumassoid can be found in both the Windward and Leeward islands in sites dating to around AD 1000 to just after contact (Bright 2011; Hofman 2013). The Lesser Antillean Cayoid represents a terminal pre-colonial to post-contact indigenous ceramic tradition, which are correlated with the presence of Kalinago peoples (Boomert 1986).

22 A number of these objects have been associated with the evolution of communal displays taking place at plaza sites, for instance stone elbow collars and belts (Walker 1993). Intricately carved three-pointed stones had earlier incarnations as smaller, undecorated three-pointers of various materials that are first found around the beginning of the first millennium. The regional distribution of the largest, most elaborate specimens is correlated with the spread of the central plaza sites and the historic descriptions of classic *cacicazgos*. As a result, these larger three-pointers are also generally associated with elite ceremonies and exchanges (de Hostos 1923; Oliver 2009). The same is often argued for other items like the ceremonial seats called *duhos* and shamanic paraphernalia (Ostapkowicz 1997; Roe 1997).

In short, politics was not the only aspect of indigenous culture and society to display an increasingly complex and locally dense social structure during the last centuries before European contact. The rise of the *cacicazgo* went hand in hand with other dynamics in inter- and intra-communal relations. Growing population numbers meant larger social networks. However, even if there was a total growth of node and tie quantity, the social ties that individuals had did not necessarily expand geographically. The expansion of village centres into plaza complexes serving the wider region must have converged with a new understanding of the collective. This is also supported by evidence for more large-scale communal subsistence strategies such as fishing and agriculture and more refined food preparation techniques. In this period the idea of community was clearly extended to non-kin, perhaps for the first time in the history of the Caribbean (Siegel 2004; Torres 2012).

Between AD 600/800 and 1492 a development took place in which interpersonal sets of relations were transformed within larger social institutions. Most lines of evidence point to a process in which personal relations would have become territorially entrenched, thereby perhaps carving up the Antilles into smaller territorial units. On the other hand it is clear from ethnohistorical studies, artefact provenance studies, overarching similarities in material culture assemblages and other synchronous developments that people, goods and ideas continued to circulate in interregional exchange systems. Thus, after a short period of divergence, from AD *c.*1000 to the end of the pre-colonial period the Caribbean once again became more connected. As I will discuss in Chapters 7 and 8, rather than being the outcome of a type of chiefdom society, this was the result of multiple interacting, dynamic processes.

## Cultural, linguistic and ethnic (self-)identification

The result of this long history of pre-colonial encounters meant that at the time of contact the Caribbean had a highly diverse cultural, linguistic and ethnic layout, something which did not go unnoticed by European travelers in the region (Hofman and Carlin 2010). Needless to say it has been always deemed important to utilize their information to be able to know more about how social interactions and material distributions could have been based on cultural, linguistic and ethnic groupings. However, it is becoming more and more clear that the particular mechanics of group membership were not fully grasped by Spanish and other European reporters. Or, if they were, these were not clearly communicated in their chronicles. Nevertheless, attempts to re-construct group affiliations based on historic sources and to apply these labels to material culture assemblages do continue.

"Taíno" is probably the best known of these group labels. It is still a frequently occurring term in Caribbean archaeological literature, nowadays most often serving to denote a widespread Antillean set of cultural practices and norms shared by several or more localized cultures in the Greater Antilles and beyond (Petersen, *et al.* 2004). It is akin to but different from an older use of the term that suggested

the existence of a conglomeration of Taíno peoples, sometimes grouped under the header "the Arawak" (Rouse 1948a), who occupied the Greater Antilles from Eastern Cuba to Puerto Rico (Lovén 1935). Linguistically the "Taíno" would all have belonged to the same Arawakan language family that is widely distributed over the South American mainland (Granberry and Vescelius 2004; Heckenberger 2013). Rouse (1992) further divided these Arawakan speaking groups on the basis of (ceramic) material culture traits and socio-political organization: "Sub-Taíno" in Cuba and Jamaica, "Classical Taíno" on the island of Hispaniola, and "Eastern Taíno" on Puerto Rico and some of the northern Lesser Antilles. To many, "Taíno" material cultural represents the aesthetic epitome of the indigenous peoples of the Antilles (Bercht, *et al.* 1997; Kerchache 1994; Regional Museum of Archaeology Altos de Chavon 1991). Several contemporary Caribbean indigenous revival movements both in the region and the diaspora utilze the term "Taíno" as a self-identification and have re-constructed a "neo-Taíno" language and culture.

"Taíno" is just one of several denominations for Greater and Lesser Antillean indigenous peoples that are believed to have inhabited the islands at the moment of contact. The inhabitants of the Bahamas, for example, were and are often referred to as "Lucayo". These, like the "Taíno", are believed to have been Arawakan speaking groups, and would have been identified with an indigenous word for "islander" and are sometimes referred to as Lucayan "Taíno" (Keegan 2007; Petersen, *et al.* 2004). The "Guanahatabey" (sometimes called "Ciboney") of Central and Western Cuba were purportedly an isolated people who lived in caves and used only lithic tools at the moment of contact (Rouse 1948c). The central and northern parts of the neighbouring island of Hispaniola are believed to be the homeland of "Macorix" and "Ciguayo" groups. Several historic sources indicate that people here spoke a different language and these reports were combined with the presence of divergent archaeological assemblages in central and north Haiti and the Dominican Republic (Ulloa Hung 2013).

In the Lesser Antilles historic reports and archaeological material have also been applied in conjunction to reconstruct group formations. The Island-Caribs or Kalinago are the only pre-colonial indigenous group present in the Caribbean that still forms a sovereign indigenous community today (Honychurch 2000). In the past they formed an ethnic group together with the mainland Kalina. The Cayo pottery style, reminiscent of the mainland Koriabo complex, is connected to these people (Boomert 1986). Their language is subdivided in a male and female vocabulary. The female vocabulary consists of an Arawakan grammar and lexicon, while the male vocabulary consists of an Arawakan grammar with a lexicon that has many Caribban loanwords (Breton 1999 [1665]; Granberry and Vescelius 2004). Said to have migrated from the mainland to the southern Lesser Antilles according to their narrated histories, their connection to the late pre-colonial Cayo style also suggest they were late arrivals in the Caribbean. Due to recent excavations and surveys there is now an increasing understanding of the archaeological reflection

of this group (Boomert 2011; Hofman and Hoogland 2012).[23] In addition, older literature refers to people inhabiting the Lesser Antillean before the arrival of the Island Caribs as "Igneri" or "Eyrie". Because it was believed that they were pushed out by the arrival of the Island Caribs in the late pre-colonial period, earlier ceramic styles belonging to the Saladoid series have been correlated with their presence (Fewkes 1903/1904; Rouse 1948a: 517 and 545).

It should be noted that the origin and comprehensiveness of the majority of these group labels are vague at best (Boomert 2000; Hofman 1993: Chapter 6; Hulme 1993). However, in academic vernacular these terms have long continued to be used in a similar way as one might speak of an ethnic group: the Dutch, the Romani, the Taíno, the Macorix. This trend still continues in some (popular) historic overviews (e.g. Knight 2011: Chapter 1). However, with the notable exception of the Kalinago, it is not clear how and if any of them correlate to an ethnic or socio-cultural, indigenous (self-)identification.[24] This is especially unclear in the case of the "Taíno" label. It has long been recognized that none of the indigenous peoples of the Caribbean ever referred to themselves or others as being ethnically "Taíno". The term does not appear as a collective name in any of the primary or even secondary sources before the mid-19th century (Rafinesque 1836: 186; Rouse 1948a:note 9). Instead *taíno* probably meant "good", "friendly" or "noble" in at least one Arawakan language spoken on the islands at the time of contact (Hulme 1993).

There is a sizeable contribution from Arawakan, Caribban and maybe some influence from Waraoid and even Tollan languages to the historically reported linguistic register (Granberry 2013). Nevertheless, like is the case with group denominations, a lack of understanding exists with regards to the specific history, identification and distribution of languages. All in all it can be said that, in the case of the pre-colonial Antilles, the marriage of "historical ethnic studies" (i.e. the identification and study of ethnicities through historic sources), linguistics and archaeology is not a happy one. As a result of this mismatch, hypotheses

23 Conflicts with the Spanish, English, French and Dutch during the colonial period have led to the historic descriptions of these people's portrayal as cannibalistic, brutal warrior tribes who in prehistoric times were continually raiding the "peaceful" chiefdoms to the north. In the past this has led scholars to draw a cultural fault line between the northern and southern Lesser Antilles at the Virgin Islands (Rouse 1948b, 1948c; Figueredo 1978). Others had even suggested that the northern Lesser Antilles during the late pre-colonial period were something of a perpetual conflict zone wedged between Taíno and Carib peoples in which there were only some marginal settlements. It has since long been understood that especially the latter view was incorrect (Allaire 1987; Boomert 1986; Whitehead 1995), but presuppositions concerning a perceived Taíno/Carib dichotomy continue to plague Caribbean archaeology today (Hofman, Bright, *et al.* 2008).

24 An accurate historic and archaeological characterization of the Guanahatabey is lacking. This has led to the realization that the idea of a Cuban "pre-ceramic" frontier enduring to the contact period is probably false (Rodríguez Ramos 2008; Rodríguez Ramos, *et al.* 2009). The status of the terms Ciguayo and Macorix have also been reconsidered, which has led to a resurgence of fieldwork in the regions that they supposedly inhabited (Ulloa Hung 2013). Perhaps these names represent regional denominations rather than ethnic, culture or language group names. Something similar may have been the case with the Lucayo. Granted, due to socio-cultural-geographic correlations, these labels could have some tenuous links to indigenous perceptions of group identities. In contrast, the existence of the "Taíno" seems to have no firm ground in historical, social or material cultural reality whatsoever.

on the socio-cultural boundaries of groups have traditionally been proposed based on the distribution of types of material culture and the more than likely erroneous identification of historically reported ethnic or linguistic affiliations. Without denying the importance of indigenous perceptions of cultural, linguistic, ethnic and social differences, I feel it is better to let these boundaries potentially emerge from the archaeological material, rather than imposing them top-down. For this reason I will limit the application of these labels in any form to an absolute minimum.

## Ontology

An ontological approach focuses on indigenous "theories of being" and is an anthropological adaptation of ontology as it is used in (meta-physical) philosophy. An ontological approach seeks to capture salient, emic understandings and explanations of the features of the world, the place of humans and other beings in it, and how this came to be. In this the term ontology is closely analogous to the concepts of worldview or cosmovision, but it signals a departure from the notion that what (non-Western) people think and feel about their world are variants in expressions of or perspectives on one transcendental reality. Rather, referring to a worldview or cosmovision as an ontology instead starts with the idea that how people think and feel about their world aligns with how this world literally is. This is a radical move away from relativism in favour of the acceptance of the (internal) realism of other ways of thought (Goodman 1978; Overing 1990). This is not without some destructive complications about knowledge and truth-claims in the field of (archaeological) anthropology (Henare, *et al.* 2007). However, the realization that non-Western ontologies are (internally) real and logical already leads to an important shift in our own perception of them. For example, practices that are inconsistent with our reality – in that case referred to in academic vernacular with terms as "magical", "esoteric", or "symbolic" expressions – make sense in the context of the original ontological system and should thus be analysed and interpreted as such (see also Paleček and Risjord 2013).

Due to the quick decline of Amerindian societies and cultures and in particular the repression of beliefs and practices considered to be diabolical by European missionaries, our knowledge on indigenous Caribbean ontologies is limited. In the Greater Antilles all that remains is a smattering of sources on indigenous views on the state of the world and the place of humans in it. Fortunately, there are some sources that can give us a more comprehensive approximation. Manuscripts as for instance the *Account of the Antiquities of the Indies* by Fray Ramon Pané (1999 [1571]) or those of other early ethnographer-style clergymen in the Lesser Antilles such as Breton (1999 [1665]), de la Borde (1684), and Labat (1979 [1722]), are relatively objective descriptions of indigenous ontologies. However, even based on these sources it is not possible to paint a picture of local ontologies with more than

a broad stroke.[25] One, time-tested solution to this problem has been to expand the limited sources of information at our disposal by drawing upon analogies to mainland indigenous cosmologies, specifically those of Lowland South America (e.g. Arrom 1975; Boomert 2001c; Roe 1982, 1997; Stevens-Arroyo 2006; Whitehead 2011). Obviously, a one to one correlation between Lowland South American and Antillean indigenous ontologies does not exist. Nonetheless, in comparing Antillean worldviews to those known from narratological and ethnographic research in Lowland South America, the two regions showcase a wide range of similarities in their ontological substrate. When extrapolating this unity into deep-time it is possible to present a base-line for the pre-colonial indigenous ontologies of the Caribbean islands (Boomert 2001c; Roe 1982).

At its basis this deep-historic, base-line model could be called "animistic" (Oliver 1997). Animism is the inclination to believe in spirits or souls that reside in or are identified with (parts of) the natural world (Descola 1996; Roth 1915; Tylor 1871). The problem with this term is it presupposes that what is "natural" and what not is a useful distinction to make. Generally speaking, and specifically in Amerindian ontologies, this is not the case (Viveiros de Castro 1998; Willerslev 2011). Furthermore, animism is too broad a category to serve as an ontological trope in specific cases. Belief in some form of spiritual agency applies to most if not all indigenous ontologies of the Americas. It also applies to (aspects of) the worldview of many who live in societies that have not traditionally been recognized as animistic, like our own (Gell 1998; Knappett 2005; Pels 2010; Skrbina 2005).

As a reaction to the problems with the term animism, in 1998 the ethnographer Eduardo Viveiros de Castro advanced "perspectivism" as a competing model. At the heart of this model lies the concept that Amerindian ontologies are not based on the true natures of beings, but on their perspectival states. An Amerindian theory of being is in a sense multi-"natural", i.e. it recognizes multiple ways of being which can also be expressed or experienced at the same time. In addition, the outward forms of humans, animals, and spirits are not representative of their subjective states. Rather, the inward state of many (but not all) organic and even inorganic beings is of an elementary sameness. Which form and behaviour other types of beings display is not a given, but depends on one's perspective.

For example, in normal circumstances humans are humans. Animals are animals and potential prey *for* humans. Spirits are spirits and as such often prey *on* humans. All are subjects and thus potential social partners – although such roles are often restricted to beings that have been identified as central counterparts of human "symbolic ecologies" (Roe 1982). Roles such as prey and predator are not

25 For the pre-colonial Caribbean one finds no evidence of overarching belief systems that were implemented from the top-down such as widely shared political ideologies, organized religions, or even loosely organized "cults" with a larger following. Even if there was a shared ontological substrate, we may consider that different communities and even individuals had quite variable ontologies. This may have been yet another drive towards the variability of material culture expressions we see in the archaeological record. Research thus far has tended to stress overarching patterns in indigenous cosmographies and their material expression in the archaeological record, rather than provide a view on (inter-island) differences. Thus it is presently impossible to discuss the issue of the possible diversity of ontologies more in-depth.

natural, i.e. (biologically) inherent, but based on a being's perspective. So, in their own contexts spirits and animals will act as humans, talk like humans, and have similar material cultural repertoires and practices – e.g. houses, dress, hammocks, foodstuffs (Viveiros de Castro 2004). What is more, because spirits and animals see themselves as humans, spirits will potentially see humans as prey, while animals may perceive of humans as predators akin to spirits.

As such the "manifest form of each species is a mere envelope (a 'clothing') which conceals an internal human form, usually only visible to the eyes of the particular species or to trans-specific beings such as shamans" (Viveiros de Castro 1998: 470-471). Indeed, the outward form of a being is flexible and can undergo rapid transformations from prey to predator or from subject to object and back again (Viveiros de Castro 2004). Sometimes transformations are induced by subjects themselves. More often than not, they are due to the agency of others or transformative contexts – e.g. a shaman that stays too long within the village of Anacondas or eats the food of his animal hosts risks never being able to return again (see Carlin 2004: 511-514). In "before-time", a widespread concept among Amerindian groups, such transformations happened with even greater frequency. These transformations in before-time are also (dialectically) contingent with the outward shape, and essential qualities of human, animal and spirit subjects in the present (e.g. Overing 1990). Many Amerindian oral traditions are based on such present and before-time transformations talking of humans that change into animals, animals that change into humans, spirits that change into elements of the landscape, *etc.*[26] These same perspectivist elements are also found in Antillean indigenous narratives (e.g. de la Borde 1684; Labat 1979 [1722]; Pané 1999 [1571]; Taylor 1938).

This perspectivist model provides us with a deeper understanding of the type of material culture that (for us) represents more esoteric aspects of pre-colonial life, notably the widespread use of shamanic paraphernalia and iconographies of fantastical creatures. Specifically perspectivist animals must have had a central place in indigenous Caribbean ontologies. Starting *c.*500-400 BC we see the incorporation of animal iconography in ceramics, amulets of stone, shell and bone, and other forms of material culture. Often these animal shapes are mixed with anthropomorphic elements or vice versa, creating animal-human hybrid iconography. "Adornos", lugs and handles attached to vessel rims and walls, are found from *c.*400 BC onwards and often have an emphatic hybrid anthropomorphic and zoomorphic character. Ceramic motifs are often more difficult to interpret but it has been suggested that the same set of hybrid animals feature in them, as well (Petitjean-Roget 1997; Roe 2004; Rouse 1992; Waldron 2010).

It is generally believed that this ontological substrate did not change much throughout the pre-colonial period – although this must partly be an artefact of direct historic analogy. There was, however, a slight divergence in the ritual practice and material expression of this ontology on the islands (Arrom 1975;

26 For those interested in Amerindian narrative collections and motif analyses, see the excellent series titled *Folk Literature of South American Indians* (1979-1992, edited by Johannes Wilbert) of the Latin American Institute at the University College of Los Angeles.

Boomert 2001c; Oliver, *et al.* 2008; Roe 1997; Stevens-Arroyo 2006; Whitehead 2011). This culminated in an Antillean system of beliefs and practices surrounding a set of superhuman beings often referred to as *cemíism* (Oliver 2009). Even though it was a main feature of Antillean culture and society, beliefs and practices surrounding *cemí* were not in any way part of a centrally organized religion. Any similarities of specific superhuman beings and practices among the islands thus resulted from shared symbolic and ecological contexts, as well as from a diffusion of ritual practices and beliefs (Allaire 1990). It is all the more remarkable that the material expressions of *cemíism* – (idols, amulets, personal accoutrements, ceramic decoration, shamanic paraphernalia and other valuables with pronounced (zoo)anthropomorphic imagery – remained relatively uniform across the islands. A subject that will be returned to in Chapter 8.

One may ask: how would indigenous ontologies have impacted how social networks functioned? In this regard it is important to understand that Amerindian perspectivism is not only a model of "being" or identity, but also of relational subjectivity. With this I mean to say that subjective or "agentive" states are based on outward differences but internalized equalities. Thus having a certain perspective constrains or expands the potential of a spirit, animal or human to interact with the world and others in it. This changes the quality and quantity of possible relations – e.g. a human that has become outwardly animal may inadvertently be hunted and eaten by other humans. In other words, this flexible perspective would have allowed for a wide range of possible (social) ties between humans and other types of beings.

This has repercussions for archaeological interpretations of how past Caribbean communities were "networked". For example, it means that material evidence of connections between humans, animals, spirits and ancestors – e.g. zoo-anthropomorphic designs, carving of petroglyphs, post-mortem manipulation of human bones – should not (only) be interpreted as the result of metaphorical or otherwise symbolic behaviours. Instead, these may have been expressions of literal relations between subjects. Though this ontology pushes beyond the boundaries of what a Western naturalistic framework considers to be "true" and possible social interactions, from an emic perspective such a wider field of inter-subjective relations would have exponentially increased the total amount of potential social partners and competitors. Even if we would only be strictly interested in explanations that align with a modern view of subjectivity, we cannot discount the fact that relations with other than human beings had a great effect on the historical trajectories of societies and cultures in the pre-colonial period.

## Substrates and processes of pre-colonial networks

This overview has only highlighted general trends, with many local particularities of Caribbean environments and historical contexts left undiscussed. This bird's eye-view has thus necessarily obscured much of the intricacies of the current scholarly debates (see Keegan, *et al.* 2013). Rather, what this chapter has done is identify and

discuss a number of ecological and historical parameters, substrates and processes. These all came together in creating a dynamic geographic and cultural space characterized by a high amount of micro- and macro-level connections.

First of all, as Rouse (1986) had recognized previously, the geographic layout of the Caribbean islands must have had a shaping effect on the patterns of homogeneity and diversity in the region. However, in the case of the Caribbean, the popular perception of the environmental similarity of (tropical) islands is contradicted by the large variety in local ecological and geological systems. This meant differential access to resources, which was conducive for the creation of inter-island networks. On the other hand environments were similar enough to allow analogous local evolutionary developments in subsistence practices, material culture production and distribution and (ecological) base-lines for belief systems. These differential but analogous environments would have reinforced a mixed collective of socio-cultural practices and ways of dwelling within these islandscapes.

Although much remains unknown with regard to maritime logistics and (perceptions of) safety, a high degree of inter-island voyaging, indicated by archaeological and ethnohistoric sources, would have been a logical outcome of this natural, social and material landscape. In this regard it is also notable that the geographic layout of the Northeastern Caribbean correlates with that of a lattice-network. Most islands were intervisible and local archipelagoes were always well-connected through exchange of goods and inter-island residential mobility (Hofman, Bright, *et al.* 2007; Laffoon 2012; see also Chapter 6). Within island regions, exchange and other interactions would have been quite literally "down-the-line" in the sense that people or goods were geographically moving down (or up) a chain of islands. If voyagers decided to skip certain paths in the island network, this would have been a choice made with reference to other places geographically farther down the line and all the social and material costs and benefits that this entailed.

The history of the Caribbean can be painted in broad strokes as a series of networks that grew and contracted, merging and separating in the process. This view reinforces the deep-time connections between Caribbean societies and cultures and the almost rhythmic cadence of ties between various islands and mainlands (cf. Hofman, Bright, *et al.* 2007; Hofman and Bright 2010; Hofman and Hoogland 2011; Rodríguez Ramos 2010). This process started with the establishment of the first (mainland-)island networks (6000/4000 BC-2000 BC). Once the connection between westerly and southerly island communities had been made (2000 BC-800 BC), local and regional networks continued to grow and develop, becoming part of intermittently and weakly connected Greater Caribbean interactions (800-200 BC). This growth led to (re-)emerging connections between the islands and the mainlands of the Caribbean as well as to the creation of the first robust interregional networks (200 BC-AD 400). This was initially followed by an increasing density and expansion of local and regional interaction spheres (AD 400-600/800), but was followed eventually by a retraction of interaction networks in the Lesser Antilles around AD 700. In other regions society and culture evolved to become increasingly dense and complex on the local level (AD 600/800-1000).

This was correlated to the solidification of regional polities. From AD 1000 on we see the renaissance of patterns of similarity in material cultural repertoires across the Greater and northern Lesser Antilles (AD 1000-1492). The causal relations underlying these synchronous emergences of local and regional complexities are still very much unclear.

The homogeneity and diversity of pre-colonial Northeastern Caribbean cultures and societies cannot be separated from their geographical, geological, ecological, logistical, ontological, and historical contexts. A good understanding of this is critical to complement, substantiate and interpret the relations in and between archaeological assemblages and other lines of evidence. The resulting base-line expectation should be that these substrates and parameters allowed for a high rate of interaction among islands and regions coupled with strong possibilities for local autonomies and developments of communities and their material cultural repertoires and practices. In order to begin to better understand this pattern of connectivity I will apply a variety of network approaches to the case studies in Chapters 5 to 8. The network science and specifically graph theoretical concepts, measures and models that will be utilized will be discussed in the following chapter.